

**GENDER, ENVIRONMENT  
AND HEALTH:**

**A Working Directory to  
Issues, Networks and Initiatives**

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ARCHIV  
HATCHER  
no 108327

October 1995

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There will be a charge of \$45.00 CDN for the directory to cover printing and postage. Persons from developing countries will be charged \$25.00 CDN.

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## ACKNOWLEDGEMENTS

We greatly appreciate the help of all those who had a hand in this project. Dr. Elizabeth McGregor, founding president of the World Women's Veterinary Association (WWVA), developed the framework for *Gender, Environment and Health: A Working Directory to Issues, Networks and Initiatives*. The WWVA has published a series of similar directories on gender issues and played an important role in getting this project off the ground.

We would like to thank Jacqueline Sims, Dr. Kate Davies and Dr. Bonnie Kettel for their invaluable comments of earlier drafts of this document. Hutoxi Noble assisted in the administration of this project and was an indispensable fountain of information.

This project would not have been possible without the financial support of the World Health Organization (WHO), the Great Lakes Health Effects Project of Health Canada, the Women's Health Bureau of Health Canada, Environment Canada, and the International Development Research Centre (IDRC). We would also like to thank the Pan-American Health Organization (PAHO) for translating and distributing the directory.

While many people and organizations contributed to this directory, responsibility for errors or oversights lies with the research team.



**WOMEN VETERINARIANS IN INTERNATIONAL DEVELOPMENT**  
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September, 1995

The World Women's Veterinary Association extends congratulations to the collaborating agencies including the World Health Organization, the Pan American Health Organization, the Canadian federal government Departments Health Canada and Environment Canada, Non-Government Organizations and the coordinating lead of the International Development Research Centre in the sponsorship and publication of this "Guidebook".

This is the fourth in a series of five guidebooks initiated by the World Women's Veterinary Association in collaboration with inter-governmental, non-governmental and government agencies. Others in the series include;

***Gender in Science and Technology  
for Sustainable and Equitable Development  
A Working Guide to Issues, Networks and Initiatives***

***Indigenous and Local Community Knowledge  
in Animal Health and Production Systems  
Gender Perspectives***

***Microenterprises for Sustainable and Equitable  
Development - Gender Perspectives  
A Working Guide to Issues, Networks and Initiatives***

***Women and Youth in Agriculture  
A Working Guide to Issues, Networks and Initiatives***

researched and published with partners including the United Nations Environment Program (UNEP), the Inter-American Institute for Cooperation on Agriculture (IICA), Agriculture and Agri-Food Canada, the World Council of Indigenous Peoples (WCIP) and the International Development Research Centre (IDRC).

As the momentum of the United Nations Fourth World Conference on Women and its "Platform for Action" carries forward from Beijing into implementation and action, we hope that this Guidebook will stimulate fresh commitment and action at the critical interface of gender, health and the environment.

Dr. Elizabeth McGregor  
Founding President & International Liaison  
World Women's Veterinary Association

# I Introduction



IDRC Photo

## INTRODUCTION

*Gender, Environment and Health - A Working Directory to Issues, Networks and Initiatives* is a collaborative effort to bring together a growing resource base of policies, national and community-based studies and activities, organizations and researchers within the field of gender, environment and health. Its purpose is both to encourage and facilitate future initiatives and partnerships in this crucial area by bringing together successful examples of previous and on-going actions.

This directory itself is a result of a fruitful partnership between the World Women's Veterinary Association (WWVA), the International Development Research Centre (IDRC), the World Health Organization (WHO), Health Canada, and Environment Canada. It continues a series of publications by WWVA and other partners on gender issues:

*Gender in Science and Technology for Sustainable and Equitable Development* Volumes One and Two (IDRC, WWVA, 1993);

*Indigenous and Local Community Knowledge in Animal Health and Production Systems - Gender Perspectives* (WWVA, IICA, WCIP, 1994);

*Gender and Micro-Enterprise* (WWVA, UNEP, 1995).

While concern for environmental degradation and the situation of women worldwide has been a local, national and international issue for well over two decades, concern for the impact of environmental degradation on women's health is a newly-emerging field of research and activity. Spurred by the 1992 Earth Summit and the Global Commission on Women's Health established by the World Health Organization, the interface of gender, environment and health issues is a rapidly growing policy area for governments, national and international agencies, research institutes and NGOs.

The issues and challenges in gender, environment and health, however, are not new. Marginalized in many parts of the world economically, politically, and socially, women are on the front lines of environmental degradation in their home and work spaces. Environmental conditions such as indoor air pollution from the use of biomass fuels in open stoves, exposure to pesticides and industrial pollution and unsanitary water significantly increase the susceptibility of women to chronic and acute health conditions. In spite of this, there is a paucity of gender-disaggregated information that demonstrates the differential impact of environmental degradation on women. Gender-specific research is needed,

information must be disseminated and action must be taken at all levels to address this issue.

One area of critical importance is policy-making. Past approaches of 'add gender and stir' are no longer adequate, if they ever were. In an area as complex as this, policy must be formulated from an innovative and multidisciplinary perspective. Because gender, environment and health have traditionally been three separate fields, and yet are now becoming recognized as having high degrees of overlap, there is strong need to devise policy that recognizes both the history and continuing evolution of this interface. Women have a central role to play in this process.

The road ahead for gender, environment and health issues is full of potential. There is a long and full history of Women in Development (WID) and Gender and Development (GAD) research and activism. The ecofeminist movement is rich and flourishing and increasing attention is being focused at all levels on the relationship between environmental degradation and health.

By bringing together available information and initiatives, *Gender, Environment and Health - A Working Directory* will lay the foundation for future networking and partnerships. It will serve as an invaluable resource document for the United Nations Fourth World Conference on Women in Beijing in 1995 and will be a 'roadpost' to the future of gender, environment and health issues.



## II Discussion Papers



## DISCUSSION PAPERS

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The discussion papers will present the conceptual challenge of "Gender, Health and Environment." It will explore linkages between these issues and highlight the differential impact on women.

Authors include:

- Vandana Shiva
  - Michael Paolisso
  - Bonnie Kettel
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## Overview

Although much is written on gender, environment and health as separate issues, it is only recently that the conceptual linkages among the issues have begun to be explored. Their interconnections at different levels and the resulting implications for policy, programming and community action are emerging as an important field of research and analysis.

The following three discussion papers, written by Vandana Shiva, Michael Paolisso, and Bonnie Kettel examine different aspects of the connections between gender, environment and health issues. Shiva situates gender, environment and health within the international environmental regime, critiquing many of that regime's tenets. Paolisso, through a review of relevant literature, presents a thorough summary of the effects of environmental degradation and poverty on women's health. Kettel develops a conceptual framework for gender-sensitive research and policy analysis that centres on women's interactions with the biophysical environment and the implications of this interaction for their environmental health. Together, these papers provide a comprehensive overview of the different aspects of the conceptual linkages between gender, environment and health.

Shiva, in "Women, Ecology and Health: Rebuilding Connections," argues that there are no insular divisions between the environment and women's bodies and health. Environmental hazards are also health hazards even though the linkages have been denied by fragmented and divided worldviews. Shiva argues that only by beginning with women's experiences, analyses and actions will it be possible to rebuild the connections between ecology and health to create a more holistic approach to the contemporary crisis of survival.

In "New Directions for the Study of Women and Environmental Degradation," Paolisso considers the effects of environmental degradation on women in light of their roles in agricultural, income generation and family health. He reviews the existing literature on gender, environment and health, concluding with a call for more multidisciplinary, gender disaggregated research that can be incorporated into a wider range of development and environment initiatives.

Kettel, in "Women, Health and the Environment," reviews the lack of data on women's non-reproductive health, arguing that there is a need for increased research and policy formulation focusing on women's environmental health in both developing and developed countries. Kettel develops a conceptual framework within which renewed research and policy formulation on women, health and the environment should take place.



Women, Ecology and Health: Rebuilding Connections

by Vandana Shiva

It is now twenty years since the 'environment' was put on the agenda of international concern with the Stockholm Environment Conference in 1972. The United Nations Conference on Environment and Development (UNCED) held in Rio de Janeiro in June 1992 marked the culmination of these two decades of environmentalism, enabling us to take stock of trends, to build on the most promising and lasting ones.

The global concern for planetary survival has moved from issue to issue in the last two decades. From desertification it shifted to acid rain, and the current preoccupation is the pollution of the atmospheric commons, symptomatised by the greenhouse effect and ozone depletion. The official environmental response has largely been one of offering technological and managerial fixes which, rather than addressing or solving the basic ecological problems, often creating new ones. The search for technological fixes to the greenhouse crisis is an example of a cure which could be worse than the disease, destabilising the planet's life support systems and livelihoods in the Third World.

There is another response to the growing ecological crisis which comes from women engaged in the struggle for survival; because of their location on the fringes, and their role in producing sustenance, women from Third World societies are often able to offer ecological insights that are deeper and richer than the technocratic recipes of international experts or the responses of men in their own societies. There are two reasons for this.

First, these responses come from cultures in which maintenance of life has been the civilising force; secondly, the gender division of labour, introduced or aggravated by the development process, has increasingly pushed women to work for the production of sustenance, while men have been drawn into military and profit-seeking activities. In the post-UNCED era of 'global environmentalism', the two distinct processes outlined above continue to be at work for the identification of environmental problems and their solutions. In the dominant process, men in centres of economic and political power see the roots of the problem and the burden of solutions as lying outside themselves and their context. They begin with prescriptions for change in other places and by other people, often people and places that have been victims of the environmental consequences of decisions made in those very centres of power. Thus, the UN Conference on Environment and Development had a tendency to identify the South as the source of all environmental problems and the North, with its technology and capital, as the source of all environmental solutions.

*Earth body, human body: the continuity*

The 'environment' is not necessarily an external, distant category; in Penny Newman's words, 'The "environment" for women in our communities is the place we live in and that means everything that affects our lives.' Women's involvement in the environmental movement has started with their lives and with the severe threat to the health of their families. From the perspective of women, environmental issues are quite directly, and clearly issues of survival. Ann Usher explains, 'The Thai community forestry movement that emerged in the mid 1980s is not just a fight for rights over the forest. It is a fight for survival', a point Penny Newman makes in the context of toxic hazards. Survival becomes the juncture connecting different movements and women in different locations. For women, health issues and environmental issues are related. Ann Usher shows how metaphorically and materially 'the condition of the human immune system weakened by AIDS shares many similarities with a degraded ecosystem like a dying forest....Not only is the degraded forest unable to "perform" the functions that were once part of its nature, it becomes increasingly sensitive to unusual pressure from the outside....Stresses that were once absorbed by the ecosystem without inflicting significant damage now cause devastation.'

Penny Newman has discussed the links between health problems and the pervasiveness of chemicals in our production systems. She points out how white, male-dominated environmental organisations fail to see the interconnection between various issues--ozone depletion, acid rain, toxic wastes, pesticides--and to understand that they are actually one issue, the massive production of man-made chemicals by the petrochemical industry.

Mira Shiva argues that health issues and environmental issues are one and the same. She demarcates diseases as arising from two conditions--deprivation of essentials or an excess of non-essentials; ecological erosion leads to the former, pollution to the latter. She further points out that no amount of drugs and doctors can create health if essentials are becoming more scarce due to ecological erosion, and non-essentials more pervasive due to consumerist life-styles, environmental pollution and the accumulation of waste.

Environmental problems become health problems because there is a continuity between the earth body and the human body through the processes that maintain life. This continuity also implies that the challenge of the reproduction of nature and the challenge of the reproduction of society need to be addressed systemically. Reducing the problem of the reproduction of society, in the face of declining resources and declining access to resources, to a 'population problem' is another symptom of the tendency to treat people of other cultures, races and places not as human beings but as statistics to be manipulated. But behind the numbers being manipulated are real women with human rights and health needs. As Mira Shiva reports:

For those involved in health work, population control policies have been a double tragedy, first because they failed to meet women's contraceptive needs and second because they eclipsed other necessary health care work....Had those whose hearts bleed for the soaring population of India cared to listen, they would have recognised the needs to strengthen the hands of women early enough, educationally, economically and socially, so that they could be helped to make choices about conception and contraception.

An almost logical, and dangerous, extension of this is the subject of the contribution of the Forum Against Sex Determination and Sex Pre-selection (FASDSP): technologies that determine genetic characteristics in unborn foetuses. It addresses the political and ethical implications of the manipulation of women's bodies, either through invasive technologies or more subtly, to suit the gender bias of society. The patriarchal analogy of woman and nature is subverted through the women-ecology-health connections made in this paper, thus relocating the terms of the discourse through a redefinition of the human body, the earth body and the body politic.

People, their environment and their society are not separable by rigid and insular boundaries. The boundaries between them are porous and flexible, allowing interchange and influence. The unity here is not the uniformity of the fragmented atomism of Descartes and Hobbes. It rests on the continuity of life in its interconnectedness; there are subtle and complex connections between diseases of the human body, the decay of ecosystems and the breakdown of civil society, just as there are connections in the search for health at all these levels.

As the 20th century closes, feminism is faced with two challenges: on the one hand there is the challenge posed by ecological disruption which threatens the very basis of life on this planet; on the other, there is a constant need to respond to, and transform, the patriarchal categories of definition and analysis that we have inherited.

The ecological challenge compels us to recognise connections and continuity within an organic, evolving, dynamic nature. A feminist response that is ecological must necessarily reactivate a conscious awareness of, and dialogue with, nature, lifting it out of its patriarchal definition as something passive and inert--a definition that has also been extended to women. This separation between the natural and the human world was constructed simultaneously with the separation of mind from matter, and intellect from body.

The exclusion of nature from culture and body from mind were used to essentialise gender in such a way that women were treated like nature, devoid of mind and thought, while men were constructed as distinct from the physical world, guided by reason alone and capable of complete intellectual transcendence of the body. How should we respond to these social

constructions? We can transcend the nature/culture dichotomy by recognising that the passivity and inertia of nature are a patriarchal construct and that the interconnectedness of women and nature can be one of creativity, life and intelligence. And, significantly, of resistance.

This politics, based on nature taken as both female and intelligent, does not see liberation in severing the link between woman and nature, *but in recognising the necessary connection and continuity between the human and the natural*. It does not locate intelligence in the machine or artefact; rather, the ecological perspective acknowledges that some machines and artefacts in fact initiate disruption and imbalance. Chemical fertilisers were treated as total substitutes for, and an improvement of, the earth's fertility. Their use has led to soil, water and atmospheric pollution, and unhealthy plant growth, vulnerable to pests and diseases. An ecological perspective, therefore, emphasises the need to distinguish between artefacts, machines and other technological products on the basis of whether they interfere constructively or destructively with nature. It also raises fundamental questions about the political and social role of technology, by rejecting patriarchy's nature/culture dualism.

#### *Separatism and the disintegration of the body politic*

Separatism is patriarchy's favoured way of thought and action. There are many levels at which false separation creates conditions for ecological and social disruption and the marginalisation of women from the body politic. A neutral separatist boundary that women everywhere are challenging is between production and reproduction. This in turn derives from the basic dualism of nature/culture that characterises patriarchal paradigms, which exclude ecological contributions to the production of economic value. The externalisation of women's work and nature's work from dominant economic thought has allowed women's and nature's contributions to be used but not recognised. Nature's work is what ecological perceptions allow us to see.

'Nature' is also socially, culturally and politically constructed. Not only is it not outside economics and production, it is the basis of economic production. The 'virgin' view of nature necessarily goes hand in hand with the 'whore' view of what is not virgin nature. However, nature is neither 'virgin' nor 'whore', and ecology is not just conservation. Production happens in nature, in the home, in our daily lives, and is not limited by the artificial production and creation boundaries of patriarchal economics and science. The separation between production and reproduction, between innovation and regeneration, has been institutionalised to deny women and nature a productive role in the economic calculus. Conservation must happen in the factory and in the city if total destruction is to be avoided. Gail Omvedt and Teresita Oliveros have described from India and the Philippines of how capitalist agriculture and industrial development have affected farmers, especially women



farmers, and how they are engaged in struggles that simultaneously protect nature and their needs.

Peasant movements in the State of Maharashtra in India are bringing issues of the reproduction of nature into agricultural production, thus changing the assumption about productivity and producers. The drought eradication campaign of the Mukti Sangharsh movement makes visible the environmental costs of sugarcane cultivation, and has led to the search for production systems which do not degrade land and water resources. This ecological perspective is also making women central to the search for sustainability, as captured in the slogan 'hirvi dharti, stri shakti, manav mukti' (green earth, women's power, human liberation), and in the experiments with sita sheti, smallscale, low-input agriculture production, mainly for consumption in the household.

A similar situation exists with regard to peasant women's direct action to resist their displacement by an industrial development project covering five provinces adjacent to Metro Manila. In a gesture of symbolic irony women in barrio Tartaria drove away surveyors who had come to survey land for a slaughterhouse and cemetery for the industrial zone: in the face of the expansion of this culture of death, peasant women in the Philippines 'are struggling to sustain and defend life by sacrificing their own'. For them, 'the survival of their families and communities is synonymous with the survival and preservation of the environment'.

The contributors also examine the notion of 'rights'. The concept of rights that derives from a fragmented view of nature is a notion that fails to protect either people's health or the health of ecosystems. A system of rights derived from separation creates and protects property; existing jurisprudence is built around the protection of property, not the protection of life, and tells us how this jurisprudence militated against the delivery of justice to the victims of the Union Carbide disaster in Bhopal. It is necessary to evolve a rights jurisprudence that protects people, their health, and ecosystems; notions of rights for the protection of property may contradict rights to the protection of life, both in the case of human reproduction and of plant reproduction. Intellectual Property Rights (IPRs) are the ultimate Cartesian construct of a mind/body, culture/nature dualism, and perpetuate the evolution of ethics and law in the anti-ecological direction of 'separatist' rights to property which threaten farmers and women worldwide.

'Separatist' rights as embodied in IPRs, and in the negotiations at the General Agreement on Tariffs and Trade (GATT), have been identified as patriarchal projects by women activists of the South, rather than by feminist theorists of the North, indicating that our conventional notions of the separation of theory and action and of the primacy of the former need revision. 'Separatism' seems to be emerging as the contemporary expression of threatened patriarchal power, linked intimately to the global patriarchal project of forced

integration into so called 'free markets'. 'Separatism' is appearing as a virus, infecting the body politic subjected to the rapid 'opening up' to global forces. Ethnic conflict, xenophobia, fundamentalism, and the rise of narrow nationalism are tearing apart the social fabric just as ecological destruction is tearing apart the web of life in nature. Integration as understood by global capitalist patriarchy is leading to disintegration because it is generating economic, social and cultural insecurities faster than people can identify the roots of these insecurities. Feeling the besieged 'other' in the global playing field of the market, and not being able to identify that field, members of diverse communities turn against each other, identifying their neighbours as the 'other' that poses a threat to their well-being and survival.

Since diversity characterises nature and society, the attempt to homogenise nature creates social and cultural dislocations, and the homogenisation of nature also becomes linked with the homogenisation of society. Ethnic and communal conflicts, which are, in part, a response to cultural homogenisation, are further aggravated by the process of development which dispossesses people, denies them control over resources and degrades ecosystems.

It would be wrong to assume that 'separatist' views only infect the body politic in the South. Yugoslavia is an indication that this is a global phenomenon. We see the spread of violence as the culmination of patriarchal projects in which the potential for death and destruction is far greater than for the sustenance and reproduction of life. Superficial ideas of what development should be have led to the rise of fundamentalism, terrorism and communalism, which further threaten life and peace. The feminist response to violence against women, against nature and against people in general attempts to make the production and sustenance of life the organising principle of society and economic activity. Whether it is the technological terrorism of Union Carbide in Bhopal, or the terrorism of racism, fundamentalism and communalism in Europe, Pakistan, India and Sri Lanka, we see a culture of violence and death extinguishing a culture in which life is generated, protected and renewed. It is in reclaiming life and recovering its sanctity that women of our region search for their liberation and the liberation of their societies. In the Indian subcontinent, communalism refers in particular to social and political relations between the majority Hindu community and Muslim, Sikh and other minorities.

### *Rebuilding connections*

A common criticism levelled at ecological feminist approaches to the current crisis, is that of 'essentialism'; relating environmental issues to women in a specific way is seen as an 'essentialist' world view. Yet the charge itself emanates from a paradigm that splits part from whole, fragments and divides, and either sees the part as subjugating the whole (reductionism) or the whole as subjugating the parts--in other words, essentialising both.

There are, however, other paradigms in which the whole and the part carry each other--the part is not separate from the whole, but its embodiment, in flux, in dynamism, in change. Quantum theory is probably the best illustration of how parts embody wholes, because quantum subsystems which have been part of a system do not behave as individual, unconnected fragments on separation, but have connected histories in spite of separation. The famous Einstein-Podolsky-Rosen paradox raises major philosophical issues related to this non-reductionist, non-hierarchical relationship between parts and wholes. The whole is not external to the part in all paradigms of 'nature' and 'society'. This is what David Bohm is pointing to through his concept of enfoldment and the implicit order in which the whole is enfolded in the part and unfolds through it.

A second aspect of the charge of essentialism is that it comes from a view that treats nature as inert and passive, and without intrinsic value. By failing to recognise nature's diversity, its regenerative capacity and its production of life, this view essentialises all production into human or technological intervention.

Another charge of essentialism comes from those who see difference as so 'essential' that it makes solidarity and commonality impossible. This again is based on the patriarchal paradigm of 'sameness'; if people, things, organisms are different, then the assumption is that they can have no relationship and no overlap. This leads to a solipsism that interprets relating and connecting as sameness and the argument that the search for common ground for women's actions and concerns is essentialising the category 'woman.' There is, however, no essentialism involved in partnerships, in solidarity, in symbiosis. Women acting together in spite of their diversity, is not equivalent to the essentialising of woman as a uniform category. Yet another common criticism of reconnecting with nature is that it involves a return to the past. This criticism arises from externalising nature in space and time; connections then imply a 'return' to another time, another place.

If, however, our perceptions are ecological, then nature is the complex web of processes and relationships that provide the conditions for life. In this view, nature is not external, and it is not spatially and temporally separated from our being. Essential ecological processes that maintain life cannot be treated as part of the world-view of technological obsolescence. The moment we accept conditions for life as obsolete aspects of a primitive past, we invite death and destruction. In fact, it is this chronocolonisation, or temporal colonisation, of living processes based on false and artificial constructions of 'traditional', 'modern', 'post-modern', as if they are in a linear temporal hierarchy of the past, the present and the future, which underlie the subjugation of nature and women. This colonisation of life cycles and time separates production from reproduction. The separation of the conditions of life from ourselves and our economic and scientific activity, and the location of these conditions in the past, are a major cause of the ecological destruction of ecosystems and of our bodies.

Through these contributions we attempt to reconstitute both 'woman ' and 'nature ', and to show that nature as the ecological web of life is not out there in space and time: it is us.

Across the world, women are rebuilding connections with nature, and renewing the insight that what we do to nature, we do to ourselves. There is no insular divide between the environment and our bodies. Environmental hazards are also health hazards, as was so brutally revealed in Bhopal and at Love Canal. Environmental hazards are also health hazards in food systems. Pesticides do not merely pollute fields; they end up polluting our bodies. Destruction of biodiversity does not merely impoverish nature, it impoverishes tribal and peasant societies. These links exist in the real world even though they have been denied by fragmented and divided world views. Beginning with women's experiences, analysis and actions we will rebuild the connections between ecology and health, for a more holistic approach to the contemporary crisis of survival.

Reprinted with permission from Vandana Shiva (ed.), Close to Home, New Society Publishers, P.O. Box 189 Gabriola Island, B.C., V0R 1X0, and 4527 Springfield Ave., Philadelphia, PA 19143, 1995; cost \$12.95US, \$15.95CDN.

New Directions for the  
Study of Women and Environmental  
Degradation

by Michael Paolisso

**Introduction**

The poor in developing countries suffer particularly heavily from the negative consequences of environmental degradation, which affects both their health and economic production. Some 470 million of the poorest people in the developing world live in rural and urban areas that are environmentally degraded or ecologically vulnerable. Most of them can be found in Asia, where 60 percent of that region's poor -- 327 million marginal farmers, herders, and urban squatters -- live in degraded environments (Leonard 1989). Regardless of the region, in these environments poor households must extend already long working days to maintain economic production in the face of decreasing fertility of agricultural lands, deforestation, and reduced pastures. At the same time, inadequate sanitation and water services, air pollution, and exposure to industrial contaminants increase their risk of infectious diseases, respiratory problems, and cancers (World Bank 1993).

Poor women may be particularly vulnerable to environmental degradation because of their already heavy workloads, poorer health status relative to men, and close dependency on environmental resources for their productive and reproductive responsibilities (Collins 1991; Dankelman and Davidson 1988; Rodda 1991). This concern for the negative effects of environmental degradation on women is increasingly being expressed in official statements and reports by national and international development agencies, research organizations, and nongovernmental organizations (NGOs). Unfortunately, existing research on the impacts of environmental degradation on women is extremely limited in terms of providing reliable and detailed findings that can be used to develop effective gender sensitive policies and programs. The problem is less one of quantity of studies than of quality. With few exceptions, reported findings linking women and environmental degradation are based on cursory assessments or observations made over brief periods of time. While such reports are useful for raising issues and concerns, they can not be substitutes for more comprehensive and systematic research on the gender differentiated effects of environmental degradation. Additionally, there is a conceptual bias in the existing literature on women and environmental degradation toward women's responsibilities for providing fuelwood for home consumption. As a result, insufficient recognition has been given to how environmental degradation affects women's ability to earn income and maintain family and personal health.

This paper presents the findings of a comprehensive review of the available literature on the costs to women of environmental degradation. As a precursor to presenting the review's findings, discussion first focuses on the potential impacts of environmental degradation on women, given women's environmentally-linked agricultural, income earning, and family health roles. Next, the review's findings in terms of the quality, coverage, and conceptual and methodological strengths and weaknesses of existing studies are presented. The paper concludes with a call for more multidisciplinary, gender-disaggregated research in order that the concerns about the effects of environmental degradation on women can be integrated into a wider range of environment and development initiatives.

### **Effects of Environmental Degradation on Women**

Environmental degradation can negatively affect agricultural production by women, their generation of income from natural resources, and their own and family's nutrition and health.

#### *Agricultural Production*

Women perform critical roles in agricultural and livestock production that are dependent on the availability and quality of such resources as land, water, forests, and pastures. They produce the majority of the world's food (Sivard 1985) and contribute 60-80 percent of agricultural labour in Africa and Asia, and 40 percent in Latin America (Russo et al. 1989). Women agriculturalists are also decision makers in agricultural production, not only in sub-Saharan Africa (Moock 1976), but also in parts of North Africa and Asia. In regions of Nepal for example, women make 40-80 percent of decisions regarding seed selection, use of improved seeds, and fertilizers (Ahmed 1987).

In many developing countries women farmers are also responsible for the care of small and large livestock. For these women, livestock is a source of food for both home consumption and sale. In the hill areas of India, where animal husbandry is the second most important source of income after agriculture, women consistently spend more time tending livestock than men (Kaur 1991). In Burkina Faso, milk is a major source of income for Fulani women, who use it to purchase condiments, cloth and millet (Henderson 1986).

Environmental degradation may affect women agriculturalists in a number of ways. In developing countries, women often farm marginal lands that are subject to decreasing soil fertility, erosion, and salinization. Most women do not hold title to the lands they farm because of legal restrictions on inheritance and land reform schemes that have failed to recognize their traditional rights. Without title to land, women have little incentive to make investments in, for example, terracing or other labour-intensive soil conservation practices since they have no guarantee of continued access to the land (Mehra 1994).

Women farmers also have limited access to information and technologies for improving the sustainability of agricultural lands because, in most developing countries, agricultural extension services often do not reach them (Berger, DeLancey and Mellencamp 1984; Staudt 1978). As a result, women have fewer options available to maintain production as resources are degraded. Women may have few available substitutes for enriching soils, for example, when dung and crop residues are used as fuels because fuelwood is scarce. This can lead to significant reductions in agricultural yields (Spears 1978). Moreover, without direct access to extension services, women receive secondhand information that may be inaccurate and fail to contribute to improved agricultural outcomes.

In addition, because women have limited access to credit, they may be unable to purchase pumps or tubing to channel irrigation water to their fields; and since they are not usually included in the membership of water users' associations, they are unlikely to influence community decisions on water allocations.

Finally, women farmers may suffer indirect effects of environmental degradation when deforestation and desertification increase the time they must spend collecting fuelwood, fodder, and water, reducing their time available for agriculture (UNASYLVA 1990/91).

While a cause rather than an impact, pesticide use must also be taken into account in assessing the effects of environmental degradation. The health risks from excessive pesticide use may be increasing as women expand their participation in the growing nontraditional agroexport sectors in many developing countries. As noted by Thrupp (1994) for Ecuador, nontraditional agroexport crop production typically requires high volumes of pesticides in order to meet phytosanitary standards, yield goals, and produce "blemish-free" produce for export to Northern consumers. In Ecuador as of 1991, 8,646 of all workers (or 693 percent) in the nontraditional agroexport sector were women (ibid). If instructions for safe pesticide use are not followed, or training in its application inadequate, given intensive use, women's intermediate and long-term health, even if they are not directly applying the pesticide, may be compromised, since women's reproductive systems and other organs are particularly vulnerable to toxic pesticides (WHO 1990).

### *Resource-Based Income Generation*

Women rely on the collection of plants and animals from forests, rivers, and marine habitats to help meet home consumption and income needs. Worldwide, large numbers of rural and periurban women collect and process a wide range of nontimber forest products. These activities typically include harvesting fruits, nuts, and medicinal herbs; home-based processing of foods, fibers, dyes, and liquor; and making crafts for sale in local markets. These nontimber forest products can be major sources of income for poor women, particularly in situations where women have no property rights to land (Sontheimer 1991).

A survey of 100 women in Manipur, India, revealed that two-thirds of them collect minor forest products as their only source of income (FAO 1987). Women in the Sahel also earn cash incomes from the sale of wild baobab leaves (Cloud 1986).

Many poor rural women use forested areas to collect fuelwood for direct sale and charcoal production, and as fuel for processing forest and nonforest products. In Africa and Asia, the involvement of women in marketing fuelwood and charcoal appears to be growing. In India, many of the estimated 4 million headloaders of fuelwood are women, while in Ethiopia up to 70,000 women around Addis Ababa depend on the sale of fuelwood for their livelihood. In the Sahelian countries, the sale of charcoal is a critical source of income for men and women, with women predominating in its sale in urban areas (Rodda 1991). The FAO (1988) notes that, in Mali, the small-scale retail trade of fuelwood and charcoal is undertaken by women.

Women are also active participants in small-scale fishing enterprises and the collection of aquatic and marine resources. In Zimbabwe and Ghana, it is primarily women who process and market fish (Ardayfio 1986; Hunter, Hitchcock, and Wyckoff-Baird 1990). In the Philippines, women actively trade in marine products such as oysters, clams, and mussels (UNESCAP 1985; Francisco and Israel 1991). In Colombia, women earn significant amounts of income from the sale of cockles (mollusks) they collect in mangrove forests (Dankelman and Davidson 1988).

Because these activities are so dependent on natural resources, potential losses from environmental degradation are high. Deforestation, and the conversion of biologically diverse forest systems to less rich secondary or commercial forests, may directly reduce women's incomes by restricting the range of nontimber forest products available, as well as fuelwood for processing nontimber forest and other products for market sale. In fact, one of the most significant factors determining whether women can profitably undertake any home-based, value-added processing activities is the cost in time, money, and effort to obtain fuelwood (Molnar 1993). Overexploitation and contamination of marine and aquatic habitats will have a similar effect.

### *Protection of Family Nutrition and Health*

Two central activities women perform to ensure the health and nutrition of their families are maintaining a clean and hygienic environment and preparing meals. To ensure that family health is not compromised by unsanitary conditions, women's household activities include washing, wiping, and sweeping of eating areas and removal of fecal matter and household trash. In urban and periurban areas, the ability to provide a clean and hygienic household and community is more difficult due to increased environmental contamination. Rapid and disorganized growth has seriously degraded and contaminated the environment.



Air pollution, toxic and home wastes and other urban pollutants have begun to constitute ever-greater threats to health. This increased contamination will make it more difficult for women to obtain safe drinking water, prepare and store foods in a hygienic manner, and remove organic and inorganic wastes from the vicinity of the household.

The preparation of cooked meals depends on adequate supplies of fuel. In rural and periurban areas this means that women, and to some extent men and children, collect fuelwood. The time that women spend in collecting fuelwood varies according to the availability of fuelwood trees, the amount of assistance provided by other household members, and the household's consumption requirements. In most cases, however, the time required is significant. In countries as distinct as Nepal, India, Niger, Burkina Faso, and Kenya, fuelwood collection has been found to require 3 to 5 hours per day and involves travelling distances of 3 to 10 kilometers (Agarwal 1986).

Deforestation and the resulting fuelwood scarcity can negatively affect the preparation of cooked foods. With less fuelwood available, women may either cook meals for less time or reduce the number of cooked meals (UNASYLVA 1990/91). Fewer cooked meals can lead to undernutrition in young children who are unable to consume large quantities of food at one sitting. Less cooking time per meal may preclude preparation or adoption of nutritious foods or crops that require lengthy cooking, or increase consumption of raw or inadequately cooked foods. Pregnant and lactating women may be particularly vulnerable to these dietary changes, because of the combined effects of an increase in work collecting fuelwood and a decrease in food consumption (Cecelski 1992).

Deforestation can also exacerbate the already significant health risks from smoke pollution. In households that are dependent on biomass fuels, one of the major domestic health risks in developing countries is indoor air pollution, which has been identified as one of the four most critical global environmental problems (World Bank 1992). Because of their key roles in preparing food with fuelwoods, women may suffer particularly severe consequences from indoor smoke pollution. These include chronic lung diseases, cancer, adverse pregnancy outcomes and such daily discomforts as irritated eyes, running noses, and headaches. In China, India, Nepal and Papua New Guinea, for example, up to half the adult women (few of whom smoke) have chronic lung and heart disease because of the high levels of indoor smoke (World Bank 1993). Deforestation and fuelwood scarcity force women to use lower quality, quick-burning biomass fuels, increasing the time that they must spend in tending cooking fires. Thus deforestation may be increasing the already high health risks from smoke pollution.

## Review of the Literature

An in-depth review of the literature on the effects of environmental degradation on women reveals that information is quite limited. The available information describes impacts on women's production of food, cash crops, and livestock, their use of forest and aquatic products, and collection of fuelwood and preparation of food.

### *Food, Cash Crop, and Livestock Production*

There is currently no reliable estimates in the literature of the direct impacts of declines in soil quality, due to salinization, erosion, nutrient loss and desertification, on women's agricultural work and care of livestock, although a few studies describe women's contributions to land reclamation and soil conservation in response to environmental degradation (ILO 1988; Thomas-Slayter, Kabutha, and Ford 1991). This deficiency in information is the combined result of an under-appreciation of women's farm work in agronomic and environmental studies of the effects of declines in soil quality on agricultural production, and a lack of systematic rigor in measuring changes in soil qualities and women's farm work in research on women and the environment studies.<sup>1</sup>

There is some evidence, however, regarding the indirect impacts of deforestation on agricultural productivity. Kumar and Hotchkiss (1988) have shown that, in Nepal, when deforestation increases the time women spend collecting fuelwood, they must decrease the time they devote to agricultural production. In fact, while deforestation was found to lead to a reduction in total household farm labour of more than four hours per day, decreases in women's farm labour account for 75 percent of the change. On a per capita basis, deforestation has reduced women's farm labour by 1.6 hours per day, compared with a decrease in men's farm labour of 0.8 hours per day. Reductions in women's labour have resulted in diminished production and increased pressure to expand agriculture into marginal forest areas that initially require less labour than the intensification of production in existing fields. In addition, it appears that production of staple crops such as wheat and maize has suffered disproportionately. The marginal product of women's labour is substantially higher in these crops than is that of men, and the crops are grown during the

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<sup>1</sup> In an attempt to fill this information gap, ICRW in collaboration with World Neighbours/Honduras has recently completed fieldwork in a study on the effects of declining soil fertility on women's productive and reproductive responsibilities in the Yuscaran province, Honduras. The study used a multidisciplinary approach that included soil analysis of farm plots correlated with women's agricultural, domestic and off-farm work patterns. Information was also collected on women's own health patterns and fertility behaviour. The results of the study will be available by June, 1995. A brief overview of the study can be found in ICRW (1994).

dry season - a period when women spend more time collecting fuelwood (Kumar and Hotchkiss 1988).

Other studies address the potential impact that deforestation has on women's agricultural labour through their substitution of dung and crop residues, which fertilize soils, for fuelwood in domestic heating and cooking. Unfortunately, the information they provide is inconclusive (Dankelmarl and Davidson 1988). As Molnar (1993) points out, the effect of these agricultural and livestock by-products on soil quality varies. In marginal farming areas of South Asia, as in the upland farms of Nepal, for example, diversion of biomass to fuel can lead to reduced agricultural productivity by lowering the water-absorbing capacity of the soil. This may mean that women must work harder to maintain agricultural production levels on lower quality soils. In the highly productive, irrigated areas of India, on the other hand, farming practices and high yields generate so much agricultural residue and animal dung that use of these materials as fuel may have little negative effect on soil quality and, thus, on the time women must devote to agricultural labour.

With regard to potential gender differences in the risk of pesticide poisoning, most available studies only report on high use of pesticides and the extent to which women's agricultural activities bring them into contact with treated crops (Terompet 1993). Better information, although still very preliminary, can be found for the case of nontraditional agroexports in Ecuador. Based on, albeit limited, field observations, Paolisso and Blumberg (1989) observed that women predominated in the flower export industry, and that under pressure to meet production quotas entered fields that had been just chemically treated, wearing no protective clothing or masks. Thrupp (1994) confirms this practice, noting that flower production managers in Ecuador sometimes withdraw fieldworkerst most of whom are women, from sprayed fields, and then only for 30 minutes, an inadequate period of time in terms of contamination. Evidence of the extent to which such contact actually results in absorption of chemicals and poorer health for women is almost nonexistent, and what does exit needs to be confirmed by more extensive analyses. Again for Ecuador, Thrupp (1994) reports on a study cited by Blumberg (1992) showing that blood tests of 27 workers in a large flower firm showed declines in cholinesterase levels to 30 percent below normal creating the possibility of long-term kidney or liver damage. Twenty-three out of the 27 were women.

#### *Use of Forest and Aquatic Products*

Information on environmental degradation and other environment-dependent economic activities carried out by women focuses on the effects of deforestation on women's enterprises and marketing of fuelwood, charcoal, and nontimber forest products. Little is reported regarding water contamination and women's use of coastal and marine resources.

**Fuelwood-dependent enterprises.** Several studies make claims that fuelwood scarcity caused by deforestation affects income-generating enterprises run by women. In Burkina Faso, for example reports show that fuelwood scarcity has reduced women's incomes because prices for fuelwood, which is used in women's production of local beer, have risen much faster than the price of the beer itself (Gattegno and Muchnik 1983). The Food and Agriculture Organization (FAO) notes that a decline in the quality of fuelwood available to women in northeastern Thailand means that they must use root stumps, fresh branches, and softwoods in silkmaking - a substitution that is problematic because silkmaking requires accurately controlled temperatures that are most readily obtained with quality fuelwood. In addition, these women's saltmaking, which requires long hours of boiling, is also threatened by the inefficiency of substitute fuels (FAO 1987). By contrast, Ardayfio (1986) found that, in Ghana, women substituted purchased for collected fuelwood as the time spent in collecting it increased due to deforestation. Since income from the sale of smoked fish can be as high as 68 percent of household income, it was more cost effective to purchase fuelwood than spend more time collecting it at the expense of processing it for sale.

These studies suggest that deforestation may be having a direct impact on women's economic well being and their ability to contribute to the support of their households. Unfortunately, it is unclear whether the information they provide is representative, and the studies present no data on the degree of deforestation that women are experiencing or the actual costs of fuelwood scarcity in terms of income loss. In addition, the studies focus on enterprises that are very fuel-intensive and highly dependent on adequate supplies of quality fuelwood. It is not clear whether women who only intermittently market surplus subsistence foods are as strongly affected by fuelwood constraints.

**Marketing of fuelwood and charcoal.** A number of studies report that deforestation is also affecting women's collection of wood for sale. The FAO reports that, in India, scarcity has raised the price of fuelwood and charcoal so much that many poor women in Himachal Pradesh are now willing to walk up to 6 kilometers a day to collect fuelwood for sale (FAO 1987). Near the town of Renchi, firewood sellers, mainly tribal women, are willing to walk 8 to 10 kilometers to surrounding forests to collect wood for sale in town - forests that less than a decade ago were just a kilometer or two away (Centre for Science and Environment 1985, cited in Dankelman and Davidson 1988). Other studies report that, in some parts of the country, women have lost access to fuelwood once collected freely on private lands as landowners have revoked this privilege in order to market the increasingly valuable fuelwood themselves (Dankelman and Davidson 1988).

Impacts on charcoal making are also reported. In Ghana, deforestation and scarcity of fuelwood threaten the viability of charcoal production by women, which is a major household economic activity, particularly during periods of crop failure. Purchase of fuelwood has become prohibitively expensive, yet collection from distant places is

constrained by women's need to closely monitor the carbonization of wood which, for large quantities of fuelwood, can require days (Ardayfio 1986).

Studies also suggest that, when the commercial value of fuelwood increases with deforestation, women face increased competition from large-scale commercial vendors (Dankelman and Davidson 1988). Women are at a disadvantage because they lack the resources to compete with men. They seldom have access to donkeys, carts, or trucks for transport, or the tools and technology for felling wood and making charcoal (Dankelman and Davidson 1988). In addition, cultural proscriptions and social mechanisms make it difficult for women to challenge men's encroachment.

Again, while these studies do suggest that marketing of fuelwood and charcoal by women is being adversely affected by deforestation, they are too few in number and differences in focus and geographical region make it difficult to determine how widespread is the problem and to make effective comparisons. Also lacking are detailed estimates of the actual impact on women's incomes. Deforestation most likely raises the time or monetary costs of fuelwood collection for women, but it may also simultaneously raise the sale price. Moreover, as the market price of fuelwood and charcoal increases, some women may reduce their time in collecting fuelwood and shift to employing others to cut and collect trees. Recent field observation in rural Bolivia found poor women using credit to pay male workers to cut trees for the market production of charcoal (Buvinic and Paolisso 1994).

**Marketing nontimber forest products.** Broad and anecdotal references to the impact of environmental degradation on women's income from nontimber forest products are widespread in the literature on women and the environment. However, a few studies provide more concrete documentation. While these studies do not provide reliable estimates of the economic and non-economic impacts of deforestation, they do suggest that the women who rely on secondary or impacted forests for income may be most affected by deforestation.

Ireson (1991) found that, in Laos, women in the Bolikharnsai Province gather or hunt 141 different forest products, including food plants, medicinal products, household items, and small animals for domestic consumption and sale. Women with access to old-growth forests use these nontimber forest products for home consumption and, only occasionally, market small amounts of surplus products. Women with access to only secondary growth forests or overgrown swidden fallows, on the other hand, are more likely to use forest products primarily for generating income. Although these women visit the forest less frequently, they are twice as likely to sell what they gather. They have a more commercial view of the forest and forest products, and they perceive a conflict between commercial logging and their forest gathering. Income losses associated with deforestation are, therefore, likely to be higher for these women than for those that rely primarily on oldgrowth forests.

A study in Brazil showed that a decrease in secondary forests brought about by increased cattle ranching and rice cultivation is threatening the babassu palm, which provides a major nontimber source of income for women. An estimated 400,000 rural workers in the state of Maranhao make a living from the sale of the palm kernel and its oil. Women predominate (up to 86 percent in one sample) in collecting and processing the oil-rich kernels for sale to local industries to produce lauric vegetable oil used for soap manufacture, feedcakes, and other industrial uses (Hecht, Anderson, and May 1988).

In Colombia, a study shows that dredging and excavation of canals poses serious threats to mangrove habitats along the Pacific coast and endangers the livelihoods of women who collect mollusks (cockles) mainly for sale. Daily catches of cockles declined significantly after dredging and excavation had begun, from 300-500 cockles a day to only 150-350. It was estimated that completion of the canal works and the consequent loss of suitable habitat for cockles would result in a net loss of 4.1 million Colombian pesos a year of potential income for local people (Dankelman and Davidson 1988).

### *Fuelwood Collection and Food Preparation*

Studies regarding the impact of environmental degradation on women's roles in ensuring the nutrition and health of their families focus almost exclusively on the effects of increased time spent collecting fuelwood and subsequent reductions in cooking time or numbers of meals prepared daily. There are references in the literature to the potential health impacts of substituting poorer quality fuels for scarce fuelwood, but no documentation of effects. Detailed and reliable information is only beginning to emerge on the effects of limited (clean) water supplies and lack of sanitation facilities for the disposal of solid wastes (ICRW 1994).

**Time spent in collection of fuelwood.** The most frequently reported effect of environmental degradation on women is the increased time spent collecting fuelwood for home consumption. Most studies, however, provide only broadly anecdotal accounts of deforestation leading to unspecified, but purportedly large, increases in the time women allocate to fuelwood collection and the distances they must travel (Monimart 1991; Centre for Science and Environment 1985, cited in Rodda 1991).

A number of studies provide estimates of the amount of time women spend collecting fuelwood, most of them compiled by Agarwal (1986) in her pioneering work on the fuelwood crisis in the Third World.<sup>2</sup> As a group, the twenty-one studies used by Agarwal have subsequently been erroneously cited as clear evidence that deforestation increases the

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<sup>2</sup> See Annex for a listing of the studies that Agarwal cites in Cold Hearths and Barren Slopes, 1986.

time that women spend in fuelwood collection.<sup>3</sup> While this, in fact, may be true in many developing countries, the vast majority of the studies (those referenced by Agarwal as well as others) show only that collecting fuelwood is a strenuous and time-consuming task for women, and men, in a wide range of poor households. Increased time spent collecting fuelwood as a result of deforestation is an implicit assumption. Even in the few studies that explicitly cite deforestation as resulting in increased fuelwood collecting time for women, the impact on the time spent is either not disaggregated by sex or based on very small samples and inadequate methodologies for determining, with any degree of specificity, the magnitude of the impact. For example, for Nepal, Eckholm (1975) (actually relying on data from Bishop and Bishop (1971)) reports that just a generation ago gathering firewood and fodder took no more than 2 hours. Now, due to dwindling wood supplies, firewood collection takes a whole day and involves walking through difficult mountainous terrain. Digerness (1977) reports that, in parts of the Sudan, the time taken to collect firewood has increased more than fourfold with deforestation. Nagbrahman and Sambrani (1983) show that in some areas of the Gujarat plains of India, depletion of fuelwood means that 4 to 5 hours per day are spent in its collection, whereas it was formerly collected only once every 4 days.

Despite claims to the contrary, there is only one study, carried out in Nepal that uses rigorous techniques to provide quantitative estimates of the increases in women's time spent collecting fuelwood that are due to deforestation (Kumar and Hotchkiss 1988). Using a measure of the time required to collect a standard load of fuelwood, and thus taking account of substitution effects as the time cost of fuelwood rises (i.e., households may consume less fuelwood as its cost increases), the study shows that deforestation has resulted in a 75 percent increase in the time required to collect a standard load of fuelwood in three study communities. As a result, the time of all adults spent in fuelwood collection has increased by about 45 percent and consumption of fuelwood has declined by about 22 percent. Women's fuelwood collection time alone has increased by 50-60 percent on average. In highland communities, their daily time in collecting fuelwood has increased from just over an hour to 2.5 hours; in lowland communities, it has increased from nearly 2 hours to 2.5 hours (Kumar and Hotchkiss 1988).

The Kumar and Hotchkiss study is an example of the type of methodological rigor that is necessary if reliable estimates of the impact of deforestation on women's work are to be obtained. Reliable estimates must be obtained for degree of deforestation and the resulting changes in women's work patterns, and ideally, for other areas of women's lives such as their own health and social activities. Still, studies of this type will also need to be complemented by longitudinal investigations across a wide range of environmental and cultural settings.

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<sup>3</sup> See, for example, Dankelman and Davidson (1988).

**Changes in food preparation and consumption.** Most available studies have viewed the nutritional costs of environmental degradation as a direct outcome of deforestation and scarcity of fuelwood for food preparation. A direct link between fuelwood scarcity and deforestation leading to fewer cooked meals per day has been reported in studies of India, the Sahel, and Bangladesh, where poor families have reduced meals from two per day to one per day (Kaur 1991; Agarwal 1986; Howes 1987).

Reports of shifts away from foods that require long cooking times can also be found for a number of countries. Cuanalo (1983), for example, reports that because cooking beans - an important source of protein when consumed with maize - requires large quantities of fuelwood, poor families have been decreasing consumption of this staple. Similar effects have been reported for Guatemala (Hoskins 1979), India (Kaur 1991), and Togo (Gubbels and Iddi 1986). Fuelwood shortages have also been reported as one of the reasons households are reluctant to adopt new foods. In Burkina Faso, for example, the introduction of soybeans failed because of the long cooking time they require (Hoskins 1979).

These studies report only general changes in consumption of food types, with no nutritional assessments to determine whether such cooking changes do in fact result in poorer nutrition. They again suggest a significant impact of deforestation but do not provide conclusive evidence or detailed estimates of the effect. One researcher has suggested that, in fact, dietary shifts may be caused less by fuelwood scarcity and more by opportunities for high returns through the sale of staple crops that otherwise would be consumed within the household (Molnar 1993).

The study of Nepal mentioned earlier (Kumar and Hotchkiss 1988) uses a broader approach and considers the role of women's agricultural work in changes in food consumption. Kumar and Hotchkiss have found that, while increased time allocated to collecting fuelwood does negatively affect women's time spent cooking meals, it also negatively affects their time in agricultural production. Only in higher income households with higher calorie intake and nutritional levels is reduced cooking time a significant factor in dietary intake. In households with lower incomes, where most nutritional problems are likely to be found, it is reductions in women's time spent in agricultural production that appears to result in reduced dietary intake. The implication is that the more direct effect of deforestation on food consumption is through a reduction in women's farm labour brought about by the increased time needed to collect fuelwood.

**Increased indoor air pollution.** Only a few studies mention the potentially critical health impacts of the substitution of poorer quality biomass for fuelwood as a result of deforestation. Kaur (1991) notes that scarcity of fuelwood has forced women to resort to nonwood fuels. Cecelski (1985) suggests that women are using bushes that produce noxious smoke such as the weedlike retama in Peru and basoothe in India. Noting that any increase



in exposure to smoke from cooking fires as a result of use of inefficient biomass fuels increases health risks for women Molnar (1993) argues that the fuelwood crisis is as much an issue of quality as quantity. The above reports are best interpreted as statements of concern and calls for more detailed investigation. Currently, it can only be concluded that there is no conclusive documentation of the degree to which fuel substitution is occurring, nor any reliable evidence of its health implications.

### **Conclusions: A Broader Research Agenda**

This review has revealed a serious lack of detailed and reliable data on how environmental degradation affects women in developing countries. The information available contains two major biases: first, most studies have focused only on deforestation and scarcity of fuelwoods. Second, their main concern has been with two related types of women's domestic work - the collection of fuelwood and the preparation of cooked foods. Although comparatively more research has been done on fuelwood collection, methodological problems make it difficult to draw reliable conclusions from these data.

The focus on the costs of deforestation on women's domestic work has detracted attention from other costs of environmental degradation, principally reduced agricultural production, loss of income, and diminished health status. While some information is available about these impacts, most studies again focus narrowly on the effects of deforestation and fuelwood scarcity.

Given the dependence of women's domestic and economic roles on the environment, and the importance of their economic contribution in poor households, more comprehensive research is urgently needed on how women are affected by environmental degradation. Without sacrificing concerns about the effects of deforestation and fuelwood scarcity, increased attention must be paid to other types of environmental degradation, such as soil erosion, salinization, loss of crop diversity, water shortages, air pollution, and household contamination. This information must be of high quality, representative of the diversity of women's interactions with the environment, and directly relevant to policies and programs for sustainable development. The research should also be open to investigating the reverse direction of causality between environmental degradation and women, namely how poor women due to poverty, economic need, and lack of knowledge also contribute to environmental degradation.

Four key changes in the design and implementation of future research are recommended to generate more accurate and useful policy information on the effects of environmental degradation on women:

**Increased Attention to Gender:** Currently, only limited gender-disaggregated information is available on the effects of environmental degradation. Past research has assumed either that impacts on men and women are similar, or that impacts on women are primarily restricted to their domestic activities. In particular, insufficient attention has been paid to gender differences in agricultural work, income generation, and health consequences.

Future research must be guided by an increased awareness of the role that gender plays in the relationships between the poor and their environment. Researchers across disciplines will need to be cognizant of how gender-based differences in economic and social roles structure women's use of, and dependence on, the environment. Such gender awareness is important so that in assessing degradation, environmentalists can take account of the resources women use; health scientists can identify the environmental hazards that threaten women's health; and development researchers can determine the losses in women's home production and income that are caused by environmental degradation.

**More Multidisciplinary Research:** The costs to women of environmental degradation extend beyond the research boundaries of any one discipline. For example, anthropologists and economists are ill equipped to fully understand the nutritional consequences of changes in food consumption or the health effects of environmental hazards. Alternatively, nutritionists and public health specialists lack the expertise to accurately capture changes in women's economic and family health roles. Both social and health scientists would benefit from expertise on the role and viability of key resources in local ecosystems.

There has been almost no interdisciplinary collaboration in past efforts to collect information on how environmental degradation affects women. As a result, studies have presented only partial and fragmented views of the impacts on women. Closer collaboration of researchers from the social health, and ecological sciences is necessary to provide a more complete and accurate understanding of the full range of the effects of environmental degradation on women.

**Broader Sectoral Coverage:** Environmental degradation reduces the ability of women to participate in and benefit from a wide range of programs that promote sustainable development. However, its effects on women have been considered primarily by those investigating energy issues, specifically strategies for improving access to and use of biomass fuels by poor rural and periurban households; and, more recently, by the women in development community with its concerns for improving the status of poor women. The effects of environmental degradation on women are relevant, however, to a much wider range of development sectors. Increased time constraints, loss of income, and poorer health status may reduce the contribution women make to programs in, for example, agroforestry, sustainable agriculture, microenterprise development, and health. Researchers and practitioners in a wider range of development sectors need to recognize that environmental

degradation may reduce the critical contributions women make toward achieving program goals.

**Integrate a Concern for Women in Project Environmental Impact Studies:** Most of the information available on environmental degradation and women is based on descriptive case studies. The findings from these studies have not been readily transferable to planned or ongoing development or environment projects. While there will continue to be a need for targeted research on key issues, including larger-scale projects to clarify key linkages, a significant component of future research should be more closely linked to program design and implementation.

Concerns about sustainable development have resulted in the increasing use of environmental impact studies at the design and evaluation stages of projects. An effective approach to linking research on women with program design would be to include gender considerations in the environmental impact studies. These studies offer excellent opportunities to both expand the information base on women and environmental degradation, and to link research findings directly to program development and implementation.

The current lack of information on how women are affected by environmental degradation is disconcerting given the dependence of women's critical domestic and economic roles on the environment. Adoption of the above suggestions for future research would lead to a broader conceptualization of how environmental degradation can affect women in developing countries, and result in more comprehensive findings. This broader conceptualization, supported by better data, is one of the best guarantees that women will not be forgotten in our concerns about environmental degradation and our efforts to promote sustainable development.

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ANNEX

Acharya and Bennett (1981)  
Agarwal (1983)  
Bajracharya (1983)  
Batliwala (1983)  
Cain, Khanam, and Nahar (1979)  
Chand and Bezboruah (1980)  
DEVRES (1980)  
Digerness (1977)  
Earthscan (1983)  
Eckholm (1975) [citing Bishop and Bishop (1971)]  
Ernst (1977)  
Fleuret and Fleuret (1978)  
Floor (1977)  
Folger and Dewan (1983)  
Ki-Zerbo (1981)  
Nagbrahman and Sarnbrani (1983)  
Skar (1982)  
Stone (1982)  
Swarninathan (1984)  
White (1976)

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Women, Health and Environment <sup>1</sup>

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**Abstract--** This paper develops a conceptual framework for gender-sensitive research and policy analysis that centres on women's interaction with the biophysical environment, and the implications of that interaction for their environmental health. The paper reviews the lack of data on women's nonreproductive health, and argues that there is a need for increased research and policy formulation dealing with women's environmental health in both the developing and the developed countries. One important dilemma for most researchers interested in women's environmental health is the lack of an appropriate conceptual model. The paper argues that attention to women's interaction with the biophysical environment within their own "life spaces" reveals that women are exposed to the hazards of environmental illness in a manner that is clearly gender-differentiated. The paper reviews the impact of poverty, illiteracy and gender bias on women's life spaces, and argues that the failure to recognize and protect women's life spaces in economic policy and planning commonly leads to "disease environments" for women and their children. Evidence of the impact of such disease environments on women's environmental health is drawn from the urban setting and from women's experience of desertification in Africa and Asia. The paper reviews the policy issues that emerge from this analysis, and makes a series of suggestions for national and international policy and action in support of improvements in women's environmental health.

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<sup>2</sup>This paper was originally prepared for the Fourth Meeting of Commonwealth Ministers Responsible for Women's Affairs in Cyprus in 1993. Substantial portions of the paper were also used as the basis for a discussion paper, "Beyond Nairobi and Rio: From Vision to Action for People and Nature," which was prepared for the Women's Environment and Development Organization in November, 1993. A summary of the paper is presented in the Report of the Regional Workshop of Governmental and Nongovernmental Organizations (East and Southeast Asia) on "Women, Economics and Sustainable Development," ENGENDER (Centre for Environment, Gender and Development), Singapore. The paper is published here with the permission of the Directorate of Women's and Youth Affairs of the Commonwealth Secretariat in London, and the Women's Environment and Development Organization in New York.

## 1. INTRODUCTION

The purpose of this paper is to identify some of the key issues relevant to the impact of the environment on women's health, and to formulate a conceptual framework that will facilitate gender-sensitive environmental health policy and action. Most existing discussions of women's health have considered only briefly aspects of women's health outside of their reproductive health [1]. At a health policy level, especially in the developing countries, women's primary significance has been as childbearers and childcarers.

Any adequate conceptualization of women's health involves women's total well being, a condition of life that is determined not only by women's reproductive functions, but also by the effects of "work load, nutrition, stress, war and migration," among other factors [2]. Among these additional factors are the environmental risks to women's health, particularly the risks arising from the "biophysical environment," a crucial domain that has been almost totally neglected in health research and policy analysis [3, 4].

"Environmental health" is an arena for health policy that emerges from the inextricable link between human health and the environmental context within which people lead their daily lives [3]. The specific policy link between women's health, and the health of the local environment, is commonly established by women's environmental action as users and managers of a variety of resources in the "biophysical environment," and by women's social and cultural involvements as health managers and care-givers.

In this paper, the "biophysical environment" is understood as including both the natural and the constructed (or "built") "life space" within which women carry out their various gender-based involvements as domestic workers, producers and income-earners. Understanding the environment for human health as a biophysical "life space" allows us to avoid arbitrary distinctions between natural and built environments, rural and urban areas, and developing and developed countries as contexts for women's environmental health concerns. Instead, the focus of policy attention is on the health implications of women's (and men's) direct and indirect interaction with the biophysical environment at the local level.

In all human communities, use and management of local life spaces is a gendered phenomenon, as women and men tend to occupy, use and manage aspects of the biophysical environment in a gender-differentiated manner. A detailed understanding of how women's (and men's) patterned interaction with the life space they occupy exposes them to health risks is central to articulating and promoting a gender-sensitive environmental health agenda. This paper uses a model developed by Roundy [5] to show how women's gender-based involvements with the biophysical environment can expose them to environmental illness in a gender-differentiated manner.

In both the developing and developed countries, women are also the primary day-to-day health managers. They manage health through their domestic work, through cleaning, sweeping, drawing water, washing clothes, dishes and children, and preparing food [6]. Women are central to maintaining the health and well being of their households through these activities. Women also manage health through their involvements as care-givers.

Across the world, when people get sick, it is women who look after them.

As health managers, women are already providing a range of health care services, including tonics, herbal extracts, poultices, ointments and oils, and a variety of other medicines. MacCormack says: "To ignore their knowledge, curiosity and their social legitimacy to provide care is to squander a valuable human resource" [6, pp. 832]. Many of the health care products and remedies that women provide are found in the biophysical environment within their life spaces. Women also have considerable knowledge about the appropriate use of the biophysical environment, including an awareness of how to use biophysical resources in a sustainable, healthy manner [7]. As environmental managers, they are, therefore, also important agents of disease control.

Women's knowledge about the sustainable use of the biophysical environment, and about health and care-giving, are still largely unrecognized assets for the promotion of their own health and the health of the natural and built environment. The failure to recognize women as environmental and health managers and decision-makers is a costly policy dilemma [8]. Where women's environmental interests and needs are not recognized -- whether in the introduction of new technology, urban planning, or overuse of the biophysical environment -- the consequence is the creation of "disease environments" [9]. Where women's health interests and needs are not recognized -- through genderblind data collection, top-down health delivery, or lack of concern for their participation -- effective health promotion becomes impossible. A gender-sensitive approach to environmental and health policy formulation is a significantly lower cost alternative. In this paper, the participation of women is seen as central to policy formulation specifically in relation to their environmental health.

## 2. NEW PERSPECTIVES ON WOMEN'S ENVIRONMENTAL HEALTH

The "Safe Motherhood" conference, held in Nairobi in 1987, focused the attention of health policy analysts on women's reproductive health. Maternal morbidity and mortality offers a useful domain for an illustration of the potential significance of the biophysical environment to women's health and well being. Five hundred thousand women, 99 percent of them in the developing countries, die every year from difficulties related to pregnancy and childbirth [10]. The preponderance of these deaths in the developing countries suggests that maternal health is not a simple consequence of reproductive risks per se, but an outcome of a host of maternal health hazards, among them social, economic and biophysical hazards, confronting women in these countries. These additional health risks have an important impact on maternal morbidity and mortality. They also affect women's health throughout the life cycle, and they do so, albeit in varying ways, and to varying degrees, in both the developing and the developed countries.

Koblinsky et al. offer a view of the possible impact of the biophysical environment on women's menstrual health, which in turn impacts on their success in pregnancy and childbirth, and their overall health and well being. Women's menstrual status affects issues

as disparate as their recovery from breast cancer, their cardiovascular health, and risk of osteoporosis. Yet, we have no idea how environmental impacts on women's menstrual health affect their long-term risk of cancer, heart disease or other illnesses, including mental illness. As Koblinsky et al. suggest, "...the reproductive system is responsive to a multitude of environmental signals, and systematic exploration of alternative (environmental) factors is clearly warranted" [10, pp. 50, 55].

Menstrual health is an issue shared by women everywhere, in both the developing and the developed countries. Other aspects of women's environmental health may differ significantly between these two settings. In the developing countries, women experience a range of health problems that are clearly environmental in origin. Many of the leading causes of death in the developing countries, which are also known to cause significant morbidity, are either environmental in origin or exacerbated by environmental factors.

The leading causes of death in the developing countries are diarrhoeal diseases, acute respiratory conditions such as pneumonia and bronchitis, other infectious diseases, including tuberculosis, and vector-borne diseases such as schistosomiasis and malaria. Diseases such as diarrhoea, typhoid, schistosomiasis and malaria are caused by bacteria or other vectors (snails and mosquitos) in local water systems. Pneumonia and bronchitis are the common result of air-borne pollutants, including smoke. Tuberculosis is the result of air-borne bacteria, whose presence is generally increased by inadequate and unsanitary living conditions. Each of these diseases can best be controlled through careful management of the local biophysical environment. For the purposes of this paper, therefore, they are all considered to be "environmental illnesses."

Over fifty percent of all deaths from heart disease and cancer also occur in the developing countries [11, p. 19]. In the developed countries, these diseases are the leading causes of death, including deaths among women. Although it is not clear to what extent health problems such as heart disease and cancer, which are not commonly recognized as "environmental illnesses," may be affected by environmental factors such as water and air pollution and toxic contamination, recent studies have drawn attention to the impact of the organochlorines, which are found in pesticides and refrigerants, on the incidence of breast and ovarian cancer [12].

The work of Koblinsky et al. [10] on female menstrual health also suggests the possible hidden impact of environmental factors on female morbidity and mortality rates due to cardiovascular disease and cancer. From this point of view, diseases such as schistosomiasis and malaria, which are vector borne, and diseases such as heart disease and cancer, which have important genetic components, may also be different expressions of "environmental illness" experienced in different life spaces, especially the differing life spaces of the developed and the underdeveloped countries. In both settings, there may also be important epidemiological distinctions between life spaces in rural and urban areas, and even between neighbourhoods in the same rural area or city in exposure to a particular environmental disease.

This paper also suggests that the experience of environmental illness may differ

significantly, not only between the developing and the developed countries, and rural and urban areas, but also between women and men within each of those settings. It argues, based on the initial evidence presented, that gender may sometimes be as important, or even more important, a factor in exposure to a particular environmental illness than is residence in a particular country or neighbourhood.

### 3. THE NEGLECT OF WOMEN'S HEALTH

The United States National Council on International Health (NCIH) held a path-setting conference on "Women's Health" in 1991. The conference, which included representatives from 74 countries, provided a forum for the articulation of a new agenda for women's health policy [13]. This new agenda is centred in a holistic view of women's well being as a life-long phenomenon affected by a variety of mediating factors. Participants in the NCIH conference supported the view that, as a holistic phenomenon, women's well being cannot be addressed either piecemeal, or in isolation from the social, political, economic, cultural -- and biophysical -- milieu in which women live [14-16]. Four guiding principles for new directions in international health policy for women were identified at the NCIH conference: the importance of gender-specific data, an end to gender discrimination in health policy and action, a life cycle approach to women's health, and support for women's empowerment as personal and family health decision-makers [13,15, pp. 12-16].

It is disconcerting to realize how little we actually know about women's health as compared to the health of men. Statistical health assessments in the developed countries, such as the United Kingdom, are "largely gender-blind, with an overwhelming focus on male mortality rates, and measures of morbidity" [17, p. 86]. In the developing countries, the emphasis on maternal morbidity and mortality has been accompanied by a lack of concern for data collection on other causes of illness and death among women. Koblinsky et al. argue that "women's health has been neglected in general, a neglect which fuels, and is fuelled by, a lack of information" [10, pp. 43].

In the United States, health research funding and methodology have focused on the leading causes of male morbidity and mortality such as hypertension and lung cancer [1]. Although half a million American women die of heart disease every year, almost all of the significant studies on cardiovascular health have been done on men. Only 13.5 percent of American health research funding is devoted to health issues of particular importance to women [18, pp. 164-165].

In part, this inadequacy is a consequence of the acute care bias that pervades health research and funding. The acute care bias is also a male bias, and not only in the disproportionate interest in men's health as compared to the health of women. The Asia and Pacific Development Centre (APDC) reports that eighty percent of national health budgets are commonly spent "to cure the illnesses of a minority through the training and equipping of doctors who are usually men" [19, p. 14].

The lack of unambiguous data on female morbidity and mortality makes it difficult to

identify and assess the factors, environmental or otherwise, that do affect women's health. Alanagh Raikes, writing about women's health in East Africa, suggests that one useful starting point for an improved understanding of factors relevant to women's health would be to analyze existing morbidity data by geographical region and gender specificity. However, as Raikes points out, morbidity data is often not good enough to allow for this breakdown. Not only are the data lacking in gender specificity, but their overall accuracy is often grossly inadequate as well [20, p. 450].

Where they are available, it is interesting to see what commonly used statistical indicators of women's well being actually measure. The World's Women: Trends and Statistics 1970-1990 [21], which was compiled from a variety of United Nations sources, provides measures of life expectancy, maternal mortality, infant mortality combined for males and females, mortality rates for girls, fertility, contraceptive use, availability of trained attendants at births, and smoking rates. Such indicators tell us very little about women's non-reproductive well being [1, 4].

Identifying appropriate gender-specific indicators of women's well being is not an easy task. As Payne suggests, based on research in the United Kingdom:

at the centre ...lies the fundamental problem of what is meant by health, how this varies ... and how to reconcile the divide between positive concepts of health as more an absence of illness, and the necessity of relying on the only regularly produced statistics which measure rates of death and sickness rather than health [17, p. 94].

The NCIH guidelines suggest some important qualitative indicators of women's overall health status. Among these is the proportion of decision-making roles in health assessment, promotion and expenditure held by women. The amount of leisure time available to women, both in number of hours, and in comparison with men, is also a potentially important qualitative indicator of their health and well being, particularly with regard to mental illness.

Existing data show that the overall incidence of mental illness is highest amongst men [22], although this assessment certainly needs to be evaluated through better epidemiological studies on women's mental health. Paltiel suggests that women are more emotionally hardy than men; "...women are excellent copers. They are extraordinarily resourceful, creative members of their communities" [22, p. 198]. The challenge is not to stretch women's extraordinary coping skills past the limits of their mental and physical health. Instead, "we need more and better studies on the ...effects of women's help-giving ...as others rely on their strengths ...to the detriment of their own well being, including burnout, a form of physical and emotional exhaustion [22, p. 210]. We also need to assess the possible relevance of environmental factors to women's mental health, including factors as disparate as desertification and smog.

It is also important to identify unambiguously the leading causes of death among women. Data on the gender-specific incidence of environmental illness in the developing countries is almost totally lacking. In the developed countries, the absence of research on menstrual



cycles, and their susceptibility to environmental impact, also makes it difficult to identify those environmental factors that are damaging to women's health and well-being. The apparent, but unaddressed significance of environmental factors to women's morbidity and mortality suggests three necessary improvements in the collection of female health indicators:

- a. Improved record keeping on all incidences of morbidity and mortality in the developing countries;
- b. Gender-disaggregated collection of data on diseases known to be environmental in origin, such as diarrhoea, relevant acute respiratory illnesses, and other relevant diseases such as tuberculosis, typhoid, schistosomiasis and malaria;
- c. A world-wide plan of action for research on women's menstrual cycles including cycle length, bleeding duration, hormonal patterns, and metabolic impacts, together with epidemiological research on environmental determinants of variations in the menstrual cycle [10].

#### 4. UNDERSTANDING ENVIRONMENTAL SYSTEMS AND THEIR IMPACT ON WOMEN'S WELL BEING

The prevailing inattention to the significance of the biophysical environment, which surrounds and affects women's health throughout the life cycle, is not only a gap in data, or relevant indicators. It is also a conceptual gap that affects our ability to understand a variety of environmental impacts on women's well being. The difficulty for many researchers and policy analysts interested in women's environmental health is knowing where to begin. The inclusiveness and generality of the term "environment" often leads to ambiguity. The primary focus of attention in this paper is the "biophysical environment" which includes both natural and built elements such as trees, water sources, mosquitos, houses and smokestacks. The biophysical environment may be distinguished from the social, economic and cultural or "societal" environment and from the changing biophysical and societal circumstances that constitute the "historical environment." Women (and men) occupy all three environmental contexts simultaneously throughout their lives.

The biophysical life space forms the primary arena for environmental health policy analysis. Within their life spaces, women seek food, fuel, water, shelter, fodder, fertilizers, building materials, medicines, the ingredients of income generation, and wages in support of their activities as individuals, wives and mothers. In the developing countries, women are the primary users and managers of the biophysical environment for human sustenance [7, 23]. In urban areas, and in the developed countries, women's roles as household provisioners and health managers also exposes them to particular environmental risks.

Societal and historical factors lead to variations and changes in their life spaces that are positive or negative for women's health, and the health of the environment. Societal factors, such as poverty, illiteracy, and gender oppression, can significantly affect the quality of

women's life spaces in both the developing and the developed countries (see below). Changes to women's life spaces, especially from the introduction of new technology, can transform local biophysical systems, thereby creating "disease environments" that are hazardous to women's health.

"Disease environments" are aspects of, or places within, women's life spaces that support environmental illnesses [9]. These environmental illnesses may be new, furthered, or reintroduced by the disruption of equilibrium in the biophysical environment [3, 24]. In part, the widespread incidence and impact on women's health of such disease environments is the result of the current inattention to environmental and gender issues in economic development policy at the national and international levels [3, 25].

The creation of disease environments has often resulted from the introduction of irrigation systems, especially in the developing countries [4]. Both malaria, which is spread by mosquitos, and schistosomiasis, which is spread by snails, are water-dependant environmental diseases. Irrigation, especially inadequately designed and managed irrigation systems, provides new and better breeding grounds for the vectors that cause malaria and schistosomiasis. Hydroelectric development can have a similar effect. Irrigation and hydroelectric development establish simplified biosystems within which these disease vectors are able to flourish. Improved breeding areas further the spread of malarial mosquitos, while the spread of schistosomiasis requires the additional factor of inadequate sanitation, and improper disposal of human waste. The use of pesticides that often accompanies irrigation can establish vector resistance to insecticides, while the molluscicides used to attack snails are both hazardous and costly [24].

The changing patterns of labour utilization, migration and settlement that accompany technological development can also establish disease environments. In Swaziland, the changed patterns of migration and settlement that accompanied the introduction of citrus and sugar estates led to a resurgence of malaria across the lowland areas of the country [26, p. 482]. Crowded urban areas are almost, ipso facto, disease environments. Cities, which are central to modern transportation networks, and offer the possibility of rapid human transmission, create ideal disease environments for a variety of environmental illnesses [9], especially if pollutants and environmental toxins are allowed to accumulate in an uncontrolled manner.

The creation of disease environments can be prevented, or alleviated, by integrated planning that considers the biophysical and health consequences of proposed technological interventions. However, what few health policy analysts have recognized is that the "disruption of equilibrium" in a local life space may also be a gendered phenomenon, with very different implications for women and men in the same biophysical environment [27]. The neglect and denial of women's environmental and health interests and needs with regard to their life spaces is a primary, but almost totally unaddressed, factor in the creation of disease environments for women and their children [15, 16, 23].

## 5. SOCIOCULTURAL IMPACTS ON WOMEN'S ENVIRONMENTAL HEALTH

The well being of women world-wide is marked by significant "epidemiological polarization," with some countries, and some communities, offering far greater hazards to women's well being than others. The wide regional disparities that exist in women's health status are reflected in female life expectancy data. As of 1988, 12 Sub-Saharan African countries had female life expectancies under the age of 50 [11]. Life expectancy rates for women of 50 years and under are also found in Bangladesh, Nepal and Pakistan, while women in India have a life expectancy of only 58 years [19, pp. 292-295].

There are also significant differences in female life expectancy across social classes in the developed countries [11]. Thus, in the United Kingdom, the highest female mortality rates are found among unskilled (classified according to husband's occupation) married women, followed by women who are unskilled (classified by own occupation) and single [17, p. 100]. In both the developing and the developed countries, high female mortality is accompanied by significant levels of female morbidity. Spatial variations in disease patterns, such as national and neighbourhood variations, are often the consequence of interaction between the socio-economic and cultural context of life and the biophysical environment [9, p. 1]. Three broad parameters are clear: poverty, illiteracy, and gender oppression [8, 15].

The health risks of poverty are generally far greater for women than for men. Women are far more likely than men to be poor; women worldwide, in every income category, own less than men, work longer hours, and earn less income [28]. As a result, according to Jacobson, "poverty among females is more intractable than among males, and their health even more vulnerable to adverse changes in social and environmental conditions" [8, pp. 4, 7].

In the developed countries, class can be as significant a factor in the determination of women's health and well being as is residence in a developing country. In the United Kingdom, "there is a powerful relationship between socioeconomic status and poor health when measured by mortality and morbidity" [17, p. 117]. Female-headed households, which now include one-quarter to one-third of all households worldwide [29], are particularly vulnerable, even in the developed countries [17, p. 121].

Several studies draw attention to inadequate housing as an outcome of poverty that creates health hazards for women. In India, Bhatt noted the detrimental impact of crude stoves, biomass fuels and poor ventilation on the respiratory health of women and children. She also comments that "infections and accidents, not the oft-touted problems of childbirth, are the leading killers of women during the reproductive age" [30, pp. 14-16]. For poor women in the United Kingdom, poor quality housing means poor heating, lack of space, damp living conditions, lack of hot water and inadequate furnishings [17, p. 135]. Both separately, and in combination, these difficult conditions impact on the health of women, and their children, in an ongoing manner.

Illiteracy is also an important factor in the creation of life spaces hazardous to women's health. The World Bank reports that education is "strongly associated" with good health,

while literacy plays an "extremely powerful role ...in determining a population's level of mortality" [31, p. 41]. World-wide, women have a primary responsibility for the maintenance of the life space, especially the dwelling place, and the provision of family health care. Illiteracy, which is a common outcome of lack of education, denies women the opportunity for vital health learning, particularly the importance of sanitation and personal hygiene in personal and family health care.

There are now at least 597 million illiterate women in the world, compared to only 352 million men. Only 15 percent of African women are literate, and only one-third of women in Asia. According to Jacobson, "parents are apt to invest in educating girls only when they perceive long-term gains will outweigh immediate costs" [8, p. 11, 18]. In urban Brazil, according to the World Bank, maternal education accounted for 34 percent and increased access to piped water for only 20 percent of mortality decline between 1970 and 1976 [31, p. 52]. Women's literacy is, therefore, a critical factor in environmental health promotion.

Gender oppression is also a significant factor in the creation of hazardous environmental conditions for women and girls. Gender discrimination in the allocation of food and health care has resulted in "markedly higher" death rates for young girls than for young boys in the Middle East, North Africa and South Asia [8, see also 4, 15]. In India, "deaths of girls under the age of five exceed those of boys by nearly 330,000 annually," while women aged fifteen and over die from tuberculosis, typhoid and gastroenteric infections "at consistently higher rates than for males" [8, p. 9]. One study from the Punjab indicated that mortality for girls under 15 years was almost 50 percent higher than for male mortality [32, p. 21]. Bhatt argues that "the expectation of life at various ages shows that ill-health stalks the Indian women right through her life" [30, p. 14]. As a result, the ratio of women to men in India has declined, so that there are now only 929 women for every 1,000 men [8, p. 10].

Behal describes women in purdah in North Indian villages as "prisoners of the courtyard." She argues that, because of their limited mobility, "women's perceptions on issues such as health, hygiene and how to deal with them is very low" [33, p. 28]. Women in many countries experience a variety of difficulties in access to acute medical care, including their own unwillingness to visit male health professionals. Distance and poor roads, together with cultural restrictions on women's mobility, compound this effect, as does gender bias in health expenditures for wives and daughters [34].

Together, poverty, illiteracy and gender oppression have a deadly outcome on women's well being. Prakash describes the outcome for women in India:

...the image of woman as mother is not only consecrated but her sacrifices for the welfare of her family applauded. And what is the nature of her sacrifices ...that she go hungry ... that she work long hard hours ... that she bear child after child ... that she forego much-needed medical care ...that she be abused, beaten, bruised and burnt alive ...all for the sake of her family [35, p. 33].

The deadly impact that Prakash describes affects women directly, through immediate

assaults on their bodies and health, and indirectly, through the creation of biophysical environments that are hazardous for women's well being. In order to transform these hazardous life spaces, the social, economic and cultural factors that give rise to them, particularly poverty, illiteracy and gender oppression, must also be addressed. Thus, a gender-sensitive environmental health policy would necessarily include approaches to poverty alleviation, the promotion of literacy, and the eradication of gender bias both locally and nationally, as important factors in the creation of life conditions that are healthy for women.

## 6. UNDERSTANDING ENVIRONMENTAL HEALTH: A NEW MODEL

As this paper has suggested, women's "spheres of activity," the amount of time that they spend in each, and also the intensity of their environmental involvements in these spheres, affect the nature and degree of their exposure to environmental health risks [1]. Roundy [5] has articulated a useful model which has so far received inadequate attention as a base-line for gender-sensitive environmental health research and policy formulation.

Roundy's model divides a particular human settlement into a series of activity spheres. For the community of Upper Bilajig in Ethiopia, Roundy delineates six activity spheres. These begin with an "individual cell," characterized particularly by behaviour such as personal hygiene, food and beverage consumption, and "ethnosurgery." (For this latter element, we might substitute use of traditional medicine as a form of behaviour with more general application.) This individual cell is the centre of a series of concentric circles, which include the household, compound, settlement, production area, and a final "further ranging area of contact." Each of these activity spheres brings residents into contact with a varying place, and a varying disease environment, within the overall community and neighbourhood [5, pp. 268-269].

While this model can be used for the delineation of activity spheres in any community, the particular spheres will vary from rural to urban environments, and from one region and country to another. It is the general, not the specific model, that is broadly relevant. The model also differentiates eight different behavioural subsystems that take place in these various activity spheres. These subsystems include family (household) interaction, extra-family (household) socializing, religious activities, primary production, trade, water use, animal contact and defecation. Each of these subsystems can be examined separately in relation to each activity sphere. Here again, behavioural subsystems will vary from one setting to another, and it is only the general model that is broadly applicable.

It is also possible to aggregate the behavioural subsystems, and to categorize the overall degree of interaction, in frequency and intensity, within each activity sphere as occasional, common or very great [5, pp. 270-271]. The clear advantage of the model is that it can be used for gender-sensitive research. Thus, Roundy shows how the degree of interaction with various activity spheres differs for adult males, adult females, working age children, and non-working children. (Infants were categorized with adult females.)

The differences that emerge are striking. To all intents and purposes, these categories of people, who might otherwise be said to occupy the same community, actually live in different life spaces, and interact with different biophysical environments. In the process, they are also exposed to different diseases. In Upper Bilajig, it is men and working children who run the greatest risk of exposure to schistosomiasis, while women and younger children appear to have the highest rates of exposure to tuberculosis [5, pp. 275-276].

This model has significant implications for research in support of gender-sensitive environmental health policy. It indicates the tremendous importance of *understanding where and how women (and men) actually live in the biophysical environment, and the implications of their use of certain arenas of the biophysical environment for their own health*. Presently, there is little relevant information on women's varying activity spheres and the health risks they are exposed to in the biophysical environment. This is a key area for research on women's health and well being that deserves significant policy attention.

## 7. WOMEN'S ENVIRONMENTAL HEALTH: URBAN ISSUES

In urban areas, the built aspects of the biophysical environment become comparatively more important as an aspect of the life spaces women occupy. This is not to say that the natural elements in the biophysical environment become irrelevant to women's health in urban areas. Instead, the major focus of concern is the impact of built elements on the natural aspect of the urban biophysical environment, and thus, on women's health.

Population is growing in many urban areas, particularly in the developing countries, at a phenomenal rate. By 2025, about sixty percent of the world's population is expected to live in urban areas [36]. Over fifty percent of urban dwellers in the developing countries live in slums and squatter settlements [36, p. 122]. There are two predominate forms of environmental health hazard that characterize life in urban areas. The first of these are the environmental problems faced by the urban poor, particularly slum dwellers and residents of squatter settlements. The second are the environmental difficulties shared by all urban dwellers, including those in high-income neighbourhoods.

All urban dwellers may be faced with air and water pollution, excess noise, traffic congestion, and other urban hazards such as higher crime rates. Urban areas generally do not contain space for the natural absorption of garbage and sewage. Thus, sanitation and waste management is a much larger task in these areas, and even high income earners may be affected if these systems are inadequate. Industrial and toxic waste is a particular health hazard, especially when these pollutants are dumped into local rivers or onto open ground.

Squatters and slum residents must confront the environmental health hazards of overcrowding, inadequate sanitation and waste management, inadequate water supply, and inadequate housing. The combined impact of these dilemmas can be a dehumanizing level of stress and discord. In some cities, such as Calcutta and Bombay, more than fifty percent of the urban population lives in slum areas, with inadequate housing and a lack of basic services. Urban poverty often leads to inadequate housing. The Asia and Pacific

Development Centre reports that over one billion people, or a quarter of the world's population, [36, p. 121-122].

Environmental disease is prevalent in urban areas in the developing countries. Diarrhoea, dysentery, hepatitis and typhoid, all the result of environmental factors, are the major causes of death in such areas. Inadequate sanitation and contaminated drinking water are largely to blame. Rates of illnesses such as tuberculosis, diarrhoeas, leprosy and hookworm are generally higher, sometimes very much higher, among slum dwellers [36, p. 123].

However, the negative health impact of urban poverty is not limited to the developing countries. Payne argues that, in the United Kingdom, "unsafe public space ...constitutes deprivation in the environment for women, as does inadequate public transport and poor public amenities." Racism adds a further dimension to the environmental impact of poverty "where women from some ethnic minority groups might have to go further to find shops selling food and other goods which they need, whilst racism makes the environment more dangerous" [17, p. 136]. Three-quarters of hazardous wastefill sites in the southeastern United States are located in low-income neighbourhoods, while at least one toxic waste dump can generally be found in communities occupied by African-Americans and Hispanic - Americans [37, p. 21].

Women experience a disproportionate share of urban environmental difficulties as the result of their common gender-based roles as household provisioners and maintainers, especially of food, water, energy and shelter. Women's particular housing needs, such as adequate space, play areas for children, access to shopping and transportation, and security, are rarely taken into consideration in the design of urban structures and neighbourhoods, even in the developed countries.

Urban environmental hazards may also have a negative impact on women's maternal health. A report from Malaysia suggests that the rate of miscarriage among women in the state of Malacca increased 400 percent as the result of water shortages during a period of severe disruption of the local water system. These increased miscarriages appeared to be the result of water carrying by women who could not find, or afford, anyone to help them [36, p. 127]. Urban life, especially in crowded slums and squatter settlements, may also lead to increased stress, anxiety and mental illness. Payne's work on women's health in the United Kingdom suggests that this problem is not limited to the developing countries, but may also be found in low-income urban areas in the developed countries as well [17].

The environmental hazards of urban life may be compounded by the industrial hazards of women's work places. Women's health concerns arising from unsafe working conditions and long work hours have received surprisingly little attention [8, p. 5]. Packard also argues that greater attention needs to be paid to the health problems of female workers:

Women are frequently employed in the informal sector or in...work where wages are lowest, conditions are inferior and health and welfare benefits are nonexistent ...Women also work a double day and are often expected to maintain the household as well as

contribute to its income. This places a great deal of stress on women and may produce different health problems than those experienced by men [26, p. 478].

Elements which are not hazardous in themselves can become so in the context of industrial work. Packard reports on the health problems of women workers in pineapple processing factories in Swaziland. Women in these factories stand in cold fruit juice for ten hours or more, without the protection of boots and gloves. As a result, they develop ulcers on their arms and legs [26, p. 481]. Women workers who live in slums or squatter settlements, or on the street, can face environmental threats to their well being throughout the day and night. Where these environmental difficulties are compounded by violence against women, from partners, employers, or government officials, the hazards to their well being can be literally life threatening.

In urban areas, women's health and the quality of the biophysical environment are intertwined issues. It is not possible to significantly improve women's health without improving their life spaces, and it is not possible to improve women's life spaces without recognizing women's interests and needs in the use and management of their own households and communities. Thus, women are central to environmental and health policy formulation in urban areas.

## 8. ENVIRONMENTAL DEGRADATION: SOURCES AND IMPACTS ON WOMEN'S HEALTH

"Environmental degradation" is the loss of biological productivity that results from erosion, the destruction of biodiversity, and factors such as salinization and sodication. Through its impact on the biophysical environment, environmental degradation has serious consequences for the health of women. Sontheimer comments that "over the last twenty years, the relationship between women and the living systems which support their life has changed drastically in response to heavy ecological stress in many areas of poor, developing countries"[38, p. i].

"Desertification" is currently the most widespread form of global land degradation. Although vast areas may be affected by desertification, the phenomenon is always "site-specific." It always occurs within a local biophysical environment, and is always amenable to prevention through local and national strategies for desertification control and promotion of "land health" [39].

Desertification generally results from four common hazards: inappropriate irrigation, overcultivation, overherding and deforestation. Population growth exacerbates the problem. However, it is a common misperception that desertification is most severe in the developing countries. As a proportion of existing dryland, moderate to severe desertification is most serious in North America. Asia contains the largest area of desertified dryland, followed by Africa. At least 50 per cent of Australia's dryland is also moderately to severely desertified [39, p. 19].



The developed countries, such as the United States and Australia, are better able to cope with the social and economic consequences of desertification, at least in the short term, through investment in reclamation, and the availability of nonagricultural employment. Among the existing consequences of desertification in the developing countries are crop failure, destruction of rangelands, reduction of woody biomass, reduction of surface and ground water, sand encroachment, flooding after sudden rains, overall failure of life support systems, famine and forced migration. In between 1984 and 1985, desertification produced 10 million environmental refugees in Africa [39, pp. 3, 12]. At least in Africa, the vast proportion of environmental refugees are men, who move to urban areas in search of employment, leaving the women and children behind in the desertified zones to fend for themselves [40].

As a result of their activities in producing food and gathering fuelwood and water, women in the developing countries are often held responsible for desertification [7]. This is also a misperception that denies the significance of profit-oriented strategies of production, such as agro-business, cash cropping, commercial meat production, timber and pulp extraction, and the impact of industry-oriented hydroelectric development, on the desertification process. As the United Nations Environment Programme points out in a recent report, "an over-riding socioeconomic issue in desertification is the imbalance of power and access to strategic resources among different groups in a given society" [39, pp. 3-4].

Gender bias, and the denial of women's needs and interests, is prominent amongst the social factors that lead to desertification [27, 40]. Profit-oriented strategies for dryland resource use typically rely on complex technologies such as irrigation, hybrid seeds, artificial insemination and industrial processing. Women in the developing countries have minimal access to these technologies, which are commonly expensive and require new skills, and little control over the land needed to use them. The technologies themselves may impact negatively on women's life spaces, and spread diseases such as malaria and schistosomiasis.

Very little of the money or other benefits gained from this profit quest flows back to women at the local community level, even though women may be a significant source of free or cheap labour for cash crop and plantation production. However, once the desertification process sets in, often as a result of the overuse of these technologies, women typically become the primary victims through the increasing difficulty they experience in the provision of food, water and fuelwood.

Desertification in Africa and South Asia has generally resulted in women having access to a smaller and smaller land base. As a result, women have often been forced to exploit land more intensively. This has furthered the spread of soil erosion and loss of vegetative cover. At the same time, the deforestation that has resulted from land clearing and timber cutting has also forced women to overuse remaining local sources, or to search further from home for fuelwood. As Monimart describes it, "fuel-gathering becomes ever more time consuming and burdensome, to the point of becoming unbearable." Deforestation has also led to water shortages through loss of ground water, while the use of pesticides and

fertilizers has further damaged women's water sources. In this way, shortages of water for domestic use in many areas of Africa and South Asia have reached a critical level. Ultimately, "the land and the women alike are exhausted. Neither gets any rest" [40, p. 35].

The increasing female impoverishment that typically results from desertification also has profound consequences for women's health: "their health, that most precious asset, is severely undermined by privation of food, more frequent pregnancies, and the increasing burden of work" [40, p. 38]. The United Nations Environment Programme now suggests that the solution to the problem of desertification lies largely in socio-political and socio-economic measures, rather than in technology [39, pp. xiv-xv]. Thus, desertification control must begin with "...solving problems such as poverty, food, housing, employment, health, education, population pressures and demographic imbalance." Furthermore, to achieve success, "broad-based public participation ...including women ...is essential" [39, p. vii].

## 9. ENVIRONMENTAL IMPACTS ON WOMEN'S HEALTH: A CASE STUDY

Ferguson [41] provides a "snapshot" of women's environmental health in a developing country in his study of Kibwezi Division of Machakos District in Kenya. Kibwezi is located in a marginal, semi-arid agricultural zone, with a low and unreliable rainfall. Population density is high and growing, with an average of only .23 hectares of agricultural land per person. Shortages of food are both seasonal and chronic. Kibwezi is a division on the edge of the downward spiral of environmental decline.

The most commonly identified agricultural problem is a shortage of water, followed by shortages of equipment, seeds and labour. As in Kenya generally, women appear to contribute the major labour of food crop production, even in households headed by men. The health status of both adults and children is inadequate, with malaria, gastro-enteric and respiratory tract infections as the most common adult diseases.

About 30 percent of households have de facto female heads, and there is generally a high level of demographic dependency on women of child-bearing age. The crude birth rate is high. Women in the 40-44 age group have an average of 7.5 births]. but life expectancy for men and women combined as of 1979 was only 47 years [41, pp. 21, 26].

In these generally difficult circumstances, women also experience specific difficulties that emerge from their interaction with the biophysical environment. Water collection is particularly onerous: "on average, women are carrying 20-25 kg loads for 3.5 km, 1.5 times per day on rough terrain and in temperatures of up to 40 degrees Centigrade." Women carry water on their backs. When men do assist in water collection, they use bicycles, ox-carts or donkeys [41, p. 25].

One-third of the women are suffering from parasitic infections, especially hookworm. Women generally are also shorter, and have less body fat than a comparison group from a more fertile area of Machakos District. They also have generally low haemoglobin levels, the apparent result of malaria and frequent pregnancy. Women with hookworm infestations

have particularly severe anaemia [41, p. 27]. As a result of their difficulties:

...women of childbearing age form a cohort which is under heavy and almost constant stress ...the majority of women ...are undernourished and this condition is exacerbated by the widespread prevalence of intestinal parasitosis, normally considered to be less of a problem in Kibwezi than malaria, gastro-enteric infections and bilharzia ...In many cases, chronic exposure to such stress leads to chronic disability and the burden on the more healthy women is concomitantly increased [41, p. 28].

In between 1978 and 1983, over one hundred community health workers were trained in Kibwezi through a community-based health project. However, the impact of these health workers on the health of women and children was limited. This limited outcome was due to the failure of the community to select women for these roles, and the failure of the project to encourage and support training of female health workers. Ferguson suggests a number of possible "indirect" interventions: improved credit and extension services for women; encouraging men to take on water collection through the introduction of carrying methods that rely on bicycles, ox-carts or hand carts; and community-based grain stores. To this list he adds more direct strategies such as nutrition education, maternal and child health and family planning information, and evaluation and monitoring of health interventions [41, p. 29].

It is typical that no direct recommendations for improvement of women's non-reproductive health, other than nutrition information are put forward. Specifically, nothing is said about interventions that might alleviate the prevalent environmental diseases in Kibwezi. A distressing vision appears from these recommendations of a group of tired, poor, environmentally sick women being instructed about the basic food groups. This vision is an all too frequent reality of women's health policy and planning, especially in the developing countries.

In order to move beyond this vision, we certainly need to begin with gender-sensitive environmental health research. Roundy's model [5] offers an excellent framework for the design and implementation of such research in both the developing and the developed countries. Such research would add a critically important epidemiological dimension, based on the notion of gendered life spaces, to the improvements in female health indicators discussed earlier in this paper. However, as Ferguson's research in Kibwezi also makes clear, we also need new policy approaches that will build on women's gender roles as environmental and health managers, and support women's participation in environmental and health decision-making at the local, national and international levels.

## 10. WOMEN'S ENVIRONMENTAL HEALTH: THE POLICY ISSUES

Several key points concerning the formulation of gender-sensitive environmental health policy emerge from the preliminary evidence reviewed in this paper. These key points are

summarized briefly here as the basis for a delineation of the "way forward." First, appropriate health policy for women requires support for their overall well being, not only their reproductive health. Effective women's health policy also demands recognition of the full range of women's activities and responsibilities, including their involvements as domestic managers, producers, workers, care-givers and environmental managers. Better understanding is also required of the centrality of women to both environmental and health management, in the developing and the developed countries.

A gender-sensitive environmental health policy that will sustain women's health cannot be developed in an information vacuum. Far better data is needed on women's morbidity and mortality, and on women's gender-differentiated exposure to environmental illnesses. There is also a significant need for qualitative and participatory research to uncover women's existing environmental health problems as a basis for more detailed environmental health assessment, research and action. "Silver bullet" approaches, which aim to improve women's overall health and well being through a particular strategic intervention, such as nutrition education or maternal health care, are unlikely to result in significant overall improvement in their health status, especially in their environmental health [14].

One fundamental reason why such approaches simply cannot work is that they fail to recognize that women and men do lead gender-differentiated lives, and that in many communities, in many countries, including communities in the developed countries, women and men really do not inhabit the same "life spaces. They may live in the same city or village, they may work on the same farm, they may sleep in the same room in the same household, but from the time they rise, until the time they go to bed, they may actually occupy and use very different life spaces, and they may be exposed to very different environmental illnesses as a result. For this reason, the differential attention paid to men's environmental needs and interests in a great deal of current national and international development policy and programming -- in both the developing and the developed countries -- may, in fact, be as significant an environmental health hazard for women, as is poverty, illiteracy and gender oppression [23, 27].

For this same reason, it is also not effective in terms of costs or outcomes to involve women only as implementors of health and environmental action plans arrived at by others, especially through top-down, male-oriented decision networks. Instead, the focus of policy attention has to be on women as key agents for the promotion of environmental and human health within their own life spaces. In the developing countries, local women's groups provide an important context for empowering women as environmental and health decision-makers. They offer women mutual solidarity and encouragement, and the benefit of shared knowledge and ideas [8]. In the developed countries, women are beginning to discover that the walls of their homes, and the boundaries of their neighbourhoods, do not act as some "magical detoxifying barrier" to the impact of pollutants and toxic contaminants on their life spaces [42]. In communities such as Love Canal in the United States, and Port Hope, Ontario, women have begun to participate in local action to prevent the spread of environmental pollution and inadequate disposal of nuclear waste [43].

However, such groups cannot operate in a policy vacuum [8]. They require support and affirmation at every level of environment and health action, from the community level up to national and international decision-makers. They also require access to the scientific and technological information, training and education that will serve their interests in environmental and human health. Ultimately what is necessary for environmental and human health policy that will protect and maintain healthy life spaces for women, in both the developing and the countries, is for women to participate in policy formulation, and related scientific and technological professions, in equitable numbers with men [4, 44].

## 11. THE WAY FORWARD

Women's participation as environmental and health professionals and decision-makers is a low-cost strategy for promotion of environmental and human well being. However, rehabilitative and curative costs in both areas will continue to rise as long as policy in other areas, particularly economic policy, is prioritized over environmental and human well being [3, 8]. National and international decisionmakers, both political and civil, have a key role to play in reorienting future development priorities towards a more cost effective, sustainable future through support for women's environmental and health knowledge and action.

Women who are poor, illiterate and oppressed, whether they live in the developing or the developed countries, cannot take on a meaningful, effective role as agents of environmental and human health. National and international decision-makers also have a central responsibility to support the alleviation of these hazards to women's well being through policy and action in support of better incomes, education and autonomy for women. This will require support for national and donor funding directly addressed to the alleviation of these barriers to women's well being and participation, including the barriers that currently deny women access to scientific and technological expertise and training, and political participation.

Research in both the developing [19, 36] and the developed countries [43] shows that women want to address their own environmental and health problems, and to do so in an integrated, effective, empowering manner. Top-down, male-oriented approaches to policy formulation will not include them effectively. National and international decision-makers also have an urgent responsibility to ensure that women are included in decision-making frameworks at every level of policy formulation. This will require support for the participation of women as key decision-makers at the national level, and at every level of government and community action. However, one woman cannot speak for all women. Women must have the opportunity and encouragement to participate in equal numbers, and with an equitable voice, in every level of environmental and health policy and decision-making.

In 1992, the World Health Assembly took what Yoon refers to as "a major step forward" by selecting "women, health and development" as the basis for its discussions [4, p. 26].

Many of the policy imperatives summarized here were supported by the Assembly in a set of recommendations which Yoon reviews. However, as Yoon points out, "although the expert group panel had emphasized linkages of gender and health to environment, particularly in areas of reproductive health, cancers, tropical diseases and occupational health ...these were not specifically highlighted in the resolutions" [4, p. 27]. Member states were also encouraged only to "include at least one woman" in their delegations to the World Health Assembly. On the other hand, the Assembly recommendations did urge the Director-General of the World Health Organization to "maintain the target of 30% for the proportion of all professional and higher-graded posts ...to be occupied by women" [45].

The forthcoming 1995 Fourth World Conference on Women will assess governmental progress on the Forward Looking Strategies for the Advancement of Women from the 1985 Nairobi conference [46]. The Forward Looking Strategies contain key sections in support of women as environmental and health decisionmakers. In addition, Chapter 24 of Agenda 21, the global action plan adopted by the United Nations Conference on Environment and Development also contains key recommendations for the empowerment of women in these areas [47]. However, the Forward Looking Strategies and Chapter 24 of Agenda 21 need to be ratified and addressed, through national policy formulation and implementation on the part of the member states of the United Nations. The Women's Agenda 21 from the World Congress of Women for a Healthy Planet, organized by the Women's Environment and Development Organization in Miami in 1991, also offers a valuable set of guidelines for the empowerment of women as participants in policy formulation for sustainable and equitable development [48].

All of these excellent policy guidelines, especially guidelines developed by women themselves in documents such as the Women's Action Agenda 21, are to no avail if they are not implemented. For this reason, key working groups and networks concerned with "women, health and the environment," such as the Women's Environment and Development Organization, are presently turning their attention to the formulation of specific, feasible recommendations for the improved participation of women in policy formulation [10] and relevant science and technology professions [4, 44].

A recent report from the Expert Group Meeting: Women and Economic Decision-Making calls this organizing for "clout." Of course, organizing for clout is not limited to women's participation in economic policy formulation, but has significant implications for women's involvement in environmental and health policy formulation as well. The report's view of what is essential in "organizing for clout" is informative:

to be truly empowered ... women need to break out of isolation and to organize into effective groups to influence local and national government ...policies and resource flows, the media, and the social fabric as a whole. Women need to look beyond their immediate environments to create networks cutting across sectoral and professional boundaries and national border and so create new opportunities [49, p. 17].

In the months leading up to the Fourth World Conference on Women in September

1995, "women, health and the environment" is likely to be a key policy concern. The efforts to date of the working groups and networks organizing for a strategic change in women's participation in environmental health policy formulation suggest that what is really needed in the future is partnership - between policy-makers, researchers, government officials, non-governmental organizations, and women's groups -- both nationally and internationally, to recognize, protect and improve women's life spaces as a basis for a more equitable and sustainable approach to environmental and human health.

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### **III Policy Issues: Gender, Environment and Health**



IDRC Photo



## **POLICY ISSUES: GENDER, ENVIRONMENT AND HEALTH**

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The following section highlights some of the key policy issues that require attention in the area of Gender, Environment and Health. A regional approach is adopted in looking at the various issues, as different issues are prominent in each region. For example, breast cancer is one of the main relevant issues in North America, while in Africa, other issues such as indoor air pollution and tropical diseases are more prominent.

From an analysis of regionally specific information collected in this section, fundamental policy issues emerge that are pertinent across the globe. First, there is a lack of gender-disaggregated information on the linkages between environmental degradation and women's health. More gender-specific research needs to be undertaken to meet the information needs of health care practitioners, government officials, community groups and individual citizens. Thus, while there is a growing literature base in Gender and Environment, and in Environment and Health, the research base linking all three is less substantial.

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**SELECTED REGIONAL INDICATORS RELATED TO  
GENDER, ENVIRONMENT AND HEALTH**

Indicator/Region	Sub-Saharan Africa	Middle East and N. Africa	South Asia	East Asia and Pacific	Latin America	Former USSR	Industrialized countries	Developing countries	LDCs
Literacy Rate, 1990 Male (%)	61	69	59	88	86	99	..	76	54
Literacy Rate, 1990 Female (%)	40	45	32	71	83	97	..	57	32
Life Expectancy, Female as % of Male	107	104	101	106	108	..	108	105	104
Maternal Mortality Rate	616	202	492	159	189	..	10	351	607
% with access to safe water	42	77	77	66	80	..	..	69	49
% with access to sanitation	36	70	29	27	66	..	..	36	34
% with access to health services	56	82	77	87	74	..	..	79	48
% of all women suffering from anaemia	44	42	60	37	31	..	13	..	..

Source: UNICEF 1995.

Notes: All figures are totals or weighted averages. For a full list of countries in each category, please refer to UNICEF (1995), pp. 86-87. Literacy rate refers to percentage of persons aged 15 and over who can read and write. Access to health services refers to the percentage of the population that can reach appropriate local health services by the local means of transport in no more than one hour. Maternal mortality rate refers to number of deaths of women from pregnancy-related causes per 100,000 live births. "..." means data not available.

## POLICY ISSUES: AFRICA

Africa faces an environmental crisis unprecedented in history. Rapid deforestation, loss of soil fertility, low agricultural productivity, disappearing biodiversity, and increasingly unmanageable urban environment have thwarted the continent's social and economic development. In Sub-Saharan Africa alone in the past 50 years, 65 million hectares of productive land turned to desert. Environmental insecurity has caused massive migration of ecological refugees. Women constitute over 80 per cent of adult refugees, millions of whom have emigrated to neighbouring countries fleeing military conflicts. According to UNHCR, there are an estimated 20 million internally displaced persons on the African continent. This situation has had an severe impact on the health of women as they struggle to cope with dislocation, malnutrition, lack of housing, clean water and sanitation.

Deforestation has made it more difficult and time-consuming for women to gather fuelwood, thus reducing their time available for infant and child care. The collection of fuelwood in far and unfamiliar forests exposes women to allergens, fungus infections, severe fatigue and to bites from venomous snakes, spiders, leeches, insects. Since African peasant women bear the heaviest burden of agricultural work, they are predisposed to diseases associated with hazardous pesticides, respiratory problems during chaffing, grain pounding and harvesting.

### Indoor Air Pollution

A form of pneumoconiosis has been observed in rural African women, termed "Hut Lung." The cause is attributed to biomass emissions. This is an important issue in Africa, given the millions of women whose domestic duties regularly include cooking with biomass fuel in small poorly ventilated huts. It should be noted that pneumoconiosis has also been attributed to silica particles inhaled while chaffing and while hand-grinding grain between rocks.

### Garbage Dump Scavenging

With increasing economic pressures, a large number of women and children have resorted to scavenging garbage dumps seeking valuable items for recycling. Most studies have indicated the positive economic benefits of garbage recycling. There are, however, important health issues surrounding the impact of organic waste on those women's health which require research attention.

### Waterborne tropical diseases

*Malaria* is indigenous in some 100 countries, although 80% of clinical cases are found in sub-Saharan Africa. Out of the 300 million new cases of malaria which develop annually around the world, two-thirds occur in women and children. Women in rural areas get up early to fetch water and firewood, or they may stay up late at night preparing meals; both these times of day are peak biting periods. Thus, these chores expose women, more than others, to the possibility

of malarial infection. Pregnant women also show increased susceptibility to malaria, partly as a result of anaemia and possibly because natural immunity is depressed during pregnancy.

*Schistosomiasis* is the second most prevalent parasitic disease in Africa, contracted by the passage of the parasite through the skin. While epidemiological research has indicated that the prevalence of urinary schistosomiasis in men is higher than in women, those women who are infected may bear an additional burden due to both physical and social morbidity (genital lesions and stigmatization). The severity of the disease is related to the intensity of infection, which is determined mainly by frequency of exposure. The stigma attached to water-borne diseases such as urinary schistosomiasis in women affects their own health-seeking behaviour and their access to health care. In a village in Cameroon, prevalence of schistosomiasis was found to be 76% with slightly more women infected than men. The Cameroon village study also established that most women could not afford the recommended drug, Praziquantel, which sells for the equivalent of US\$4 per tablet. Four tablets are needed per treatment.

*Guinea-worm* is a considerable problem for the entire community, but particularly so for women, owing to their multiple roles and responsibilities. A pilot study of 42 women, using qualitative survey methods, was carried out in two guinea-worm endemic areas of Nigeria, to evaluate the effects on women and their domestic and economic duties. The prevalence in the two areas was estimated at 30% and 60 % respectively. Guinea-worm is mainly prevalent in West African countries.

Activities which increase the risk of exposure to water are the main determinants for schistosome infection, guinea worm and malaria. Given the role of women in water collection and management, they are at especially high risk.



## **POLICY ISSUES: CENTRAL AND EASTERN EUROPE**

Although research has suggested that air pollution has affected mortality in the most heavily polluted parts of Central and Eastern Europe, environmental pollution is not the principal factor in life expectancy gaps in Central and Eastern Europe (Hertzman 1994). Environmental pollution should, however, be seen and examined in the context of determinants of health, and of differential impact on men and women. The relative impact of environmental pollution on life expectancy in heavily polluted areas of Central and Eastern Europe is likely of the same magnitude as excesses of medically avoidable death or lifestyle factors such as diet, smoking and exercise.

### **Environmental Health Priorities**

The most common environmental health problems in Central and Eastern Europe result from exposure to the following pollutants:

- \* **Lead in air and soil**
- \* **Airborne dust**
- \* **Sulphur dioxide and other gases**

The health effects associated with exposure to these contaminants include neurobehavioural deficits, acute and chronic respiratory conditions, lung cancer and abnormal physiological development. The sources of these pollutants range from dust from burning coal in household furnaces, small enterprises, power and heat plants and metallurgical industries to emissions from power and industrial plants. Some regions which are particularly problematic are Bulgaria, Romania, Northern Bohemia, the Russian Murmansk region, and Ukraine.

While less prevalent than lead, dust and airborne gases, pollutants in food and water also impact on health. These pollutants include:

- \* **Nitrates and other contaminants in drinking water**
- \* **Contaminants in food**

Inappropriate handling or disposal of contaminated water has resulted in waterborne arsenic, viruses and bacteria being linked to incidence of human disease. Overall, airborne pollution, however, poses a greater threat to human health than waterborne pollution in Central and Eastern Europe.

Little data exists regarding the differential impact of the environment on the health of women and men in Central and Eastern Europe. Case-specific evidence, however, does point to the need for gender-disaggregated studies and data. For example, studies have shown a high distribution of lead among children and mothers in Katowice region of Poland, and differences in reduced lung capacity between girls (69%) and boys (29%) in Kehra, Estonia, due to ambient concentrations of sulphur dioxide and other emissions from a pulp and paper mill (Hertzman 1994).

Environmental health problems in Central and Eastern Europe are concentrated in large areas of ecological disaster, smaller industrial areas, and in locations of poor town planning. Strategies to improve regional air quality would have to focus both on whole sectors of economies as well as on specific sources of emissions.

To improve the environmental health status in Central and Eastern Europe, certain remediation objectives need to be pursued. Among them are the control of lead emissions from all significant industrial and transportation sources, control of dust from all significant industrial point sources, control of dust and gas emissions from coal burning, and reduction of nitrate levels in rural water supplies. These represent only some of the policy areas in which activity is needed.

## **POLICY ISSUES: LATIN AMERICA**

Environmental degradation is reaching crisis proportions in Latin America. The rate of deforestation is the highest in the world, while intensifying agriculture in marginal areas is degrading land and contaminating water and marine habitats through the high usage of chemical herbicides and pesticides. Urbanization is increasing air pollution while inadequately disposed garbage is contaminating water supplies.

The health effects of Latin America's environmental degradation are most pronounced on the region's poor. 80% of the region's poorest people inhabit areas where ecological destruction or severe environmental hazards threaten their well-being, the highest of any developing area (Paolisso and Yudelman 1991). One of the most notable characteristics of poverty in Latin America is the growing number of women among the poor. 20% of the poorest households in rural areas, and up to 38% of those in urban areas, are headed by women, one of the most profound changes in the social fabric of Latin America (Paolisso and Yudelman 1991).

### **Exposure to Toxins**

Perhaps the clearest risk of women in Latin America is exposure to toxins. Lack of access to resources has significantly increased the number of women working as wage labourers in export agriculture where they are directly exposed to toxic chemicals for sustained periods of time. Increasing numbers of people are suffering from both acute poisonings, which can bring on vomiting, fever, vertigo, diarrhea, delirium, muscular convulsions, neural damage or even death, and chronic damages including headaches, allergies, dizziness, dermatitis, blurred vision or carcinogenic disorders that emerge over the years.

In Ecuador, for example, 69.3 % of workers in the nontraditional agroexport industry are women (Thrupp 1994). On one farm, 27 workers, 23 of whom were women, showed declines in cholinesterase levels indicating risks of short term damage and potentially long term kidney or liver damage from exposure to pesticides (Thrupp 1994). In Colombia, nearly two-thirds of flower workers have symptoms of pesticide related illnesses, including headaches, nausea, eye and skin problems. Spontaneous abortions and children with congenital problems such as limb malformations are also common. Approximately 80% of flower workers in Colombia are women (PANNA 1993).

A second means of exposure to toxins is through poor sanitation and inadequately treated and disposed garbage and toxic wastes. In both urban and rural settings, poor sanitation can expose women to contaminated water supplies for example, particularly since it their responsibility for collecting drinking water.

## **Air Pollution**

Air pollution is another major problem for women's health in Latin America. Latin America has one of the highest rates of urbanization in the world and is home to the megacities of Mexico City and Sao Paulo. Respiratory ailments are one of the health effects which can result from exposure. Already, in Mexico City, it is estimated that nearly 100,000 children die yearly as a result of air pollution while approximately 5 million people suffer from respiratory diseases. In Sao Paulo, one-fifth of the children under the age of four who die in the city are victims of respiratory ailments (Shallat 1990). Air pollution will continue to be an even greater health hazard for the most vulnerable of the population - the elderly, infants and children, pregnant women and the poor.

## **Indoor Air Pollution**

Indoor air pollution, stemming from the use of biomass fuels in open stoves for cooking and heating, is a significant risk factor for several forms of ill-health including chronic respiratory diseases in adults and acute lower respiratory infections (ARI) in children. In Latin America it is estimated that 50% of rural homes, and a similar number of urban homes, use wood for fuel (De Koning et al 1985). Women, the principal food preparers, experience prolonged exposure to wood smoke which contains many toxic (carcinogens, co-carcinogens and volatile and particulate substances) and non-toxic substances (carbon monoxide, nitrogen and sulphur dioxides). The result in Mexico for example, is high levels of chronic obstructive pulmonary disease and respiratory failures in non-smoking women<sup>1</sup>.

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<sup>1</sup> International Development Research Centre (IDRC) Project Summary, Woodsmoke (Mexico), Health Sciences Division, November 1991.

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## **POLICY ISSUES: NORTH AMERICA**

The particular configurations of gender concerns and environmental problems in North America have created gender, environment and health issues that are significantly different from those in developing countries. The relative wealth of Canada and the United States, combined with a better standard of living and higher education levels, put most North American women in a privileged position. However, this does not mean that there are no issues of gender, as demonstrated by the 1995 United Nations Human Development Report, which rated Canada as the best country in the world to live in overall; when gender was factored in, it rated 9th.

North American countries rank lowest in the world in terms of their environmental records; their citizens use the most natural resources and produce the most waste. The 1994 UNICEF Report on the Progress of Nations ranked industrial nations on a scale of 0 - 100 for their environmental records on matters such as water use and quality, pollutants emitted per capita, municipal waste and car travel. The United States scored lowest, with 35 points, and Canada second, with 37 (WEN 1995). This combination of relative wealth, poor environmental records and a continuing struggle for gender equity has shaped North American gender, environment and health policy issues. This overview selects and presents three of the most prominent issues in the region: exposure to toxins, exposure to organochlorines and their link to breast cancer, and biotechnology.

### **Exposure to Toxins**

The United States Public Health Service notes that the most difficult challenges for environmental health today come from uncertainties about the toxic and ecologic effects of the use of fossil fuels and synthetic chemicals. Some 82% of major industrial chemicals have not been tested for their toxic properties and links to specific diseases and only a small proportion of chemicals have been adequately tested for their connection to cancer (United States Department of Public Health 1990). Exposure to toxins through air, water and food and their potential health effects on women's general and reproductive health are important concerns (see Tab 5).

### **Organochlorines and Breast Cancer**

Particularly cogent to women is the wide use of organochlorines, a class of highly persistent and toxic substances that include dioxin, DDT, PCBs, CFCs, aldrin, dieldrin and thousands of lesser known chemicals. Organochlorines are found in products such as pesticides, plastics, industrial solvents, and in pulp and paper products, including sanitary napkins and tampons. One particularly troubling aspect of their use is that they have been linked to

incidence of breast cancer. The link is a controversial one, and this debate is prominent in North American circles (see Tab 6). Many women's environment groups lobby for the use of alternative products to reduce exposure to organochlorines.

### **Biotechnology**

A final important gender, environment and health issue is biotechnology, that is, the use of living organisms or parts of living organisms - usually micro-organisms, plant cells, or animal cells - to manufacture goods that are useful to people (Vital Link 1990). There are concerns about the possible health effects stemming from the use of such products. A current example is the debate over recombinant growth hormone (rBGH), also called recombinant Bovine Somatotropin (rBST), a synthetic hormone approved for use in the United States in 1994 and awaiting approval in Canada. rBGH indirectly causes cows to produce up to 25% more milk by releasing a chemical called IGF-1 ("insulin like growth factor #1") which causes increased milk production. There are several potential causes for concern in terms of human health. rBGH-treated cows are more prone to mastitis (udder infections) and are consequently treated with antibiotics, which then end up in the milk supply. These antibiotics can cause severe allergic reactions in humans, in addition to contributing to the increasing concern about antibiotic resistance because of overuse. Finally, some scientists have found a link between IGF-1 and breast cancer (Rachel's Hazardous Waste News, #383, n.d.).

North American women's activist groups are concerned about the potential health effects of this product, and other bioengineered products such as the FlavrSavr tomato, which contains a flounder gene. Activists are also alarmed by the fact that these and other bioengineered products are being approved in many cases without public debate which results in foreign substances being introduced into women's bodies without adequate information provided on possible health effects.

## POLICY ISSUES: ASIA

Environmental abnormalities affect health in Asia in many ways, four of which are most notable. In each case, there are instances of differential impact upon men and women.

### **Pesticides and Fertilizers**

Pesticides and fertilizers have a detrimental effect on health. The potential risks associated with pesticide use are often aggravated in developing countries due to poor management, e.g. inadequate labelling of pesticides, a lack of training on proper use procedures, illiteracy among users, indiscriminate use, etc. In India, Pakistan, Bangladesh, the Philippines, Malaysia, and Vietnam, numerous studies have found a direct relationship between various agricultural chemicals (e.g. DDT, HCH) and health. In addition to many forms of cancer, respiratory problems and burns, exposure to pesticides and fertilizers can result in fertility-related problems in women. Contaminants such as DDT have also been found at very high levels in breast milk in areas of heavy pesticide use. This issue is particularly relevant to rural women as they constitute the majority of field-workers.

A disturbing trend in the area of pesticide use is the increasing reliance upon them by developing countries. For example, India increased its treated acreage from 6 million hectares in 1960 to over 80 million hectares in the 1980s. Indonesia, Pakistan, the Philippines and Sri Lanka all increased their pesticide use by more than 10% per year between 1980 and 1985 (*World Resources 1994-95* 1995). Moreover, products such as DDT, chlordane and heptachlor, which are prohibited in developed countries, are still widely used in developing countries. Hence, pesticide dumping is becoming a pressing international environmental problem.

### **Indoor Air Pollution**

A second environmental health issue in the region is hydrocarbon emissions from traditional cooking stoves. In China, coal "cakes" and cooking oil are used in domestic cooking. In India and other parts of South Asia, cow dung "cakes" are used. Both sources of fuel give rise to harmful emissions, which can be even more injurious given the small size of most rural dwellings in Asia. Some of the health effects of indoor air pollution include: conjunctivitis, upper respiratory inflammation, acute respiratory infection (ARI), acute poisoning from toxic gases, chronic obstructive pulmonary disease (COPD), chronic bronchitis, lung cancer. Health problems such as burns, cataracts and arthritis (from crouching over a stove for hours at a time) are also prevalent in communities which rely heavily on traditional cooking stoves. As with pesticides, impact is directly related to exposure; women, who may spend as much as three hours a day cooking meals, and children are the groups most affected. Recent work in this area has focused on the installation of

ventilation units or fans (China) and encouraging the use of biogas plants (India).

Xu (1990) found a statistically significant correlation between birth defect rates among infants whose mothers used different kinds of fuel for domestic cooking in China. Mothers who used coal for cooking had higher birth defect rates than mothers using gas. It is clear that indoor air pollution can play a role in the altered development of the fetus during pregnancy. Another study found that cooking fumes significantly raise the risks of lung cancer among women. Women exposed to cooking fumes were much more likely to develop lung cancer than men, even male smokers (Ou et al. 1989).

### **Environmental Contamination**

The health issue that tends to get the most attention is environmental contamination. In Bhopal, site of the Union Carbide accident in 1985, residents have suffered respiratory, psychological, and immunological effects as a result of prolonged exposure to methyl isocyanate, among other toxins. Women in Bhopal are over two and a half times more likely to suffer miscarriages than women in the rest of India. There is also a higher proportion of cases of malformed or severely disabled newborn babies (*World Resources 1994-95* 1995).

In parts of Southeast Asia, contamination is a growing health issue. Exposure to environmental cadmium in Japan has resulted in metabolic and digestive disorders in both men and women, although there are also gender-specific effects. Research and activism in the Philippines is currently pinpointing the health impacts of government-initiated coal thermal power plants (Israel 1994). Respiratory problems, asthma, coughing, flu, pneumonia, and tuberculosis are some of the health effects that have increased due to the air and water pollution generated by the power plants.

### **Tropical Diseases**

Finally, tropical diseases are important health issues in the Asian context as well. Diseases which can be spread via human excrement (typhoid, amoebic dysentery, parasitic infections, hookworm) are a problem for rural women in Southern Asia where open-field defecation may be practised in the same areas in which women work or through which they travel to get fuel and fodder. The risk of exposure, and thus contamination, can be high.

This brief overview of some of the key policy issues in gender, health, and environment in Asia points to the need for more research in this area to understand better gender-specific patterns of affliction and their implications.



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**POLICY ISSUES: A SELECTED GLOBAL EXAMPLE**

**Indoor Air Pollution**

**PROBLEM:**

- 400-700 million women and children suffer effects of indoor air pollution
- Urban Outdoor Air: causes 8 million lost DALYs\* annually
- Rural Indoor Air: causes 25 million lost DALYs\* annually

**CAUSE:**

1. More than 50% of households worldwide use unprocessed household fuels:
  - vegetable residues
  - wood
  - charcoal
  - dung
  - coal
2. Pollutants:
  - particulates
  - carbon monoxide
  - benzene
  - polyaromatic hydrocarbons
  - formaldehyde
  - sulphur oxides
  - toxic metals

**POLICY HIGHLIGHTS:**

- World Development Report 1992 and 1993 cite indoor air pollution as one of the four most important global environmental problems
- UNCED Agenda 21 calls for indoor air pollution intervention research

\* DALYs: Disability-Adjusted Life Years

Source: WHO 1992.

## IV Global Policy Recommendations



## GLOBAL POLICY RECOMMENDATIONS

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This chapter outlines key policy documents which have emerged from landmark international conferences. Recommendations regarding gender, environment and health are listed according to relevant subject headings with references to page, paragraph, or recommendation numbers following in parentheses.

These international conferences and policy statements serve to situate the discussion of gender, environment and health within a broader policy context, allowing for the generation of terms of reference for future research questions, recommendations and action in this field. The recommendations included in this chapter can be categorized according to four general themes. The recommendations advocate:

- equitable access to resources and decision-making processes
- increased, and equitable, participation of women
- gender-disaggregated data and impact assessments
- concerted action at micro- and macro- levels

The first category refers to recommendations which call for equitable access for women to resources, technologies, services, information, and political power. These recommendations, while key to improving the condition of women, focus mostly on practical needs. The recommendations within the other three categories constitute efforts to address more strategic interests, and thus to alter the position of women. These recommendations advocate increasing the participation of women in decision-making processes, studying and reporting differential effects with gender-disaggregated data, and addressing issues at international, national, and local levels.

While each of the documents referred to contain valuable recommendations and calls for action, the 1985 *Nairobi Forward-Looking Strategies for the Advancement of Women* and the 1991 *World Women's Congress for a Healthy Planet* constitute the more comprehensive of the documents with regard to the links made between all three of gender, environment and health.

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### Landmark United Nations Conferences and Documents

- *The Vienna Programme of Action on Science and Technology for Development*, United Nations 1979
- *Advisory Committee on Science and Technology for Development*, United Nations 1984
- *The Nairobi Forward-Looking Strategies for the Advancement of Women*, United Nations 1985
- *World Survey on the Role of Women in Development*, United Nations 1986
- *World Survey on the Role of Women in Development*, United Nations 1989
- *Report of the Economic and Social Council*, 1990
- *World Women's Congress for a Healthy Planet*, Miami 1991
- *Agenda 21*, Rio 1991
- *International Conference on Population and Development*, WHO-UNICEF, 1994
- *Report of the Technical Discussions on Women, Health and Development*, WHO 1992
- *Draft Platform for Action*, Beijing 1995
- *A Common Concern: The Gender Dimension of Science and Technology for Sustainable Human Development* International Development Research Centre ed. 1995
- *Science and Technology for Sustainable Human development: The Gender Dimension* Report prepared by the Gender Working Group, the United Nations Commission on Science and Technology for Development, February 1995.

**Landmark United Nations Conferences and Documents**

*Key Recommendations: Gender, Environment and Health*

**ENVIRONMENT AND NATURAL RESOURCES**

*\* The Nairobi Forward-Looking Strategies for the Advancement of Women, UN 1985*

- Paragraph 151: Provide access to water and sanitary facilities; involve, consult women in water and sanitation projects and use of technologies.
- Paragraph 225: "Improve sanitary conditions...[including] improvements in the home and the work environment...with the participation of women."
- Paragraph 226: Enhance awareness by women of environmental issues, and the capacity of women and men to manage their environment and sustain productive resources. Disseminate information on environmental sustainability, and recognize women as "active and equal participants" in ecosystem management and the control of environmental degradation.
- Paragraph 227: Assess and eliminate negative effects of environmental impact of policies, programmes and projects on women's health and activities.

*\* World Survey on the Role of Women in Development, UN 1986*

- Provide wells, piped water, electricity, energy, etc., to improve rural women's working conditions. [p. 222]

*\* World Survey on the Role of Women in Development, UN 1989*

- Recognize impact of structural adjustment policies on rural women (i.e. modernization of technology, use of high-yielding varieties, fertilizers, etc.), and of women's economic role in agriculture, rural development and food production. [p. 75]
- Integrate women into mainstream agri-development; gender-disaggregated data on women's roles, responsibilities in the agro-ecological environment, farming systems, etc. Attention to role of women in sustainable development (i.e., conservation, use of resources. [p. 77]
- Recognize effects of environmental degradation on women's health. [p. 97]

*\* World Women's Congress for a Healthy Planet, Miami 1991*

- Adopt an International Code of Environmental Conduct to consider "the effect on women when planning activities that may affect the Earth" [p. 17]
- Implement full cost accounting of environmental and social costs, and assign full value to women's labour. [p. 17]
- Recognize links between women, militarism, and environment; poverty, land rights, food security; biodiversity and biotechnology; sustainable technology transfer; role of women as consumers in sustainable development. [pp. 18-22]
- Create gender-balanced UN Commission on Environment and Development; support the United Nations Environment Programme, gender-balanced policy-making, provision of information and funding for women in environmental management. [p. 23]

*\* Agenda 21, Rio 1992*

- Provide information on land use and management [10.11 (c)]; on combatting deforestation [11].
- Promote participation of women in:  
forest-related activities [11.3 (b)],  
forest maintenance [11.13],  
improved land use, agroforestry systems, combatting land degradation [12.14 (a)],  
desertification [12.56 (d)],  
water management [18.59 (f)],  
recycling [21.25 (d)].
- Provide education and training for women in:  
forestry industries [11.3 (f)],  
drought, desertification [12.14 (b)],  
sustainable development of mountain ecosystems [13.11 (c)],  
alternative non-chemical pest control in agriculture [14.81 (b)].
- Take full account of women's role in data on alternative livelihoods (tree crops, livestock, etc.) [13.17 (b)];
- Conduct research on effects of hazardous wastes on women's health [20.26 (b)].
- Promote (government) environmentally sound technology designed and developed consulting women [24.3 (d)].
- Involve women in decision-making and sustainable development activities [24.7].
- Develop research and policy analysis on impact of environmental degradation on women, i.e., drought, toxic chemicals, etc. [24.8 (c)].

\* *Draft Platform for Action, Beijing 1995*

- Article 51. Recognize daily reality of women's management of natural resources, obtaining fuel and water, managing household consumption.
- Article 53. Include women in decision-making, re: environment.
- Article 54. Include women and their perspectives in environmental policies; recognize effects of environmental degradation on women.
- Article 55. Involve women in environmental management, protection, and conservation programs.

\* *Other documents*

- "Gender, Science and Technology: An Environmental Perspective" in *A Common Concern: The Gender Dimension of Science and Technology for Sustainable Human Development* (IDRC ed. 1995): recommended applying gender and environment analysis to development interventions; inclusion of women, their views and interests in use, management, policy planning re: natural resources and environment; policy and research to consider links between poverty, environmental degradation, women's health, literacy and employment.

## HEALTH

\* *Advisory Committee on Science and Technology for Development, UN 1984*

- Paragraph 34: Give high priority to research and development serving women's "health and nutritional needs and promoting their general well-being"
- Paragraph 65: Structure mechanisms to monitor the impact of new technologies on women's health.
- Paragraph 71: Criteria for selection of technologies for use by women should include improved hygiene.

\* *The Nairobi Forward-Looking Strategies for the Advancement of Women, UN 1985*

- Paragraph 151: "Provide immediate access to water and sanitary facilities for women...; [consult women] with regard to technologies used in water and sanitation projects."
- Paragraph 155: Conduct general screening of women's diseases and cancer; provide services in harmony with timing and patterns of women's work, needs, perspectives; ensure women have same access as men to affordable, curative, preventive and rehabilitative treatment.

- Paragraph 162: Enhance occupational health and safety for men and women; address health impact of new technologies and the harmonization of work and family responsibilities.

\* *World Survey on the Role of Women in Development, UN 1986*

- Pg. 97 Inadequacies and deficiencies in protective work legislation for women.
- [see Part Five Annex; same as UN 1984]

\* *World Survey on the Role of Women in Development, UN 1989*

- Pg. 281: "The application of biotechnology in health and pharmaceutical could contribute to the improvement of health for all...thus relieving some of women's burdens."
- Pg. 282: "Any assessment of reproductive technology must also take into account the rights of parents and..women's rights to health and education."

\* *World Women's Congress for a Healthy Planet, Miami 1991*

- Pg. 20: "We condemn any attempt to deprive women of reproductive freedom or knowledge...we demand women-centred, women-managed comprehensive reproductive health care and family planning; research and remedial action should also focus on the effects on health of toxic chemicals, nuclear wastes, radiation, pesticides and fertilizers."
- Pg. 21: "We are concerned about genetic engineering...and oppose the release of genetically manipulated organisms into the environment; we call for immediate and direct regulation of research and development in biotechnology; we urge that [nuclear technology] be stopped."

\* *Agenda 21, Rio 1992*

- Art. 3.8(j), 5.51: Governments to strengthen preventive and curative health facilities, ensuring they are women-centred and women-managed.
- Art. 6.27(c.i): "Involve women's groups in decision-making at the national and community levels to identify health risks and incorporate health issues in national action programmes on women and development"
- Art. 6.29: Technical support to women's organizations in the health sector.
- 16.13(c): Screening of medical technology, especially those relating to reproductive health.



*\* Draft Platform for Action, Beijing 1995*

- Annex Article 33: "Traditional health knowledge should be used and respected."
- Annex Article 35: Support "research on prevention, treatment, and health care systems for diseases and conditions that affect women and girls differently, including drugs and medical technology."
- Article 74: "Action by non-governmental organizations might include non-formal health education and advisory services for women...giving particular emphasis to women's traditional health knowledge."

*\* Other Documents*

- May 7-9, 1992 WHO 45 WHA, Report of the Technical Discussions on Women, Health, and Development: Established Global Commission on Women's Health. Commission's action agenda: increase awareness of women's health issues; promote women's health through all mass media; provide forum for consultation.
- 1994 - International Conference on Population and Development, WHO-UNICEF: Topics include women's health. Prep. Comm.: Rec.8: safe abortion; Rec. 11: access to family planning; Rec. 12: STD protection; Rec. 24: prevent women's exposure to harmful material; Rec. 27: contraceptive R&D.
- WHO Project 2000+, Target 38 Appropriate Health Technology assessment mechanics to be in place by 1990.  
Report of the Gender working Group, United Nations Commission on Science and Technology for Development (February 1995) Page 11: more medical research needed on biomedical, clinical, epidemiological and social science aspects of women's health and reproductive health services; additional research must be aimed at other issues, such as susceptibility fo women to some diseases due to their exposure to pollutants in the natural environment, and their specific physiological responses to these pollutants.

**ENERGY**

*\* Advisory Committee on Science and Technology for Development, UN 1984*

- Recommendation 75. Transfer/develop technologies "to enable women to utilize effectively agricultural wastes... for fuels, animal feed and construction materials."
- Recommendation 76. "Undertake major afforestation programmes and... introduce technologies for more efficient use of firewood."

*\* The Nairobi Forward-Looking Strategies for the Advancement of Women 1985*

- Paragraph 191: Apply industrial technologies to women's needs to free them from time- and energy-consuming tasks.
- Paragraph 218: "Rationalize energy consumption...improve energy systems...increase technical training...with a view to women as producers, users and managers of energy sources."
- Paragraph 219: Assess new energy sources and reduce drudgery of women's work.
- Paragraph 220: "Support grass-roots participation of women in energy needs assessment, technology and energy conservation, management and maintenance."
- Paragraph 221: Introduce improved on new energy sources to reduce drudgery, muscle use in women's work.
- Paragraph 222: Develop fuelwood plantations, diffusion of fast-growing varieties of trees and technologies; promote use of solar energy and biogas with regard to use and management by women.
- Paragraph 223: Involve women "at all levels of decision-making and implementation of energy-related decisions", provide information, educate, and train women in energy-related areas.

*\* World Survey on the Role of Women in Development, UN 1986*

- Attention to drudgery of women's work in energy policies, equity constraints in design and access; data disaggregated by gender to reflect use, development, and conservation of energy by women, re: training and employment of women in energy-related fields. [pp. 201-202]
- Plan methods to include women in energy decision-making; integrate women's concerns re: procedures, energy development, use, conservation, technologies, strategies, supply and demand, compatibility of fuel substitutions; ensure equitable distribution of benefits of new energy development; provide training in skills needed for women to contribute to energy decisions and technology. [pp. 202-203]
- Enlist participation of women in design, planning, testing, management, maintenance, conservation of new and traditional energy technology. [p. 210]
- Encourage role of women in rational and proper use of renewable energy sources; consider multiple roles of women in energy development and use at all stages of energy projects. [p. 227]

\* *World Survey on the Role of Women in Development, UN 1989*

- Address effects on women of deforestation, desertification, i.e. access to energy, fuelwood, fodder for livestock, income-earning activities; detrimental effects of alternative (i.e., use of agricultural wastes for energy deprives soil of fertilizer). [pp. 97-98]
- Integrate women's roles and needs in energy resource planning; disseminate information on household energy conservation. [p. 99]

\* *World Women's Congress for a Healthy Planet, Miami 1991*

- Recognize impact of nuclear energy and nuclear research and development on women's health; advocate halt to all nuclear research and development, and replacement with alternative fuels. [p. 18]
- Provide women with access to water, fuel supplies; develop alternative energy sources. [p. 19]
- Use self-renewing sources as alternative to nuclear power, fossil fuels; promote mass transportation systems; development of more energy-efficient motor vehicles; encourage initiatives to reduce fossil fuel and energy use, waste, overconsumption. [pp. 21-23]

\* *Agenda 21, Rio 1992*

- Assess impact of structural adjustment policies on women, i.e., in terms of removal of subsidies on food and fuel. [24.8 (b)]

## EDUCATION

\* *Agenda 21, Rio 1992*

- Provide education and vocational training for women on forestry technology and industry. [11.3]
- Programmes to create rural and urban training, research and resource centres...to disseminate environmentally sound technologies to women. [24.8 (g)]

## FOOD SECURITY

*\* Advisory Committee on Science and Technology for Development, UN 1984*

- Recommendation 77: Give high priority to improving access to adequate water supplies; involve women integrally in planning and maintaining water supplies.

*\* The Nairobi Forward-Looking Strategies for the Advancement of Women, 1985*

- Paragraph 62: Agrarian reforms to "guarantee women's constitutional and legal rights in terms of access to land and other means of production."
- Paragraphs 174-178: Development strategies in food and agriculture to integrate women at all levels of planning and implementation; women to be fully integrated and involved in agricultural research; establish multi-sectoral programs to promote productive capacity of rural women in food and animal production; provide women with training in food technology; resources and investment to go to women's programmes re: food security; rural extension to women.

*\* World Women's Congress for a Healthy Planet, Miami 1991*

- Pg. 19: Ensure women's access to food, land inheritance, tenure and ownership; basic human rights; increase food security resources; limit discriminatory land practices; encourage use of indigenous foods and preparation methods; women to have greater access to food processing technology; no patenting of life forms, including non-generating seeds; agricultural sustainability; ban bovine growth hormone (BGH) and others; oppose genetic manipulation and release of such products into environment.

*\* Agenda 21, Rio 1992*

- Article 14.81(b): Train women and extension workers in crop health and alternative non-chemical pest control.

*\* Other Documents*

- Report of the Economic and Social Council (1990): Achievements of the International Drinking Water Supply and Sanitation Decade 1981-1990; note women's involvement critical to safe water supply. [Task Force on Women and the International Drinking Water Supply and Sanitation Decade established 1982; supported by PROWESS and INSTRAW; changed orientation toward women's involvement from sector approach to overall approach permeating all project components, leading to development of planning and evaluation framework (PEGASUS)].

INDIGENOUS KNOWLEDGE

*\* World Survey on the Role of Women in Development, UN 1986*

- Pg. 231: Acknowledge that "women are a pool of technological knowledge in farming, livestock-raising, gardening, preparation of foods, indigenous medicine, some aspects of education, small-industry production, and many other fields" and that "the technological knowledge that they possess has often been well adapted to both ecological and local societal environments."

*\* World Women's Congress for a Healthy Planet, Miami 1991*

- Pg. 14: "States should recognize the right of indigenous people to take part in decisions relating to the development and use of their traditional lands."
- Pg. 21: "Aboriginal and indigenous peoples, and specifically women, must be recognized as providing vital wisdom and leadership in [sustainable development]"

*\* Agenda 21, Rio 1992*

- Article 7.76: Take account of traditional cultural practices of indigenous people and their relationship to the environment.
- Article 12.56(d): "Support local communities in their own efforts in combatting desertification, and draw on the knowledge and experience of the populations concerned, ensuring the full participation of women.
- Article 15.4(g): "Recognize and foster the traditional methods and the knowledge of indigenous people and their communities, emphasizing the particular role of women, relevant to the conservation [and sustainable use of biodiversity]."

- Article 15.5(e,f): Take action to respect, record, protect and promote the wider application of the knowledge, innovations and practices of indigenous and local communities, including women; long-term biodiversity research to include indigenous people and women.
- Article 17.94: Maintain, exchange traditional marine knowledge.
- Article 26.5: "UN organizations and other international development and finance organizations should...incorporate [indigenous people's] values, views and knowledge, including the unique contribution of indigenous women in resource management and other policies." 26.5 (c.ii): Increase efficiency of indigenous people's knowledge and management systems by promoting the adaption and dissemination of suitable technological innovations.
- Article 34.14(c): Facilitate maintenance and promotion of environmentally sound indigenous technology, with attention to needs and role of women.

*\* Draft Platform for Action, Beijing 1995*

- Article 74: Particular emphasis on women's traditional health knowledge.

*\* Other Documents:*

- World Council of Indigenous Peoples (WCIP) Declaration of Working Group of 11th Session "solemnly proclaims the following UN Declaration of the Rights of Indigenous Peoples":  
Article 29: full ownership of intellectual property and special measures to control their sciences, technologies, medicines, and knowledge.

### **International Agreements on the Environment: Implications for Health**

The following is a list of international environmental agreements ratified to varying degrees by national governments. The agreements focus on general and specific environmental concerns. While the conventions center on environmental issues, the implications for effects on human health are of related concern. National, regional and international efforts to address environmental health issues will require an understanding of these conventions, but must also question the extent to which these conventions address gender-related considerations, if at all.

The inclusion of this listing serves to illustrate the extent to which individual national governments participate in international agreements. While the conventions are regional or international, they are signed and/or ratified by national governments who then have a responsibility to uphold them and account for them in their national planning policies. It is interesting to note the discrepancies between those countries which have signed, but not ratified, accepted or approved the conventions, and those which have indeed ratified them.

The *Green Globe Yearbook (1994)* documents some fifty-one international conventions on the environment, with tables on the degrees of participation by over one hundred and ninety countries.

#### **General Environmental Concerns**

- Convention on Environmental Impact Assessment in a Transboundary Context: *Espoo Convention*

#### **Atmosphere**

- Convention on Long-Range Transboundary Air Pollution: *Transb. Air Pollution (LRTAP)*
- Framework Convention on Climate Change: *Climate Change (FCCC)*
- Vienna Convention for the Protection of the Ozone Layer: *Ozone Layer convention*

#### **Hazardous Substances**

- Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal: *Basel Convention*
- Convention on the Transboundary Effects of Industrial Accidents: *Transb. Effects of Indust. Accidents*
- FAO International Code of Conduct on the Distribution and Use of Pesticides: *Distrib. and Use of Pesticides*

**Marine Environment**

- Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter: *London Dumping Convention*
- International Convention on Oil Preparedness, Response, and Cooperation: *OPRC Convention*
- United Nations Convention on the Law of the Sea: *UNCLOS*

**Nature Conservation and Terrestrial Living Resources**

- Convention on Biological Diversity: *Biological Diversity*
- FAO International Undertaking on Plant Genetic Resources: *Plant Genetic Resources*

**Nuclear Safety**

- Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency: *Assistance Convention*
- Convention on Early Notification of a Nuclear Accident: *Notification Convention*

**Transboundary Freshwaters**

- Convention on the Protection and Use of Transboundary Watercourses and International Lakes: *Transb. Waterc. and Intern. Lakes*



International Agreements and Degrees of Participation (selected countries)

Country	General <i>Espoo Conv.</i>	Atmosphere <i>Ozone Layer Conv.</i>	Hazardous Substances <i>Basel Convention</i>	Marine Env't <i>UNCLOS</i>	Nature Conservation <i>Biological Diversity</i>	Nuclear <i>Assistance Convention</i>
Canada	•	`	`	•	`	•
Czech Republic	•	`	`	•	•	`
Ecuador		`	`		`	
Ethiopia				•	•	
Guatemala		`	•	•	•	`
India		`	`	•	•	`
Indonesia		`	`	`	•	•
Mexico		`	`	`	`	`
Poland	•	`	`	•	•	`
Zimbabwe		`		`	•	•

Key:

- states that have signed, but not ratified, accepted, or approved
- ` states that have ratified, accepted, approved, or acceded

Source: *Green Globe Yearbook 1994.*

## **V International and National Initiatives and Responses**



IDRC Photo

## INTERNATIONAL AND NATIONAL INITIATIVES AND RESPONSES

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The link between environment and health is now recognized by many national governments. The result has been a flourishing of government and inter-government activities, initiatives and policies in the areas of pollution, solid waste management, hazardous wastes, pesticides, fertilizers, and atmospheric emissions, among others.

The gender dimension, however, has remained largely absent. Some countries have been more progressive than others in this regard. For example, as profiled in this section, Canada's Great Lakes Health Effects Program held a series of women's consultations, thereby recognizing the connection between environmental degradation and women's health. A notable international example is the case of Guatemala, which is working with UNDP and WHO to implement a comprehensive policy in the area of Gender, Environment and Health.

Translating a multi-sectoral strategy into action is a difficult process. In Africa, although National Environmental Action Plans (NEAPs) have been devised for several countries, implementation is weak. Another obstacle is the "Triple Burden" many women bear when their responsibilities are increased by virtue of the fact that governments demand their "participation" in various projects from which they may ultimately derive little benefit. The nature of women's participation must also be re-examined; are they instigators, planners, decision-makers or recipients/targets of policy?

The cases selected in this tab have been chosen based on the following criteria:

- prominence in literature/weight of evidence
- burden of disease/ailments
- advice from key policy experts
- regional representation
- lessons learned from projects/policies
- coalition approaches
- level of governmental commitment and implementation

It would be impossible to profile all relevant national and international examples; thus, the following examples are not exhaustive. This section highlights some of the more progressive policies and initiatives arising from governments and inter-governmental organizations. The focus is on policy *trends* as well as policy *gaps* in this area.

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INTERNATIONAL:

**Health and Household Energy**

As a follow-up to the WHO Consultation on Epidemiological, Social and Technical Aspects of Indoor Air Pollution from Biomass Fuel held in Geneva in 1991, a project aimed at improving community health was proposed by the UN Department of Economic and Social Development (UNDESD).

This project is intended to implement some key recommendations from this consultation in selected countries, using a multisectoral approach appealing to local organizations, particularly women's organizations. The objective is to reduce exposure to biomass emissions through the introduction of small-scale alternative technologies.

Work is initially being undertaken in Ethiopia and Vietnam, with plans to expand the project to other countries contingent on funding.

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INTERNATIONAL:

**NEAPs: A Selected International Initiative**

The National Environmental Action Plan (NEAP) is an initiative which began in Lesotho, Madagascar and Mauritius. It is executed in cooperation with the World Bank and is an initiative which now involves the majority of African countries. It is an in-country, demand-driven process based on local participation. The NEAP aims to define a time-bound plan of actions including environmental policy, institutional and legal reforms, corrective measures for continuing development programs, and new investment programs.

Other African countries have developed National Conservation Strategies (NCS), assisted by the International Union for Conservation of Nature and Natural Resources (IUCN). While the NEAPs and NCSs look impressive and have high ambitions to address a range of important problems, studies have shown that most countries have failed to put plans and programs into practice. South Africa, with its unique history and current innovative political climate, may offer some lessons here. It has recently shown an interest in environmental health; the government is working on designing a model which will incorporate the environmental agenda into the broader National Reconstruction and Development Plan.

It is worth noting that while most African governments are promoting the process of developing NEAPs and NCSs, the strategies and national policies tend to focus on environmental protection with no links made to the impact of environmental degradation on men and women's health.

A review of the literature on environmental policies has led to the selection of Zimbabwe, Eritrea and Uganda as model countries with comprehensive national environmental policies supportive to gender and health. These countries share the commonality of having an enabling environment, a solid commitment towards gender equity, and open popular participation in the political process.

For more information about NEAPs:

Environment Division Technical Department,  
Africa Region, The World Bank

*NEAP Model 1:*

**Zimbabwe**

Zimbabwe is relatively well endowed with natural resources (forests, agricultural lands, livestock, water resources, wildlife and minerals). The problems associated with the management of these resources are common to many African countries, for instance overgrazing, deforestation and soil erosion. Environmental degradation in the communal and resettled areas is a result of an increasing shortage and poor management practices combined with a land tenure system which promotes overgrazing. Much of the country's natural resource base is being threatened by human activities.

In contrast to many African countries, the environmental legislation of Zimbabwe is quite comprehensive. Building upon the National Conservation Strategy of 1987, the government is in the process of developing a comprehensive Action Plan for the Environment. There are plans to establish an ad-hoc National Legislative Review Committee, which will review existing legislation with a view to ensuring that all environmental legislation would be harmonized with the envisaged framework law. In order to avoid overlapping and excessive fragmentation of laws and regulation relating to the environment, it is proposed that a single piece of legislation be developed within the context of the Action Plan. The country has developed administrative systems which, along with the Environmental Council, should be able to address environmental problems.

Environmental awareness is generally high, and a number of legislative acts deal with the need to protect the resource base. The Action Plan includes the strengthening of environmental research and education at all levels. It recommends the introduction of environmental curricula at all levels of education in order to alleviate the shortage of qualified personnel in environmental management. One of the government's education campaigns attempts to combine literacy with environmental programs run by the Department of Community Development and Women's Affairs. There is close coordination among environmental service ministries and those of Health, Energy and Water Resources and Development, Roads and Transportation, Agriculture and Rural Resettlement.

In addition to the above government institutions there are several Non-Governmental Organizations (NGOs) in the country that are active in environmental work. One of the leading rural organizations is the Organization for Rural and Agricultural Progress (ORAP), which has been active in mobilizing people in the communal areas.

*NEAP Model 2:*

**Eritrea**

Eritrea's National Environmental Management Plan (NEMP-E) was tabled in January 1995. Policy guidance and coordination for the process were provided by the Ministerial Council on the Environment composed of the Ministers of Agriculture, Construction, Energy, Mines, Water Resources, Health, Local Government, Marine Resources and Trade and Industry. In the course of its work the Technical Committee established six task forces, including one to oversee human health and pollution.

A fundamental objective of the NEMP-E was to ensure that environmental priorities were identified through a consultative process, priorities that reflect the widest possible consensus of the people, the government, experts and academics. In order to ensure this, the Technical Committee consulted a large number of teachers, women's groups, workers, youth and others. The Technical Committee also arranged several seminars throughout the country. These seminars were deemed to be of such significance that they became a permanent feature called the Eritrean Peoples' Forum on the Environment. The Forum is designed to consult the public periodically on its perception of environmental issues.

The NEMP-E clearly addresses issues of environmental health focusing on strategies to eradicate and control water-borne diseases such as malaria, leishmaniasis, schistosomiasis, gastro-enteritis, amoebiasis and shigellosis. The policy document recognizes the significant role of women in environmental issues. It recommends that the National Union of Eritrean Women:

- take a lead in the protection of the environment;
- establish within its organization a unit or a task force to deal with gender and environmental issues;
- mobilize women for environmental protection activities and increase the awareness of women about the negative impact of environmental degradation and the well-being of women and their families;
- cooperate with the National Environmental Management Plan Secretariat in drawing up programmes for environmental protection;
- develop the capacity to implement gender and environmental policies through training and research.

*NEAP Model 3:*

**Uganda**

Uganda is in the final stages of formulating a National Management policy. This exercise is part of the National Environment Action Plan process which is being carried out under the auspices of Directorate of Environment, Ministry of Natural Resources. Environmental affairs came into the limelight in Uganda in 1986, parallel with the National Resistance Movement gaining power. A Ministry of Environment Protection was created and charged with the task of ensuring that environmental degradation be curtailed, and proper environmental standards be maintained and promoted.

Over time there has been a re-organization of all ministries in the country in order to increase efficiency. Consequently all ministries dealing with natural resources - Water, Minerals, and Forestry - have been merged under one Ministry of Natural Resources, with the former Ministry of Environment Protection becoming a Directorate in the new Ministry. The NEAP process, started in 1991, did not suffer any setbacks during the re-organization. The draft policy has already been made and is still under discussion in various fora before submission to the government for adoption. The overall goal of the policy is:

Sustainable social and economic development which maintains or enhances environment quality and services, productivity on a long term basis that meets the needs of the present generation without compromising the ability of posterity to meet its own needs.

Specific Goals include:

- Enhance health and quality of life of all Ugandans and promote long term socio-economic development through sound environment management;
- Preserve and/or restore the equilibrium of ecosystems and maintain ecological processes and life support systems;
- Integrate environment concerns in all development oriented policies, plans and activities at national and local levels with community participation.



NATIONAL:

**Mexico**

The International Development Research Centre (IDRC) of Canada, together with the National Institute of Respiratory Diseases (INER) in Mexico, is working on a project to examine the impact of wood smoke from domestic cooking on women. Modifications to home cooking and heating facilities could greatly reduce exposure, but scientific proof of the detrimental effects of wood smoke on women's health is required.

This projects supports two complementary studies to address the problem of exposure to wood smoke:

- a case control study based on in- and out-patients at INER;
- a cross-sectional epidemiological study in the community of Solis, north of Mexico City.

The study will permit a quantification of the contribution of wood smoke to the significant deterioration in respiratory function of non-smoking Mexican women and will explore the possibility of an additive effect from smoking.

Researcher: Rogelio Perez Padilla  
INER  
Tlalpan 4502  
Mexico DF  
C.P. 14080  
Mexico

NATIONAL:

**Guatemala**

The World Health Organization and the Institute of Nutrition of Central America and Panama (INCAP) is undertaking a pilot study to determine the impact of reducing household air pollution on the incidence and/or severity of childhood pneumonia. In 1985 over 60% of homes in Guatemala relied upon open wood fires for cooking and heating. Mounting evidence from a number of countries suggests that burning biomass fuels (such as wood) in open stoves leads to high levels of suspended particles and pollutant gases in the home environment. This pollution is being considered as a significant risk factor for several forms of ill health in developing countries including acute respiratory infections (ARI) in children. ARI in the form of pneumonia is the leading cause of death for children under 5 years of age in developing countries.

Through the introduction of different types of stoves in a number of homes in the Quetzaltenango province of Guatemala, the pilot study has shown that significant reductions in indoor air pollution can be achieved. The mothers in the pilot study, particularly the younger ones, had no difficulty accepting the new stoves and adapting to their use. Obstacles to overcome in the introduction of these new technologies include the price and availability of propane gas, and the cultural preferences among some family members for wood fires to provide warmth for children and the elderly.

Source: WHO Working Group on Childhood Pneumonia and Household Air Pollution in Developing Countries 1993.

NATIONAL:

**Malaysia**

Poisoning from pesticides is a growing problem in Malaysia. Recent studies of rice farming in Malaysia indicate that a large proportion of rice farmers suffer from symptoms associated with pesticide poisoning (Asna et al 1989). In the 1980s, nearly 15% of all pesticide users reported experiencing some form of pesticide poisoning at least once in their lives (*World Resources 1994-95* 1995). Between 80-90% of field and general workers in the agricultural plantation sector are women, including about 30 000 pesticide sprayers. The effect of pesticides upon women's health is therefore becoming a policy priority.

In the past decade, the government established a National Poison Centre in the Department of Pharmacology, Universiti Kebangsaan Malaysia. The purpose of the Centre is to identify the risk of poisoning of the local population, establish preventive measures, diagnose and provide treatment for victims of poisoning. There is no gender component to the Centre's activities, despite the fact that it is women who are predominantly responsible for rice planting.

The Malaysian Agricultural Research and Development Institute (MARDI), part of the Ministry of Agriculture, conducts research on various pesticide-related problems. It also makes recommendations on pesticide use. The Ministry then disseminates any useful information to farmers.

In 1984, the government undertook a nation-wide campaign to promote general awareness of pesticides and how to use and store them safely. The campaign included lectures, talks, exhibitions, radio programs, posters, and documentaries to educate the public about pesticides. One component of the campaign looked specifically at health effects of pesticides (Esa and Ramasamy 1988).

NATIONAL:

**The Philippines**

The Philippines was the first country in the world to set up a body to act as a monitor its actions to meet the commitments it made at UNCED. The Philippine Commission on Sustainable Development (PCSD) has significant NGO representation at all levels and is considered to be a legitimate actor in the country's environmental policy sector.

Like Malaysia, the Philippines' use of pesticides in agriculture is increasing, particularly in the production of rice and bananas. In Central Luzan, studies have made a strong link between mortality and occupational exposure to insecticides. Past research has shown a higher incidence of pesticide poisoning in males (54%) than in females (46%) for the period 1980-87 (Castaneda and Rola 1990). Males under 40 years of age have been found to be most widely affected (Castaneda and Maramba 1980; Gonzales and Chua 1984). Pesticide residue (beyond tolerable limits) has also been found in goat milk and human milk, indicating a high degree of exposure in women as well.

One progressive move the Philippine government has taken is establishing an occupational health and monitoring program for workers who apply pesticides to banana plantations. Despite the positive nature of this program, however, the government does not intend to support this program indefinitely; it is expected that the banana industry will become more involved over time (Forget et al. 1990).

Research indicates that what is needed for more effective control and regulation of environmental degradation and its impact on human health is more government regulation and better training of agricultural extension agents and farm workers (Rola 1989).

NATIONAL:

**Indonesia**

The Indonesian Ministry of Health has within it a Directorate for Environmental Health. Indoor Air Pollution is addressed by this Directorate and the Directorate for Communicable Disease Control.

The National Program on Renovation for Rural Housing is an intersectoral collaborative program involving the Ministries of Health, Public Housing, Internal Affairs, and Social Affairs. The National Institute of Research is also working on a pilot project for new housing models and prototypes in Irian Jaya since house structure has been found to be a contributing factor to health problems caused by indoor air pollution. The new model provides for a route by which smoke and emissions may be expelled from the house.

While Indonesia has been active in policy making in the area of air quality standards for ambient air and the workplace, it has not yet addressed indoor air quality in private dwellings or public buildings. Likewise, it has implemented an act concerning Basic Provisions for the Management of the Living Environment, but has not extended these provisions to include indoor air quality (Crewe 1991).

The Indonesian Institute of Sciences undertook a study in 1992 to determine perceptions of environment and health in two villages in West Jakarta. This study was innovative in that the results were disaggregated according to gender. Although a statistically significant difference between men and women's levels of awareness of the relationship between environment and health was not found by the study, researchers did find that the majority in both sexes recognized the link between the two variables. Women, however, had a slightly lower level of awareness and were fairly ill-informed about water-related diseases (Yudomustopo n.d.).

NATIONAL:

**Canada**

*Introduction*

This section focuses on a selection of Canadian *government* initiatives dealing with gender, environment and health. While Canada has certainly not found all the solutions to the particular set of problems it confronts, the activities featured below provide an example of how one country has identified and begun to address the issues at this interface. The decision to focus on Canada was also influenced by the high degree of Canadian information available to researchers while compiling this directory, a natural corollary of the fact that this publication originated in Canada.

Following a brief overview of the evolution of Canadian environmental policy, four initiatives are highlighted in this section:

- 1) The Great Lakes Health Effects Project and its Women's Consultations;
- 2) The St. Lawrence Health Effects Project;
- 3) The Arctic Environmental Strategy;
- 4) The EAGLE project.

**The Great Lakes Health Effects Project**, and in particular its Women's Consultations, as well as **The St. Lawrence Health Effects Project**, provide insightful examples of how government and activists have worked together to create new networks of women's groups. **The EAGLE Project** provides an example of partnership between government and community, as it was designed with and is administered by the Assembly of First Nations, an umbrella group representing Canada's aboriginal peoples. Both projects demonstrate the importance of building bridges between the advocacy community and government.

**The Arctic Environmental Strategy** is part of a larger international initiative to protect this particularly sensitive environment. The Canadian component is administered by several different national and territorial agencies, and research is carried out in conjunction with local communities. This case study provides an example of how a series of multi-level partnerships can facilitate programming activities.

Tab 6 presents some Canadian *non-governmental* initiatives in the breast cancer and environment movement. Further information on Canadian organizations and agencies, including the International Development Research Centre can be found in Tab 7.

### **Canada: Health and Environment Policy**

Since the 1970s, the Canadian government has promoted the integration of health and environment policies. The initiative to create such policy is aided by the country's abundant natural resources, wealth, political stability and its interested populace. It is also assisted by the comprehensive conceptual basis of Canadian health policy, in particular, the recognition of the importance of health promotion policies which take into account social, mental and environmental factors as part of overall health. All these factors contribute to Canada's ability to develop and pursue more progressive and innovative health and environmental policies than many other countries in the North.

This section will first summarize the evolution of Canadian environmental policy since the 1980s and the concepts that inform the policy framework on health and environment. It will then present the Canadian Environmental Protection Act, which forms the legal framework for Canada's health and environment policies. The Green Plan, a landmark for Canadian health and environmental policy, and the Action Plan for Health and the Environment, the health component of the Green Plan will be discussed. The section will conclude with several examples of initiatives in this area, which come under the aegis of the Action Plan on Health and Environment.

#### *The Evolution of Canadian Environmental Policy: A Summary*

Canadian environmental policy has undergone significant changes in the last decade, transforming from "a mere garden variety policy field into a new paradigm for governing in the 1990s" (Doern 1992). The introduction of the Green Plan in 1990 (see below) was the high water mark for this process; unfortunately, the years since have seen a devolution in terms of commitment, awareness and funding. Analysts attribute the changes that occurred under the Mulroney Conservative government (1984-92) that culminated in the Green Plan to a number of national and international factors: the Brundtland Commission and the advent of the sustainable development paradigm, a series of international environmental disasters, the acid rain negotiations with the United States and the increasing presence of environmental issues on the agendas of the G-7 summits from the late 1980s onwards, an indication of the increasing recognition of the relationship between environment and economy. All these factors contributed to the change in focus, perception and acceptance of Canadian environmental policies.

*Informing Environment Policy: Health Promotion and The Ottawa Charter*

As Canadian environmental policies have evolved, they have widened to include links to human health issues. A key to this progressive approach to health and environment lies in the focus on health promotion as part of health policy. In 1974, the federal government released *A New Perspective on the Health of Canadians* (the Lalonde Report), which introduced the term "health promotion" into the federal lexicon as part of a new conceptual framework for health policy in Canada. Health promotion received a great deal of international attention and the concept was a cornerstone of the landmark Ottawa Charter eight years later. According to the Charter, Health Promotion

*recognizes the physical, mental and social dimensions of health and their dependence on healthy living conditions. Health promotion is committed to equity, community participation and cooperation among sectors and its mission is to enable, mediate and advocate (Ottawa Charter for Health Promotion).*

The incorporation of the concept of health promotion into federal policy is significant for health and environment policy, particularly in its comprehensive definition of the determinants of health. These determinants include peace, food, shelter, education, social justice, a stable ecosystem and sustainable resources. This multifaceted approach to health has been incorporated into several Canadian health and environment policies.

*The Canadian Environmental Protection Act*

Passed in 1988, the *Canadian Environmental Protection Act* (CEPA) gives the federal government stronger powers to regulate the use of hazardous substances in order to protect both the environment and human health from dangerous or toxic substances. It acts as the enabling legislation for other environmental initiatives. Working on the premise that there are thousands of chemicals presently in commercial use in Canada, CEPA proposes that only scientific inquiry can determine which are harmful and should be controlled. It is administered jointly by the Department of Environment (DOE) and Health and Welfare Canada (HWC). DOE is responsible for the environmental assessment and development of environmental quality guidelines, and Health and Welfare for assessing human health implications and developing appropriate guidelines.

CEPA requires Environment Canada and Health and Welfare Canada to prepare and publish a **Priority Substances List** that identifies substances including chemicals, groups of



chemicals, effluent and wastes that may be harmful to the environment or health. The Act also requires both departments to assess these substances to determine if they are toxic.<sup>1</sup>

Under CEPA, a substance is considered toxic if it enters the environment in amounts that may:

- harm the environment (for example, PCBs can accumulate in fish and cause reproductive problems in the wildlife that eat the fish);
- endanger the environment on which human life depends (for example, CFCs deplete the ozone layer and increase exposure to ultraviolet radiation which may increase the risk of skin cancer);
- endanger human life or health (for example, lead can harm the development of the human nervous system).

If a substance is assessed as toxic it will be removed from the Priority Substances List and may be placed on the List of Toxic Substances, becoming subject to the relevant regulations. Canada is also a signatory to several international agreements that control toxic substances such as sulphur dioxide, nitrogen oxides, chlorofluorocarbons and halons. Health and Welfare Canada also acts as National Correspondent for the United Nations Environment Program's International Registry of Potentially Toxic Chemicals.

CEPA also regulates new chemicals through the **Domestic Substances List (DSL)**, which identifies all chemicals already in use in Canada. Anything introduced into use in Canada which is not on the list is considered new, and the industry is required to provide certain data on it before it can be used commercially. HWC and DOE evaluate the new substance and recommend the necessary measures. This process is also applied to new biotechnology products, which are also subject to specific tests to confirm that they do not affect human health. (The public and the government of Canada do not always agree on the safety of products; see Tab 3, Policy Issues, North America, for a discussion of the controversy around the introduction of recombinant bovine growth hormone (rBGH) into the Canadian milk supply.)

DOE enforces CEPA through regular inspections and investigations. Penalties for violating regulations governing safe handling, use and disposal of toxic substances can be severe; fines up to \$1 million dollars can be imposed, as can terms of imprisonment for up to five years.

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<sup>1</sup> According to this definition toxicity depends not only on the toxic properties of the substance, but also on the amount of the substance to which humans are exposed.

in any violation of CEPA regulations. However, while the regulations are in place, CEPA has proved difficult to enforce, and continuing budget cuts to DOE have made it increasingly difficult to maintain existing enforcement capabilities.<sup>2</sup>

### *Canada's Green Plan*

Canada's Green Plan, introduced with much fanfare in 1990, is a remarkable document. For the first time, conceptual links between environment and economy were made explicit, as were links between environment and health. As Doern comments, "compared to any previous environmental initiative, or indeed, to many other policies in the last two decades, the ... Green Plan is truly ambitious. It sets out a comprehensive series of goals, over 100 specific initiatives, and many defined targets and scheduled action plans" (Doern 1992). Unfortunately, in the years since its introduction, funding has been cut and government commitment has waned. Still, the document itself remains a testimony to Canada's vision, should it have the capacity to fulfil it.

Canadian public opinion was a key part of developing the Green Plan. A series of public opinion polls conducted in the late 1980s and early 1990s (Decima, Summer 1987; Environmental Monitor, Winter 1988; Angus Reid, 1989; Gallup, 1992) found that up to 80% of those interviewed expressed serious concerns about human health and safety as a result of environmental pollution, both currently and in the future. Clearly, many Canadians see the environment linked to human health; one study showed that while 53% of Canadians felt that the environment currently posed problems to human health, 87% felt that it would in 25 years.

Topping the list of concerns were air pollution and water quality (Gallup 1992). The polls also showed that the Canadian public expected a strong response from their federal government - as opposed to the provincial or local - to their concerns. Indeed, as Doern comments, "The intensity of public opinion in support of stronger environmental action cannot be denied - Canadians are, in fact, miles ahead of their politicians and rightly want political leadership on this issue." Clearly, such public support is a valuable asset if it can be sustained.

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<sup>2</sup>Sources: "Human Health and the *Canadian Environmental Protection Act*" in *Issues, Health and Welfare Canada, Health Protection Branch, Sept. 20 1991*, "Preparing the Second Priority Substances List under the CEPA: An Invitation to Stakeholders to Comment on the Federal Government Proposals," Environment Canada, Health and Welfare Canada, April 1993, *Vital Link* 1992.

In order to respond effectively to these concerns, the Canadian government chose a multidisciplinary/multisectoral, long-term approach to environmental problems using both public consultations and scientific conferences. The Canadian government took the process of developing the Green Plan to the people of Canada. Some 6000 plus Canadians attended information sessions held across the country and 3500 people participated in two one-day workshops. As well, countless other Canadians wrote in to express opinions. The end result was a uniquely Canadian version of environmental planning. This process resulted in the launching of *Canada's Green Plan* in December 1990.

The Green Plan was originally conceived to be a five-year, \$3 billion comprehensive national strategy and action plan for sustainable development, intending to "*secure for current and future generations a safe and healthy environment and a sound and prosperous economy.*" The Green Plan is designed to attack the underlying cause of environmental problems and environmentally unsustainable development: poor decision making at all levels of society. It marked a fundamental shift for Canadian environmental policy, towards seeing environmental protection and economic development as mutually supporting - instead of mutually exclusive - and inextricably linked to the health and well being of Canadians.

The Plan has been effective given its operating constraints. It was subject to severe funding cutbacks and indeed never received the full amount that was originally allotted. In addition, public interest dropped, and the issue went to the proverbial back burner. Some charge that the very structure of the Plan contributed to its ineffectiveness (Hoberg & Harrison 1994; Doern 1992). Mulroney's Conservatives favoured a pro-market, free trade-oriented method of government. For that style of governing, the Green Plan was rather interventionist, but it was thought that it was designed that way to respond to public demand for a show of national unity on the subject of the environment. Still, when the Plan is analyzed, it becomes clear that most of it is devoted to public information, and contains few direct measures or market incentives (Hoberg & Harrison 1994; Doern 1992). When Jean Chretien's Liberals took power in 1992, they stated that they intended to revive the Green Plan, although they were not required to do so since the Plan is not policy *per se*. Despite the Liberal commitment, the Plan is currently fading into oblivion.

In the final evaluation, while the Plan provided a strong conceptual framework for action on the environment, its promise was never fulfilled due to the combination of decreasing government commitment, aided by a change in leadership, declining public interest, and most of all, severe funding cuts.

### *Action Plan on Health and the Environment*

In 1992, Health and Welfare Canada initiated the *Action Plan on Health and the Environment* (APHE), as a component of Canada's Green Plan. While it too has been subject to funding cuts, it is still in operation. HWC participated in the consultation process for the Green Plan in 1990, from which they derived 12 areas of health recommendations: air quality, information and education, water quality, waste management, monitoring, regulations under CEPA, food quality, risk management, research activities, radioactivity, consumer products, and international and intergovernmental co-ordination (Myres & Wiedman 1991). HWC developed these areas of concern into the four major action areas of the APHE:

#### *1) Regulation and monitoring*

One part of HWC's role in protecting the health of Canadians is to set standards and administer regulatory functions with regard to water, air, soil and food quality. These tasks have become more complicated because of the increase in environmental pollutants. This subcomponent includes the monitoring of the effect of environmental hazards on human health as another way to reduce health risks associated with air, water, soil and food.

#### *2) Groups at risk*

Some Canadians are more vulnerable to environmental health risks than others. This may be due to age, as in the case of infants and the elderly, geography, as in the case of those who live in the Great Lakes Basin, lifestyle, such as the aboriginal population whose diet may depend in large part on the environment, or a combination of factors, as in the case of Northerners who live in a particularly environmentally sensitive area and whose diet is often made up primarily of country foods. Through this subcomponent, HWC will assess the differential risks for these particular populations, inform these populations and develop initiatives to address these problems.

#### *3) Facilitating individual and community action*

Action on environment and health must take place at all levels. Canadian involvement at the individual and community levels began with the nation-wide consultations on the Green Plan, where citizens indicated their willingness to be part of initiatives. Through this subcomponent, APHE will help inform people about the environment and health implications of their actions by interpreting scientific information for lay people and assisting communities in promoting healthy environments.

4) *International activities*

By their very nature, health and environment issues are international issues. Consequently, effectively addressing them requires global cooperation. This subcomponent enables HWC to work with other national and international agencies in this field, and ensures that Canada has a voice in relevant international fora.

Several examples of APHE initiatives are outlined below.

### **Goals of Canada's Green Plan**

#### **Goal One: Clean Air, Water and Land**

Assurance that citizens today and tomorrow have the clean air, water and land essential to sustaining human and environmental health

#### **Goal Two: Sustainable use of Renewable Resources**

The shifting of forest management from sustained yield to sustainable development.

#### **Goal Three: Protection of Our Special Spaces and Species**

The setting aside of 12% of the country as protected space.

#### **Goal Four: Protecting the Integrity of Our North**

Preservation and enhancement of the integrity, health, biodiversity and productivity of Canada's Arctic ecosystems.

#### **Goal Five: Global Environmental Security**

Phasing out CFCs by 1997, and methyl chloroform and other major ozone depleting substances by the year 2000.

#### **Goal Six: Environmentally Responsible Decision Making**

Provision of timely, accurate and accessible information to enable Canadians to make environmentally sensitive decisions.

#### **Goal Seven: Minimizing the Impact of Environmental Emergencies**

Quick and effective response to threats posed by pollution emergencies due to human activity and naturally occurring environmental emergencies.

**The Green Plan in Action:**  
*The Great Lakes Basin*

An important issue for Canadians is the continuing contamination of the Great Lakes Basin (GLB), the largest source of freshwater in the world. This important waterway stretches halfway across the North American continent, encompassing the province of Ontario and the states of Minnesota, Wisconsin, Michigan, Ohio, Pennsylvania and New York. The GLB has served as the industrial centre for Canada and the United States for over a century and the area is home to the majority of the Canadian population.

A major Canadian federal report released in 1991 noted that because the GLB is exposed to a wide variety of persistent toxic chemicals, the elevated levels of exposure that citizens face can pose a threat to human health (*Vital Link* 1992). Such chemicals come from a number of sources, including industrial processes, farms, leaking water sites and emissions from combustion sources such as municipal incinerators and motor vehicles. Studies completed to date indicate that the general population living in the GLB is probably not exposed to higher levels of the major pollutants than people who live in other North American urban centres, as exposure estimates for the general adult population are usually below established acceptable intakes. Still, certain subpopulations are vulnerable. Foetuses or breast-fed infants could be exposed to higher levels of contaminants than the general population through placental transfer and breast milk. Aboriginal groups or anglers who consume locally caught fish and wildmeat are also at increased risk. In addition, individuals who have respiratory diseases may be at greater risk from the effects of airborne pollutants in the basin.

The precise nature and severity of the health effects and the specific population affected are still largely unknown and much research remains to be done. Current work includes epidemiological and toxicological investigations of cancer incidence and birth deformities and relationships between exposure to contaminants in the Great Lakes ecosystem and a wide variety of health effects, particularly on the immune system, reproduction and infant development. Issues such as reproductive outcomes, the safety of breastmilk, infant development and respiratory effects in young children have continued to be of great concern to women living in the Great Lakes. (See "The Great Lakes Health Effects Program; Women's Consultations" below.)

*Human Health Effects from Exposure to Great Lakes Contaminants*

The focus of concern over human health effects is the presence of toxic chemical contaminants throughout the Great Lakes ecosystem, particularly those chemicals that have

metabolic processes. This focus represents a move away from the almost exclusively regulatory focus on protecting people from substances which cause cancer or structural birth defects, and highlights the effects that some chemicals can have at even minute exposures, including effects that are passed down from parents to their children.

Using various screening techniques, 263 contaminants have been confirmed as being present in measurable concentrations in either the water, sediments or in the tissue of fish, wildlife or humans. This list includes 126 substances for which evidence exists of toxic effects on various life processes.<sup>3</sup>

*Routes of Exposure:*

There are a number of routes of exposure to contaminants in the GLB:

- food consumption (major route, primarily fish);
- drinking water (secondary route);
- inhalation of polluted air;
- dermal exposure to waterborne contaminants.

*Health effects:*

Morbidity and mortality rates due to cancer, birth defects and other illnesses thought to be related to chemical exposures in the GLB do not differ significantly when compared to those of other similarly industrialized areas. There are some exceptions; respiratory problems appear to be higher among people living in industrialized areas around the GLB. However, generalized averages like this may hide the fact that some specific subpopulations who have higher contaminant exposure levels or who are more sensitive to contaminants (foetuses, the elderly) may be suffering from high rates of health problems.

As well, subtle health effects due to long-term, low-level exposures to a mixture of toxic chemicals are difficult to document scientifically. Traditional health outcomes (i.e. cancer,

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<sup>3</sup> A toxic substance is defined by the GLWQA as a "substance which can cause death, disease, behavioural abnormalities, physiological or reproductive malfunction in any organism or its offspring, or which can become poisonous after concentration in the food chain, or in combination with other substances."



birth defects) that are relatively severe and well recorded may be somewhat insensitive as health indicators of the low-level exposure to environmental chemicals. The more subtle effects on reproduction, the immune system, and child development need to be studied (*Your Health and the Environment Factsheet*).

### *The Jacobsen Study*

In the early 1980s, the Jacobsen study found warning signs of impaired development in babies born to mothers who consumed large quantities of Lake Michigan fish. Earlier studies had found persistent, bioaccumulative pesticides and industrial chemicals in human blood cells and fat cells, in male and female reproductive organs, and in breast milk. Because some of these same chemicals had been linked to reproductive failures in fish and wildlife, it seemed likely that human babies might also be affected. Some of these chemicals could pass through the placenta to reach the developing foetus when it is especially sensitive to toxic substances.

The research team collected data on babies born in Michigan hospitals. After controlling for more than 30 possible confounding factors, the researchers found that babies of women who consumed large quantities of Lake Michigan fish tended to have lower birth weights, smaller head circumference and to be born earlier - all warning signs of impaired development. These babies also did not do as well as others on tests given shortly after birth for alertness, reflexes and mobility. Several months later, they were less able than other babies to recognize new pictures from familiar ones. By age 4, the children were lagging behind the others in short term memory.

Cases such as these have been presented by the women of the GLB to highlight the necessity of developing indicators which take into account their concerns, need for knowledge and the health effects of environmental pollution. Women's participation in interpretation, evidence evaluation and decision-making issues remains to be addressed.

### *The Great Lakes Water Quality Agreement*

The recognition of the need to restore the water quality of the Great Lakes watershed led to the governments of Canada and the United States signing the *Great Lakes Water Quality Agreement* (GLWQA) in 1972. While the 1972 agreement was primarily based on the chemical content of the water, revisions in 1978 and again in 1987 adopted an ecosystem approach to restoration and maintenance. This approach takes into account the interdependency of all parts of the ecosystem: plants, animals, air, land and water and of course, people.

**Goals from the Great Lakes Water Quality Agreement  
(relevant to human health)**

- the establishment of monitoring and research programs to identify the impact of persistent toxic substances on the health of humans and the quality and health of living aquatic systems;
- the development of the use of reproductive, physiological and biochemical measures in wildlife, fish and humans as health effects indicators and the establishment of a data base for storage, retrieval and interpretation of the data; ...and
- conducting research to determine the significance of effects of persistent toxic substances on human health and aquatic life (International Joint Commission 1978a).

In addition, the 1978 report states that both parties shall "develop approaches to population-based studies to determine the long-term, low-level effects of toxic substances on human health" (International Joint Commission 1978b).

*The Great Lakes Action Plan*

The GLWQA commits the country to measures to restore and maintain the waters of the GLB. The *Great Lakes Action Plan* (GLAP) was announced by the Canadian federal government in 1989. It is administered by Health and Welfare Canada and involves six federal departments: Agriculture Canada, Environment Canada, Fisheries and Oceans, Public Works Canada, Transport Canada, and Health and Welfare Canada.

Within the Plan, there are three distinct initiatives: the *Great Lakes Cleanup Fund*, to address the major areas of concern in this region; the *Research Program*, for environmental quality and assessment; and the *Great Lakes Health Effects Project*. In addition to the GLAP, Environment Canada has launched a prevention initiative designed to target industry, the public and governments to work together to prevent the creation and release of pollutants.

*Canadian Initiative 1:*

**The Great Lakes Health Effects Program**

The *Great Lakes Health Effects Program (GLHEP)* merges the concepts of health promotion and health protection in its framework. It focuses on both action and research, taking a multidisciplinary, diverse and participatory approach to the effects of toxic contamination on human health (See "GLHEP Goals" below). Primarily addressing the physical parameters of health, GLHEP focuses on determining hazards and the nature and extent of risk. The program also employs many principles of health promotion to achieve its aims.

The responsibilities of GLHEP include monitoring the exposure of populations in the GLB to contaminants, studying possible effects of such exposure and finding ways for people to reduce their exposure. GLHEP is committed to prevention, specifically by supporting the philosophies of zero discharge and virtual elimination of persistent toxic substances. The program also has a strong commitment to public participation. Public consultation and information sessions have been held and public and media reports produced. GLHEP has also developed and maintained working partnerships with regional health departments, community hospitals and physicians.

**The Great Lakes Health Effects Program**  
*Mission Statement*

To protect human health from the effects of exposure to environmental contaminants in the Great Lakes Basin.

*Goals*

1. To determine the nature, magnitude, and extent of effects on health associated with exposure to contaminants from all sources in the Great Lakes. (Research/Hazard Identification)
2. To develop and implement strategies to reduce or eliminate risks to human health related to pollution in the Great Lakes Basin. (Evaluation/Hazard Management)
3. To increase communication and consultation amongst agencies and the public and to provide timely, useful information to foster action on health and environmental issues. (Communication and Consultation)

*Guiding Principles*

- achieve public participation through developing working partnerships;
- ensure effective inter- and intra-agency program coordination and cooperation (working better together);
- support the philosophies of prohibition of discharge of substances in toxic amounts and the virtual elimination of persistent toxic substances.

**The Great Lakes Health Effects Program**  
*Women's Consultations*

Recognizing that health and environment issues in the Great Lakes Basin have a differential impact on women, the Great Lakes Health Effects Program (GLHEP) has been active in promoting research and action in this area. In 1992-1993, the Consultation Unit of GLHEP identified and established a network of groups concerned about women, health and environment in the Great Lakes Basin. A second consultation designed to address specific concerns and needs around the issue was held in May 1993. Cosponsored by the Ontario Farm Women's Network, the meeting brought together 25 participants from a variety of environmental organizations, women's interest groups, community and health action groups who are active in the Great Lakes Basin. In March 1994, a third consultation resulted in the formation of the *Women's Network on Health and the Environment (WNH&E)*.

**Objectives of the Consultations:**

- to increase knowledge and understanding of the critical link between health and environment in the Great Lakes;
- to foster information-sharing between represented organizations and researchers;
- to discuss levels of public awareness and public perception of women's health and environment issues; and
- to define and determine actions, clarify positions and build partnerships for the future.

**The Great Lakes Health Effects Program**  
*Women's Consultations*

**Issues Addressed**

Consultation participants stressed the importance of promoting community involvement in any action on health and environment issues, noting that communities have an increasing responsibility to help create healthy ecosystems for their citizens. They advocated empowering communities to help share the burden of solving health and environment problems with governments and industry, and to create momentum for change.

The need to keep women at the forefront of health and environment issues was also expressed. It is too often the case that men make decisions on issues that affect women's health. The unique style of woman-to-woman communication was emphasized as an important asset in outreach. Participants acknowledged a need for women to strengthen their communication techniques, including public speaking and media skills in order to utilize these skills to the best of their abilities. Participants also emphasized the need for parallel initiatives in education and action.

The need to raise levels of awareness of the links between environment and human health in the Great Lakes Basin was identified as a priority. Women's groups were seen to have a role in the effective dissemination of information. This would include examining the accessibility of available materials, identifying the target groups, making language more user-friendly and exploring communications options such as videos and pamphlets for public information purposes.

*Contacts:*

For more information on the Great Lakes Health Effects Program's Women's Consultations, please contact Mary Heegan at the Great Lakes Health Effects Program, Main Statistics Building, Tunney's Pasture, Ottawa, Ontario, Canada, K1A 0K9 tel:(613) 957-1876, fax: (613) 954 -7612

### **The Women's Network on Health and the Environment**

While the original intention of the Women's Network on Health and the Environment was simply to keep in touch by sharing information through a newsletter entitled Connections, the Network soon felt the need to "speak out and take action!" on issues ranging from the introduction of the bovine growth hormone into the Canadian milk supply to the link between breast cancer and the environment. Their concerns and intentions are stated below in their platform for action.

The consultations and the formation of the Network reflect the innovation and enthusiasm of the women of the Great Lakes Basin in mobilizing around this issue. The results of the consultation have added to the emerging recognition - and growing body of literature around the relationship between women's health and the environment.

*Contacts:*

For more information on the Women's Network for Health and the Environment, and copies of their newsletter, Connections, please contact Liz Armstrong, WNH&E, c/o the WEED Foundation, 736 Bathurst St., Toronto, Ontario, Canada, M5S 2R4. Tel: (416) 516 2600, Fax: (416) 531 6214

**The Women's Network on Health and the Environment**  
*Platform of Action*

The purpose of the WNH&E is to make connections between deteriorating health, including diseases such as breast cancer and endometriosis, and environmental degradation.

We believe in environmental justice for all women, regardless of race, socioeconomic status, religion, age, abilities/disabilities or sexual orientation.

Our aim is to share information with network members and others about a variety of environmental issues, such as pesticides, the nuclear fuel chain and toxic chemicals which have a detrimental effect on women's health and the health of all living beings. We also support the "zero discharge" of persistent toxic chemicals including radionuclides and the "reverse onus" principle, which requires the users of chemicals and other potentially dangerous substances to prove that any discharges into the environment are safe (rather than putting the onus on citizens to prove after the fact that pollutants are harmful).

Our mandate includes speaking out against unacceptable government standards on environmental matters, corporate military and community practices that pollute and speaking out on behalf of all clean production methods that promote sustainability.

Our commitment is to collaborate with the women most directly affected by environmental degradation such as farmers and workers in the manufacturing, chemical and nuclear industries, as well as marginalized communities, including aboriginal people, women of colour, poor women, lesbians and others.

We believe we have a right to live in communities where the air we breathe, the water we drink, the food we eat and the places we work are clean and poison free.

To this end, we support the work of groups such as the International Joint Commission on the Great Lakes, and the joint WEDO/Greenpeace USA project, "Women, Health and Environment: Action for Cancer Prevention."

We invite all women who share these goals to join us in this work and to become part of our growing network.

Source: *Connections*, March 1994



*Canadian Initiative 2:*

**The St. Lawrence Health Effects Project**

Stretching over 1500 kilometres from the embouchure of Lake Ontario, through the province of Quebec to the Atlantic ocean, the St. Lawrence River is a key Canadian waterway. 70% of Quebec's residents live in its vicinity and half of the province draws its drinking water from the river. However, some 260 000 tonnes of hazardous waste are illegally dumped into the river every year. The St. Lawrence Action Plan (SLAP) is a joint federal/provincial initiative introduced in 1988 to de-pollute, restore, protect and conserve the St. Lawrence and its tributaries. A health component was included in the second five-year phase of the SLAP, which was announced in April 1994. This component was developed in response to concerns about the potential health risks of the river waters, specifically drinking water quality, fish and wildlife consumption (including the consumption of seagull eggs, which have been found to contain highly concentrated amounts of PCBs), and dermal exposure to waterborne contaminants through recreational activities such as swimming, windsurfing and water skiing. The program aims to characterize the health of basin residents in terms of exposure to environmental contaminants, thus identifying groups at risk from exposure, and to develop appropriate risk management strategies in consultation with those groups. The long-term objectives of SLHEP are to:

- assess the risks associated with contaminants by developing indicators of exposure;
- prepare reports on current knowledge regarding contamination risks to the public;
- develop and communicate strategies for reducing risk;
- monitor contamination of human tissues
- publish a report on public health in the twenty Zones of Primary Intervention.

Currently, there is no gender-specific programming, apart from studies analyzing cord blood and placenta to determine levels of contamination. All data collected will be gender-disaggregated, in order to provide a data base for future gender-oriented programs.

Sources: *To Our Health, St. Lawrence ! St. Lawrence Vision 2000, St. Lawrence Vision 2000, An Action Plan to Conserve and Protect, Action Plan on Health and Environment, Mid Year Review 1995*

*Canadian Initiative 3:*

**The Arctic Environmental Strategy**

On June 14 1991 at Rovaniemi, Finland, the Government of Canada (through Indian and Northern Affairs Canada) and seven other circumpolar countries adopted a comprehensive *Arctic Environmental Strategy* (AES). This occasion represented the first time that all eight Arctic countries - Canada, Denmark, Finland, Iceland, Norway, Sweden, the Former Soviet Union and the United States agreed to work cooperatively to protect the Arctic environment. The full involvement of the indigenous peoples of the Arctic in developing and implementing AES has been integral to the success of the project which provides an example of the importance of multi-level partnerships in this area.

*Goals*

Recognizing that this region is particularly sensitive to pollution and that much of its human population and their culture is directly dependent on the health of the region's ecosystem, AES calls for a coordinated attack on the problems surrounding the transport of persistent organic contaminants, heavy metals and other pollutants in the Arctic. The goal of AES is to preserve and enhance the integrity, health, and biodiversity of the Arctic ecosystem for the benefit of present and future generations. While the conceptual linkages between health and environment are very strong in the Strategy, it has not yet fully developed its gender component. At this point, as yet early in the Strategy, gender analysis is limited to gender-disaggregated data and projects focusing on cord blood and reproductive health. AES is intended to be a living document, and there will be a continuing emphasis on consultation during the implementation process.

AES is based on the premise that due to their lifestyle, aboriginal peoples are frequently more exposed than the general population to environmental contaminants, particularly those contaminants found in fish and wildlife. Accordingly, the objectives of the Strategy are as follows:

- to ensure that indigenous people's perspectives, values and practices are fully accommodated in the planning, development, conservation and protection of the Arctic region;

- to ensure better decision-making through the integration of local, regional, national and international interests as part of new legal, constitutional and cooperation arrangements;
- to develop international agreements to use, conserve and manage resources and protect the circumpolar Arctic environment.

### *Human Health in the Arctic Environmental Strategy*

AES has a subcomponent dealing directly with human health issues. Its objectives are as follows:

- to assess human exposure to contaminants, including measurement of contaminant levels in humans, identification of sources of exposure (with particular consideration of traditional diet and calculations of intakes from all sources;
- to examine the relationship between contaminant exposures and effects in humans;
- to evaluate the health benefits of traditional diets;
- to conduct health risk assessments, including evaluations of the risks of contaminants in country foods and the known benefits of traditional diets;
- develop risk management strategies and encourage and support actions that will reduce or eliminate future human exposure to contaminants (including personal risk reduction strategies, and strategies to reduce local and long range contamination in the environment).

These objectives are meant to enable the program to consult with, communicate to and provide the advice and information required by northerners. Achieving these objectives will produce the following:

- data on contaminant levels in country foods and human tissues, the effects of food preparation methods on contaminant levels, and risk benefit information for use by health officials and community leaders in the development of health advisories and consumption recommendations;

- estimates of human exposure based on contaminant levels in humans as well as in food species consumed by humans;
- evaluation of the nutritional importance of country foods in a healthy diet relative to risk from contaminants in country food;
- determination of actual or potential effects of contaminants on health and clarification of the link between atmospherically transported pollutants and human health (this information is required for international control of these chemicals).

Research on the consumption of traditional foods, the differences in contaminant levels, (human body burden) do include a gender focus, and the resulting data is gender-disaggregated.

### *Programs and Activities*

The rationale for the human health subcomponent program is based in the evidence that there is widespread ecosystem contamination of the Arctic environment by organochlorines. This programming will allow for a determination of the level of such products in human populations, their spatial and temporal trends, as well as an indication of what further actions may be necessary to protect human health in the North. The two projects discussed below are examples of the gender focus in AES programming; as mentioned above, it is found mainly in the focus on cord blood and reproductive health.

#### **1) Human Contaminant Trends in Arctic Canada**

##### *Objectives*

- to develop and refining mechanisms for monitoring human exposure to environmental contaminants;
- to determine baseline levels of specific organochlorines and metals in maternal and cord blood;
- to establish interim blood guidelines for neonates and women of child-bearing age which are culturally and geographically appropriate;
- to contribute to territorial, national and international environmental contaminant databases;

- to investigate the relationship between contaminant levels in maternal blood and contaminant levels in cord blood;
- to investigate the contribution of lifestyle choices, including occupation, use of tobacco products and traditional (fish and wildlife) food use, to levels of contaminants in maternal and cord blood;
- to assess the need for feasibility of additional monitoring initiatives examining environmental contaminants in people;

### *Methodology*

This project uses environmental health posters, a video entitled "Environmental Contaminants in the North," program fliers and fact sheets to gain support and the informed consent of participants. In addition, monthly newsletters are distributed to participants providing information on pre- and post-natal nutrition as well as monitoring updates. Participants provide blood samples and lifestyle surveys.

The project has also held environmental contaminant workshops to follow up earlier information fora in the region. These workshops are intended to exchange information regarding contaminants and to provide a basis for the formation of a consultation working group, which will provide advice to the health board on the development and implementation of a maternal and cord blood monitoring system.

## **2)Cord Blood Study - Nunavik**

### *Objectives*

The general objective of this project is to monitor pre-natal exposure to food chain contaminants in order to assess spatial and temporal trends. The specific objectives are as follows:

- to measure lead mercury and organochlorines in the cord blood of Inuit newborns;
- to link levels of exposure to personal (mother's age, weight, parity), environmental (community) and dietary variables (Fatty acid content in plasma, phospholipids);

- to compare the levels of exposure with data from different parts of the Canadian Arctic, the rest of Canada and other circumpolar countries.

### *Rationale*

Most epidemiological and experimental studies on health effects related to lead, mercury and PCB exposure suggest that foetuses have the highest vulnerability to adverse neurodevelopmental effects. In the Great Lakes area, results reported in 1982 indicated that newborns of women who had eaten large quantities of contaminated fish were smaller at birth. (See "Great Lakes Health Effects Project - Women's Consultations.") This is particularly cogent to the Inuit population because of their diets. Since lead, mercury and organochlorines are transferred to the foetus through the placental barrier, pre-natal exposure can be properly assessed by measuring the concentration of contaminants in the cord blood at birth.

### *Methodology*

Information on the health status of the infant is collected using a confidential questionnaire. The following information is requested:

- name, village of residence
- birthdate
- sex
- weight, length, head circumference
- gestational age
- haemoglobin of mother
- APGAR
- smoking
- mother's blood pressure

Venous blood, plasma and placenta are collected at birth and sent frozen to a lab every two or three months to the laboratory for analysis.

**June 14 1991 - The Rovaniemi Declaration - signed by the 8 Arctic Nations  
Declaration on the Protection of the Arctic Environment**

We, the representatives of the Governments of Canada, Denmark, Finland, Iceland, Norway, Sweden, the USSR and the USA:

Meeting at Rovaniemi, Finland for the First Ministerial Conference on the Protection of the Arctic Environment;

Deeply concerned with the threat to the Arctic environment and the impact of pollution on fragile Arctic ecosystems;

Acknowledging the growing national and international appreciation of the importance of Arctic ecosystems and an increasing knowledge of global pollution and resulting environmental threats;

Resolving to pursue together in other international environmental fora those issues affecting the Arctic environment which broad international cooperation;

Emphasizing our responsibility to protect and preserve the Arctic environment and recognizing the special relationship of the indigenous peoples and local populations to the Arctic and their unique contribution to the protection of the Arctic environment;

**Hereby adopt** the Arctic Environmental Protection Strategy and commit ourselves to take steps towards its implementation and consider its further elaboration.

**We commit ourselves** to a joint Action Plan of the Arctic Environmental Protection Strategy which includes:

- cooperation in scientific research to specify sources, pathways, sinks and effects of pollution, in particular, oil, acidification, persistent organic contaminants, radioactivity, noise, and heavy metals as well as sharing of these data;
- assessment of potential environmental impacts of development activities;
- full implementation and consideration of further measures to control pollutants and reduce their adverse effects to the Arctic environment.

### **The Rovaniemi Declaration**

**We intend** to assess on a continuing basis the threats to the Arctic environment through the preparation and updating of reports on the state of the Arctic environment, in order to propose further cooperative action.

**We also commit ourselves** to implement the following measures of the Strategy:

- Arctic Monitoring and Assessment Programme (AMAP) to monitor the levels of, and assess the effects of, anthropogenic pollutants in all components of the Arctic environment. To this end, an Arctic Monitoring Assessment Task Force will be established. Norway will provide for an AMAP secretariat;
- Protection of the Marine Environment in the Arctic, to take preventative and other measures directly or through competent international organizations regarding marine pollution in the Arctic irrespective of origin;
- Emergency, Prevention, Preparedness and Response in the Arctic, to provide a framework for future cooperation in responding to the threat of environmental emergencies;
- Conservation of Arctic Flora and Fauna, to facilitate the exchange of information and coordination of research on species and habitats of flora and fauna;

**We agree** to hold regular meetings to assess the progress made and to coordinate actions which will implement and further develop the Arctic Environmental Protection Strategy.

**We agree** to continue to promote cooperation with the Arctic indigenous peoples and to invite their organizations to future meetings as observers.

**We agree** to meet in 1993 and accept the kind invitation of the Government of Denmark and the home rule government of Greenland to hold the next meeting in Greenland.

Wherefore, we, the undersigned Representatives of our respective Governments, recognizing its political significance and environmental importance, and intending to promote its results, have signed this Declaration.



*Canadian Initiative 4:*

**The E.A.G.L.E. Project  
The Effects on Aboriginals from the Great Lakes Environment Project**

The Effects on Aboriginals from the Great Lakes Environment (EAGLE) Project is a community-based, environmental epidemiological study and risk/exposure assessment of how aboriginal health is affected by environmental contaminants in the Great Lakes Basin. The EAGLE project is a cooperative effort involving Medical Services Branch of Health Canada, the Assembly of First Nations (AFN) and First Nations communities. Funding is provided by the Action Plan for Health and Environment, (APHE), which is Health Canada's component of Canada's Green Plan. First Nations people play an active role in all decisions, and project staff are First Nation members.

By incorporating Western science into traditional Aboriginal holistic approaches to environmental health issues, the EAGLE project provides an innovative and culturally relevant approach to environmental health studies.

*Goals*

The EAGLE project is conducting a community based health study to examine the impacts of environmental contaminants on the holistic health and well being of individuals and communities in accordance with sound scientific principles. This includes:

- carrying out a comprehensive health study and risk/exposure assessment of the 61 targeted First Nations communities located within the Great Lakes Basin and in the process develop mechanisms for health protection;
- promoting environment and health education and awareness among communities;
- incorporating principles of both quantitative and qualitative risk assessment and exposure assessment (environmental epidemiology) in a weight of evidence approach.

### *Objectives*

- to identify the Native communities in the Great Lakes and their concerns related to the environment;
- to review and identify all the scientific information relevant to Native health in the Great Lakes Basin;
- to identify conceptual models and tools for community epidemiology research related to Natives and environmental contaminants;
- to ensure that any abnormal health findings are communicated immediately to the individual concerned and/or the individual's physician;
- that EAGLE project reports, results, conclusions and recommendations will be distributed to participation Native communities, Native and non-Native organizations and government departments;
- that First Nation communities will be involved in all aspects of the EAGLE project.

### *Methodology/Conceptual Approaches*

The EAGLE project uses a risk assessment process based on one developed by the National Academy of Sciences and used by the United States Environmental Protection Agency. Because this is an innovative, community-based approach, the EAGLE project has adopted the axiom "*painting the line on the road as we walk on it*" to describe the development of the overall scientific framework and end points of the study.

### *Projects and Activities*

#### 1) The Fish Sampling Program

This program involved an analysis of over 600 individual samples with 11 different species of fish from the Great Lakes for mercury, PCBs and pesticides.

## 2) Blood Analysis Study

A Pilot Blood Sampling Study was initiated in 3 communities (Walpole Island/Bkejganong, Akwesasne, Michipicoten) to develop further the framework and database for the risk/exposure assessment. Target populations were:

- women of childbearing age who consume large amounts of fish and wildmeat;
- mothers and nursing infants;
- individuals identified through eating patterns surveys as high/low consumers of fish and wildmeat; and
- any concerned individual, provided they fill out an eating patterns survey.

Samples are analyzed for lead, PCBs, pesticides and other organochlorides including DDT and mirex. Strict confidentiality is maintained.

## 3) Social Indicators

In accordance with a culturally relevant and holistic approach, socio-cultural indicators of health and well-being in communities will be established to understand the relationship between environmental contamination and change and/or disruptions in traditional life. The three components of this program are:

- identification of socio-cultural indicators appropriate for First Nation Communities;
- the establishment of suitable collection mechanisms for selected indicators;
- cross-referencing of socio-cultural indicators with health and environment indicators.



## VI Advocacy, Research and Field Studies



## ADVOCACY, RESEARCH AND FIELD STUDIES

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This tab provides regional case studies of NGO programming, collaborative efforts and advocacy movements working at the interface of gender, health and environment. These projects are mainly examples of local level action; people working together to effect positive changes in everyday community life.

While the examples profiled are all pertinent, they are by no means exhaustive. There were chosen through the following criteria:

- prominence in literature/weight of evidence
- burden of disease/ailments
- advice from key policy experts
- regional representation
- NGO initiatives
- lessons from unsuccessful projects
- coalition approaches

These projects sometimes reflect current national and international policy agendas and are sometimes ahead of them, displaying creativity and innovation in responding to issues of gender, environment and health. At the local level, there are more linkages being made between gender, environment and health issues. As discussed in tab 5, most national policies only include two of the three concepts.

Grassroots initiatives, as profiled here, can often lead the way to more progressive policies. As Margaret Mead commented, "a small group of committed individuals can change the world, indeed, it is the only thing that can."

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**Advocacy in Action:  
Breast Cancer and the Environment in North America**

The breast cancer/environment activist movement in North America<sup>1</sup> provides an example of how an issue has been transformed through women's mobilization and action. Although the link between incidence of breast cancer and environmental contamination has not been proven, the debate around the issue has resulted in a strong advocacy movement that has demanded that attention be paid to the disease, changed the way it is viewed and placed it firmly on policy and research agendas. The following section will provide an overview of the debate and the current directions of activism in the area.

*Links between breast cancer and the environment*

The debate on the link between environmental contaminants and breast cancer is waged between breast cancer/environmental activists and the chemicals industry. Each side cites scientific studies as evidence for their position. The debate has two levels; the argument over conclusive proof, and the argument over weight of evidence.

*Conclusive proof*

Both parties agree that there is no conclusive proof or hard scientific data that definitively proves that environmental contamination (in particular by organochlorines) causes breast cancer. However, the importance of this lack of conclusive proof is where the arguments differ. Activists argue that there is sufficient research demonstrating adverse effects, and to wait until "conclusive proof" is found before taking action will result in a loss of valuable time, energy and lives. In their view, the weight of evidence from existing research is sufficient impetus for action. The industry disagrees, citing the need for conclusive data before action is taken.

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<sup>1</sup> While breast cancer is generally viewed as a northern disease, activists feel that rates are likely higher than recorded in southern countries. Underreporting may be due to the prevalence of other health problems and the lack of testing facilities. Also, because breast cancer is interconnected to sexuality, it is felt that the comfort level with the issue is low. Incidence in southern countries may also be on the rise because of the stockpiling of chemicals such as DDT. Consequently, Northern activists feel that their research and advocacy work will be applicable in other contexts.

### *Weight of Evidence*

Since the question of conclusive proof is unlikely to be resolved to either side's satisfaction in the near future, the debate moves on to weight of evidence. Since 1930, breast cancer incidence has increased steadily at a rate of 1 to 2% annually in industrialized countries, and in the last decade, has increased by 4% in the United States. Activists assert that already identified risk factors, such as genetic inheritance, reproductive and hormonal factors and diet cannot fully explain the increases. There is evidence to suggest that the continuing contamination of the environment by chlorine based synthetic chemicals may be an important factor in the rising incidence of breast cancer. The exposure to "xeno-estrogens" (industrial, agricultural and pharmaceutical chemicals that mimic estrogen in the body) is subject to suspect as they may play an important role in the increasing incidence of cancer of the breast and certain other sites as well as reproductive and development impairment. Since estrogen is a known risk factor for breast cancer, chemicals that act like estrogen are also likely to increase risk of the disease. Environmental factors that cause genetic mutations or suppress the immune system may also be significant.

Most of these *xeno-estrogens* are found in *organochlorines*, a class of highly persistent and toxic substances that include dioxin, DDT, PCBs, CFCs, aldrin, dieldrin and thousands of lesser known chemicals. Approximately 80% of chlorine is used in the chemical industry to produce PVC (vinyl) and other plastics, pesticides, industrial solvents and other chemicals. Chlorine bleach is used in the pulp and paper industry while smaller amounts are used to disinfect waste water and drinking water. Since they are persistent, bioaccumulative, toxic and widespread, organochlorines generally dominate official lists of priority pollutants.

Although organochlorines do not occur naturally in human tissue, 177 variations have been identified in fat, blood, breast milk and breath of North Americans. Exposure to these chemicals during adulthood may cause estrogen-like effects and promote breast cancer. *In utero* exposure may cause lifelong changes in the endocrine system that may lead to increased risk of breast cancer many years later.

Thus, some researchers and many activists feel that women exposed to high levels of organochlorines have significantly higher levels of breast cancer, noting trends in breast cancer incidence rates which are consistent with increasing contamination by organochlorines (Sternglass and Gould 1994; Wolff et al 1993; Krieger et al 1994). An often cited case study is that of Israel, where some scientists and believe that a ban on three carcinogenic pesticides may have been responsible for a 30% drop in breast cancer rates in Israel in 1976 - 1986 despite worsening of other known factors (Westin 1990; Shames et al 1994).



However, a countervailing view is held by other scientists and by most of the chlorine industry. The Chlorine Chemistry Council recently stated that the current weight of scientific evidence does not support the hypothesis of a relationship between chlorinated chemicals and breast cancer let alone the question of conclusive proof.<sup>2</sup> The Council and other like minded groups feel that the studies that are most often cited by activists as weight of evidence have too many logical gaps in their scientific methodology to be acceptable.

For example, with the case of Israel, it has been noted that although a rapid decline in deaths due to breast cancer was recorded after the country banned the use of certain pesticides, mortality had never risen while these pesticides were in use. Other counter arguments follow similar lines; although certain studies may indicate a possible link, there are too many confounding factors that make the conclusions unclear at best. Therefore, the industry feels that the weight of evidence is not sufficient to support the hypothesis, let alone the call to action sounded by activists.

### *Activism in Action*

A starting point for the breast cancer movement is the way in which the disease is viewed. Generally, cancer is perceived as a disease of individuals, and to avoid it people are warned to stay out of the sun, to avoid cigarettes and fatty foods, and so on. With breast cancer, the onus on individuals is taken one step further: North American women are advised to perform a monthly breast self exam (BSE) and to have yearly mammograms (x-rays of the breast) after age 40 because "early detection is the best prevention".

Breast cancer activists advocate for a shift from individual onus to environmental focus. They argue that, given the weight of evidence of a link between environmental contamination and breast cancer incidence, the approach should at least be widened to find ways to reduce environmental hazards.

*We must place a priority on exploring ways to improve the environment rather than ... on identifying and surgically altering individuals who may become ill within a hazardous environment ....Susan Sherwin*

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<sup>2</sup> Breast Cancer; Summary of Chlorine Related Research, Sept. 1994.

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Activists acknowledge that such a switch would require changes at many levels. There are alternatives available for all uses of organochlorines, making their presence completely preventable. Such a reform would require changes not only in industry practices and national and international policies but also in people's lifestyles. It is difficult to persuade people to switch to environmentally friendly products and processes when it means changes to a comfortable lifestyle. Nonetheless, such changes are taking place. For example, the Women's Environment Network in Ottawa, Canada organized an information campaign within the school system that teaches young women that tampons and other sanitary products may be dangerous if they have been bleached with chlorine and recommends safer choices.

Advocates face different obstacles when lobbying governments and industry. North American activists are encouraging the use of the "precautionary" or "reverse onus" principle in implementing environmental safety guidelines, which would require preventative action and places the burden of proof on those who are putting chemicals into the environment. However, such policies are difficult to design and expensive to implement, leaving many NGOs feeling that government policies are more reflective of corporate interests than of their concerns.

*The boards of the American Cancer Associations read like the Who's Who of drug manufacturers. This relationship would explain research direction focusing on detection and treatment, rather than prevention. - The Women's Environment Network, Network News. Ottawa: Winter 1993.*

Activists also confront an alliance between chemical - pharmaceutical companies and the cancer industry. An often mentioned example is the "BCAM Scam." Breast Cancer Awareness Month (BCAM) is an annual awareness-raising event in the United States. It is sponsored by Zeneca Pharmaceutical, an American subsidiary of the giant British corporation, Imperial Chemicals Industries (ICI). Imperial Chemicals Industries, (ICI), is one of the world's leading producers and users of chlorine. It also manufactures a breast cancer treatment drug (Paulson 1993). Activists feel that ICI's motives in sponsoring this event are suspect, and that the BCAM event is another example of a company that stands to profit from treatment drugs thereby disregarding possibilities of prevention.

Obstacles aside, the breast cancer movement has made many inroads. There are hundreds of groups across the continent who are connected through national and international networks. An example of the level of organization around this issue comes in the recent WEDO/Greenpeace initiative entitled "Women, Cancer & Environment : Action for Prevention." The project aims to support and strengthen the growing network of women who see their health as inextricably linked to the environment. The project's

focus is on preventable environmental factors of disease. They see breast cancer as an example of an entry point into the broader discussion of health and its connection to the environment. These groups have raised the level of awareness of this issue in the general public, pushed until the disease has received attention at the national level - both the United States and Canada have held national forums on the issue - and continued to lobby, inform and educate.

*There is a great untapped vocal resource in women ...we need to raise the noise level -  
Liz Armstrong, Women's Health and Environment Network, Canada*

### **Community Water Projects and Women: Ecuador**

An NGO in Ecuador, HCJB Desarrollo Comunitario, promotes the construction of water systems in rural communities to improve water supply and quality. Women are actively sought out and included in every stage of the community water projects as they are frequently the major users and collectors of water. This was not always the case, however, as women were originally excluded from discussions leading to community projects as well as the planning and development of the projects. The result was that women would disagree with the end results of the water projects and would actively campaign against them.

Due to the efforts of HCJB Desarrollo Comunitario, latrines, handpumps, group and house connections, and rain water collection tanks now benefit 60,000 people in over 300 communities. Health education is an integral component of all projects and participants receive a training course followed by 3 years of field supervision.

*Source: Women and Water: A Collection of IWTC newsletters on issues, activities and resources in the area of women, water and sanitation needs.*

### **Building Environmental Awareness in Argentina**

The Fundacion para Estudios e Investigacion de la Mujer (FEIM), is an NGO in Buenos Aires that conducts educational seminars on health and hygiene issues for urban women. The seminars are conducted at the home and community level for women between the ages of 20 and 60. Approximately 10-12 seminars are conducted annually with about 35 women participating in each. The seminars consist of five sessions of approximately three hours each. The training materials are continually update through the seminars for future use and include training manuals and games that highlight key relationships among health, hygiene and the environment.

The majority of the participating women are working class housewives, responsible for child care and home domestic duties. The women may undertake subcontracted work at home.

The purposes of FEIM's seminars include:

- to raise awareness of urban sanitation issues;
- increase women's confidence to handle these issues; and
- help women develop the skills they need to manage community health and environmental problems such as urban sanitation issues.

For more information contact:

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Source: Michael Paolisso and Sally W. Yudelman. *Women, Poverty and the Environment in Latin America*. Washington, DC: ICRW, 1991.

## **Women, Environment and Population: A Collaborative Program in Latin America and the Caribbean**

The International Centre for Research on Women (ICRW) is undertaking a two-year collaborative program to provide information on the linkages between women's productive and reproductive roles and population and environmental change. This information will be used to inform policies and interventions in Latin America, where the program is based. The program is being done in collaboration with three Latin American NGOs: La Morada in Chile, Centro de Planificación y Estudios Sociales (CEPLAES) in Ecuador and World Neighbours in Honduras.

One main research hypothesis of the program is that women significantly improve the negative impacts of environmental degradation on household well-being, but these efforts increase women's workloads, create time conflicts between home and market activities and reduce the health of women.

To test this hypothesis ICRW and its NGO partners developed a prototype research design adapted to the specific cultural and socioeconomic characteristics of the study sites. Study communities were selected to represent poor communities and to demonstrate a range of women's response to environmental degradation. The NGO partners completed demographic and ecological profiles of the study communities in each selected site. These profiles served as the basis for designing gender-sensitive household surveys that were used to collect detailed environmental, demographic, socioeconomic and health data. Each research team developed indexes of environmental vulnerability that measures the combined effects of a number of different environmental hazards experienced by households.

Sample study sites are focusing on the following issues:

- in four rural communities Yuscaran, Honduras research focuses on the effects of decreasing soil fertility and subsequent reduced soil yields on women's and men's home and market activities, in relation to household demographic structure, family planning knowledge, attitudes and practices, household socioeconomic position, environmental conditions and other variables.
- in the community of La Argelia in Ecuador, research has been collected on the effects of the unsanitary disposal of garbage, limited access to potable water and inadequate sewage on the family's health
- in Sierra Navia, the poorest neighbourhood in Santiago Chile, data was collected on the effects of air pollution and garbage on women's domestic responsibilities, their health and the health of their families.

The findings from these studies and others in the program will be disseminated to member communities in the program, throughout the region and at the United Nations Fourth World Conference on Women.

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Source: ICRW Information Bulletin, December 1994.

### **Energy-Related Environmental Pollution: The Philippines**

CERD, Community Extension for Research and Development, is an NGO that is active in Calaca, Batangas province. CERD attempts to organize communities to act collectively to ameliorate their environmental and economic conditions. Together with ICRW (International Centre for Research on Women) and WRRC (Women's Resource and Research Centre), CERD undertook a project to:

- examine the gender-differentiated economic and health impacts of the pollution generated by the Calaca Coal-Fired Thermal Power Plant;
- document measures taken by women and the community to protect the environment and their resource base and to mitigate pollution;
- support and enhance CERD's community organizing activities in Calaca by obtaining gender-disaggregated information about the community and its needs; and
- use the participatory research process as a consciousness-raising device in the community.

The main environmental changes caused by the power plant were: severe noise and vibrations; a foul odour; air pollution; ground water pollution; and pollution of Balayan Bay from hot waste water dumped by the plant. There were also reductions in fish catches and crop yields.

The main health problems reported were: respiratory illnesses such as asthma, coughing, flu, pneumonia, tuberculosis; stomach problems; diarrhoeal diseases; and chronic skin rashes.

The project found few differences between men and women in their knowledge of environmental, economic and health conditions and the impact of environmental degradation. Possible ways of addressing the problems generated by the power plant were also similar between men and women. Both groups participated in demonstrations against the plant, but men's participation rate was significantly higher.

Source: Israel 1994



**International Cooperation Against Pesticides: PAN AP, UNIFEM, IUCN**

The Pesticide Action Network Asia Pacific (PAN AP), in cooperation with the United Nations Development Fund for Women (UNIFEM) and the International Union for the Conservation of Nature (IUCN) undertook a general monitoring of the global pesticide situation in 1987. The results indicated a lack of awareness of the dangers associated with pesticide use, poor protection of field workers, improper handling and storage of pesticides, and misleading advertising. In 1991, PAN AP launched a three-year Women and Pesticides Training and Education Program to provide women with resources and training to ensure better practices and prevent the over-use and misuse of pesticides.

The objectives of the program were:

- to enable women to become more aware of the hazardous nature of pesticides and the national policies related to pest management;
- to enhance the capacity of women's groups, the government and other public interest groups of the need to reduce human and environmental damage caused by pesticides;
- to develop pesticide training, informational and educational activities for groups working in this area;
- to increase women's direct involvement in NGO leadership roles regarding pesticides;
- to determine the real conditions of women's exposure to pesticides in a selected number of Asian countries;
- to strengthen the network of pesticide monitors and advocates for sustainable pest control; and
- to create linkages with relevant government agencies wherever possible

National workshops were held in eight Asian countries (Malaysia, Korea, the Philippines, India, Thailand, Sri Lanka, Bangladesh, and Pakistan) and eight case studies were undertaken on the impact of pesticides on women. In addition, substantial information was translated into local languages and distributed to the public. In the Philippines, 952 households were interviewed in 1993. Of all the individuals interviewed, 63% were women, of which 93% were pesticide sprayers. In Pakistan, the project interviewed 60 households in 1993. Women in Pakistan do not actually spray pesticides but come into direct contact with them through picking, weeding, thinning plants, fuel collecting, hoeing, seed-cotton cleaning, mixing pesticides, washing spray tanks, washing clothes, and disposing of empty pesticide containers (Rengam 1994).

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### Biogas promotion: India

Action for Food Production (AFPRO), a New Delhi-based NGO, has been active in promoting the use of biogas in India. AFPRO organizes biogas seminars annually. In 1992-93, the seminars were organized in conjunction with the Centre for Appropriate Technology and the Aga Khan Rural Support Programme. For the first time, women (about 15) attended the seminars.

In addition to many other benefits, biogas has several health-related impacts for peasant women. During the seminars, the women participants identified the following consequences:

- utensils did not get coated with soot;
- toilets could be linked to biogas plants improving sanitary conditions around the dwelling unit and women from the rural household did not have to wait until nighttime to defecate;
- biogas provided a smoke-free atmosphere in the cooking area
- the house remained cleaner;
- biogas effectively replaced the need for preparing cowdung cakes
- diseases of animals were reduced as dung was removed promptly for feeding biogas plants;
- storage of cowdung cakes inside dwellings was not required during the rainy season;
- lung and throat infections due to smoke were reduced;
- women were able to sleep two hours more in a day due to lesser time required for cooking;
- snake and scorpion bites from collection of cowdung cake and firewood heaps were reduced; and
- it was possible to control the flame size with biogas burners.

Source: *Development and Ecology* 1993.

### **Pesticide Action Network (PAN) International**

Formed in 1982, PAN now includes over 300 health, consumer, environment, and advocacy groups and individuals who are active in campaigning against the excessive and indiscriminate use of pesticides. PAN has regional offices in the Pacific, Africa, and Latin America. In 1985, PAN launched its 'Dirty Dozen' campaign, a public awareness and lobbying effort about twelve particularly hazardous pesticides. Many national governments have since banned these chemicals or severely restricted their use.

Some of PAN's current campaigns include:

- Preventing export of banned pesticides. It is working to enact legislation in the US to prohibit the export of pesticides such as DDT which is considered too dangerous for use. PAN is also involved in assisting and tracking the progress of citizens' groups in over 80 countries in restricting the use of the 'Dirty Dozen' chemicals;
- Strengthening regulatory laws in other countries, particularly in Mexico, Central and South America;
- Advocating sustainable agriculture; and
- Banning Methyl Bromide. PAN is working with 13 other organizations to ban methyl bromide, a highly toxic fumigant that depletes the ozone layer and has killed farm labourers, factory workers and residents of treated housing.

**CONTACT:**

Adam Kirshner  
PAN-North America  
116 New Montgomery, #810  
San Francisco, CA 94105  
Tel. (415) 541-9140  
Fax. (415) 541-9253  
E-mail: [panna@igc.apc.org](mailto:panna@igc.apc.org)

### **Water Awareness: India**

CHETNA, Centre for Health, Education, Training and Nutrition Awareness, is an Indian NGO established in 1980 to improve the effectiveness of existing food programmes for women and children. Its mandate has broadened in recent years, and it is beginning to look at occupational health hazard issues and problems faced by women.

CHETNA has taken on a "Water Awareness Programme" in Banaskantha district, Gujarat, in which it is developing a water-related health education strategy which actively involves women. Other elements of the strategy are environmental sanitation for the prevention of water-borne and water-related diseases and creating general awareness regarding health as it relates to water.

### **Solid Waste Collection and Health: India**

The Italian Association for Women in Development (AIDOS) and the United Bustee Development Association (UBDA) have undertaken a health, education, nutrition project in a slum (*bustee*) in Calcutta. Approximately 700 women and 300 children are involved in rag-picking (solid waste collection) in this particular area, and the project aims to secure more control for these workers over their product and pricing, to improve their health and hygiene conditions, and to improve their working conditions in general. Other specific objectives with regard to health include increasing awareness among women rag-pickers of the health risks they may incur and making an attempt to prevent the spread of major diseases in the area. A female extension officer is responsible for the dissemination of information on basic hygiene in a working environment where women are exposed to dangerous materials and water is scarce, and on home economics.

CONTACT: Ms. Daniela Colombo, AIDOS, Rome, Tel. (39-6) 68-73-214, Fax (39-6) 68-72-549.

### **Malaria Interventions for Child Survival: Africa**

Malaria is the single largest component of the burden of disease for sub-saharan Africa and mainly affects women and children. Conventional interventions are increasingly ineffective and malaria is on the rise throughout the developing world.

Recent research, supported in part by IDRC of Canada, has drawn attention to a new intervention employing insecticide impregnated bednets to prevent malaria. Preliminary results suggest reductions in child mortality exceeding 60% from this single intervention. If this is so, the malaria bednet could become the single most important intervention for child survival in Africa. This observation needs to be confirmed through rigorously designed, randomized controlled community trials in multiple sites. These trials (Burkina Faso, Gambia, Ghana, and Kenya) are now underway under the auspices of WHO.

What is still required to complete this project is a series of regional consultations in Africa to develop strategies for the further development and introduction of this intervention; and to conduct operational research, introduction studies, market analyses, technology transfer and technology development for bednet manufacture and impregnation services in Africa.

#### **Environmental Impact Assessment:**

If this project is successful, this intervention would eliminate the need for insecticide spraying which can be both costly and environmentally hazardous.

#### **Gender Considerations:**

Malaria is most severe for children and women, particularly during pregnancy. This project is aimed exclusively at women and children, and monitoring is done to confirm that they have continuous access to the intervention.

### **Women, Water and Sanitation: An Action Research Project in Egypt**

Research in phase 1 of this project confirmed that the poor environmental conditions and personal hygiene habits of the inhabitants of two Nile Delta villages are largely related to the inappropriateness of the existing water supply and sanitation technologies. This second phase will monitor and evaluate the impact of innovative, community-chosen water supply and sanitation technologies, community level management of these facilities, and a hygiene education program designed to promote an awareness of environmental conditions and improve general hygiene practices. Phase 1 provided information concerning the planning installation and maintenance of water supply and sanitation facilities; the existing knowledge, attitudes and practices of water collection and storage, sanitation and hygiene; and the role of villagers, particularly women, in decisions concerning water supply and sanitation.

Researchers evaluated the health education program established in two villages during phase one, assessed the role of health promoters, and identified improvements to village sanitary conditions. Data was collected through interviews, participant observation, and focus group meetings. The influence of women as recipients of health-related information was also determined. In households, an increase in awareness of the link between water and sanitation-related health issues, and some modifications to hygiene practices, were identified. Parents indicated that children had a large influence on hygiene practices within the household, and that some had modified their habits and practices as a result of information introduced by the children. It was also found that women exposed to hygiene information were more likely to modify their food preparation practices. The research team worked with the villagers to establish village water committees that later implemented sanitation-related improvements. At the end of the project, eight water handpumps were installed in the villages.

### **Natural Resources, Production and Women's Knowledge in the Field of Nutrition and Health: Senegal**

The study was undertaken in a village in North Senegal (Meri), where desertification is an acute problem. The focus of the study was women environmental knowledge and the limitations to the practical application of this knowledge as a result of severe constraints imposed upon the women by the same environment, specifically desertification.

The study findings were:

- that women possess a deep and practical knowledge of their natural resource base, particularly with regard to health and nutrition issues. They have detailed information on the various resources, and their classification such as being able to identify different types of plants and their usefulness, even to the point of the usefulness and value of the different parts of the plants both for the children and adults including their seasonality and periodic availability;
- it is this detailed and functional knowledge that has enabled women to cope with drought and desertification. Prior to the onset of severe desertification, women had relatively easy access to the crucial resources but with periodic droughts, they have to cover long instances in the search for food, water, fuelwood, herbs, etc. Moreover with increasing and acute scarcity of these resources, men have commoditized them and taken control thereby rendering them inaccessible to poor women and their families;
- Acute resource scarcity has also resulted in the disruption of the traditional sharing of resources. Due to desertification, free access to resources based on family neighbourliness is absent as hitherto common property resources became commoditized through private ownership.





**Indoor Air Pollution: Definitive Research**

Over half of the world's households burn smoke-emitting fuels for cooking and/or heating. The main chemicals harmful to human health from these fuels are carbon monoxide (CO), particulates, and hydrocarbons (Crewe 1991). Research has found a link between biomass combustion and risk of lung disease for women, and ARI for children (Chen et al. 1990).

Morbidity Pattern: Household Health Surveys, 1980 and 1986, Indonesia  
(rate per thousand population)

	1980		1986
1. Acute Respiratory Tract Infection (ARI)	29.9	Acute Respiratory Tract Infection (ARI)	21.3
2. Dental, oral, Gi tract	9.2	Skin Infection	7.6
3. Bronchitis, asthma	9.1	Dental, oral, Gi tract	6.9
4. Skin Infection	8.9	Other infections	6.5
5. Diarrhea	7.7	Bronchitis, Asthma	6.4
6. Neurologic Disorder	7.6	Malaria	6.1
7. Other infections	6.3	Neurologic Disorder	5.7
8. Muscoloskeletal Disorder	6.3	Cardiovascular Disease	5.3
9. Tuberculosis	6	Diarrhea	4.4
10. Cardiovascular Disease	6	Tuberculosis	4.2

Source: Ministry of Health, Indonesia 1989, in Achmadi 1991.

Morbidity patterns in Indonesia indicate that illnesses caused by indoor air pollution are prevalent in all regions, with Acute Respiratory Tract Infection (ARI) being the most common illness in both rural and urban areas. The highest risk group is women (Achmadi 1991). Indoor air pollution is the "largest occupational health problem for women in rural areas" (Achmadi 1991). Women are particularly vulnerable because of their food preparation responsibilities,

which require extended periods of time in the kitchen, close to the stove.

### Adverse Effects of Biomass on Human Health

Function	Possible Health Effects
1. Processing/preparing cakes	fecal/oral/enteric infection; skin infection
Charcoal production	Carbon monoxide poisoning; cataracts
2. Gathering fuel wood, etc.	Bites, stings from venomous snakes, spiders, insects; allergic reactions; fungus infections; fatigue; reduced infant/child care; trauma
3. Effects of smoke acute	Conjunctivitis; upper respiratory irritation/inflammation; acute respiratory infection (ARI)
Effects of toxic gases	Acute poisoning, e.g. Carbon monoxide
Effects of smoke	Bronchitis, bronchiolitis, subacute, blepharo conjunctivitis
Effects of heat	acute burns; chronic cataracts
Ergonomis effects of crouching over stove	Arthritis

The study also found that the birth defect rates of infants who were conceived in winter (October to March, heavy air pollution) is higher than those for infants conceived in summer or spring (less air pollution) (Xu 1990).

Approximately 76% of China's rural population rely on some form of biomass fuel for cooking and heating (Hong 1991). The extent of indoor air pollution from combustion of biomass in China is therefore quite high. Of all the biomass fuels used, firewood is the most common. Due to increasing shortage of forest cover, however, more and more people are being forced to substitute other biomass materials such as rice and wheat stalks, small branches of trees and bushes.

A study was conducted in Shanghai among 393 retired women and housewives aged 45 and above to ascertain the difference in health caused by these two different fuels (Zhou et al, 1987). The results were as follows:

Comparison of Prevalence of Respiratory Diseases and Symptoms in Women Using Coal and Gas Stoves for Cooking, China

Disease/Symptom	Coal Users (%)	Gas Users (%)
Cough	40.10	17.74
Productive Cough	25.60	12.90
Shortness of Breath	25.60	9.68
Chronic Bronchitis	24.64	11.83
Emphysema	10.14	2.15
Bronchodilation	6.23	1.64
Asthma	7.25	1.32

Even after multi-factor logistic regression analysis, the results clearly indicated that coal in all cases was a significant contributing factor to chronic bronchitis, emphysema and respiratory symptoms such as cough, expectoration and shortness of breath. These symptoms were all more common for women who used coal than those who used gas for cooking (Hong 1991).

Life style - including gender roles - is important in lung cancer etiology. In China, studies have found that the risks of lung cancer in Shanghai women rose with the frequency of stir-fry cooking.

Since women are generally the fuelwood gatherers of the household, shortages of fuelwood have a direct impact on them. In many cases, there is even an impact on their health. Brouwer et al. (1989) have suggested four strategies women employ when faced with acute fuelwood shortages; each of these strategies has consequences for women's and families' health. They are:

1. Women are unable to spend as much time on food production, income generating activities, and childcare, thereby jeopardizing the health and nutrition of household members, especially children.
2. Women turn to alternative fuels such as animal dung, agricultural residues, and fuelwood of lower quality. The result is: a) the withdrawal of dung and agricultural resources from fields, thereby decreasing soil fertility and levels of food production; b) less food available for cattle, lowering their resistance to disease and possibly reducing their milk and meat production; c) more smoke emissions when wet or lower quality wood is used.
3. Women attempt to reduce fuel consumption by: eating cold leftovers, reheating cooked

food, cooking fewer meals, cooking food for less time or not cooking it all, making diet substitutions that do not require cooking or require less cooking, purchasing more pre-prepared foods. The effect of these changes is to increase susceptibility to intestinal infections, impair the absorption of proteins, reduce the intake of vitamins and energy, and decrease the total amount of food consumed.

4. Less fuel available for heating and boiling or heating waater can have negative effects on the general health of the family, e.g. by increasing the chances of inflammation of untreated wounds, intestinal infections caused by drinking unboiled water, and eating with dirty hands from insufficiently cleaned plates (Crewe 1991).

## **VII      Networks, Centres and Researchers**



IDRC Photo

**NETWORKS, CENTRES AND RESEARCHERS: A DIRECTORY**

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The following section provides a directory of national and international centres, or networks conducting research or supporting efforts in gender, environment and health. The list is compiled from a search which included organizations working specifically in environmental health or in gender and development in general.

Selected individual researchers working in gender, environment and/or health are also included as they have been instrumental in making inter-sectoral links, advocating policy and action, and participating in conferences and symposia to educate the public and disseminate information to governments and organizations.

This list will provide a starting point for individuals, groups or government bodies who are interested in further research, or planning projects and initiatives in this field. At the end of the chapter a blank form is available for updating contacts. You can help update our list by completing the form and sending it to:

**Gender, Environment and Health Directory**

c/o Janet Hatcher-Roberts  
Senior Program Specialist, Health Policy  
International Development Research Centre  
250 Albert Street  
P.O. Box 8500, Ottawa, Canada K1G 3H9

Fax: (613)567-7748  
Internet: [JHatcher-Roberts@idrc.ca](mailto:JHatcher-Roberts@idrc.ca)

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Networks, Centres and Researchers

Organization	Activities	Contact
<p>Aboriginal Nurses of Canada (ANAC)</p>	<p>ANAC is responsible for the promotion of Aboriginal health, medicine, and culture. Aboriginal control of Aboriginal health and involvement and decision making on matters pertaining to health services and delivery is encouraged and promoted by ANAC. Every effort is made by ANAC to recruit people of Aboriginal ancestry into medicine, nursing and other health professions. Other activities of ANAC include: assistance to government and private agencies in the development of programs designed to improve health in Aboriginal communities; maintaining a consultative mechanism which all agencies concerned with Aboriginal health may use; the development of courses in the education system of nursing and health professions on Aboriginal health and cross-cultural nursing; the development of general awareness in both Aboriginal and non-Aboriginal communities of the special needs of Aboriginal people; and research and assembly of materials on Aboriginal health.</p>	<p>Executive Director: Ruth Ann Cyr                      Claudette Dumont-Smith                      55 Murray Street                      Ottawa, Ontario                      Canada                      Tel: (613) 241-1864                      Fax: (613) 241-1542</p>

<p>All-Union Research Institute of Nature Conservation</p>	<p>The Institute conducts research, coordinates scientific activity, and establishes protected areas networks. The sustainable use division is involved in regional problems of nature conservation, biochemical assessment of human impacts and environmental standards, and technogenic emission impact assessment. The Institute has international ties with the World Conservation Union (IUCN) and the World Wildlife Fund (WWF).</p>	<p>Valery Orlov, Ph.D., Science Secretary Znamenskoe-Sadki 113628 Moscow, Russia Tel: (7) 95 423 0322 Fax: (7) 95 423 2322</p>
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<p>Alliance of Northern People for Environment and Development (ANPED)</p>	<p>The objectives of ANPED are to facilitate cooperation among organizations within the ECE region for the purposes of promoting a holistic approach to environment and development, including the promotion of human rights, social and ecological justice, equity, cultural diversity, democracy and peace. ANPED also coordinates common campaigns focused on environment and development in partnership with the peoples of the South against global environmental degradation and human poverty. ANPED Working Group on Changing Consumption and Production Patterns has been linking NGOs which work on the health and environment impacts of consumption and production patterns and collects background documentation to support NGO work on this subject.</p>	<p>ANPED Mr. Peter Wahl, Secretary Contact: Eva Charkiewicz</p> <p>Interim Secretariat: c/o ANPED WG on changing consumption and production patterns Postbus 18185 NL-1001, ZB Amsterdam</p> <p>Tel: (31 20) 626 1732 Fax: (31 20) 627 9349 e-mail: iucnethcomm@gn.apc.org</p>
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<p>The Association for Women in Development (AWID)</p>	<p>Founded in 1982, AWID is a non-profit, international professional membership association with a two-fold mission: to increase the awareness of individuals, institutions and nations of their interdependence in an equitable development process, and to promote the full and active participation of women in development in order to ensure that they share in its benefits. The sixth international forum of AWID, Washington, 21-24 October, 1993 addressed the following issues: health issues, women's rights, and environmental and cross-cutting issues.</p>	<p>Dr. Norge Jerome President AWID 14402 W. 68th Street Shawnee, KS 66216-2149</p> <p>Dr. Nancy S. McDonnell AWID Programme Chair 433 Beam Building College of Business Administration Pennsylvania State University University Park, PA 16802 Tel: (814) 865-0384 Fax: (814) 863-7261</p>
<p>Bharat Dogra, Environmental writer and publisher</p>	<p>Publishes <i>News from Fields and Slums</i>, a newsletter devoted to environmental problems and the effects of development on the environment.</p>	<p>NFS-India D-7 Raksha Kunj Paschim Vihar New Delhi-110 063 India</p>

<p>Breast Cancer Action (Ottawa)</p>	<p>Breast Cancer Action is a survivor-led, voluntary, national charitable organization, working to help, educate and support women and men living with breast cancer, their families and the community. They are working together to make politicians, research, and medical communities understand that this must be a national priority. Programs include a Support and Resource Centre open to the public five days a week; Young Women's Breast Health, a program aimed at high school and university aged women to teach them good breast health habits; Make Waves, an aqua program designed specifically for breast cancer survivors; an annual survivor's walk; and most recently, the formation of an Environmental committee which will be launching a campaign in the Spring of 1996 to raise awareness on the link between pesticides and breast cancer. Finally, throughout the year workshops are held on a variety of topics which have included stress management and art therapy, as well as having open monthly meetings with a guest speaker each month.</p>	<p>Breast Cancer Action  P.O. Box 39041  Billings Bridge Plaza  Ottawa, ON  K1H 1A1  Tel: (613) 736-5921  Fax: (613) 736-8422  e-mail: <a href="mailto:bcenet@magi.com">bcenet@magi.com</a>  www site:  <a href="http://infoweb.magi.com/~bcenet/">http://infoweb.magi.com/~bcenet/</a></p> <p>Contacts:  President: Carol Spiro  Co-Chairs of Environmental  Committee: Vera Yusek  and Marti Mussell</p>
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<p><i>Campaign News/Shakti</i></p>	<p>A publication which provides information on alternative health care for women. Published <i>In Search of Our Bodies: Feminist Views of Health and Reproduction in India.</i></p>	<p>B-10 Sun and Sea Apartments 25, J.P. Road Versova, Andheri (West) Bombay-400 061 India Tel: 626 0622  Contact: Mira Savara, Co-ordinator</p>
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<p>Caribbean Environmental Health Institute</p>	<p>The Caribbean Environmental Health Institute aims to provide technical and advisory services to Member States in all areas of environmental health management, including: water supplies, liquid waste and excreta disposal, solid waste management, water resource management; coastal zone management, including beach pollution; air pollution; occupational health; agricultural pollution and pesticide control; disaster prevention and preparedness; natural resources conservation; environmental institutional development; and socio-economic aspects of environmental management. Inventories are prepared and kept on: education and training programmes; regional experts and other human resources.</p> <p>CHEI acts as a regional reference centre for the collection and dissemination of environmental data, especially health-related.</p>	<p>Caribbean Environmental Health Institute  P.O. Box 1111  The Morne Castries  St. Lucia</p> <p>Executive Director: Dr. Halmond Dyer</p> <p>Tel: 809-452-1412 (or 452-2501)  Fax: 809-453-2721  Telex: 6248 OECAS</p>
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<p>Caribbean Women and Development Unit (WAND)</p>	<p>Founded in 1978, WAND aims to bring together women's groups in the Caribbean Community (CARICOM). WAND focuses on alternative approaches to rural development, health and youth. Support is given to programmes for involvement of women in development. The emphasis of WAND's work is now on working directly with women, empowering them to define and implement their own programmes.</p>	<p>Contact: Ms Peggy Antrobus University of the West Indies Women and Development Unit School of Continuing Studies Pinelands, St Michael Barbados, W.I. Tel: 809-436-6312 Fax: 809-426-3006</p>
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<p>Center for Agricultural and Rural Development (CARD), Iowa State University</p>	<p>CARD is a public policy research center using advanced theory and quantitative analytical systems to provide improved information and analysis for agriculture and the rural sector. CARD's interdisciplinary and specialized modelling systems provide policy research results to state, regional, national, and international policy makers. Research programs function in four principal areas: trade and agricultural policy, food and nutrition policy, and rural and economic development policy. The work on food and nutrition relates most directly to issues of gender, health and development; research in the resource and environmental policy area considers more directly questions related to the environment and sustainability.</p>	<p>Center for Agricultural and Rural Development 568 Heady Hall Iowa State University Ames, IA 50011 Tel: (515) 294-1183 Fax: (515) 294-6336 WWW address: <a href="http://www.ag.iastate.edu/centers/CARD.html">http://www.ag.iastate.edu/centers/CARD.html</a></p> <p>Director: Stanley R. Johnson Associate Director: William H. Myers</p> <p>Division Leaders: Trade &amp; Agricultural Policy: Dermot Hayes Resource &amp; Environmental Policy: Bruce Babcock Food &amp; Nutrition Policy: Helen H. Jensen</p> <p>FAPRI, Darnell Smith, Managing Director</p>
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<p>Centre for Health Education, Training and Nutrition Awareness (CHETNA)</p>	<p>CHETNA contributes to the empowerment of disadvantaged women and children by assisting them to gain control over their own health and that of their family and community. CHETNA improves the health education, training, networking, qualitative and participatory research skills of individuals from both government and non-governmental institutions. CHETNA also evaluates and modifies where necessary each of its programmes to ensure their continued effectiveness.</p>	<p>Mona Shah c/o Centre for Health Education, Training, and Nutrition Awareness Lilavatiben Lalbhai's Bungalow Civil Camp Road Shahibaug, Ahmedabad-380 004 Gujarat, INDIA  Tel: 91-272-866513 (or 866695)</p>
<p>Centre for Rural Health and Social Education</p>	<p>A non-governmental organization whose activities include: research, training, information dissemination, publications, seminars and conferences. Research topics include: health, health education, maternal and child health, social services, rural areas, rural communities, primary health care, and health services. Training courses are held on village level health education, project planning, and communication for project workers.</p>	<p>A-11 Ashok Nagar Tirupattur 635601 India  Director: P. Saminathan</p>



<p>Centre for Science and Environment (CSE)</p>	<p>Publishes <i>The State of India's Environment</i>. Categories of research include dam and water issues, nuclear power, forestry. An important role of the CSE during its existence has been in information dissemination.</p>	<p>F-6, Kailash Colony New Delhi, India Tel: 643 3394 (644 8109; 641 0454)  Contact: Anil Agarwal, Founder and Director</p>
<p>Centre for the Study of Medicinal Plants</p>	<p>The Centre implements research programs aimed at developing appropriate medicaments and therapy, using local natural substances when possible. Areas of study include:</p> <ol style="list-style-type: none"> <li>1)botany;</li> <li>2)phytochemistry/pharmacology;</li> <li>3)pharmacology/toxicology; and</li> <li>4)pharmaceutical technology.</li> </ol>	<p>c/o Institute for Medical Research and Medicinal Plant Studies B.P. 888 Yaoundé, Cameroon  Dr. Mbi Christiana Nso, Senior Research Officer</p>
<p>Centre for Women and Development (CWD)</p>	<p>CWD conducts social science research, and monitors and evaluates ongoing development projects. It collects information on issues regarding socioeconomic aspects of women and rural development.</p>	<p>Bina Pradhad, Exec. Director Dilli Bazar P.O. Box 3637 Kathmandu, Nepal Tel: 410936 Telex: 2464 RAUNIAR NP.</p>

<p>Commission of Human Ecology (CHE) International Union of Anthropological and Ethnological Sciences (IUAES)</p>	<p>The CHE/IUAES is an umbrella organization working in global human ecology. Activities include research and education on such issues as: air quality/ emission control; health; human ecology; and sustainable development. The CHE/IUAES convenes the World Academic Conference on Human Ecology, most recently in Merida, Yucatan, Mexico (July 1993).</p>	<p>Napoleon Wolanski, Ph.D., D.Sc., Chairman 00-330 Warsaw, Nowy Swiat 72, Poland Tel: (48) 22 268312</p>
<p>Development Alternatives with Women for a New Era (DAWN)</p>	<p>DAWN is a South-South network which spans Africa, Asia, the Caribbean, Latin America and the Pacific. Since 1984 DAWN's goal has been to understand the economic, social, cultural, political processes which cause and perpetuate inequalities of gender, class and race, and to work towards building alternative visions and strategies. DAWN's activities include research/analysis, training, advocacy, international relations and communications activities, which focus on: Alternative economic frameworks for sustainable development; Reproductive Health; and Environment and Development.</p>	<p>c/o Peggy Antrobus WAND School of Continuing Studies University of West Indies Pinelands, St. Michael Barbados Tel: 809-436-6312 Fax: 809-426-3006</p>

<p>EarthAction Network</p>	<p>The EarthAction Network seeks to preserve biological diversity; to ensure equal access to food, shelter, education, health care, and family planning; and to prevent war and stop the production of weapons.</p>	<p>26 Blvd Louis Schmidt, 1040 Brussels, Belgium Tel: 32-2-7368052 Fax: 32-2-7358895 Internet: gn:earthaction</p>
<p>Earth Council (Conseil de la Terre) (Consejo de la Tierra)</p>	<p>The Earth Council was created as a result of the Earth Summit to provide an international forum for focusing on follow-up of the Earth Summit by facilitating and supporting the efforts of people's organizations, national multi-stakeholders, councils and local organizations. The Earth Council helps grassroots and people's organizations act more effectively in respect to sustainable development in their own communities and sectors. A key strategy for the Earth Council is the development of alliances and partnerships, which add value to the actions of each, avoiding duplication of efforts and making best use of limited resources.</p>	<p>Earth Council Headquarters: P.O. Box 2323-1002 San José - Costa Rica Tel: (506) 256-1611 Fax: (506) 255-2197 E-mail: eci@terra.ecouncil.ac.cr</p>

<p>Ecology and Peace Association</p>	<p>The Ecology and Peace Association is an NGO comprised of prominent scientists and publicists who conduct independent scientific examinations of hazardous water and other environmental projects and their ecological impact.</p>	<p>Sergei P. Zalygin, President 19, Kuznetskij Most 103031 Moscow, Russia Tel: (7) 95 209 5702 (Internet: Econet:sfmt:ecopeace)</p>
<p>Energy and Environment Group (EEG)</p>	<p>The EEG is a research and documentation organization which aims to increase environmental awareness through critical reports, publications, seminars. It is working to create a network of NGOs.</p>	<p>Dr. Sudhirendar Sharma, Director Post Bag No. 4 New Delhi-110 066 India Tel: 608515 Telex: 31-66145OMIN  contact: C.P. Jayalakshmi</p>

<p>Environmental Services Group (ESG) WorldWide Fund for Nature-India</p>	<p>ESG is involved in studies relating to the environmental aspects of development programs. Assistance to the government of India is provided for its environmental information system and its public awareness programs. ESG sets up multidisciplinary project teams with the assistance of a network of experts based in different parts of the country. ESG also provides technical and other backup support for individual environmentalists, voluntary agencies, and others working on environment related assignments. A series of publications including two periodicals and audiovisuals are produced throughout the ESG public education program.</p>	<p>Environmental Services Group (ESG) WorldWide Fund for Nature-India B-1, Local Shopping Centre J Block Saket New Delhi-110 017 INDIA  Contact: Mr. Thomas Matthew Director Tel: 656714</p>
<p>European Environmental Bureau (EEB)</p>	<p>The EEB brings together environmental NGOs in the member states of the European Union (EU) in order to strengthen their effect and impact on EU environmental policy and projects. The EEB promotes the protection and conservation of the environment, the restoration and the better use of human resources.</p>	<p>Mr. Raymond Van Ermen, Secretary-General EEB 26 rue de la Victoire, B-1060 Bruxelles, Belgium Tel: 32-2-5390037 Fax: 32-2-5390921</p>

<p>Food Safety Branch, Food and Consumer Economics Division, Economic Research Service, U.S. Dept. of Agriculture, Washington, D.C.</p>	<p>The food safety branch focuses on economic aspects of food consumption and production that affect food safety outcomes and food safety policy design. The program will address all sources of hazard and their potential control, whether microbial pathogens, pesticide residues, animal drugs, or naturally occurring toxins. Research will analyze consumer demand for risk reduction, production tradeoffs in reducing hazards, policy alternatives, and the impact of proposed regulations, including international harmonization. The branch will undertake a new effort to monitor and report indicators regarding food safety hazards, their effects, and mitigation.</p>	<p>Economic Research Service 1301 New York Ave., N.W. Washington, DC 20005-4688 Tel: (202) 219-0012 Fax: (202) 219-1252</p> <p>Branch Chief: Steve Crutchfield e-mail: <a href="mailto:scrutch@ers.bitnet">scrutch@ers.bitnet</a></p>
<p>Fundacja Biblioteka Ekologiczna (Ecological Library Foundation)</p>	<p>The Ecological Library Foundation was created in 1990, and provides information about the endangered state of the natural environment. An accessible bibliography includes information on biological sciences, natural protection, health protection. The Library is translating key titles into Polish.</p>	<p>Jarek Fiszler, Director ul. Kościuszki 79 61-715 Poznań, Poland Tel: (48) 61 521325 Fax: (48) 61 528276</p>

<p>Hipólito Unanue Agreement Convention Hipólito Unanue (CONHU)</p>	<p>The agreement aims to establish priorities to fortify programs on the prevention, promotion and recovery of health. The agreement also includes as one of its aims the improvement of the environment by establishing regulations for the prevention of environmental contamination - regulations that will be compatible with the socio-economic development.</p>	<p>Convention Hipólito Unanue (CONHU) Paseo de la Republica 3832, 3o.piso Lima 27, PERU Tel and Fax: (5114) 409285 Postmaster @conbu.org.pe.  Executive Secretary: Dr. Carlos Bázán Zender.</p>
<p>International Center for Research on Women (ICRW)</p>	<p>ICRW is a private, non-profit organization which aims to improve the productivity and incomes of poor women in developing countries worldwide. Programs include: technical services, policy research, and public education in key areas including the environment and poverty.</p>	<p>1717 Massachusetts Avenue, NW Suite 302 Washington, DC 20036 Tel: (202) 797-0007 Fax: (202) 797-0020  Contact names: Michael Paolisso Kathleen Kurz</p>
<p>International Women's Tribune Centre (IWTC)</p>	<p>IWTC is an information and communication support group for women's and community organizations in Africa, Asia, Latin America, Western Asia, the Caribbean and the South Pacific. IWTC produces action-oriented publications such as the quarterly newsletter <i>The Tribune</i>, and offers technical assistance and training in the production of information materials.</p>	<p>Anne Walker, Executive Director IWTC 777 United Nations Plaza New York, NY 10017, USA Tel: (212) 687-8655 Fax: (212) 661-2704 Email: iwtc@igc.apc.org</p>

<p>Isis International-Santiago</p>	<p>Isis International is an international NGO created as a women's information and communication service. Its primary objective is the empowerment and full participation of women in the development process through the formation of networks and channels of communication and information. The objectives of Isis International-Santiago are achieved through the following regular program areas: Resource Center and Information Program; Violence Against Women Networking Program; and the IV World Conference on Women and NGO Forum. The Resource Center contains thousands of publications, books and reference materials on a range of development and gender issues, organized in data bases. The Women and Health Networking Program includes activities such as: participation and development of the International Network of Documentation Centers on Women and Health; the collection of information on health issues for data bases; and the publication of a bibliographical catalogue and fact sheets on specific health issues.</p>	<p>Isis International-Santiago          Casilla 2067          Correo Central          Santiago, Chile          Tel: (562) 6334582/ 6382219          Fax: (562) 6383142          E-mail: isis @ax.apc.org</p> <p>General Coordinators:          Ximena Charnes          Ana Maria Gomez</p>
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<p><b>Kali for Women</b></p>	<p>Kali for Women is India's first women's publishing house, specializing in books on and by women, with a special focus on women from the South. Topics include: Women's Issues; Health and Environment; and Consciousness Raising.</p>	<p>N-84, Panchshila Park New Delhi-110 017 India Tel: 6440245; 6436597</p> <p>Contacts: Urvashi Butalia Ritu Menon</p>
<p><b>Kanyakumari Health and Adult Education Programme (KHAEP)</b></p>	<p>Community health, environmental development, women's education, community based rehabilitation are priorities for KHAEP. KHAEP provides education on health and development with an emphasis on women's education. Help growing kitchen gardens, medicinal herbs, and social forestry is provided. Care of nature and ecology is also encouraged.</p>	<p>Kanyakumari Health and Adult Education Programme (KHAEP) Christurajapuram Martandom Kanyakumari District-629 165 Tamil Nadu INDIA</p>
<p><b>Kenya Medical Research Institute (KEMRI) Traditional Medicine and Drugs Research Centre</b></p>	<p>Established under an Act of Parliament, KEMRI is charged with the responsibility of undertaking research in all areas of health in order to provide solutions or remedies for priority health problems. It cooperates with all the relevant institutions and organisations in Kenya and elsewhere in search of better health.</p>	<p>Dr. Davy K. Koech, Director Mbagathi Rd. P.O. Box 54840 Nairobi Kenya Tel: 722541/4 Fax: 720030</p>

<p>Latin American and Caribbean Women's Health Network</p>	<p>The network aims to: promote and consolidate the work of organizations and groups of women in the health field; provide channels of information for sharing experiences, ideas and information; and promote joint activities and develop networks of communication.</p>	<p>Amparo Claro, Coordinator Secretariat: Isis International Casilla 2067 Correo Central Santiago, Chile Tel: (56 2) 638-2219 Fax: (56 2) 638-3142</p>
<p>Latin American Environmental NGO Network</p>	<p>The Latin American Environmental NGO Network seeks to increase knowledge of the aims and current work of Latin American development NGOs.</p>	<p>c/o CIPFE Canelones 1164 Casillo Correo 13125 11700 Montevideo Uruguay Tel: 598-2-907648 Fax: 598-2-985959</p>
<p>Lokaniketan</p>	<p>Lokaniketan is an educational, cultural and welfare mission for social growth, development and mass communications. Lokaniketan works to: raise awareness about environmental pollution; conduct women's participatory training and job generation programs; and organize conferences, seminars and workshops.</p>	<p>Dr. Dulal Chaudhuri, Honorary Director 20/A Central Road Calcutta-700 032 West Bengal India Tel: 72-3639</p>
<p>Lokayan</p>	<p>Lokayan is involved in social activism and environmental work. It also publishes a newsletter.</p>	<p>Lokayan 13 Alipur Road New Delhi-110 054 INDIA</p>

<p>Ministry of Natural Resources Management and Environmental Protection</p> <p>** (this ministry is not listed in the current directories of Russian government)**</p>	<p>The Ministry is detailing the Global Convention on the Protection of Biodiversity as well as developing and improving the national network of natural reserves. The Ministry is part of a number of intergovernmental bilateral agreements on the environment.</p>	<p>Bladimir B. Sakharov, Director, Department of International Cooperation 11, Nezhdanovoi Street Moscow K-9, Russia Tel: (7) 095 229 65 60 Fax: (7) 095 230 27 92</p>
<p>Mukti Datta Janjagaran Society</p>	<p>The Janjagaran Society works to mobilize village women in the mountainous regions of the Kumaon Himalaya to take direct action in forest preservation.</p>	<p>Goralkot Estate, Binsar P.O Ayarpani District Almora-263 601 Kumaon Uttar Pradesh India</p>
<p>Nation Building Forum</p>	<p>The forum is opposing the government of India's encouragement of chemical use through increased fertilizer subsidies. These subsidies exist in India even though the use of chemical fertilizers in India has risen by 300% since 1975 and the yield of rice has risen by only 20% over the same period. These chemicals, (nitrogen, phosphate, and potassium), contaminate large portions of Uttar Pradesh and Bihar states' ground water systems.</p>	<p>Nation Building Forum C-38 Pamposh Enclave New Delhi-110 004 INDIA</p>

<p>Pacific and Asian Women's Forum (PAWF)</p>	<p>PAWF is an informal network of women activists, researchers and other women concerned with and working on women's issues. Their newsletter, <i>Pacific and Asian Women's Network</i>, contains articles and information regarding groups, activities and conferences.</p>	<p>623/27 Rajagiriya Gardens Rajagiriya Sri Lanka  4 Bhagwandas Rd. New Delhi 110 001 India</p>
<p>Parvateeya Paryavaran Sahrakshan Samiti</p>	<p>An NGO which aims to save and restore water reserves; organize eco-development camps; arouse consciousness among villagers, especially women; run health centres; organize women's movement; and work for village self-rule.</p>	<p>Himdarshan Kutir P.O. Dharamghar Pithorgarh Uttar Pradesh-262 571 India</p>

<p><b>Pesticide Action Network (PAN)</b></p>	<p>The Pesticide Action Network North America Regional Centre (PANNA) is one of five autonomous coordinating organizations within a network of over 400 PAN-related non-governmental organizations (NGOs) around the world. PANNA advocates the adoption of ecologically sound practices in place of pesticide use. PANNA is action oriented and information based, emphasizing networking and coalition building to support worldwide opposition to hazardous pesticides and democratically controlled, socially just, least toxic alternatives. PANNA programs and campaigns are supported by a variety of information services, including: the <i>Global Pesticide Campaigner</i> - a quarterly periodical of pesticide and sustainable agriculture news; the Information Clearinghouse- which answers information requests from around the world and links NGOs with individuals and each other; and a variety of Internet services- including an online database of pesticide reform and a weekly online news service.</p>	<p><b>AFRICA (Anglophone):</b>                  Environment Liaison Centre International                  P.O. Box 72461                  Nairobi, Kenya                  Tel: (254-2) 562015                  Fax: (254-2) 562175                  Telex: 23240 ELC KE                  e-mail: elcidwr@gn.apc.org</p> <p><b>AFRICA (Francophone):</b>                  Environment et Development du Tiers Monde                  B.P. 3370                  Dakar, Senegal                  Tel: (221)225 565                  Fax: (221)222 695                  Telex: 51456 ENDA TM SG                  e-mail:                  Abou_Thiam@endadak.gn.apc.org</p> <p><b>ASIA/PACIFIC:</b>                  PAN Asia and the Pacific                  P.O. Box 1170                  10850 Penang, Malaysia                  Tel: (60-4) 657 0271                  Fax: (60-4) 657 7445                  e-mail: panap@peg.apc.org</p>
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<p>Pesticide Action Network (PAN) (continued)</p>	<p>(see previous page for PAN activities and other regional office addresses)</p>	<p>Pesticide Action Network (continued): EUROPE: PAN Europe c/o Pesticides Trust Eurolink Business Centre 49 Effra Rd London, SW2 1BZ England Tel: (44-71) 274 8895 Fax: (44-71) 274 9084 e-mail: pesttrust@gn.apc.org</p> <p>LATIN AMERICA: RAPALMIRA Apartado Aéreo 1440 Palmira (Valle) Colombia Tel: (57-227) 35 455 Fax: (57-227) 55 252</p> <p>NORTH AMERICA: PAN North America Regional Center 116 New Montgomery Street #810 San Francisco, CA 94105, U.S.A. Tel: (415) 541-9140 Fax: (415) 541-9253 e-mail: panna@panna.org panna@igc.apc.org Contact: Adam Kirshner</p>
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<p>Romanian Marine Research Institute (RMRI)</p>	<p>Established in 1970, the RMRI conducts research in the Black Sea, Mediterranean Sea, and Atlantic Ocean. Since 1990, the RMRI has been affiliated with the Ministry of the Environment. RMRI operates a marine coastal water quality monitoring system, conducts research and testing of oil spill cleanup technology, and also studies the transfer through the food chain of heavy metals.</p>	<p>Alexandru S. Bologa, Ph.D., Scientific Deputy Directory Bd. Mamaia 300, PO Box 3 8700 Constantza, Romania Tel: (40) 16 50870 (40) 16 43288 Telex: 14286</p>
<p>Silent Spring Institute, Inc. (SSI)</p>	<p>SSI is a nonprofit research institute dedicated to identifying the links between the environment and diseases that affect women, especially breast cancer. SSI represents a unique collaboration of scientists, physicians, and activists committed to eradicating preventable diseases of women. The Institute is conducting a major study examining the potential links between breast cancer and the environment in Cape Cod, Massachusetts.</p>	<p>Silent Spring Institute, Inc. 29 Crafts Street Newton, MA 02158 Tel: (617) 332-4288 Fax: (617) 332-4284  Executive Director: Harlee Strauss, Ph.D.</p>

<p>Social Uplift Through Rural Action (SUTRA)</p>	<p>SUTRA is a voluntary organization working in the Himalayas in the field of women's development. SUTRA works with sixty village women's groups and trained women paraveterinary workers. It is involved in environmental issues and appropriate technology as they affect women.</p>	<p>Subhas Mendhapurkur, Director Jagjit Nagar District Solan-173 225 Himachal Pradesh India Tel: 25</p>
<p>South Gujarat University, Department of Rural Studies</p>	<p>The Department conducts research on: fisheries; women and technology; water resource development; rural women and health, with reference to smokeless chulhas (stoves).</p>	<p>Dr. Mohini Gadhia Department of Rural Studies South Gujarat University Surat-395 007 Gujarat, India</p>
<p>Southern Networks for Environment and Development (SONED)</p>	<p>SONED aims to articulate a southern perspective on the environment and development debate following the UNCED process, and seeks to present alternative strategies regarding institutional mechanisms and leadership to deal with environmental and development issues.</p>	<p>Secretariat SONED Africa Region, P.O. Box 12205 Nairobi, Kenya Tel: 254-2-445893/4 Fax: 254-2-44-3241/5894</p>



<p>Streehitakarini</p>	<p>Streehitakarini is a women's organization with the objective of helping women to lead free, full, and healthy lives. Its programmes include: family welfare and family planning; nonformal and adult education; immunization and nutrition; training of community health workers; and grassroots organization.</p>	<p>Dr. (Smt.) Indumati G. Parikh, Director, or  Dr. V. B. Mulgaonkar, General Secretary Lokmanya Nagar Compound K. Gadgil Marg Dadar Bombay-400 025 India Tel: 4220565</p>
<p>Third World Network</p>	<p>The Third World Network is an independent, non-profit international network of organizations and individuals involved in issues relating to development, the Third World and North-South affairs. It conducts research on economic, social and environmental issues pertaining to the South; publishes books and magazines; organises and participates in seminars; and provides a platform representing broadly Southern interests and perspectives at international fora such as the UN conferences and processes.</p>	<p>Coordinator: S.M. Mohamed Idris Director: Martin Kohr Third World Network 228 Macalister Road, 10400 Penang Malaysia Tel: 60-4-366-159/366-728 60-4-2293511/2293713 Fax: 60-4-364-505 60-4-2298106 Internet: twnpn@twn.po.my Econet: TWN@igc.apc.org</p>

<p>UN Non-Governmental Liaison Service (NGLS)</p>	<p>NGLS serves to bring important development and environment activities and issues of the UN system to the attention of NGOs. NGLS works with international, southern and northern NGOs seeking access to UN system events, processes and resources. The gender dimension of economic and social development issues infuse all of NGLS's programme activities.</p>	<p>NGLS Palais des Nations CH-1211 Geneva 10 Switzerland Tel: 41-22-798-5845 Fax: 41-22-788-7366  Room 6015 866 UN Plaza New York, NY 10017 USA Tel: (212) 963-3125 Fax: (212) 963-8712 e-mail: <a href="mailto:ngls@igc.apc.org">ngls@igc.apc.org</a> on APC <a href="mailto:ngls@nywork2.undp.org">ngls@nywork2.undp.org</a> on Internet</p>
<p>Women, Environment and Development Network (WEDNET)</p>	<p>WEDNET began in 1989 with the mandate to link African and Canadian women researchers. WEDNET activities primarily focus on creating networks among those working in gender and environment.</p>	<p>Dr. Bonnie Kettel Faculty of Environmental Studies, York University North York, Ontario Canada Tel: (416) 736-5252 Fax: (416)</p>

<p>Women's Environmental Network (WEN)</p>	<p>WEN aims to educate, inform and empower women whose work focuses on the environment. WEN is particularly involved in exposing the environmental impacts of toxic pollutants on women's reproductive health.</p>	<p>Women's Environmental Network Aberdeen Studios 22 Highbury Grove London, N5 2EA England Tel: 44-171-3548823 Fax: 44-171-3540464  Contact: Lin Collins</p>
<p>Women's Environment and Development Organization (WEDO)</p>	<p>WEDO aims to empower women as equal and active decision makers in environment and development. WEDO activities include programming, outreach, task forces, and monitoring Agenda 21.</p>	<p>Rachel Kyte, Executive Director 845 Third Avenue New York, New York 10022 Tel: (212) 759-7982 Fax: (212) 759-8647</p>
<p>WorldWIDE Network-Women in Development and Environment</p>	<p>This organization is a worldwide network of women which educates, promotes and mobilizes women in environment and natural resources programmes. WorldWIDE has compiled a directory of Women in Environment which lists 1,700 women active in the environment. WorldWIDE also mobilizes the Global Assembly of Women and the Environment, convened with the executive director of the UNEP. WorldWIDE forums occur at local and national levels.</p>	<p>Waafas Ofosu-Amaah, Managing Director 1331H Street, NW Suite 903 Washington, DC 20005, USA Tel: (202) 347-1514 Fax: (202) 347-1524</p>

<p>World Women's Veterinary Association (WWVA)</p>	<p>WWVA is an international NGO of over 1000 professionals in 48 countries dedicated to global development with specific focus on poverty, animal and public health, and gender. It undertakes research and projects on gender and development, indigenous knowledge, science and technology.</p>	<p>Dr. Elizabeth McGregor, Founding President 181 Fourth Ave., Ottawa, Ontario Canada Tel: (613) 594-9149 Fax: (613) 594-5946</p>
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## Recent Conferences

Conference Title and Location	Topics of Discussion	Contact
<p>Sixth Conference of the International Society for Environmental Epidemiology and Fourth Conference of the International Society for Exposure Analysis  <i>18-21 September, 1994 Research Triangle Park, NC</i></p>	<p>At this Joint Conference, scientists from all the world exchanged ideas and applications for research on environmental health. Epidemiologists, toxicologists, environmental scientists, public health practitioners and others discussed the integration of epidemiologic research with sophisticated tools for exposure assessment. Topics included pesticides, air pollution, indoor air, hazardous waste, electromagnetic fields, radon, water quality, motor vehicle emissions and global warming.</p>	<p>Registrar, University of North Carolina School of Public Health, Office of Continuing Education,            CB #8165, Miller Hall, Chapel Hill, NC 27599-8165            Tel: 919-966-4032            Fax: 919-966-5692</p>
<p>Annual Conference of the International Society for Environmental Epidemiology and the International Society for Exposure Analysis,  <i>30 August - 1 September, 1995, Noordwijkerhout, The Netherlands</i></p>	<p>The conference focuses on methodology to improve public health impact assessment of environmental pollution at international, national and regional levels. Topics for the symposia include: environmental epidemiology and health impact assessment; multicenter studies in environmental epidemiology; methodological aspects and results of studies conducted in Europe; exposure assessment; and environmental epidemiology in public health.</p>	<p>Ms. Susan Peelen, MSc,            Department of Epidemiology and Public Health, University of Wageningen,            P.O. Box 238, 6700 AE Wageningen, The Netherlands            Tel: 31-8370-84124            Fax: 31-8370-82782            email: susan.peelen@medew.hegl.wau.nl</p>

<p>Tracking Foodborne Pathogens from Farm to Table: Data Needs to Evaluate Control Options 9-10 January, 1995, Washington DC</p>	<p>Experts from economic, animal science and medical disciplines, industry leaders and policymakers addressed the need for improved food safety data. The conference discussed the integration of scientific evidence about pathogens in food supply and their role in human illness.</p>	<p>Jean Buzby Economic Research Service/USDA, Room 1108, 1301 New York Ave., N.W., Washington, DC 20005-4788 Tel: 202-219-0905 Fax: 202-219-1252 email: jbuzby@ERS.bitnet</p> <p>Tanya Roberts Economic Research Service/USDA, Room 1108 1301 New York Ave., N.W. Washington, DC 20005-4788 Tel: 202-219-0857 Fax: 202-219-1252 email: TanyaR@ERS.bitnet</p> <p>Helen Jensen, Department of Economics, Iowa State University, Ames, IA 50011 Tel: 515-294-6253 Fax: 515-294-6336 email: hhjensen@iastate.edu</p>
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<p>International Symposium on Computer Mapping in Epidemiology and Environmental Health 12-15 February, 1995 Tampa, Florida</p>		<p>World Computer Graphics Foundation, University of South Florida, 4202 E. Fowler Avenue, Tampa, FL 33620-8100 Tel: 813-974-2386 813-974-4808</p>
<p>From Research to Prevention: Managing Occupational and Environmental Health Hazards 20-23, 1995, Helsinki, Finland</p>	<p>Themes and topics included: changes in exposure patterns; health effects; new tools for prevention; national prevention strategies; modern occupational medicine; safety; chemical and physical factors in the work environment; psychosocial factors; and musculoskeletal disorders. Proceedings and panel listings available.</p>	<p>Ms. Mirkka Salmensaari, Finnish Institute of Occupational Health, Topeliuksenkatu 41 a A, 00250 Helsinki, Finland Tel: 358-0-47471 Fax: 358-0-4747548 email: msal@occuphealth.fi</p>
<p>International Congress on Hazardous Waste: Impact on Human and Ecological Health 5-8 June, 1995, Atlanta, Georgia</p>	<p>Internationally recognized scientific experts from various technical disciplines joined to evaluate and disseminate information regarding the ecological and health effects of hazardous waste.</p>	<p>John S. Andrews Jr., MD, MPH, Associate Administrator for Science, Agency for Toxic Substances and Disease Registry, 1600 Clifton Road, NE, Mailstop E-28, Atlanta, GA 30333 Tel: 404-639-0708 Fax: 404-639-0586 email: jsa1@atsoaal.em.cdc.gov</p>

<p>Pan American Conference on Health and Environment in Sustainable Human Development 1-3 October 1995, Washington, D.C.</p>	<p>This conference will bring together ministers of health, environment and economy of the countries of the Americas. The purposes of the meeting include: advance a shared understanding of the relationships among health, environment and sustainable human development; to define and propose mechanisms to integrate social policies into national development plans and programs; to define and propose policies, strategies, and concrete activities to help countries to fulfil their commitments from the 1992 Earth Summit; to define and propose mechanisms for joint action among the countries; and to contribute to the next Summit of the Americas to be held in Bolivia in 1996. Specifically, the Conference seeks to adopt a "Pan American Charter" as a frame of reference for the promotion and protection of health and the environment for sustainable human development. It also seeks to adopt a "Regional Plan" for joint actions and shared responsibilities among the countries and international cooperation agencies to fulfil international commitments in the above areas.</p>	<p>Dr. David Tejada Executive Secretary to the Conference  Pan-American Health Organization (PAHO) 525 23 Street, N.W. Room 507 Washington, DC 20037  Tel: (202) 861-6840 Fax: (202) 861-8462  <i>Please note that conference is by invitation only.</i></p>
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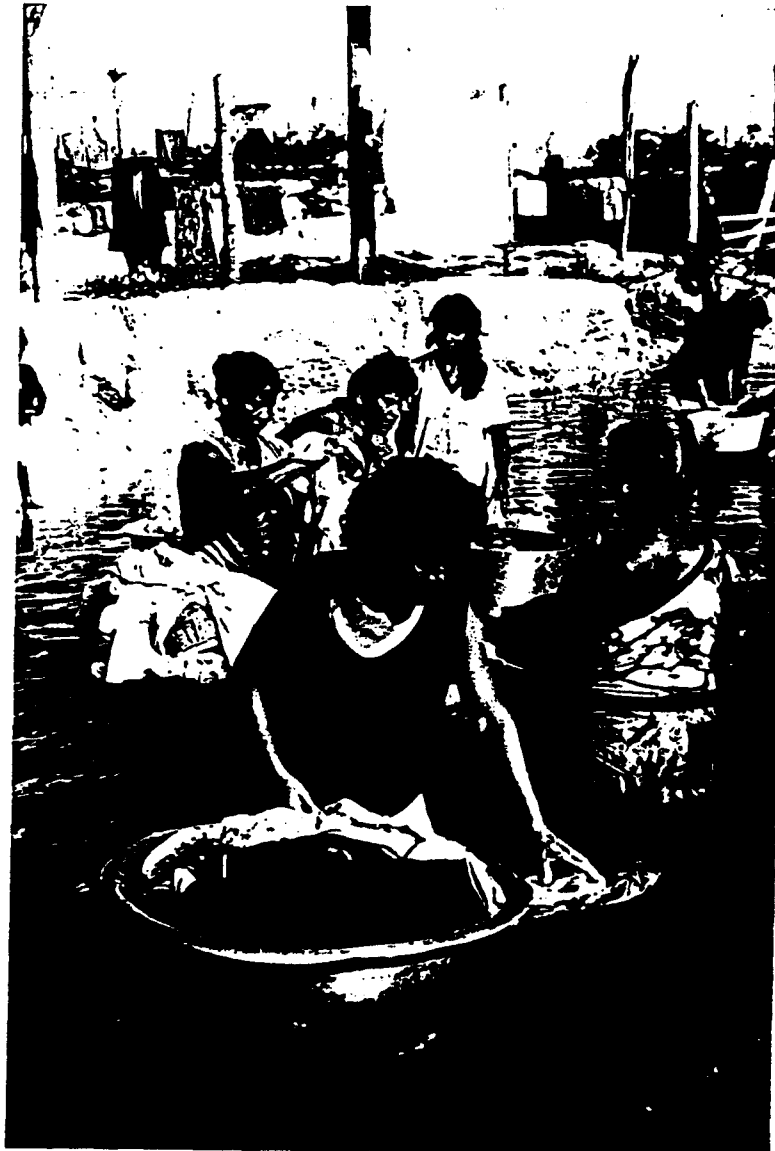
**Networks, Centres and Researchers: An Update of Recent Conferences**

Conference Title and Location	Topics of Discussion	Contact
Conference Title and Location	Topics of Discussion	Contact

**Networks, Centres and Researchers: An Update**

<b>Organization</b>	<b>Activities</b>	<b>Contact</b>
<b>Organization</b>	<b>Activities</b>	<b>Contact</b>

## **VIII      A Guide to the UN System, Development Banks and Regional Organizations**





**A GUIDE TO THE UNITED NATIONS SYSTEM, REGIONAL ORGANIZATIONS AND  
DEVELOPMENT BANKS**

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In this section, the directory provides the reader with a "roadmap" to the United Nations system, regional organizations and development banks. It includes summary charts to give short descriptions of gender, environment and health activities and initiatives within each organization. Addresses with telephone, fax and telex numbers have been included, along with a contact point whenever possible, to facilitate further contact.

Traditional approaches to gender, environment and health have fallen short of the needs of women. New partnerships must be forged to envision and invigorate the path ahead to develop more fully the interface of gender, environment and health. This section of the directory, in combination with the section listing non-governmental organizations, will suggest a broad range of possibilities for forging new partnerships for action.

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Organization	Activities	Contact
African Development Bank	Address requests for information to contact at right	<p>African Development Bank Avenue Joseph Anoma B.P. 1387 Abidjan 01 Cote d'Ivoire Tel: (225)204444-204171 Fax:227839 Tx: 22202 Secretary General: Kofi Dei-Anang</p>
Andean Development Corporation	<p>In 1982, the Andean Development Corporation signed an agreement with IFAD, thereby establishing a general framework for cooperation that would facilitate the achievements of common goals among the member countries of both institutions. Their participation as a cooperative institution includes, among other activities, the administration and supervision of loans granted by IFAD to the countries of the subregion. The program intends to develop activities in the areas of education and health adapted to environmental and cultural conditions.</p>	<p>Andean Development Corporation Edificio Torre Central Transversal, Piso 4 al 10 Caracas, Venezuela tel: 58-02-285-558 MASTER Fax: 58-02-284-5754 Tx: 27418 Cafesve Exec. President: Dr. Luis Enrique Garcia</p>

<p>Arab Fund for Economic and Social Development (BADEA)</p>	<p>Address requests for information to contact at right</p>	<p>BADEA P. O. Box 21923 Safat, 13080, Kuwait Tel: (973)536578 fax: (973) 536583 Director General: Akdlatif Y. al hamad</p>
<p>Asian Development Bank (ADB)</p>	<p>Environmental concerns include: tropical forest management, biodiversity protection, pollution control, urban environmental improvement, poverty alleviation, institution building, human resource development, agricultural and natural resource management. ADB is pursuing an initiative to develop an Asia Sustainable Growth Fund with private sponsors.</p>	<p>Office of Environment and Social Development Asian Development Bank P.O. Box 789 1099 Manila The Philippines Tel: (63-2)632-4444 fax: (63-2)741-7961</p>
<p>Canadian International Development Agency (CIDA)</p>	<p>Address requests for information to contact at right</p>	<p>CIDA 200 Promenade du Portage Hull, Quebec Canada K1A 0G4 Tel:(819) 997-5456</p>

<p>Commission on the Status of Women (CSW)</p>	<p>CSW was established by ECOSOC in 1946 to prepare reports to ECOSOC on matters concerning the promotion of women's rights in the political, economic and educational fields. It has a five member working group to consider confidential and non-confidential communications on the status of women, trends and patterns of discrimination indicated by communications. The CSW meets in closed meetings.</p>	<p>Commission on the Status of Women (CSW) Division for the Advancement of Women Centre for Social Development and Humanitarian Affairs Vienna International Centre P.O. Box 500 A-1400 Vienna Austria Tel: (43-1)211310 Fax: (43-1)237495</p>
<p>Commonwealth Development Corporation (CDC)</p>	<p>Under the terms of the CDC Act, investment in projects in the areas of health are not permitted. These sectors are dealt with by the British aid initiative under the auspices of the Overseas Development Administration.</p>	<p>CDC One Bessborough Gardens London SW1V2JQ United Kingdom Tel: (44-71) 828-4488 Fax: (44-71) 8286505 Tx: 5121431/25849 Chief Executive: John Eccles</p>



<p>Deutsche Gesellschaft für technische Zusammenarbeit (GTZ)</p>	<p>Address requests for information to contact at right</p>	<p>GTZ 6236 Eschborne 1 Dag-Hammarskjold-WEC-1-Z Germany Tel: 49 6196790 Fax: 49 619679115 head of Division - Health, Population, Nutrition Division: Dr. med Rolf Korte DTPH Dr. med Georg nachtigal, MSc</p>
<p>European Development Fund</p>	<p>Address requests for information to contact at right</p>	<p>European development Fund C/o European Communities Rue de la Loi 200 B-1049 Bruxelles, Belgium Tel: (322) 235-1111 Fax: (322) 236-2725 Tx: 21877  Contact: Dr. Dominique David  Women in Development Desk Contact: Dr. Sherry Chapman</p>

<p>Finnish International Development Agency (FINNIDA)</p>	<p>Address requests for information to contact at right</p>	<p>FINNIDA Ministry of Foreign Affairs Mannerheimintie 15 A 00260 Helsinki Finland Tel: (358-1) 341-6424 Fax: (358-1) 341-6428</p>
<p>Food and Agriculture Organization of the United Nations (FAO)</p>	<p>The FAO carries out four main functions: it collects, analyses and disseminates information; it advises governments on policies and programmes; it provides technical assistance; and serves as a neutral forum for the discussion of food and agriculture issues. Major areas of FAO activity are: crop production, livestock, natural resources, research and technology, rural development, nutrition, food and agriculture policy, fisheries and forestry.</p>	<p>Food and Agriculture Organization of the United Nations Viale delle Terme di Caracalla 00100 Rome, Italy Tel: (39-6) 52251 Fax: (39-6) 52253152</p>

<p>The Ford Foundation</p>	<p>While the Ford foundation does not at this time have a program focussing expressly on health services or medical care, they do support organizations in areas related to health including community development, agriculture etc.</p>	<p>Ford Foundation 320 East 43rd Street New York, NY 10017, USA Tel: (212) 573-5000 Fax: (212) 599-4584 Chair: Henry B. Schact President: Franklin A. Thomas</p>
<p>Inter-American Development Bank (IDB)</p>		<p>Directors in Charge of Women's Affairs: Lynn Walker, Marsha Smith</p> <p>IDB 1300 New York Avenue, N.W. Washington, DC 20577 USA Tel: (202) 623-1000 Fax: (202) 623- 3614 Tx: 64141 President: Dr. Enrique V. Iglesias Environmental Protection Division: Anne Deruytere</p>

<p>International Fund for Agricultural Development (IFAD)</p>	<p>The objectives of IFAD include: meeting the needs of the poorest rural communities in particular, rural women, small farmers, the landless, fisherman and livestock herders; promoting grassroots development and innovative approaches that build on local participation; finance project and programmes that introduce, expand, or improve food production systems. Directives from the Executive Board have emphasized the economic empowerment of rural women, and the integration of women into IFAD project activities</p>	<p>IFAD 107, Via de Serafico, 00142 Rome, Italy Tel: (39-6) 54591 Fax: (39-6) 5043463</p>
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<p>International Research and Training Institute for the Advancement of Women (INSTRAW)</p>	<p>INSTRAW is responsible for research, training and information activities on issues of women and development (WID) and the worldwide dissemination of research and public information on WID issues. INSTRAW's primary objective is to ensure that sustained attention is given to the integration of women into development activities at all levels. While not directly involved in the development of health programmes, INSTRAW has pursued research in health related areas. A core program for the 1992-1993 biennium is <u>Incorporating Gender in Environment and Sustainable Development</u>. INSTRAW is also involved in developing modular training package on Women, Water Supply and Waste Management and Women and Waste Management. Another module on women and sustainable development is forthcoming.</p>	<p>INSTRAW                  Calle Cesar Nicholas Pension No. 102-A, Santo Domingo D.N.                  Dominican Republic                  Tel: (809) 685-2111                  Fax: (809) 685-2117                    Director: Ms. Margaret Shields</p>
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<p>Organization of American States (OAS)</p>	<p>The OAS is the forum for hemispheric dialogue on political, economic, social, educational, cultural, scientific, and technological matters. Among its specialized agencies is the Inter-American Commission on Women (CIM).</p>	<p>OAS 1889 F St. N.W. Washington, DC 2006 USA Tel: (202) 458-3000 Fax: (202) 458-6147 Secretary General: Joao Clemente Baena Soares</p> <p>CIM Address: as above Tel: (202) 458-6084 Fax: (202) 458-6335 Executive Secretary: Linda Poole</p>
<p>Pan-American Health Organization (PAHO)</p>	<p>A specialized agency of the OAS, PAHO is the regional agency of the WHO.</p>	<p>PAHO 525 23rd St. N.W. Washington, DC 20037, USA Tel: (202) 861-3200 Fax: (202) 223-5971 Director: Dr. Carlyle G. de Macedo Women's health and Development Coordinator: Dr. Pamela Hartigan Tel: (202) 861-3405 Fax: (202) 223-5971</p>

<p>Promotion of the Role of Women in Water and Environmental Sanitation Services (PROWESS)</p>	<p>A unit with UNDP, PROWESS is devoted to expanding women's participation in water and sanitation issues. Launched in 1983, the program has been merged with the World Bank Water and Sanitation Program.</p>	<p>PROWESS/UNDP 304 East 45th Street New York, NY 10017, USA Tel: (202) 906-5862 Fax: (202) 906-6350</p>
<p>Swedish International Development Authority (SIDA)</p>	<p>Address requests for information to contact at right</p>	<p>SIDA S-105 25 Stockholm Sweden Tel: (46-8) 728-51-00 Fax: (46-8) 322-14-1 Director General: Mr. Carl Tham Women in Development Desk: Dr. Carolyn Hannan Andersson</p>
<p>United Nations Children's Educational Fund (UNICEF)</p>	<p>UNICEF is committed exclusively to the welfare of children. It works with governments, local communities, NGO's and other partners to carry out programs in: primary health care, nutrition, water and sanitation, the environment, women in development, and basic education and other activities that improve the well-being of children.</p>	<p>UNICEF 3 United Nations Plaza New York, NY 10017, USA Fax: (212) 888-7454</p>

<p>United Nations Development Fund for Women (UNIFEM)</p>	<p>UNIFEM funds programs which support and promote the participation of women in development programmes and policies.</p>	<p>UNIFEM 304 East 45th Street, 6th floor New York, NY 10017, USA Tel: (212) 906-6289 Fax: (212) 906-6705</p>
<p>United Nations Development Program (UNDP)</p>	<p>UNDP's regular health program constitutes a very small part of overall expenditures. Within this relatively small program commitment, UNDP emphasises training of health personnel and improvement of management capacity. The promotion of primary health care, health system infrastructure development, disease prevention and control, provision of clean drinking water and adequate sanitation are of central importance to UNDP's health program input in both urban and rural areas</p> <p>UNDP's Capacity 21 program undertakes activities to assist developing countries build their capacity to integrate the principles of Agenda 21 into their national development strategies.</p>	<p>UNDP One United Nations Plaza New York, NY 10017, USA Tel: (212) 906-5000</p>



*UN System, Development Banks and Organizations*

<p>United Nations Educational, Scientific and Cultural Organization (UNESCO)</p>	<p>UNESCO promotes education, science, culture and communications. Its focal areas include: earth sciences, energy resources, environment, population, rural development, water sciences, women.</p>	<p>UNESCO 7 Place de Fontenoy 75700 Paris Cedex Tel: (33-1) 45 68 12 81 Fax: (33-1) 42 73 16 88</p>
<p>United Nations Environment Program (UNEP)</p>	<p>UNEP's role is to catalyse, coordinate and stimulate environmental action within the UN system. UNEP activities include: environmental health, ecosystem management, desertification control, environmental management, soils and water resources, forestry, energy, natural disasters, environment and development, environmentally appropriate technologies, industry and the environment and oceans.</p>	<p>UNEP Headquarters P.O. Box 30552 Nairobi, Kenya Tel: (254-2) 333930 ext. 4311 Fax: (254-2) 520711 Tx: 22068</p> <p>UNEP Liaison and Regional Office Palais des nations, CH-1211 Geneva 10, Switzerland Tel: (41-22) 79858850</p>
<p>United States Agency for International Development (USAID)</p>	<p>Address requests for information to contact at right</p>	<p>USAID 320 21st Street N.W. Washington, DC 20523, USA Tel: (202) 647-9620 Fax: (202) 647-0148</p> <p>Administrator: J. Brian Atwood Women in Development: 703-875-4411</p>

<p>World Health Organization (WHO)</p>	<p>Under its Programme for the Promotion of Environmental Health, WHO focuses on:</p> <ol style="list-style-type: none"> <li>1. urban environmental health (integrated urban health and environment planning, create conditions conducive to good health, focus on priority issues of air and water pollution, hazardous wastes)</li> <li>2. rural environmental health (water supply and sanitation, water resource development)</li> <li>3. global and integrated environmental health: (support for environmental health information management, human resource development, environmental health research, major global environmental issues affecting human health: ozone layer depletion, climate change, ionizing and non-ionizing radiation)</li> </ol> <p>With UNDP, WHO is incorporating health concerns into the Capacity 21 program to integrate health and environment concerns into national</p>	<p>WHO 20, Avenue Appia 1211 Geneva 27 Switzerland Tel: (41-22) 791-2111 Fax: (41-22) 791-0746 Tx: 415416</p> <p>Programme for the Promotion of Environmental Health</p> <p>Office of the Executive Director Tel: (41-22-791-3582)</p> <p>Rural Environmental Health, Chief, Dr. D. Warner Tel:41-22-791-3546</p> <p>Urban Environmental Health Chief, Dr. R. Helmer Tel: 41-22-791-3761</p> <p>Global and Integrated Environmental Health Director, Dr. T. Kjellstrom tel: 41-22-791-376</p>
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## **IX Selected Bibliography**



**IDRC Photo**



## **SELECTED BIBLIOGRAPHY**

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This section highlights emerging literature on the interlinkages between gender , health and the environment. It begins with an annotation of selected regional issues, followed by a bibliography obtained through inter-library searches of various databases. The bibliography includes a rich base of data and analysis of each field on which understanding of gender, environment and health linkages could be accomplished.

At the end of the tab, the World Health Organization's *Women, Health and Environment: An Anthology* has been reproduced with permission. This anthology contains a variety of examples of issues related to gender, environment and health. The purpose of the Anthology is to bridge a number of gaps in existing understanding of how environmental factors affect women's health and to create clearer linkages between gender, environment and health.

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**Selected Annotation**

***Women and the Environment***

Prepared by Annabel Rodda, *Women and the Environment* focuses on the role of women as users, producers and managers of the earth's resources, and shows how environmental degradation affects their health and basic needs. The book includes a glossary of environmental terms, a guide to education and action, and a bibliography and resource guide.

Zed Books, 1991. paper; 192 pages.

***Malaria and morbidity***

Simply offering malaria treatment is inadequate, as a variety of pressures may combine to prevent women from taking advantage of it. Wherever possible and whenever appropriate, health services must be taken to women. It is clearly unwise to rely solely on official statistics to estimate the numbers likely to be affected by a given disease. In many instances, those who slip through the net of official statistics are women.

Ettling M. *World Health Magazine*, 1990, April-May.

**"Clinicopathologic and socioeconomic impact of Chagas disease on women: a review"**  
in P. Wijeyaratne, E. Rathgeber and E. St-Onge, eds. *Women and Tropical Diseases*

The social impact of Chagas disease is likely to be greater on poor women than on any other population group. But as family educators, caregivers and home-makers, they are in a good position to help reduce transmission to the family members. If they were fully informed through extensive health education efforts of the nature and extent of the disease and its modes of transmission, they could educate their children in its prevention and control. Chagas disease therefore illustrates how the health status of entire communities could be improved by specifically focusing on women in terms of further research efforts, and educational, preventive and economic measures.

A. Zajac. Ottawa: International Development Research Centre, 1992: 134-148

***Close to Home: Women Reconnect Ecology, Health and Development Worldwide***

This collection of papers chronicles women's struggles against businesses and governments that pollute the earth and threaten women's health and well-being. Based on a seminar held in India in 1991, this book clarifies linkages between deforestation and the spread of HIV/AIDS and between the promotion of reproductive technologies and the devaluation of women, and examines the effects of agribusiness on human rights and ecology.

Vandana Shiva ed. New Society Publishers, 1994. 176 pages.

***Feminist Perspectives on Sustainable Development: Shifting Knowledge Boundaries***

A collection of essays by celebrated feminist thinkers, *Feminist Perspectives* builds linkages between gender equity, food security and survival, ecological preservation and political participation. Chapter's review women's contribution to the Earth Summit in 1992 and critique the state of feminist research and politics in sustainable development.

Wendy Harcourt ed. Zed Books with Society for International Development. 1994. 272 pages.

***The Health of Women: A Global Perspective***

Definitions of women's health must go beyond reproductive roles, to include considerations of socio-economic factors and gender politics. In *The Health of Women*, contributors address issues of access to health care and violence against women across continents and generations.

M. Koblinsky, J. Timyan and J. Gay eds. Westview Press. 1993. 290 pages.

***The World's Women: Trends and Statistics***

*The World's Women* is a pioneering study of social trends and statistics by gender. It provides data and analysis on economic life, population and health, family life, education, public life and human settlements, media and the effects of war. This compilation of gender disaggregated information has been designated as an official document of the Fourth World conference on Women (Beijing 1995).

UN Publications. May 1995 (second edition).

***Women, Poverty and the Environment in Latin America***

This report presents the findings of ICRW's (International Centre for Research on Women) review of women's environmental contributions in Latin America. Information was collected through interviews, questionnaires, publications and project materials. The results of the study demonstrate that there is a growing women and environment movement in Latin America. Ninety-four organizations are identified that incorporate women and environment activities in their programs. While most of their activities are small scale, the study shows that the organizations can and do make invaluable contributions to sustainable food production, reducing illness through improving sanitation, and improving the quality of life in poor urban and peri-urban communities.

Michael Paolisso and Sally W. Yudelman. Washington, DC: ICRW, 1991. 47 pages.



***Patient No More; The Politics of Breast Cancer***

This book presents a first hand account of a Canadian journalist's bout with breast cancer. Describing the chain of events from diagnosis, treatment and eventually activism, it details the issues surrounding the disease from a patient's point of view and gives a well researched and thoughtful critique of the systems and processes around breast cancer in the North.

Sharon Batt. gynergy books. 1994. 415 pages

***Ecofeminism***

The relationship between patriarchal oppression and the deterioration of the environment is carefully analyzed in this collection of essays which cover a range of topics from the concept of knowledge, poverty and development, biotechnology, the search for cultural identity and the search for freedom and self determination. Prevailing theories about economic development, women in development and sustainable development are considered and critiques in the process of constructing a an ecofeminist epistemology.

Maria Mies, Vandana Shiva. Zed Books. 1993. 328 pages.

***Interregional Workshop on the Role of Women in Environmentally Sound and Sustainable Development***

Volume 1 contains papers/chapters on theory and methodology, background papers and case studies. The case studies are diverse in thematic scope and geographic focus. Volume 2 contains "Guidelines for Action at the Project Level," as well as project profiles in the following areas: Water Supply and Sanitation, Energy, Rural Development/Agriculture, Coastal Area Management, Management, Research and Training, Science and Technology, Micro-Enterprise/Construction, Health, Small-Scale Mining, Statistics, Population, Aging, Desertification and Public Information.

*Vol. 1: Proceedings of the Workshop and Vol. 2: Project Profiles.* Beijing: United Nations Department of Economic and Social Development, The State Science and Technology Commission of the People's Republic of China, All-China Women's Federation, United Nations International research and Training Institute for the Advancement of Women, 1992

***Indoor Air Pollution from Biomass Fuel***

Thirteen papers about the various aspects of indoor air pollution are presented in this volume. Geographic representation is diverse: Indonesia, China, India, Africa, Vietnam, and Nepal. Issues covered include: health impacts, social and economic consequences, technical interventions, the role of information networks, the success of different global and national programs for improved cookstoves, and the role of energy

*Working Papers from a World Health Organization (WHO) Consultation, June 1991.* Geneva: WHO, 1992.

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# **Anthology on Women, Health and Environment**



**World Health Organization  
Geneva  
1994**

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Despite increasing interest in the issue of women's health, there is a dearth of research and training in this area. Gender-specific and gender-disaggregated data are therefore scarce. In addition, biomedical research methods and interpretations of disease and illness frequently overlook the social origins of much ill-health for women, and consequently underestimate its true dimensions.

This *Anthology* is part of a teaching package aimed at enhancing information in the area of women, health and environment, and encouraging teaching and research around the issues it contains. It cannot provide answers to the many difficult questions raised, although we hope that teachers, students, or other users may be inspired to undertake or promote further research on these or similar issues, thus bridging the gaps in existing knowledge in the interrelated areas of women, health and environment.

This work was financially supported by the Swedish International Development Authority (SIDA).

I am greatly indebted to Jacqueline Sawyer, Jeanne Mager Stellman, Ana Rosa Moreno, and Ruth Bonita for their major contribution to this work.

Thanks are also due to Dr D. Benbouzid, Dr J. Cattani, Dr B.-H. Chen, Dr E. Eckerman, Dr T. Kjellström, Dr K. Mott, Dr M. Simpson-Hébert, and Dr J. Stober for their comments and advice.

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**In all cases, the text is an abstract of the original work cited at the foot of each contribution. The introductory box which presents the issue, and the final box providing a conclusion or brief commentary, may include my own efforts to link the issues and themes or draw particular attention to important aspects. I would like to thank all authors whose work appears in the following pages, and to apologize for any inaccuracies of interpretation which may have occurred.**

**Jacqueline Sims  
Office of Global and Environmental Integrated Health  
World Health Organization, Geneva, 1994**



## Water

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Despite the voluminous literature on women's role and responsibilities in relation to water provision and use, little research has been carried out to establish the effects on women of insufficient and poor quality water in terms of household coping strategies, the health impact of water-carrying, or the differential impact on women of water-borne diseases. Some important issues raised in this chapter are as follows:

- women's lack of time and energy affects selection of water sources and can limit the availability of safe water at home and in the fields
- the high time and energy costs of fetching water govern women's perceptions of the importance of hygiene in disease prevention
- control of water has class and gender dimensions affecting all aspects of women's lives
- the stigma attached to water-borne diseases such as urinary schistosomiasis in women affects their own health-seeking behaviour and their access to health care
- social factors such as these contribute to under-reporting of urinary schistosomiasis in women
- the disabling effects of diseases such as schistosomiasis and guinea-worm hamper women's performance of their multiple roles
- this threatens the nutrition and health status of the whole family
- time and social pressures may lead to under-reporting of malaria in women and delays in seeking treatment
- lowered immunity to malaria during pregnancy has important health implications for women and their fetuses
- exposure to cadmium may increase women's risk of osteoporosis and other bone diseases.

## Choice of water sources in rural Ghana

During the rainy season many communities in West African countries use alternative water sources, such as traditional wells, to supplement hand-pumped water supplies. But these are often contaminated. Ensuring an adequate quantity of water, however, usually takes precedence over concerns about its purity. Choices of water source are governed by factors such as the workload and time shortage of women, who are responsible for fetching water for home use and on the farm. Is more health education an answer to this problem?

In many agricultural communities, the wet season is the busiest period in the year, as a considerable amount of agricultural work has to be done at this time. An investigation in a rural district of Ghana in 1985 found that the hand pump was used by only 142 people in the wet season, as opposed to 215 in the dry season. It therefore appears probable that seasonally-based rural community work patterns influence the extent to which safe drinking water sources are used at home, and while working on farms (which might be 4-6 kilometres distant). For farm work, water must either be carried from the home to the farm by women and children, or more usually, obtained from a local stream or river, unless these are dry due to drought. In this community, water shortages during the dry season are common.

Because women are largely responsible for water collection, as well as for most of the agricultural work (around 70%), it is they who determine which water source is used. Time and energy expenditure were major reasons why the source nearest home was frequently selected. Before pumped water became available, water-borne and water-related diseases were prevalent and trips to water sources long — up to 8 km in the dry season. This study was carried out to ascertain how education could optimize the health benefits of a pumped water supply, particularly since the incidence of diarrhoeal disease in the community was high, accounting for 25% of all child deaths.

### **Time and distance outweigh safety issues**

Women were asked why their village should have a hand pump; 90% gave decreased distance/time to water source as the first response, while 10% responded firstly that good quality water and the reduction of disease were important, and secondly that reduced distance to a water source was desirable. It was established that although health education efforts appeared successful in the dry season, problems were encountered in the wet season for two reasons: the community as a whole had little time for water collection tasks owing to the urgency of agricultural work, and the educators were themselves local subsistence farmers whose own farm work had to take priority at this time.

Village women were also asked what factors contributed to a decision to fetch water from sources other than the hand pump during the wet season; 53% responded that they had no time after returning from field work to fetch pumped water, 24% felt too tired to make the effort to pump water, and 20% indicated that family size dictated the need for large quantities of (presumably quickly available) water. Time and distance, rather than water safety, largely governed choice of water source. Even if distance was not a factor, women frequently mentioned the physical energy required to use the hand pump. The hand pumps are therefore seen as a secondary source during both seasons.

The findings of this study point to the importance of the source of water on the farm, suggesting that this needs to be incorporated into educational efforts, although providing wells on farmland is problematic due to high costs. It also stressed the need to link educational efforts to the peak agricultural season, despite the difficulties involved, when people are most likely to be using contaminated sources, and when local women educators are fully occupied. A further problem in the wet season is that outside assistance is not available as this area is cut off during the rains. One proposal is to involve more local women in the educational process, to ensure that women are aware of the implications of choosing a contaminated water source.

water brought into a household had a specific purpose and was never regarded as "extra".

### **Water shortage or time shortage?**

Although it was established that women understood the links between contagion, hygiene and eye disease, they often stated that they had insufficient water for cleaning their children's faces. However, there was no association between the total amount of water in the home and cleanliness of faces, and some children in homes distant from water had cleaner faces than those nearer the water supply. This confirmed the initial hypothesis that it was maternal perception of the quantities of water needed and the time required to collect it, coupled with perceptions of the usefulness of face washing, that influenced the practice. The perception of the project personnel, in contrast, was that women significantly overestimated the quantity of water needed for facewashing.

Demonstrations were organized to show that only a small amount of water was necessary for facewashing, and that a considerable number of faces could be washed for the amount of water women estimated to be necessary for one person. However, women's own perceptions were that faces were unlikely to stay clean for long enough to influence infection, and that an unwashed child could infect a child whose own face was clean. Women's time constraints were also cited as a major reason for neglecting facewashing. Time constraints were linked to the women's primary responsibility for food production, in an area where drought and food shortage are common. Women's agricultural labour was crucial, with field work starting at 5:30 am and continuing until 3 pm. Extra time invested in childcare was negatively viewed. No woman, moreover, would consider using water not carried by herself for her own household's uses. Other caregivers could therefore not be asked to wash one's children.

### **Change — a community decision**

The strong patriarchal patterns in this society put women strictly under the control of their menfolk. While mothers of young children are technically responsible for their children's health and wellbeing, they are least able to authorize any changes in household routine that would improve it. Women who oppose their husbands beyond the accepted norm risk being accused of the wish to destroy the husband and his homestead. This pattern has been detected in other women, water and sanitation projects in Africa and Asia.

To overcome this problem, the project organized community meetings attended by all, at which improved hygiene practices were discussed. In this situation, men learned of the women's conflict between child care and agricultural duties, and the prevailing perception of how much water and time it took to wash faces. Women made it clear that before they could change their behaviour there had to be community and household consensus and support for the new practices.

Behavioural change in this community had to originate in recognized village authority structures, rather than directly from the dictates of external project personnel or from women's own evaluations of a situation. The project staff therefore understood that health education efforts should target all members of the community, rather than focusing only on women as is commonly the case. This study demonstrates that in patriarchal societies, working through women's groups only will fail to achieve sustained changes in behaviour, unless these groups are vested with sufficient autonomy or authority.

*Summary of the work of:*

McCauley AP, West S, Lynch M. Household decisions among the Gogo people of Tanzania: determining the roles of men, women and the community in implementing a trachoma prevention programme. *Social science and medicine*, 34(7):817-824.

## Implications of Schistosomiasis haematobium in women

Schistosomiasis is contracted by the passage of the parasite through the skin in water. It is the second most prevalent parasitic disease in Africa, following malaria. It is generally accepted epidemiological wisdom that the prevalence of urinary schistosomiasis in men is higher than in women. The disease burden of schistosomiasis is not reflected by prevalence data, however. Even if prevalence is higher in men, those women who are infected may bear an additional disease burden due to both physical and social morbidity (genital lesions and stigmatization). Severity of disease is related to the intensity of infection, which is mainly determined by frequency of exposure. It is not known whether prolonged, low-level exposure has a cumulative effect. Recent investigations of the social implications of the disease for women suggest that urinary schistosomiasis may be a neglected and under-reported health problem.

Women who are infected with *Schistosoma haematobium* — the parasite which causes urinary schistosomiasis — may suffer from iron deficiency and anaemia if the infection reaches a level sufficient to cause loss of blood in urine (haematuria). The infection results in loss of appetite, fatigue and weakness, along with impaired ability to carry out domestic, agricultural, and parental duties. A wide range of genital, reproductive and hormonal disorders has been associated with *S. haematobium* infection.

Two studies on urinary schistosomiasis in women undertaken in Cameroon and Nigeria reveal oft-neglected social dimensions of the disease which need to be taken into consideration in evaluating the impact of this disease on individuals and communities.

In a village in Cameroon, prevalence of schistosomiasis was found to be 76% with slightly more women infected than men. While egg count diminished with age in males, there was little difference in egg count among females between 5 and 44 years of age. Over 44 years of age, a significantly lower egg count in both sexes was noted. In a study carried out in a rural area of Nigeria, (population 20,000) 71% of all water-related activities were carried out by women. Children aged from 5 to 14 years had the highest prevalence of infection (72%). Prevalence in adults was

54%. Females were found to have a more stable infection status than males. In this Nigerian community, 80% of households are polygamous and husbands do not provide full support. Loss of productivity through urinary schistosomiasis infection therefore has serious implications for family income.

Both studies attributed the women's infection rates to their gender-assigned domestic and agricultural responsibilities. These include water collection, bathing of children, laundering, cleaning of utensils, preparation and washing of foodstuffs, and farming, all of which involve regular and prolonged exposure to infected water. Inadequate sanitary disposal systems, lack of basic amenities and lack of awareness concerning sources of infection and transmission, were also identified as causal factors.

Marriage opportunities for those affected may be diminished, as parents of unmarried daughters with *S. haematobium* are obliged to inform potential suitors of the infection. In many cases, men refuse to marry an infected girl, in the belief that she has an infectious venereal disease. This thinking also affects married women who are infected. In the Nigerian community, they are forbidden any form of sexual contact with their husbands until they are cured, and may even be evicted from the household. This contrasts with the belief held by many African societies that urinary schistosomiasis in men ("red water") is a sign of coming of age and virility.

### Who gets treatment?

Decision making and financial resources in the study areas are usually controlled by men, which further reduces the likelihood that an infected woman will obtain treatment for her condition. In families with little money, fathers prefer to pay hospital fees for sons rather than daughters. Similarly, mothers must receive the consent of husbands or mothers-in-law before they seek medical treatment for an infected child. Even if a woman generates income of her own, it is unlikely to be sufficient to cover the full costs of treatment either for herself or her children.

The Cameroon village study established that few villagers could afford the recommended drug, Praziquantel, which sells for the equivalent of US\$ 4 per tablet. Four tablets are needed per treatment. The study therefore recommends use of Metrifonate, a single dose of which can reduce egg count by about 90%. This costs the equivalent of only US\$ 1, a sum the villagers agreed they could afford. Women in the Nigerian community were disinclined to seek treatment, not only to avoid diagnosis with a stigmatizing disease, but also because of its constant recurrence. This recurrence fosters the belief that schistosomiasis responds neither to

traditional nor western medicine, and together with the frequent shortage and high cost of drugs, discourages women from investing scarce resources in treatment. The problem is compounded by the local practice of selling drugs at whatever price people can afford, which leads to underdosing and escalation of infection.

The social stigma attached to *S. haematobium*, in conjunction with financial limitations, discourages infected women from seeking medical help. This may contribute to the prevalent view that males are generally more exposed to infection through occupational and recreational exposure and greater mobility than females. It is therefore likely that urino-genital schistosomiasis infections in women are significantly under-reported in many societies. The results can be tragic for the women concerned in terms of lack of treatment, prejudice if fertility is lost, and social ostracism through misunderstanding of the nature of the disease. *S. haematobium* provides an excellent example of the differential disease burden and greater suffering to which women may be exposed from an environmental hazard afflicting in principle all members of a community.

*Summary of the work of:*

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Nwaorgu OC. Schistosomiasis and women in Amagunze, South-East Nigeria. Unpublished paper prepared for WHO meeting on Gender and Tropical Diseases, Oslo, 1992. (See Appendix for contact address.)



## Schistosomiasis mansoni and work capacity in Sudan

Although an estimated 200 million people worldwide are infected with schistosomes, and up to 600 million are exposed to risk of infection, considerable controversy remains concerning the extent of ill-health caused by schistosomiasis. In the case of *Schistosoma mansoni*, the nature of the infection, which is chronic and has neither a constant effect over time nor a visible set of symptoms, contributes to this uncertainty. To obtain an indication of the degree of incapacity caused by infection with *S. mansoni*, an investigation of the relationship between women's infective status, their daily activity patterns and their productive output was undertaken in a Sudanese village.

Canals are generally considered to be the main source of transmission of schistosomiasis in this area. The village in question was selected for its potentially high prevalence and intensity of infection, and its location by a minor canal. All water for domestic and agricultural use was taken directly from this source as the village had no water pump or standpipes. Pit latrines were not available to the village population. The investigation took place during the cotton picking season. During this period, women make a major contribution to the local cash economy.

Women were screened for *S. mansoni* before the picking season began. Of 62 women screened, 30 were negative and 32 positive. Repeated stool samples were taken to verify the negative and positive results, and to enable screening for the presence of other parasites. Urine samples were taken to check for presence of *S. haematobium*. Thereafter, 22 women were paired, with one positive and one negative for *S. mansoni*, and matched as closely as possible for other variables such as other parasitic infections, age, ethnicity, socioeconomic status, household composition, and access to the cotton fields. The intensity of infection among the 11 infected women was high, with an egg output ranging from 726 to 3768 eggs per gram of faeces, (mean = 1958 eggs per gram). Anthropometric and haematological measurements were also taken to ascertain any differences in nutritional status between infected and uninfected women.

Each infected woman was observed on a minute-by-minute basis for specific periods during one day, and her partner was similarly observed on

the following day. All actions were recorded during these periods, including those not related to cotton picking (for example, collecting animal fodder between picking sessions). The total amount of cotton picked was weighed at the end of each morning or afternoon's work.

### Differences between infected and uninfected women

All 22 women picked cotton in the morning sessions of field work, but only 18 returned to pick in the afternoon. The four who did not return were all infected with *S. mansoni*, and cited fatigue as their reason for not doing so. Infected women spent less total time in the fields both morning and afternoon than uninfected women. Statistical analysis revealed that infected women spent less observed time picking cotton than women free from infection, and also less observed time engaged in other activities. Infected women spent a greater amount of observed time at rest. Infected women also picked cotton in postures requiring the least energy output, avoiding a stooped or crouched position.

Excluding the four women who did not return to the fields in the afternoons due to fatigue, analysis showed that the total quantity of cotton picked by infected women was not less than the amount picked by uninfected women. However, infected women followed different activity patterns, picking as much cotton as possible in the shortest possible time in both mornings and afternoons. In this way they maintained the average total quantity of cotton required (thus generating the expected amount of income for the household) but did not invest time in other agricultural activities such as fodder collection. Infected women also participated equally in domestic work, but spent less time on activities unrelated to either their domestic or agricultural duties. Observation showed that infected women invested less time and effort in personal care than uninfected women.

It can be concluded that the pressure on women to complete an economically important task impelled the majority of those infected to perform at the same rate as women free from infection. The resulting energy deficit was not reflected in the performance of domestic household duties — also the full responsibility of women — but in spheres where they were not held mainly responsible (other agricultural duties) or where only they themselves were affected (personal care, leisure, social or religious activities). It is unlikely that the women consciously modified their behaviour due to awareness of the parasite, as all those participating in the study were without schooling, and unaware of the health effects of schistosome infections. The infected women did realize, however, that they had limited stamina and therefore set priorities for their energy

expenditure in accordance with the perceived importance to the community of their tasks, at a certain cost to themselves.

This investigation illustrates that an interdisciplinary approach is required when attempting to determine the health burden of schistosomiasis (and indeed other debilitating tropical and environmentally-related diseases) to which different population groups are exposed, and whether or not it constitutes a major public health problem. Biomedical approaches often fail to take account of social, cultural, economic and historic aspects when evaluating disease impact. Consequently, health care procedures are formulated on the premises of epidemiological understanding alone. Women's multiple roles provide an excellent opportunity to examine a health problem in an interdisciplinary context. In this study, the sample is small and no generalizations can be drawn, but further work in this direction is warranted.

*Summary of the work of:*

Parker M. Reassessing disability: the impact of schistosomal infection on daily activities among women in Gezira province, Sudan. *Social science and medicine*, 1992, 35(7): 877-890.

## Impact of guinea-worm infection on women in Nigeria

Thanks to national guinea-worm eradication programmes in African and Asia, the numbers affected with this disease have dropped from an estimated 10 million to 3 million yearly. However, the burden of guinea-worm infection is considerable for the entire community, but particularly so for women, owing to their multiple roles and responsibilities. While the effects of guinea-worm on agricultural productivity and schooling have been studied, little attention has been given to the effects of the disease at domestic level, or to its specific effects on women.

Guinea-worm is caused by swallowing the host, a small crustacean helminth, which is found exclusively in stagnant, unprotected water sources. Approximately a year after ingestion of the helminth, the metre-long parasite breaks through the host's skin in a painful blister. While infection is rarely fatal, it can incapacitate sufferers for extended periods. The worm generally emerges at or below the knee, causing painful swellings of the knee and ankle joints as well as secondary infection, making movement difficult or impossible. The chain of events — from painful skin lesions, decreased mobility, loss of income, reduced food intake, to lower levels of personal hygiene, despondency and neglect — affects all members of a family socially and economically.

A pilot study of 42 women, using qualitative survey methods, was carried out in two guinea-worm endemic areas of Nigeria, to evaluate the effects on women and their domestic and economic duties. The prevalence in the two areas was estimated at 30% and 60% respectively.

In the communities studied, the period of incapacity from infection with guinea-worm ranged from a few days to over three months, with an average of approximately 9 weeks. Three lesions were usually present simultaneously, although four or five lesions at one time were not unusual. New lesions often appeared just as earlier ones were healing, thus extending the period of incapacity. Of the 42 women studied, 37 had been infected previously, often repetitively.

The disability level was severe in both communities studied. More than one-third of the women studied were bedridden at some stage during their illness. Twelve could barely hobble with the aid of a stick, while nine could limp unaided. Five could walk normally, two of these being affected on the hand or arm. Women in these areas, as in most of West Africa, are responsible for all domestic duties and also make a major financial contribution to their households. Polygamous, extended families are the norm, and a husband's contributions may comprise only a portion of what is needed to maintain a household. Typical activities for women include farming, trading and local crafts.

Guinea-worm impeded the women's activities in several spheres: self-care, child-care, care of the household and income generation. Of these, self-care was most likely to be neglected as women did not wish to ask for help, recognizing that this was available only to someone else's detriment. Typical problems included inability to wash oneself and one's clothes; inability to move outside the house to defecate; reduced food intake due to diminished appetite as a result of the nauseating smell of the ulcer, and desire to reduce the need to defecate. Reduced income also led to reduced food intake.

Home remedies included application of various oils, or oils mixed with herbs. Only 14% of the women did nothing to treat the ulcers. A few covered the ulcers using cotton swabs, boiled leaves, or bandages. It was considered helpful to have the swollen area punched with a red hot iron just before the worm was ready to emerge, as a means of "relieving pressure". Self-care during pregnancy was affected by guinea-worm infection, largely due to incapacity of movement preventing attendance at health clinics.

Almost all of the women (40 of the 42) were unable to carry out all of their domestic duties during the infection. Duties fell into two areas — those performed in and immediately around the house (cooking, cleaning, washing) and those involving movement further afield (marketing, fetching wood and water). Ten women were confined to home-based chores, and the remainder needed help with all chores.

### **Infection signals falling income but increasing expenditure**

All women in these communities are expected to work and guinea-worm infection has thus reduced their incomes considerably. Only 5 women had been able to continue working continuously during the infection. This loss of earnings represented a triple blow: not only was current income reduced, but money had to be spent on treatment of the disease and on

ready-cooked food (which would not otherwise be purchased). Capital needed for economic recovery was therefore used up.

The most likely source of assistance was from members of the extended family, most frequently other women. This could be fragmentary due to absence of other family members during the daytime, or infection of other family members with guinea-worm, rendering them equally incapacitated. Husbands, mothers and siblings provided cash assistance to over half the women studied. Relatives, friends and neighbours provided assistance in kind, usually food. In a small number of cases, adequate assistance could not be obtained and the sufferers had to move in with relatives or remain alone all day, often with uncared for infants, until help became available in the evening.

In areas where infection has been completely or partially eliminated through protection of water sources, women are aware of how and why the scourge has been reduced, and of the benefits that have since accrued in the form of improved health and more time for income-earning activities. As the primary care givers in the community, and as those mainly responsible for water collection and storage, women should be the focus of control campaigns. The strong cooperative ethic which helps them survive when stricken with the disease should be fully incorporated into prevention strategies.

*Summary of the work of:*

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## Hepatitis epidemics and pregnancy

A variety of hepatitis known as epidemic Non-A, Non-B (ENANB) hepatitis has been responsible for outbreaks of the disease with a predilection for young adults. It has severe consequences for pregnant women as it occurs more frequently in this group than in others and leads significantly more often to liver failure in the third trimester of pregnancy. Outbreaks have been reported on several continents.

ENANB is an ecologically determined disease largely associated with faecal contamination of drinking water (and food). It has been reported in numerous environmental settings, including areas in which drinking water sources such as rivers, streams and open wells are situated in close proximity to open drains and contaminated surface water, and areas in which leaking water pipes run through polluted land, and among crowded living conditions. Slums and refugee camps, where water supply is poor and waste disposal systems inadequate, are vulnerable. The disease also commonly occurs during monsoons and floods, when water supply and waste disposal systems are likely to be disrupted.

Data gathered by WHO show that ENANB is widespread in several countries of Southeast Asia and may account for up to 90% of all sporadic cases of acute viral hepatitis. ENANB was found to have caused all but one of the ten hepatitis epidemics that have occurred in India since 1955. In the 1955 Delhi outbreak, the first of its kind to be documented, men and women were affected almost equally, but young adults most frequently. In general, the disease ran a benign self-limited course. Pregnant women were an exception to this rule, however, with a case-fatality rate of 10% from hepatic failure. Women in the third trimester of pregnancy were especially at risk.

Until 1980, the Delhi outbreak was believed to be due to infection with Hepatitis A virus (HAV). However, investigations following another outbreak in 1976, in Ahmedabad, revealed that both epidemics were in fact due to ENANB hepatitis. Meanwhile, an outbreak in Kashmir was clearly associated with faecal pollution of a local stream — which was the main drinking water source for the population affected. The severe illness that this infection produces in pregnant women was also apparent in this epidemic. Frequency of hepatitis was greater in pregnant women (17.3%)

than in either non-pregnant women (2.1%) or men (2.8%). The frequency of disease in the first, second and third trimesters was 8.8%, 19.4% and 18.6% respectively. Liver failure developed significantly more often in pregnant women (22.2%) than in men (2.8%). It did not occur at all in non-pregnant women. Since 1980, there have been periodic outbreaks of similar waterborne NANB hepatitis in different parts of the Kashmir valley.

In India, ENANB is responsible for 87% of cases of subacute hepatic failure, for 58% of cases of acute fulminant hepatic failure and acute sporadic viral hepatitis, and nearly all epidemics of viral hepatitis. A strong association has been found between ENANB and previous infection with HAV in India, suggesting some form of interaction, although cases of ENANB have been diagnosed in individuals without previous HAV exposure. It may be that the serious forms of hepatitis, such as fulminant hepatic failure and subacute hepatic necrosis, are the result of combined infection with a NANB agent and the hepatitis-B virus.

### **Outbreaks in other countries**

Other countries reporting ENANB outbreaks include Mexico, Myanmar, Indonesia, Nepal, Thailand, and various African countries.

Outbreaks of hepatitis occurred in the Kathmandu valley area in 1973. At the time, they were attributed to infection with HAV, but are now considered to have been due to ENANB. Features included predominant infection of young adults and high case-fatality rates among pregnant women. In 1980-81 there was a larger, prolonged epidemic of hepatitis in this area, peaking during the monsoons; 70% of the cases occurred in the 15-35 age-group with a case-fatality as high as 21% in pregnant women.

In Algeria in 1980-81, ENANB outbreaks were reported following rains, flooding and contamination of water supplies, and outbreaks of typhoid fever. In 1985-86, ENANB was also identified in refugee camps in Ethiopia, Somalia and Sudan. These usually appeared 6-7 weeks after the onset of rains, which under refugee camp conditions, created a favourable environment for faecal-oral transmission of enterically transmitted infections. Again, young adults were mainly affected, with high case-fatality in pregnant women.



Many people in developing countries either do not have access to safe food or a safe drinking-water supply, or are likely to experience disruption of their water supply during seasonal flooding or times of natural disaster. In addition, many developing country populations are dominated by younger age groups. ENANB may be a significant health risk for young pregnant women living in poor environmental circumstances.

*Summary of the work of:*  
Ramalingaswami V, Purcell RH. Waterborne non-A, non-B hepatitis. *Lancet*, 1988, March 12:571-573.

## Political dimensions of access to water

In recent years, depletion and destruction of resources in rural India has made women's performance of their traditional tasks extremely difficult, often costing them their health and sometimes their lives. Scarcity of water and its poor quality are inextricably linked to the quality of life of poor women, and cannot be seen as separate issues. Drought, in this view, is a phenomenon with both environmental and social origins.

What causes water scarcity in rural Maharashtra? Although access to drinking water remains an acute problem in Maharashtra, it has not commanded the attention it deserves because of the way water scarcity is perceived by the state. Government and state policies explain water shortage and drought as arising from natural causes, thus absolving themselves of any serious responsibility other than that of providing short-term relief. The lack of an integrated approach and the fragmentation of the different departments responsible for water issues make it possible to ignore various anomalies such as the increase in the number of tubewells on the land of rich peasants, although common wells have dried up. Similarly, the increases in sugar-cane cultivation reduces the amount of water available for households, and support for cooperative sugar mills has created powerful social and political cartels. The net result of all these factors is reduced access to resources, including drinking water, for poor families.

One relatively successful attempt to alleviate such problems involved pumping water to villages and ensuring that it was distributed equitably. However, although the Water Council established to operate the project ensured that water was indeed shared equally among households, and women did indeed benefit as a result of easier access to water, the plan failed to acknowledge women as individuals. Traditionally, only men can own land; under the Water Council scheme, therefore, only men were granted water rights. Although landless men are entitled to hold water rights, women, who are traditionally landless, are not. Moreover, the time

saved by the women did not benefit them personally since men shifted responsibility for some of their own tasks to them. They claimed that as the women no longer had to spend so much time fetching water, they now had "free time" in which to perform other tasks.

### **Water scarcity reinforces caste and gender distinctions**

In India, water has always been associated with purity and purification. But in rural areas, it has also served to make class and caste distinctions more rigid. In rural Maharashtra, as in most other parts of India, class and caste positions usually go together, and in times of drought, awareness of caste and class privileges, and their associated discrimination, become further entrenched. So in drought-ridden villages which are supplied with water by trucks every few days, it is usually the headman who is supplied first, followed by other prominent residents, and lastly the lower income groups. Water scarcity may even be created, or intensified, through the use of caste and class power by richer farmers.

Although women are normally responsible for collecting water for their households, in times of scarcity it comes under the control of men of higher castes or classes. Another way in which water scarcity transforms gender relations is through male out-migration and desertion. Patriarchal relations and the low position in the caste and class hierarchies deny women these options, but leave them with the responsibility for ploughing the land, and managing an extended family. Women's relations with other women are also changed by water scarcity. More time spent collecting water can mean less "personal" time for women, so that the use of the water site as a common meeting place gradually declines.

Other negative changes in ecological conditions also affect the relationship between women and communities. A tribal grassroots organization has recently established a link between the revival of witch-hunting practices and local deforestation. Extensive forest loss has resulted in the disappearance of various medicinal herbs, plants and roots, which has led to increased disease and mortality. This in turn is being attributed to the practice of witchcraft by women, especially widows and deserted wives, and campaigns to hunt and kill such women are currently under way.

Changes in ecological conditions impact heavily on women's identities. Alienation from production conditions deeply affects their coping methods and life-views. The acquisition of gender consciousness is strongly related to the struggle for ecological resources; often women have to confront and defy the men in their families and communities when they participate in these struggles for family survival. In doing so they are usually accused of violating the position of "true womanhood." Yet achieving improved access to resources can be both a liberation and a form of upward mobility for women. Ecological crises can therefore serve as both an obstacle and an opportunity for women in their efforts to bring about social change.

*Summary of the work of:*

Rao B. Women and water in rural Maharashtra. *Environment and urbanization*, 1991, 3(2):57-65.

## Malaria control and pregnancy

Pregnant women are at greater risk of malaria infection than non-pregnant women in settings of both low and high transmission of malaria. In areas with low levels of malaria transmission, women of reproductive age have relatively low levels of acquired immunity and all pregnant women are susceptible. Various adverse outcomes of pregnancy may occur, among which low birth weight (LBW) is common. In much of sub-Saharan Africa, stable transmission of malaria is the rule, and women of child-bearing age have acquired a relatively high degree of immunity to the parasite through repeated exposure. During pregnancy, through mechanisms that are not fully understood, women demonstrate an increased susceptibility to malaria and experience a higher frequency and density of infection, particularly in the first pregnancy during which they are exposed to malaria. In subsequent pregnancies, women generally do not have a higher risk of malaria than nonpregnant women of similar age in the same setting. Despite the acquired immunity in these women, the placenta apparently provides a protected site for the parasite's development and replication. While the mother may experience no symptoms, the potential local effects of altered nutrient transport across the placenta, and the passage of infected red blood cells to the fetus, may seriously compromise fetal growth and the survival of the newborn infant.

Of the various types of malaria, only infection with the parasite *Plasmodium falciparum* is potentially fatal. This kind of malaria has become highly resistant to treatment with chloroquine in many areas. A study was undertaken over a three-year period in Mangochi District, Malawi, to investigate malaria treatment and prevention in pregnant women. This is a rural area with an economy based on family farming and some fishing, representative of many parts of rural sub-Saharan Africa. Malaria transmission is high, with some seasonal variation. High rates of follow-up of women and children could be anticipated, and local outmigration was thought to be limited. A total of 4220 pregnant women and their children were studied. Some of the principal findings are described below.

Pregnancy number was found to be an important determinant of malaria infection; 44.5% of all women were infected at enrollment. Of those pregnant for the first time (primigravidas), 67% were infected. At

delivery, placental malaria was identified in 19.9% of all women and in 29.9% of primigravidas.

Of newborn infants, 16.6% had low birth weight (less than 2500 grams). Birth order was an important predictor of LBW. Firstborns were 28% more likely to be born with LBW than infants of subsequent birth order (11.1%). The incidence of LBW in each parity group (group of identical birth order infants) was higher for babies born to women with placental malaria infection than for those without placental malaria. This association was highest among women whose third trimester of pregnancy coincided with high malaria transmission rates during the rainy and early post-rainy seasons.

Malaria infection in umbilical cord blood was also associated with LBW caused by both prematurity and intra-uterine growth retardation. In each parity group, the incidence of LBW was lower for women with no placental malaria infection. Mefloquine (MQ) was found more effective than chloroquine (CQ) in clearing placental infection. Only 9% of primigravidas using MQ had placental infection, compared with 46% using CQ. It appeared that improved birth weight could be achieved even if placental infection was cleared only in the last trimester of pregnancy. Compliance with CQ prophylaxis was found to be low, moreover, partly due to indigenous prohibitions regarding the ingestion of bitter substances during pregnancy, and partly to the difficulty in remembering to take pills at home.

### **Targeted interventions**

The study determined that use of efficacious antimalarial drugs will reduce malaria infection in pregnant women, their placentas, and the umbilical cord blood, thus improving birth weight in the population. It established that interventions are necessary and should be promoted. These can and should be targeted at "high risk pregnancies" on the basis of parity and season. In settings of high endemicity and all-year transmission, women in their first and second pregnancies should receive the intervention, particularly those whose latter months of pregnancy coincide with the high transmission season.

### **Need for an integrated approach**

However, it is understood that a broad perspective is required in improving child survival. The mothers health both during and after pregnancy may determine over 30% of child mortality risk in sub-Saharan Africa. This study on malaria infection in pregnancy identified a series of

interrelated nutritional, infectious, socioeconomic and educational factors which must also be addressed. Improving general nutrition in women, and reducing energy expenditure in pregnant women who often work in the fields, must remain a priority. These factors must be addressed as a package of services and not in a fragmented fashion if maternal and child health is to be improved.

While recognizing that low birth weight is a health issue of great concern, and fully supporting the call for a broad integrated perspective covering improved general nutrition, reduced energy expenditure, and attention to social, economic and educational factors, it might be useful to stress that these programmes should optimally be run for the benefit of all women and girls at every stage of life, rather than as a method of controlling specific health-effects and improving infant health. The need to ensure women's basic entitlement to good health in their own right, rather than as a prerequisite for child-bearing or family support, is developed in several contexts in the Nutrition and agriculture section of this *Anthology*.

*Summary of the work of:*

Steketee RW et al. Malaria prevention in pregnancy: the effects of treatment and chemoprophylaxis on placental malaria infection, low birth weight, and fetal, infant and child survival. USAID/US Dept. of Health and Human Services, 1994. (See Appendix for contact address.)

## Malaria and mobility

Women purportedly have a stronger immune response to malaria than men. But this potential biological advantage — if it does exist — may be cancelled out by sociocultural factors. The vast literature around women and development issues confirms that restrictions on women's time, income, autonomy and mobility limit their health-seeking behaviour.

Investigations into factors which encourage or discourage people from attending clinics set up in rural parts of Thailand to limit the impact of malaria revealed several interesting features. Some, such as distance and cost of travel, were obvious and affected all members of the community, particularly during the rainy season when even villages served by roads were cut off or communication severely reduced. Others related to communication problems in multi-ethnic areas, as for example when clinic staff did not share the language of potential patients.

To overcome these problems, a mobile malaria unit was developed which offered diagnostic and treatment services in the villages. The mobile team comprised a microscopist and an assistant, who travelled by motorcycle or on foot with a portable microscope and supplies. Five villages were served on a weekly rotational basis, so that villagers could plan their attendance in advance. This system was applied successfully over a two-year period, in both dry and rainy seasons. The success of the mobile clinic provided the stimulus for further research to explain why women and children attend the permanent clinics in far fewer numbers — even in areas where the clinics are highly accessible — than men.

### Identical rates of infection for men and women

A random survey was carried out over three years to establish malaria illness patterns in households. Data were analysed by age and gender. It was anticipated that there would be differences between the malaria rates of children and adults, and between those of men and women. Long experience in malaria clinics, for instance, had led to the belief the exposure of men to malaria is greater than that of other sectors of the population. Patients are typically men in the younger age brackets, and their preponderance could seemingly be explained by reference to men's activities, such as travelling to distant fields in malarious territory, hunting



at night, and occupational tasks that place them at greater risk of infection. Yet in fact, survey data revealed similar exposure among children, adult males and adult females, as well as very similar rates of malaria illness. Tests showed that men and women had identical rates of infection.

Clearly, the number of women who were infected with malaria was higher than the number of women who attended malaria clinics, despite the fact that these clinics are the only source of prompt, effective, and inexpensive treatment. There were several reasons for this discrepancy. Full-time, continuous child care, for instance, together with household and agricultural duties, and the lack of ready cash to pay for transport, discouraged women from making the journey to a clinic some distance from their homes. If children could not be left alone, they had to walk or be carried, or their fares paid if public transport was used. In effect, the time taken by a woman to travel to a clinic in town could be seen by her family as detracting from its welfare. Some young women reported that they simply did not have the time to attend a clinic for malaria treatment.

Women's reluctance to attend clinics may also be linked to their perception of the seriousness of the disease. In a semi-immune population such as the one studied, malaria was a familiar and recurring problem, but often limited to a relatively short, albeit unpleasant, period of fever, chills and headache. Any woman who has multiple roles to perform may well find it easier and quicker to wait out a moderate illness than to seek treatment. And women did indeed report that they were "not sick enough" to seek treatment at a clinic 10-15 kilometres from home and that medicine purchased from a local shop was just as effective. Fears were also expressed about the effect of taking malaria drugs during pregnancy.

While some of these impediments can be addressed fairly easily, others, deriving from traditional sociocultural expectations of women, are harder to change. Reluctance to travel alone, uneasiness and discomfort in an alien environment, fears about privacy and modesty requirements not being met, all combine to prevent women making the already difficult decision to spend time on seeking personal treatment.

Simply offering malaria treatment is inadequate, as a variety of pressures may combine to prevent women from taking advantage of it. Wherever possible and whenever appropriate, health services must be taken to women. It is clearly unwise to rely solely on official statistics to estimate the numbers likely to be affected by a given disease. In many instances, those who slip through the net of official statistics are women.

*Summary of the work of:*

*Etting M. Malaria and mobility. World health magazine, 1990, April-May.*

## Cadmium poisoning and bone disease

In a water polluted area of Japan a severe bone disease called "Itai-itai disease" was shown to have been caused by cadmium pollution from a lead-zinc mine. The bone disease affected women only, although the whole community had been exposed. The likely reasons were the poor diet of the women and interference of cadmium with calcium metabolism essential for bones. Similar exposure conditions in rice-producing developing countries merit vigilance against this problem. In addition, a potential link between cadmium exposure and osteoporosis could further implicate cadmium as a major threat to women's health.

In a farming area of Japan water pollution from a lead-zinc mine caused damage to crops during the Second World War in the early 1940s. A number of cases of osteomalacia and severe osteoporosis (debilitating bone diseases) also started occurring in the same area; the local doctor reported this unusual disease at a medical society meeting in 1946. Patients suffered great pain ("itai" in Japanese) due to numerous bone fractures; the doctor therefore called the complaint "Itai-itai disease". At an early stage a link between the polluted river and the disease outbreak was suspected. Chemical analysis eventually identified cadmium as one likely cause, although it took about 20 years to confirm this officially.

Two major epidemiological studies had by then been carried out. One important factor was the increased production of the lead-zinc mine during the war. This was located 40 km upstream from the disease area, but the cadmium was carried with the water to rice fields downstream, where the rice accumulated high levels of cadmium. Farmers were generally poor during this period and consumed little food other than what was grown in their own fields. The cadmium intake from the rice caused chronic poisoning of the kidneys. This diminished the metabolism of vitamin D and calcium, which in turn caused the bone disease.

### Mainly women affected

The epidemiological studies revealed that all the patients were women, mainly above 40 years of age and with a history of many pregnancies. By 1989, a total of 150 women had been officially identified as cases of Itai-

itai disease; 100 of them had died. Almost all fell ill before 1960. Intensive epidemiological studies in other cadmium-polluted areas of Japan identified a small number of suspected cases with similar symptoms and signs. The initial less severe stages of cadmium poisoning include damage to the kidneys. This was found in thousands of people in several polluted areas and often to the same degree in men and women.

There are several likely reasons why women are particularly susceptible to this type of poisoning from water pollution. Firstly, the bone effects are related to calcium metabolism, which tends to be depleted in women by frequent pregnancies and is further exacerbated after menopause. Secondly, women in the affected area are reported to have had a diet lower in protein and minerals than the men, which in itself could have reduced the strength of their bones. Thirdly, when the women fell ill, they were generally kept inside the house without treatment until the condition became severe. Lack of sunlight during the early stages of the illness may have contributed to the development of severe bone disease, as sunlight exposure to the skin produced vitamin D which could have counteracted the impact of the cadmium damage.

### **Social impact**

The social impact of this debilitating disease was significant. Many patients were permanently disabled and could no longer contribute to family farm work. The community was stigmatized following rumours about this strange disease. When the link to water pollution was established, control measures were taken at the mine and along the river, but the polluted soil contaminated successive crops of rice and the farmers were unable to sell it. An active patients' association was formed, which successfully fought for financial and other compensation for the affected women and their families. Economic analysis has shown, however, that preventing this pollution at the source would have been far less costly than providing remedial measures and compensation.

Details of the studies carried out and the disease mechanisms have been explained in several reports, most recently in the International Programme on Chemical Safety (IPCS) Environmental Health Criteria document No. 134. It is now known that cadmium ingested via food accumulates in the kidneys and eventually damages the cells lining the kidney tubules, where water and minerals such as calcium are reabsorbed. Damage to these cells has two main effects: it causes loss of calcium from the body, which leads to osteoporosis; in addition, it can lead to a disease similar to vitamin D deficiency, known as osteomalacia.

Increasing knowledge about bone disease has now shown that osteoporosis occurs with limited vitamin D deficiency, and that osteomalacia occurs when vitamin D activity is extremely low. Osteoporosis, which commonly involves fractures of the hip and thigh, is a major health risk for women over age 50 in most countries. Cadmium exposure at limited levels may contribute to this risk in a number of settings. Cadmium-containing fertilizers may increase intake via foodstuffs grown in soils where such fertilizers are used. Many plastic products contain high levels of cadmium, and cause air pollution if incinerated. Studies in some countries have confirmed an increasing level of cadmium in foodstuffs over time.

Cadmium-polluted areas have recently been found in rice-producing developing countries, where the conditions for women may be similar to those in Japan in the 1950s. Similar outbreaks of cadmium-induced bone disease in women may occur elsewhere, unless areas around mines, smelters and factories producing or using zinc, lead, copper or cadmium are properly assessed for pollution and human exposures and appropriate control measures taken.

*Summary of the work of:*

*IPCS. Environmental health criteria 134; cadmium. Geneva, WHO, 1992.*

## Nutrition and agriculture

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This chapter shows some of the causes and effects of the generally poor nutritional status of many women in developing countries. It also illustrates the interrelationship of nutrition, workload, and health in the context of women's energy expenditure on agricultural and domestic chores. As the problems of poor rural women have common roots in many countries and regions, issues have been selected for their broad applicability and should not be interpreted as isolated phenomena of the particular community studied. As a representative of the Ministry of Health in Zimbabwe recently reported, *"Travelling across many countries of Africa, I felt that I was talking to the same woman."*

Much of this material repeats a familiar message in a variety of different settings: in poor households and communities, women work harder than men but eat less. Similarly, it can be seen that in most instances men earn more than women, but contribute less to family prosperity, health and wellbeing. Given the high energy costs of poor women's combined productive and reproductive roles, the impact on their health of a heavy workload and insufficient nutrition is substantial.

Key points are identified as follows:

- the differences in men's and women's lifestyles and roles place women at greater risk of nutritional deficiency than men
- where the social status of women and girls is low, their access to food and medical treatment is restricted, resulting in lower health status
- age and gender affect the quality and quantity of food allocated to household members; women, particularly junior wives, are disadvantaged in this allocation
- expanded cash cropping negatively affects local food availability and increases women's workload
- more attention should be given to the issue of rural women's energy expenditure compared to their intake
- men's agricultural labour in an African community does not influence family nutrition levels significantly
- the seasonal energy deficit of rural women in three developing countries produces varying physical and metabolic responses

- the gender division of labour generates disproportionate time and energy costs for rural women
- farming in marginal areas has greater health impact on women than on men
- the price of conflicting agrarian and reproductive policies in China is paid by women.

## Nutritional deficiency and women's health

Most nutrition interventions in developing countries have been designed primarily to reduce malnutrition among children. Even programmes which include women tend to focus on pregnant and lactating women. This approach limits the success of interventions since action to improve nutrition-related reproductive outcomes is most effectively implemented before women become pregnant, and preferably should be undertaken before girls reach reproductive age. The different circumstances of men and women in developing countries affect women's nutrition, and it is necessary to take such differences into account when designing nutrition interventions.

The major nutritional deficiency diseases of concern in the developing world are protein-energy malnutrition (PEM), iron deficiency anaemia, iodine deficiency disorders (IDDs), and Vitamin A deficiency. All four show gender differentials in prevalence and severity, with three of the four representing a more serious problem for women than men: the prevalence of PEM is significantly higher among women in South Asia (where almost half of the world's undernourished people lives); both iron deficiency anaemia and goitre are more prevalent among adult women than men, although vitamin A deficiency appears to be more prevalent among boys than girls.

A dearth of good epidemiological data on adult nutritional status, and lack of appropriate reference standards, make it difficult to estimate accurately the extent of malnutrition among women in the developing world. Conservative estimates suggest that of the 1130 million adult women living in developing countries in 1985, over 500 million were anaemic due to iron deficiency, almost 500 million stunted as a result of childhood PEM, about 250 million at risk of disorders due to severe iodine deficiency, almost 100 million suffering from goitre, and almost 2 million blind due to Vitamin A deficiency. A problem of this magnitude cannot be dealt with through narrowly targeted feeding programmes for pregnant and lactating women, or by relying on the long-term effects of economic development programmes.

## **Some health consequences of poor nutrition**

Data from 32 studies examining PEM among women in developing countries established that women generally consumed only about two-thirds of the WHO recommended daily allowance for energy, and that their average weight-for-height was well below the average for small-frame women in the US. Other studies have established that the energy-intakes of pregnant and lactating women only marginally exceed those of nonpregnant, nonlactating women. The long-term negative reproductive consequences of childhood PEM are fairly widely accepted. It is well established that stunted women are at higher risk of obstructed labour, itself a major cause of maternal mortality.

Iron deficiency anaemia is the most widespread nutritional problem among women, and has severe consequences for both their reproductive and productive roles. Maternal mortality rates are significantly higher among anaemic women, as are prematurity and infant mortality rates. Although there is limited direct evidence concerning the effect of anaemia on women's physical work capacity, research on men shows a clear association between iron deficiency anaemia and reduced work capacity. Because low-income, rural women living in the tropics experience the highest rates of iron deficiency anaemia (along with other forms of malnutrition and morbidity), and also some of the most physically demanding work responsibilities (including weeding, threshing, pounding, fetching fuel and hauling water), it is probable that anaemia among women accounts for a significant loss of productivity, and therefore of family welfare, in developing countries.

Iodine deficiency disorders are of particular concern since they can result in severe negative reproductive outcomes for both mothers and infants. Evidence from 19 studies shows that prevalence of goitre appears to be higher among women, with the gender differential first appearing in adolescence and becoming much more pronounced among adults. Severity increases in women with increasing age, but declines significantly in males after adolescence. Although the reasons for higher prevalence and greater severity of goitre among women are not well understood, similar patterns in developed and developing countries suggest that at least part of the reason can be attributed to biological differences, perhaps aggravated by socioeconomic or behavioural factors.

Adolescent mothers are more likely to have low birthweight infants. This is due to a combination of shorter average maternal height, competition for nutrients between the still-growing mother and the fetus, and poorer placental function in adolescents. Interestingly, adolescent mothers need



to gain more weight than older mothers to have a normal weight baby. Concurrent pregnancy and growth in low-income adolescent girls also has a significant negative effect on the micro-nutrient status of these mothers.

### **Links between social and nutritional status**

Two aspects of the status of women appear particularly relevant as probable indirect determinants of their nutritional status. The first is the cultural importance of childbearing in terms of a woman's status and her fulfilment of family expectations. In developing countries, women are usually under considerable pressure to bear children, sometimes to the extent of having as many, closely-spaced children as possible. Another aspect affecting nutritional status is gender bias (where it exists) in intrahousehold food distribution. Some studies, based primarily on data from South Asia, have found less adequate consumption of nutrients on the part of adult women compared with men. While lower requirements may provide a partial explanation, it is unlikely that they account for all or even most of the generally poorer dietary intake of women, particularly since women often work longer hours and/or do more strenuous work than men.

Food proscriptions also affect women's nutritional status. Most societies have recommended dietary practices for pregnancy and lactation, and there is evidence from numerous cultures that meat and other high-protein foods are withheld, sometimes from women in general but most frequently from pregnant and lactating women. Women may themselves restrict their food intake during pregnancy to reduce fetal size and facilitate delivery. The effects of these practices on women's nutritional status are not known.

The lives of women in developing countries differ from those of men for cultural, biological and socioeconomic reasons. These differences place women at significantly higher risk than men of malnutrition and mortality. The importance of women's nutritional status to their own health, productivity, and quality of life, and to the survival and healthy development of their children and other family members who depend on women's domestic and market work, warrant serious efforts to reduce malnutrition among women.

*Summary of the work of:*

Leslie J. Women's nutrition: the key to improving family health in developing countries?  
*Health policy and planning*, 1991, 6(1):1-9.

## Gender differences in access to food and health care in India and Pakistan

Inadequate nutrition in women is often a function of gender biases in access to food and health care. Where early marriage is practised, this deprives women of the benefits of education and the nutritional awareness it may bring. Poor women in India and Pakistan are often exposed to the double energy demands of gruelling agricultural work along with early and frequent childbearing.

Studies in Punjab, India, show that social discrimination against young girls in nutritional matters has persisted despite agricultural growth and economic development in the area. Even in privileged families, some girls may be malnourished. Indeed, the gender differential in food consumption among children from birth to four years was higher among landed classes than in landless families, with evidence of selective discrimination against daughters of second or higher birth order. This suggests that demographic transition in the region has worsened the status of female children, since their mothers continue to be under great pressure to bear and nurture sons. In West Bengal, general village improvements have resulted in better nutritional status for boys, but not for girls. Additionally, women receive a disproportionately small share of household food, despite their greater energy expenditure on household and farming activities.

Gender differences in women's childcare and feeding practices are established early. Girls are breast-fed less frequently, for shorter durations, and over shorter periods than boys. Weaned early, they may not receive sufficient quantities of supplementary food. Documentation of the quality of food in several cultures has shown that male children generally receive more cereal, fats, milk and sugar than female children. Higher calorie and protein intakes by males of all ages have been documented for Bangladesh. Girls' lower levels of health care, combined with differences in feeding patterns, expose them simultaneously to higher rates of malnutrition and longer periods of more severe morbidity, contributing to their significantly higher mortality.

Low food intake during pregnancy is common in both India and Pakistan. Studies have shown that women consume little or no extra food during pregnancy, and may even consciously limit their intake for fear of large

fetuses and difficult labour. Food taboos not only deprive women of protein and iron sources, but also reduce calorie intake. In both countries, very high female mortality has led to an abnormally low female to male sex ratio — 933 and 904 women per 1,000 men respectively in 1981.

Seasonal shortfall in food availability tends to affect women disproportionately since their already inadequate intake will be curtailed drastically. Even when more food is available, it tends to be preferentially allocated to men, thus preventing women from accumulating any reserves. If seasonal shortfall coincides with pregnancy or lactation, the implications for women and infants are particularly harsh.

These deep-rooted social prejudices are also seen in relation to women's access to and use of health services. One study found that while females outnumbered males four to three among children suffering from kwashiorkor, over 50% of related hospital admissions were boys. A survey in Maharashtra revealed that although higher percentages of girls were ill than boys, lower percentages received medical treatment in the under-15 age-group. Girls tend to be taken to less qualified doctors than boys, and have less spent on medicine for them. In general, better and more timely medical care for boys may be the main factor accounting for the higher survival rates among males.

These trends demonstrate that households discriminate against female children in relation to health care in much the same way that they do in nutritional matters. These patterns continue in adulthood. A larger proportion of adult women than men receive no treatment, and women tend to be treated mainly through home remedies or traditional medical care, while men receive institutional care. Hospital, clinic and primary health centre records in India and Pakistan invariably show that a greater number of males than females receive treatment — as many as five times more. Illness in women is, however, frequently underreported due to women's reluctance or inability to seek medical care, or downplayed due to constraints such as time, expense, or stigma.

As women perform most of the hard labour in poor countries, it is essential to foster the concept of improving women's nutrition and health for their own rather than for their children's sake. Women's nutritional status during adolescence could be considerably improved through measures such as supplementary meal programmes, which would also have spin-off benefits for future infants. In the long term, structural and cultural changes are needed.

*Summary of the work of:*

Chatterjee M, Lambert J. Women and nutrition: reflections from India and Pakistan. *Food and nutrition bulletin*, 1989, 4:13-28.

## Food distribution within the family

It is now acknowledged that malnutrition does not affect all members of a household equally, except in times of famine. Food is not equally divided within households, but reflects the order of precedence and perceived social value of the consumers, as well as factors such as religious practices. Studies of food distribution in both developed and developing countries note that food distribution based on sex differences always favours males. Unequal food distribution is further suggested by differences in morbidity and mortality within households. Effective development interventions therefore require knowledge of household resource allocation patterns. This is important given the heavy workload borne by poor women in both rural and urban settings.

Preferential food distribution refers to increased quantity and/or quality of food, as well as less obvious factors such as serving priority. In many societies, it appears that behaviour rather than absolute quantity of available food determines nutritional status.

Distribution of food usually favours males as their economic contribution is thought to be greater. Some children may receive preferential treatment based on their anticipated future contribution to the household. In Nepal, existing evidence points to age, sex, and perceived current and future economic contribution as the primary individual characteristics determining intrahousehold food allocation patterns.

This investigation of patterns of food distribution within households was carried out in six ethnically diverse hill villages in rural Nepal, using both anthropological and nutritional science methods.

In most of the households surveyed, the food servers were adult women. Young children tended to be served automatically, but those aged between 7 and 10 years served themselves more often than they asked for food. Food serving methods varied substantially by sex from early adulthood onwards. Men, unlike women, were served automatically and with increasing frequency. This trend continued into old age. Women were much less likely to be served, and usually served themselves. Guests were frequently required to eat second helpings, whereas lower status household members had to ask for more. This becomes important when there is little

food available for second helpings. Second-helping scores for young women were particularly low, leaving them nutritionally vulnerable at the age when they marry and move into their husband's home. There they have very low status; as junior females in the household, they are served automatically but are expected not to ask for food. When their status rises to that of food server, their access to food increases. The server's access to leftover foods from other household members also contributes to their score.

### **Channelling and taboos mean lower food intake for women**

Food channelling — giving or offering food items to one person but not to another — was also a clear source of differentiation. Channelled foods tended to be the more expensive or higher status foods, especially animal products. Young children (both boys and girls) appeared to receive such foods more often than adults, although by ten years of age channelling scores were higher for boys than for girls. The difference was significant for those in early and mid-adulthood, when channelling scores for adult males were higher than for females. For both sexes, channelling appears to decline with age.

Senior males were observed to receive large portions of a desirable food while adult women received a disproportionately small share. Food proscriptions applied mainly to women, and appeared to have an overall negative effect on women's dietary diversity and intake. The following foods were often served to other household members but not to adult women: soybeans, wild green leafy vegetables, potato pickle, banana, mango, fish, eggplant, cow milk yoghurt, cow milk ghee, buffalo milk, and chili. Women consumed wheat products, pork, chicken, eggs and liquor even less frequently. Some foods, considered difficult for infants to digest, were avoided by nursing mothers. Foods in this category are not in short supply and there is no reason to avoid them apart from food belief systems. Animal products are in high demand and short supply, and preferentially distributed to adult males and small children. Channelling food away from women therefore appears to be due to a combination of food beliefs and low status.

Examining calorie intake, beta-carotene intake, riboflavin intake, and vitamin C intake, adult women scored lower than children and males for all substances. This raises concern about the nutrient intake of adult women, who have active daily work routines, culturally prescribed dietary restrictions and additional nutritional needs if pregnant or lactating.

This study demonstrated that while all women were disadvantaged *vis-à-vis* men regarding food intake, the most disadvantaged group consisted of young adult females, who performed most of the heavy domestic work but consumed the least and lowest status foods. Adolescent girls were also disfavoured, and at the time of life when they begin domestic labours such as water and fuel collection. Adolescent boys, on the contrary, tended to receive a large amount of food proportionate to body size.

*Summary of the work of:*

Gittelsohn J. Opening the box: intrahousehold food allocation in rural Nepal. *Social science and medicine*, 1991, 33(10):1141-1154.

## Cash crops, food crops and "women's work"

The importance of women's domestic and food production responsibilities has often been neglected by planners and policy makers in the development process in rural Africa. In the subsistence sector, this has marginalized women by reducing their productivity and control over resources and shutting them out of development processes, while concurrently increasing their workload. These factors, combined with mechanization and the increased importance of a cash economy, have serious implications for women's health and nutrition.

In Africa, the traditional division of agricultural labour assigns women specific tasks. They rise before dawn to fetch water, and cook, then walk to the fields for planting, weeding and harvesting. On their return home, they gather firewood, process and cook food, and tend their children. In addition, beer must be brewed for festive occasions, and goods or excess agricultural produce carried to and from the market on market days. Yet, all this labour is statistically invisible to policy-makers and planners, and only marginally reflected in labour and income statistics, since these discount work performed outside the market system. The International Labour Office (ILO), for example, defines economic activity as that which produces commodities or services for exchange on the market. This exclusion of subsistence food production renders the bulk of women's work invisible.

Changes associated with the introduction of capital into rural Africa have also affected women's workload. New technology may have reduced the time it takes to process traditional crops, but the expansion of the area cultivated has led to a reduction in forest cover; it now takes longer to collect firewood, and the family fields may be located farther away. Education of children exacerbates some of these problems since it deprives women of the assistance of their older children.

The key factor has been the replacement of subsistence farming with cash cropping. Cash crops frequently displace food for local consumption, forcing African peasants to bring more marginal land under cultivation, which leads to environmental degradation and desertification. In areas where male out-migration has increased, stimulated by the availability of

mining and other jobs, wages paid to men are generally insufficient to meet family needs. In such cases, the burden of subsistence food crop production falls entirely on women. This can be overwhelming, given that African women frequently have no land rights and little or no decision-making power. Moreover, the dominance of cash cropping and the allocation of the best available lands for this purpose means that agriculture has become separated from the local diet. Nutrition levels have suffered accordingly.

Changes in the traditional systems of social organization brought about by the development process have also disrupted the complementarity of the roles of the two sexes and the sharing of responsibilities. Women have taken over tasks traditionally outside their domain (for example when men out-migrate) but men have not done likewise as they are unwilling to do "women's work."

The first assumption of new roles occurred during the colonial era, when males were given the opportunity or obligation to undertake new responsibilities. This helped ensure that women remained largely responsible for food crop and livestock production, to both guarantee the food supply and protect family property rights. Land tenure patterns traditionally ascribed ownership to males, but granted usufruct rights to women. Women's ability to produce food was contingent upon access to land through the family of a husband or his lineage group. It is women's productivity, now as then, which still largely determines how much food will be available for consumption, although not how much they themselves consume.

### **Living standard determined by women's income?**

Female labour is crucial for the production of men's cash crops. But it is now also vital that women derive a cash income from trading if they are to purchase additional food and other household necessities. Although women's cash income is comparatively smaller than men's, it is often more significant in terms of a family's standard of living. Moreover, women spend their incomes on the family, whereas men tend to spend theirs on themselves. Women may in fact remain free to spend their own income only because men recognize that they are reinvesting it in family needs, and not accumulating capital independently. Male earnings and social activities, particularly the consumption of alcohol, are becoming increasingly detached from family activities and responsibilities, and are often reported by women to be a serious drain on household income and resources.



Women's heavier responsibilities, and the difficulties they experience in carrying them out, lead to conflict between their various roles and reduce their already limited leisure time. Dietary practices have further health implications since women customarily allocate more and nutritious food to men, while making do with bulky, low-calorie staples themselves. Food taboos, which most often relate to high-protein foods, apply least often to adult males. Few men seem aware of the potential nutritional deficits of their wives and children.

The many health problems of African women are exacerbated by overwork and poor nutrition, which are indicators of the low status of women in traditional societies. If the development process is to become more effective, women's vital role in productivity and family well-being must be given official recognition and must be fully recompensed. The African food crisis will not be resolved unless accurate information concerning women's and men's specific activities in food production, processing and marketing is made widely known and the appropriate policy decisions taken.

*Summary of the work of:*

Lado C. Female labour participation in agricultural production and the implications for nutrition and health in rural Africa. *Social science and medicine*, 1992, 34(7):789-807.

## Women's access to food

Behind most food security policies lies the assumption that once a household obtains sufficient food, all its individual members will be adequately nourished. The Indian experience shows that improving a household's access to food does not guarantee that the women in the family will receive sufficient food. Gender bias in nutritional status and food distribution within the family has been recognized only recently, despite an abundance of data on the issue. With the advent of the UN Decade for Women, further research on female nutrition was undertaken, nearly all of which underlined the fact that most development initiatives had either ignored women, failed to recognize their particular problems, or even worsened their situation.

Most nutritional surveys in India monitor the status of households rather than that of individuals, using the Consumption Unit which is based on norms rather than actual intake. One Consumption Unit is the recommended daily calorie intake of a male sedentary worker, and all other age-groups, sexes, and activity levels are taken as a proportion of this measure. There is little evidence that Indian women actually receive even this proportion of the family's food resources.

Concern over women's nutritional status is confined to pregnant and lactating women, their nutritional and health status prior to and after these stages receiving little or no attention. These women are defined, along with pre-school age children, as a "vulnerable" group and the traditional recommendation has been to provide supplementary nutrition to offset some of the ill effects of their nutritional status quo. However, this approach leaves the nutritional needs of the vast majority of poor women unaddressed, and provides a partial explanation of the declining female:male sex ratio, higher female infant mortality rates, and high maternal mortality rates.

A 1981 study by this author showed that when the total human energy contribution to the village examined were disaggregated, the respective contributions of men, women and children were 31%, 53% and 16%.

These figures seemed the first concrete substantiation of the fact that women in India work harder than men. It was then decided to try to calculate the energy expenditure of individual women, men and children in terms of kilocalories and compare this with actual food intake.

This undertaking revealed certain telling biases. For example, many important activities regularly carried out by the poor had never been measured for their energy costs. Nutrition textbooks provided calorie costs for piano-playing and typewriting, but not for fetching water or gathering fuelwood. Likewise, few agricultural activities were measured compared with military and industrial activities. Even if agricultural activities had been measured for men, no female equivalents were available. The few energy cost figures available for women included activities such as sewing and singing, and women in general were listed under the heading of "sedentary people".

The 1981 study calculated daily kilocalorie expenditure on various agricultural and domestic activities to be 2473 for men and 2505 for women. Average individual daily kilocalorie intake of kilocalories was estimated at 3270 for men, and 2410 for women. Thus, women faced both a relative deprivation in comparison with men, and an absolute deficit *vis-à-vis* their calorie expenditure. It was demonstrated that women's daily energy expenditure was likely to be higher than men's, particularly in rural settings where men's work is seasonal but women's continuous and inclusive of domestic and reproductive chores.

Neither of the two classic approaches to undernourishment — increasing total food supply, and targeting "vulnerable" groups — addresses the issue of the energy output of women; or, stated otherwise, the nutritional benefits of decreasing their workload. The current approaches can be summed up as attempts to create a healthier donkey to flog.

### **Deteriorating health and nutritional status**

Adult women's weights are well below par in all Indian states. Women's weight gain seems to cease after the age of 16 years, whereas men continue to gain weight until at least 25 years of age. This suggests that men's access to food is greater, especially between the ages of 16 and 25. Average weight gain in pregnancy of 4-6 kilograms is significantly below the recommended level of 10-12 kilograms.

The Nutrition Foundation of India has ascertained that in some economic "boom" areas, the health and nutritional status of women has actually deteriorated, and the incidence of low birthweight babies and neo-natal mortality increased quite sharply. This is attributed to the need for women

to work much harder and for longer than before, without appreciable increases in their food intake. A key factor here is the persistence in allocating unmechanized agricultural activities to women, which, coupled with their other responsibilities, ensures a heavy and exhausting work burden without correspondingly greater shares of food to sustain them. The relationship between cash cropping and foodgrain shortages is often overlooked in economic planning, although the effects of this on family nutrition are often disastrous. Cash crops may bring more money to husbands, but this may further reduce the status, and hence access to food, for wives and children.

There is reason to believe that women's access to food within the family or household is below desired levels and significantly less than men's, and that while women's energy intake is below their expenditure levels, men from the same poor families have intakes equal to or exceeding their expenditure levels. This is particularly inappropriate given the cumulative scientific and anecdotal evidence that the bulk of hard labour in most developing countries is performed by women. Current agricultural development policy and labour policy must be redirected if the vicious circle of commercialization of food crops, displacement of traditional forms of labour, additional burdening of women, and reduced access to food, is to be broken.

*Summary of the work of:*

Batliwala S. Women's access to food. *Indian journal of social work*, 1987, 48(3):255-271.

## Men's contribution to family nutrition in Tanzania

Tanzanian men's involvement in agriculture has increased, largely due to the disappearance of game but also as a result of an income-driven shift from millet to maize cultivation. Surveys undertaken in 1987 during three different agricultural periods showed that although cultivation is considered a joint activity, men and women have different and unevenly divided responsibilities. The main work burden falls on women.

A survey was carried out in a subsistence farming area of Tanzania, where most households produce sufficient food for a balanced, nutritious diet. Its purpose was to examine the issue of how much work is done by men and how this compares to women's contribution to family nutrition. The main finding was that women supplied a little more than half the calories consumed by the household, while men contributed just under half.

Both men and women view men as managers of the farm, and husbands usually take the final decisions. Tasks such as weeding are women's work; if a man contributes, it is in the spirit of helping his wife rather than performing a job linked to his own farming activities. Although cultural norms dictate that a woman cannot stay home while her husband goes to the fields, a man who works longer in the fields than his wife will be teased by other villagers. So women cannot choose the times most convenient to them for agricultural work, despite their obligation to juggle multiple roles and tasks. In Tanzanian society, men do not risk social condemnation even if their work input is minimal. Male reluctance to be associated with women's work is reflected in the following conversation, recorded during the survey: "You know, my wife, I am just helping you with this job [weeding]. It is not my work. I can choose whenever I want to go back and you should not complain. I have already helped enough." His wife disagreed, asking "Are you not eating this food?" After a further hour's weeding, the husband announced: "You will not force me to work. I am going back home." He left and his wife continued weeding.

### Different gender, different priorities

Many gender conflicts arise from differing priorities. Men may want to cultivate more land to earn more cash, although women feel they have no

time or energy for more farming. Other common conflicts concern men's desire to sell more of the crop than women consider rational for household food security. Men, the study reports, spend large sums of money each week on beer, leaving insufficient for items such as fertilizer. Women point out that if this money is spent in this way, the family will go without. These situations require tactful negotiation by women, and can generate considerable mental stress. The sale of cash crops and surplus produce is handled by men, who usually keep the money and have the final say in spending it. Women are further disadvantaged in not knowing how much money their husbands have.

An analysis of time use by gender showed that while neither men nor women worked in the fields each day, women did so more regularly than men. Women on average spent almost triple the amount of time on all activities performed (domestic and agricultural). Even when only agricultural work was taken into consideration, women still worked longer hours than men. An inverse relationship was documented between women's and men's rates of work, showing that the more women worked, the less men did. Those households in which both made a contribution showed the best results in terms of child nutrition, and suffered least during seasonal food shortages.

Observations during meal-times showed that men normally received the lion's share of food. On the rare occasions when meals include meat, men exceptionally become the servers and are responsible for the distribution of meat among family members. As household heads, men are entitled to have the best choice at meals, and more than their fair share when food is short. Furthermore, prestigious foods such as meat and eggs are often consumed by men outside the home, in coffee shops and beer bars, thus draining household resources.

Men's agricultural contribution is not a dominant factor in family nutritional status in this community, and men represent a significantly underutilized labour force. Paradoxically, hard-working husbands generate more work for their wives, as the more they accomplish in the fields, the greater women's obligations become. The resulting greater energy output of women, combined with their lack of control over cash resources, tends to nullify these extra efforts and prevent improvements in family nutrition. As both high and low levels of effort by husbands are therefore unproductive, long-term changes in the gender division of labour appear to offer the best chances of resolving the problems.

*Summary of the work of:*

Holmboe-Ottesen G, Wandel M. Men's contribution to the food and nutritional situation in the Tanzanian household. *Ecology of food and nutrition*, 1991, 26:83-96.

## Food intake and work allocation of farmers

Few detailed measurements of human energy balance and time allocation have been made in the developing world, and there are many methodological difficulties in undertaking them. People may vary in how energetically they perform the same task, and even if everyone performs all tasks in a similar manner, the application of average energy costs to individuals will fail to account for differences in metabolic efficiency. There is a need for better methodology, longer study periods, and improved understanding of the regulation of energy balance and the social and physiological mechanisms for adapting to low energy intake. Although the study below examined only 16 people, their situation is identical to that of most rural communities in developing countries and similar findings can be anticipated elsewhere.

To add to existing knowledge, a study of eight non-pregnant, non-lactating female and eight male Hindu village farmers between the ages of 25 and 40 was undertaken, over a period of 32 days.

Each activity studied was categorized as either productive work, free time, or body maintenance. Journeys to and from the fields, all labour in the fields, housework, child minding, fetching water and tending of cattle, were defined as work, and social and religious activities as free time. Body maintenance included sleeping, eating, grooming, bathing and defecating.

The mean daily energy intakes (2350 kcal for men and 1852 kcal for women) represented 84% of Indian energy intake recommendations. The average energy intake per unit mass was the same. However, women were more active than men and expended a greater amount of energy.

Results showed that women dedicated 46.2% of their time (11.1 hours per day) to economically productive work activity, compared with an average for men of 33.9% (8.1 hours per day). Including housework, women spent on average 77.6 hours working per week, compared to 57 hours per week for men. This difference was found to be highly statistically significant. There was little difference between men and women regarding time spent in body maintenance and sleeping. However, the number of leisure hours diverged sharply: men had 27.8% or 6.7 hours of their day free, while

women had only 14.7% or 3.5 hours leisure. It was clear that women allocated more of their time to economic activity and less to rest and social activity than did men, although the men's own perception was that they worked extremely hard.

Women worked longer hours at moderate levels of intensity. Men did perform slightly heavier work than women, but only for an average of 14.5 minutes per day. Conversely, men spent more time doing light work than women. The women's tasks included 34.5 minutes per day carrying water, of which the uphill return journey fell into the category of heavy work. Both men and women expended high levels of energy during peak agricultural periods, but men were able to rest more than women during the remainder of the year.

The mean daily energy intake for all men was 2350 kcal and the average output was 2285 kcal. For all women, the daily mean energy expenditure of 1968 kcal appeared to exceed the mean energy intake of 1852 kcal. This imbalance may result from the use of male values to calculate the average energy cost per kilogram for each task. The lower-intake females may, in fact, have been able to perform many work tasks at lower than average estimated energy costs.

### **Energy intake versus work output — is there a connection?**

In sum, this study of the food intake and work output of poor people living in an unhealthy and hostile environment found that men ate more (average 498 kcal daily) but spent less time on productive work than women. However, for poor individuals forced to devote a high proportion of their time to work, energy intake may bear little relation to work output. Women in developing countries, whose energy intakes are about 30% lower than males, generally allocate about 30% more of their time to productive economic work. There is no reason to assume that human energy intake is necessarily related to economically productive work output if low-intake groups consistently devote more of their time to work. The economic implications of this social process are vast, and very poorly understood.

The lack of strong correlation between daily intake and output implies a time-lag in adjusting to a series of temporary imbalances. Input and output are only occasionally in phase on a given day. The finding that the standard error for average energy intake was much higher than the standard error for mean energy expenditure has been noted in other studies. This is because patterns of daily activity tend to be more consistent and less variable than food intake. Also, methods of measuring intake and output are different in potential for error. The type, source



and variety of food eaten were similar for all villagers, and the energy content of a given food source varied little. However, inter-individual variability in metabolic efficiency is quite high. Thus, using average energy costs to calculate output for an individual may be inexact. This methodological problem is common to all field investigations of energy balance.

However, these energy leads and lags cannot readily explain the lack of close agreement between the women's intakes and outputs, and the lack of energy balance for all women deserves comment. Clearly, significant levels of variation and adaptability do exist. Social and physiological processes, including restriction of discretionary activity, increase in time allocated to economic activity, growth retardation, and changes in the metabolic efficiency of energy conversion, are mechanisms which enable individuals on a low plane of nutrition, especially poor women, to maintain a high level of economic productivity even under conditions of dire poverty.

Acquiring further understanding of the physiological mechanisms which enable undernourished women to maintain high levels of productivity is scientifically useful, but the task of solving the problem of women's excessive workload lies outside this domain. The health and development sectors need to focus on the long-term consequences for women and their infants of this extended labour, along with policy efforts to achieve a more equitable division of labour among household members.

*Summary of the work of:*

Edmundson WC, Edmundson SA. Food intake and work allocation of male and female farmers in an impoverished Indian village. *British Journal of nutrition*, 1988, 60:433-439.

## Seasonal energy stress in marginally nourished women

This study compared energy stress in three groups of rural women from India, Benin, and Ethiopia, paying particular attention to their weight loss and metabolic changes during the "hungry" season. The results highlight the diverse combination of mechanisms elicited by exposure to seasonal energy deficits: both the body weight and the basal metabolic rate (BMR) of the Ethiopian women dropped, whereas the Beninese women mobilized only their body energy stores, and the Indian women only their BMR. This diversity of response is thought to be linked to the varying nutritional status of the three groups of women. While the Beninese women had a normal body mass index (BMI), both the Indian and Ethiopian women's BMI was lower and many would be classifiable as Chronic Energy Deficient. Weight loss in high BMI persons involves loss of body fat, whereas losses in low BMI persons entail development of increasingly large proportions of fat-free mass (lean tissue) as the proportion of body fat decreases. The finding that the energy deficit was almost completely accounted for by combinations of weight loss and changes in BMR raises questions about the role of physical activity.

The differences in food intake between the harvest season — the season of plenty — and the lean season were small in all groups, but the differences between groups were much larger (see table). The Indian women (height 149 cm; BMI 18.1; energy demand 50 kcal/kg) and the Ethiopian women (height 154 cm; BMI 19.2; energy demand 45 kcal/kg) appeared to require noticeably more energy than the Beninese women, although the latter were larger in frame (height 157 cm; BMI 20.2; energy demand 33 kcal/kg). The Beninese women appeared able to sustain a productive way of life and maintain a reasonable proportion of body fat during both seasons, at levels of energy intake that barely reach 60–65% of that needed by the Indians and Ethiopians. This suggests that energy requirements vary considerably in these three rural regions, undoubtedly reflecting profoundly different patterns of life and work.

The seasonal trend in energy intakes revealed a consistent, although not remarkable (6–8%) decline in intake during the lean season. The cumulative "energy debts" (the value ascribed to the difference between the highest and the lowest daily calorie intake calculated over a given

period) of the three groups are shown in the table, which demonstrates that each group was exposed to a seasonal episode of nutritional stress, but to a varying degree. The energy debt of the Ethiopian women was the most severe at 16,380 calories. The Indians and Beninese incurred virtually identical energy debts of about 6300 and 6180 kcal respectively. Exposure to such nutritional stress may be expected to produce a measurable effect on body weight and may therefore represent a sufficient biological stimulus to trigger adaptive responses.

The seasonal body weight losses are shown in the table. The diversity of response is striking: the Indian women with the lowest BMI of all three groups showed virtually no weight loss (0.3 kg) whereas the Beninese and Ethiopian women lost three and five times as much respectively. Of the three groups, only the Beninese women, who had the highest BMI, were capable of entirely meeting their energy debt through this mechanism. As the weight loss among the low-BMI Indian women was small, and the energy deficit among the Ethiopian women large, these two groups could only partially balance their energy debt — up to 33% in the Indians and up to 68% in the Ethiopians. This suggests that the Indian and Ethiopian women must have resorted to additional strategies in order to meet their energy deficit.

### Changes in basal metabolic rate

Profound differences were revealed in the basal metabolic rate (BMR) of the three groups. The Indian women had BMR values barely 65% of those of the Beninese and Ethiopian women. Low BMRs have been reported repeatedly in Indians and other oriental populations. There is as yet no plausible explanation for this phenomenon, although its implications are important as an Indian woman would have about one-third more net energy to use for physical work than either Beninese or Ethiopian women subsisting on identical energy intakes. The observed seasonal changes in BMR are consistent with the hypothesis that reduction in BMR — a well-recognized response to energy deficit — might have played a substantial role in the energy-saving processes of these women. The drop in BMR, integrated over time as previously described for energy intakes, saved 1935 kcal in the Indian and 8280 kcal in the Ethiopian women. Energy removed from the body stores (weight loss) plus the energy saved by decreasing the BMR, approximately balances out all potential energy debts. A proportion of the debt remains unexplained in the Indian women (36%) and the Ethiopian women (19%), but as the calculation is crude and the figures small, no significance can be attached to this. No changes in BMR were recorded in Benin, suggesting an absence of any adaptive response.

An integrated picture of the diverse adaptive responses to seasonal energy stress by the three study groups

	INDIA		BENIN		ETHIOPIA	
	Harvest	Lean	Harvest	Lean	Harvest	Lean
Mean energy intake (kcal/day)	2030	1890	1661	1558	2210	2028
Potential energy debt (kcal)	6300		6180		16380	
Body weight change (kg)	-0.3		-0.1		-1.6	
Energy equivalence of weight lost (kcal)	2100		7000		11200	
Mean BMR (kcal/day)	878	835	1335	1337	1368	1276
Energy saved by BMR change (kcal)	1935				8280	
Unaccounted energy debt (kcal/day)	-25				+17	

\* Values are integrated over a period of 90 days for India, 120 days for Benin and 180 days for Ethiopia

It is important to examine to what extent physical activity contributes to limiting body weight fluctuations and to re-establishment of energy equilibrium under real life situations. This three-country study, contrary to others on seasonal variation of energy expenditure, produced evidence of tremendous stability in the energy expenditure of the Ethiopian women throughout the seasons, despite their exposure to moderately intense energy stress. Other rural communities in developing countries have also been reported as maintaining a fairly stable level of energy expenditure over the year. This lack of seasonal variation could reflect a combination of environmental and social circumstances which on one hand stretch the agricultural calendar over longer periods, thereby reducing the occurrence of short bursts of intense labour demands, and on the other cause women to maintain a uniform level of physical labour throughout the year, regardless of their state of energy equilibrium.

### **Biological or socioeconomic adaptations?**

Central to our understanding of the role played by behavioural adjustments in the adaptive response to energy deficiency is the ability to discriminate between the physiologically-driven, nutrition-dependent modifications of physical activity, and the changes in activity imposed by external, mainly economic, constraints. The unravelling of these two processes poses enormous difficulties which this study was not designed to address. However, there is evidence to suggest that decreases in physical activity may play a lesser role than originally anticipated under the conditions prevailing in rural areas of developing countries.

Firstly, energy expenditure remained practically unchanged throughout the seasons in the Ethiopian women, whose energy deficit was the most severe, and whose changes in BMR and body weight appear to have been sufficient to meet the potential energy debt. This strongly suggests that in the circumstances of this study, little scope remained for any further energy-saving through curtailing physical activity. This was also true for the Beninese and Indian women.

Secondly, physical activity, and therefore total energy expenditure, may well prove to be strictly regulated by social obligations and environmental constraints. The pre-harvest decline of physical activity may not therefore necessarily always be an expression of biological adaptation to energy deficiency, but a coincidence of low food availability with reduced agricultural workload. On the other hand, lower seasonal energy expenditure may also be explained by the practical difficulties faced by the rural poor. In Ethiopia, for example, it was observed that the amount of time spent in productive work was affected by economic status. The

poorest households recorded only seven hours of productive work per day compared to almost twice that number for richer ones. Did these poor households work less because they were semi-starved, or simply because their lack of land, tools, technical input and knowhow, and other essentials, reduced them to relative inactivity? These questions remain unanswered.

The study therefore concludes that the link between activity and energy equilibrium proceeds unidirectionally from poverty to inactivity through lack of job opportunities and from inactivity to food deprivation, and from there to loss of body weight. There is no evidence that this link operates in the other direction. The overall conclusion is that in populations exposed to seasonal fluctuations of food availability, BMR and body weight changes might represent the leading forms of adaptation to energy stress and that these can be triggered even at rather modest levels of energy deficit. No evidence was obtained that decreases in physical activity played any role in energy-saving, and the reasons for pre-harvest decrease in physical activity may in many cases be socioeconomic in origin.

This study reflects some important issues and controversies now being addressed by nutritionists. In drawing conclusions about seasonal weight variations and agricultural work patterns in women, however, the differences in men's and women's workloads and social roles should not be overlooked. Huge seasonal variations in women's workloads are uncommon, because even in the so-called "slack" agricultural season, rural women continue to be fully occupied with a wide variety of tasks and are thus likely to expend a fairly consistent amount of energy year-round, with a peak during the harvest period. In many societies, the "slack" agricultural period is a concept applicable largely to men.

*Summary of the work of:*

Ferro-Luzzi, A. Seasonal energy stress in marginally nourished rural women: interpretation and integrated conclusions of a multicentre study in three developing countries. *European journal of clinical nutrition*, 1990, 44(Suppl.1):41-46.

Other recent work on issues of nutrition and energy expenditure can be obtained from Dr A. Ferro-Luzzi, Istituto Nazionale della Nutrizione, Via Ardeatina 546, Roma, Italy.

## Time and energy costs of distance in rural Zimbabwe

This study of 331 households was undertaken to assess the time and energy costs of distance that communities face when carrying out their daily activities in a rural area of Zimbabwe. The annual time cost of distance (TCD) per trip maker in this district came to 2,837 hours, or more than four times the average national annual per capita TCD. It was also shown that the total TCD output by the household was not shared uniformly among household members. Women members carried a disproportionate share of the TCD, especially for trips related to domestic chores.

In Chiduku, the study area, the dominant economic activity is smallholder farming, although the land is rugged and only relatively small tracts are suitable for farming. The natural vegetation has become severely degraded due to overgrazing and deforestation. Forest cover is virtually depleted, leading to high time and energy costs in collecting firewood. Water is obtained mostly from streams and wells.

Estimates of the time and energy costs of distance (TCD and ECD) in this area were based on three clusters of trip generators: routine domestic chore cluster, social services cluster, and tertiary functions cluster. Inclusion of trips in the study estimates was based on two criteria: a) the reason for making the trip was a basic human requirement common to most households, and b) the trips were made on foot by members of the household, often with back or headloaded goods.

The routine domestic chores cluster absorbed the largest proportion of the household time budget, accounting for about 49% of the total household TCD output. About one-third of this effort was devoted to trips to fetch water and firewood, and to do laundry. These chores also involved head or back loads requiring higher energy consumption per kilometre walked than other chores. Distances for wood collecting trips were the greatest in the domestic chore cluster, averaging about 2 km. Livestock grazing and watering absorbed about 48% of the total TCD for domestic chores.

The tertiary functions cluster contributed the second highest TCD burden at 35%. Trips to local markets were the most important category in this cluster, accounting for 56%. Trips to retail stores, grain mills and butcher shops were added to the local markets figure, to reach a total of 83%. Distances to tertiary activities are comparatively high, accounting for low trip frequency and low number of trip makers.

The social service cluster took up only 26% of the total household output. Almost two-thirds of the TCD in this cluster was taken up by children's trips to school and a further third by trips to clinics.

### **Excessive time and energy costs to women**

Mothers' contribution to total TCD for 10 chores was highest at 25 hours/week, or about 38% of total household output. Daughters' contributions come next at 22%, followed by sons' at 20% and husbands' at only 13%. The TCD burden on daughters is comparatively greater, however, as their chores (fetching water and firewood, and doing laundry, for example) involve carrying heavy loads.

Similarly, the energy cost of distance (ECD) is also unevenly distributed among household members. Trip makers carry a much higher burden of the household ECD at 1710 calories per trip maker per day, or 80% of the average daily intake for Zimbabwe. ECD shares are differentiated by type of trip generating chore and household composition. Wives bear a disproportionate share of the ECD for domestic chores, while men are largely responsible for livestock maintenance, and make many of the trips to hospitals, traditional healers and markets. Priority attention should be given to the situation of women, who are the key to improving health and nutrition in the household.

That mothers should spend 25 hours per week on just 10 of the many trip-generating tasks, contributing two to three times more than other family members, is cause for concern. In view of women's many other responsibilities, such as cooking, child care and crop cultivation, their share of TCDs forms a major constraint to healthy nutritional status for themselves and their families.

Interventions to improve the health and nutritional standards of the rural population need to take into account not only the high time and energy costs of distance per household, but also the differential impact on women. In this case, and in most of Zimbabwe's rural households, women carry the heaviest burden of TCDs and associated ECDs by undertaking the most stressful routine domestic chore trips which involve back and head loads.



Both time and energy costs of distance are critical issues in many African rural areas. Studies of this nature make it possible to gauge the opportunity costs of the TCDs and ECDs of the basic activities of all members of the rural household, and help to set priorities when planning reductions in time and energy output. In this way age and gender biases in workburden can be demonstrated and, it is hoped, alleviated.

*Summary of the work of:*

Mehretu A, Mutambirwa C. Time and energy costs of distance in rural life space of Zimbabwe: case study in the Chiduku communal area. *Social science and medicine*, 1992, 34(1):17-24.

## Women's health in a marginal area of Kenya

While health problems affect all people in marginal areas, poor environmental conditions have a disproportionately negative effect on women's health. An integrated survey carried out in the Kibwezi district of Kenya in 1983 showed that lower land productivity, the gender division of labour, combined with changes in traditional modes of production, impact most heavily on women of childbearing age. The society depends heavily on the productive capacity of women of childbearing age; 30% of households have de facto female heads. Kibwezi illustrates one of the paradoxes of agriculture: a marginal area has a lower human carrying capacity than more productive land, but requires a higher labour input. This is normally supplied by women.

Climatically, Kibwezi is dry with erratic rains. Lack of water is the most frequently expressed agricultural problem, although when rainfall is adequate, the crops provide a balanced, nutritious diet. The population of around 100,000 is highly dispersed, and accessibility to towns and markets along the main Nairobi/Mombasa road is poor.

Water consumption is constrained by distance from the source and lack of transport. On average, consumption levels double during the short rainy seasons, which might suggest that demand for water goes unmet most of the year. Water collection, the most constantly demanding domestic/agricultural task, is associated mainly with female labour; 70% of all water collection trips are made by females over 15 years of age. Women aged 20-39 make over half of all trips. An integrated survey carried out in 1983 found that 92% of women in this age-group collected water, compared to 25% of men of similar age. Children collect water at weekends, but compulsory school attendance has reduced the amount of time that they can spend assisting with this task. Men collecting water tend to do so with mechanical or animal assistance. On average, women carry 20-25 kg loads over 3.5 km, 1.5 times per day, on rough terrain and in temperatures of up to 40°C. Many are pregnant or breastfeeding.

The heavy physical labour required of women in Kibwezi, combined with high fertility and prolonged breastfeeding, creates extra nutritional demands which are difficult to meet in an area characterized by an absolute shortage of all foods. Indeed, long breastfeeding periods result

from lack of weaning foods, and represent a partial transfer of nutritional deficit from children to mothers.

Nutritional stress can also be inferred from those survey findings which showed less body fat for each age group of Kibwezi women compared to women of shorter height from more fertile land areas. One-third of the women and children had at least one parasite, most commonly hookworm. In infected women, anaemia and nutrient loss were severe.

### Chronic disability higher among women

Average life expectancy at birth in this area is very low (47.0 years in 1979). There are few old people, and a large proportion of women are of childbearing age; in terms of total population, women aged 20-39 are more highly represented in Kibwezi than other parts of Kenya. Birth rates are therefore higher than the national average, despite male out-migration. Health status in Kibwezi is poor. Malaria, gastro-enteric infections and respiratory diseases are the most common adult ailments, while diarrhoea, measles, parasitosis and malnutrition are frequent among children. A voluntary Community Health Worker (CHW) training programme has operated since 1978. Its success has been limited, particularly in maternal and child health, probably because few women have been selected by the community for training as CHWs.

Chronic disability: prevalence by age and sex				
Age	Male		Female	
	% sample	% disabled	% sample	% disabled
Under 5	13.4	3.9	10.6	2.6
5-9	9.7	3.9	9.9	5.8
10-14	7.3	4.5	6.9	4.5
15-19	4.6	3.2	4.9	1.9
20-29	4.5	4.5	7.3	9.7
30-39	4.5	4.5	5.9	12.3
40-49	3.1	5.2	3.0	10.4
50-59	1.8	3.9	1.0	6.5
60+	1.0	7.1	0.6	5.2

Apart from old people, the group most susceptible to chronic disability (defined as inability to perform normal duties due to sickness or weakness) consisted of women of childbearing age. From age 20, higher proportions of women than men were found to be chronically disabled. Men's disability reached similar proportions only in the over 40 age group. The nature of chronic complaints differed between adult males and females. Stomach complaints, often a euphemism for gynaecological problems, and general body pains, were associated particularly with women, whereas men appeared to be more susceptible to eye problems, chronic coughs and injuries. Chest pains accounted for 29% of all reported disability for both males and females. Many of the reported symptoms were vague, but for the Kibwezi women at least, they could be correlated with the hard physical lifestyle. One reason for the higher prevalence of functionally-defined chronic disability among women may be that the demands made on them are very high, and even a slight physical handicap can greatly impair a woman's ability to discharge all her duties successfully. Chronic disability adds to the burden on healthier women, and increases the load for all women in the community.

In sum, the majority of women in Kibwezi are undernourished with a high prevalence of intestinal parasites. Malaria, gastroenteritis and schistosomiasis are seen as major problems by the community. A heavier workload than that of other members of society imposes higher nutritional demands which are augmented by high fertility rates and long breastfeeding periods. Seasonal shortage of food is normal and famine is common. These high but unmet nutritional demands predispose women to a wide range of debilitating diseases. The resulting burden on the healthier women of the community is therefore increased.

All these problems are cumulative in nature. They could be addressed by focusing on women of childbearing age as a target population for health interventions and also by addressing some of the features that make women's lives so arduous. Assisting women farmers by extending credit and extension services through women's groups, for example, or promoting improved carrying methods for water, which may encourage men to become more involved in this task, should be attempted. Maintaining community-based grain stores could reduce seasonal food shortage and benefit women's nutritional levels. The issue of fuelwood collection, although not addressed by this paper, is also relevant here. In a semi-arid area this task will be as burdensome as water collection, and can affect nutritional levels due to the relationship between fuel availability and food intake.

*Summary of the work of:*

Ferguson A. Women's health in a marginal area of Kenya. *Social science and medicine*, 1986, 23(1):17-29.

## Chinese agrarian policy and its impact on rural women

Current agrarian policy in China, coupled with the One Child per Family Policy introduced in 1979, has several negative implications for women's status and health, particularly for rural women. The benefit of past campaigns for women's equality may therefore be lost, and recognition of the economic importance of women's work greatly diminished. Male heads of household are now more likely to control both women's labour and women's income.

Agrarian policy now involves decollectivization under a "Family Responsibility System". Families must meet a production quota, but are free to dispose of any surplus as they see fit. If the quota is not met, the family must compensate the commune to which it belongs. Sideline activities and small cottage industries are encouraged, as are cultivation of family garden plots for production and sale of vegetables, and animal husbandry.

In practice, the new agricultural labour policies are reprivatizing women's labour back into the patriarchal family. Women are no longer able to earn work points through their public labour contribution, or to gain the chance to work with non-family members in agricultural tasks.

This translates into an accelerated pace of work, as rural Chinese women must now manage several different work demands, but without the aid of communal social support mechanisms which have been dismantled. Women have become the only source of assistance for the sick, elderly, disabled, young and other vulnerable groups. Elderly women find themselves dependent on their children for care and support. Thus increased economic opportunities outside the home are of no use to women who have had to assume additional domestic tasks. Rural children, especially girls, are being taken out of school to assist at home and in the fields. In short, three generations of Chinese women are negatively affected by this return to a patriarchal system.

## **Women pay the price for contradictory policies**

Sharp contradictions emerge from the collision of state policies concerning production and reproduction. For example, the family responsibility system encourages peasant agricultural production, but the One Child per Family Policy prohibits the traditional rural strategy — that of having many children — for boosting family labour power and income.

As a result of the One Child per Family Policy, some women have been subjected to forced abortions and sterilizations, or the insertion of intrauterine contraceptive devices. And it is women who are held accountable when birth quotas are exceeded. If pregnancy without official sanction occurs, prenatal care cannot be sought since the requisite authorization papers will not have been issued for presentation at local health clinics. The parents of an unauthorized child may have difficulty registering the child for grain allotments, schooling and medical care. The effects of the One Child per Family Policy on kin networks and social structures also remain to be evaluated. For several future generations, there will be no cousins, uncles or aunts, and few siblings. This is likely to represent a considerable loss to the social fabric of Chinese society.

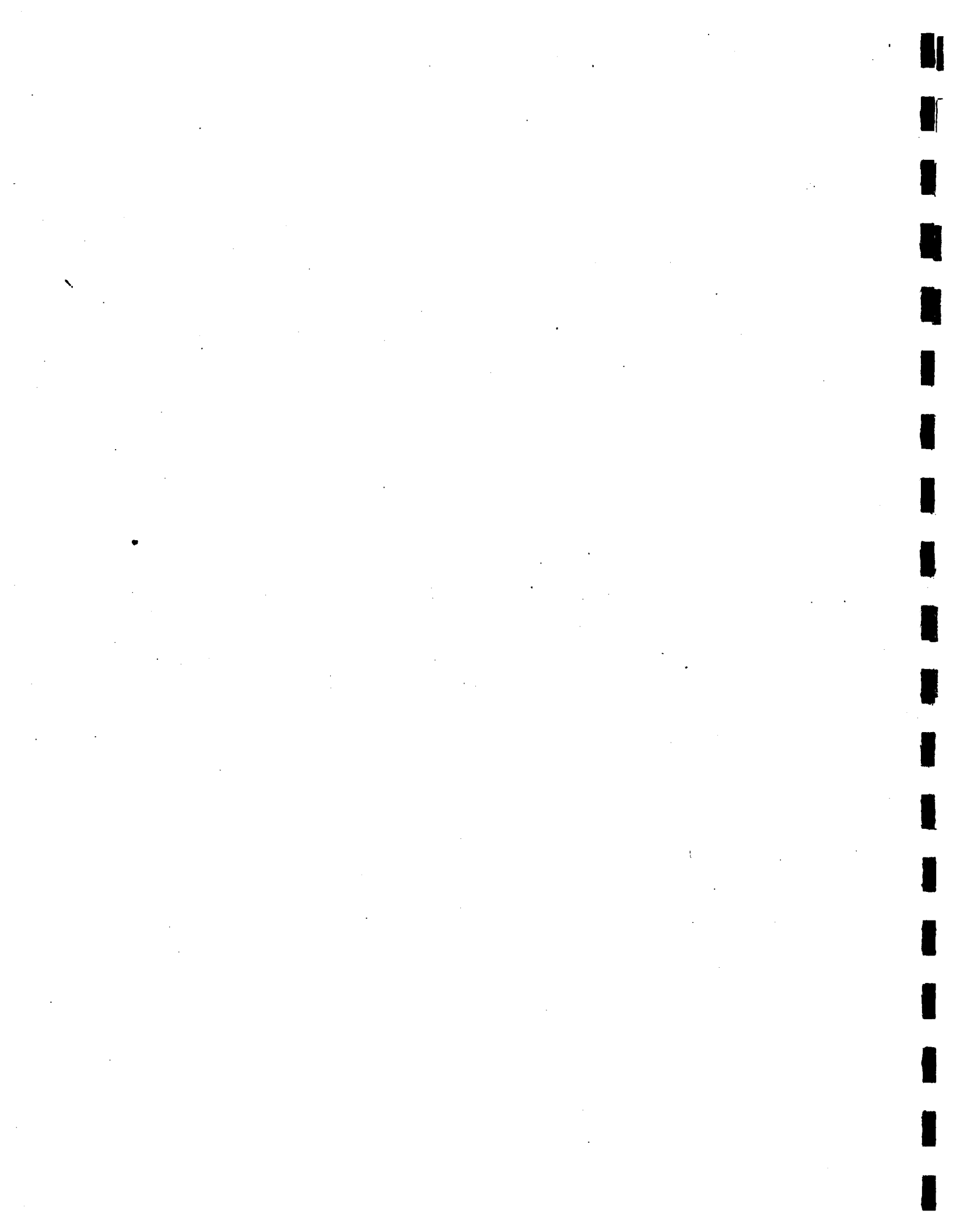
These problems at state level are compounded by the tendency of families to punish women who produce baby girls. Female infanticide, wifebeating, abandonment and divorce of wives who have given birth to daughters have been reported. Fears have been expressed that husbands or in-laws of sterilized women may press for divorce since remarriage offers another chance to produce sons. The One-Child Policy has created a sterilization trend among daughters-in-law, with divorce as an alternative strategy, if the first-born is a girl. The preference is for women to be sterilized in order to avoid any possible risk to more highly valued males.

Some analyses suggest that hard field labour in the family responsibility system is now being left to female members while men pursue better economic opportunities in rural transportation, manufacturing, and sideline small industries. Thus, real development opportunity for women is restricted yet further. The increased workburden and family responsibilities accruing to Chinese women as a result of current policies are a threat to their health and wellbeing, while the loss of their relative occupational autonomy represents a step backward. Unfortunately, no affirmative actions programmes for rural women have been designed, despite the well-known correlation between better work and education opportunities for women, and decreased fertility.

While state intervention has decreased in one area of rural life (production), it has expanded in another (reproduction). The two are inextricably linked and cannot easily be separated in practice. Institutionally, however, they are seen as distinct spheres and are often treated as such, with serious consequences for Chinese rural women. The burdens on women who give birth to a "wrong-sex" child are clearly considerable. One potentially helpful measure might be to provide economic incentives for parents of only daughters rather than for one-child families, as presently happens. This measure would address the root of the problem, which is the low economic value and status of girls vis-à-vis boys, and assist in solving several related social problems.

*Summary of the work of:*

Dalsimer M, Nisonoff L. Implications for Chinese rural women of new agrarian and family planning policies. *Feminist studies* 13, 1987, 3:583-607.





## Housing and shelter

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The health risks of poor housing are fairly well known and documented. Typical examples are overcrowding, which facilitates the spread of infectious diseases and has been associated with domestic violence, Chagas Disease, psychosocial problems, and accidents. But other aspects of housing have implications for women's health which are poorly recognized and understood, such as how their lack of social and economic control affects access to and retention of shelter. Important issues emerging in this chapter are as follows:

- Chagas disease is endemic in Latin America, where the proportion of women-headed households is the highest in the world; the heart problems caused by this disease disable women during their years of greatest economic productivity
- in societies where tangible assets accrue only to men, poor women may lose their homes if separated or divorced, due to their lack of rights
- social, cultural, and economic pressures reduce women's eligibility to enter self-construction housing schemes to assist the poor, and their chances of successful completion are less than those of men
- the harsh social environment encountered by widows in rural Nigeria threatens their health, security, and access to shelter
- far more women than men die in natural disasters in Bangladesh due to the social confinement of women and their inability or reluctance to leave the home.

## The impact of Chagas disease on women

Chagas disease (American trypanosomiasis) is a zoonosis causing heart disease, transmitted by the parasite *Trypanosoma cruzi* in an insect vector. Endemic in many Latin American countries, Chagas disease is directly related to human behaviour and poor socioeconomic conditions. Women are not necessarily at higher risk of acquiring Chagas disease unless it can be shown that they spend longer periods in the home and have higher exposure rates through this means. However, the impact of the disease on the lives and social roles of women is significant, although research is lacking on precisely how the disease affects women and the role they could play in reducing its transmission.

High transmission rates of Chagas disease are strongly correlated with poor and overcrowded housing, particularly where construction utilizes local, natural materials such as wood, mud, and thatch. The vectors — triatomine insects — live in the cracks of walls, dirt or wooden floors, and furniture.

The acute phase of the disease manifests between 4-26 days after infection, and is often accompanied by fever, muscle pain, sweating, general malaise and occasional vomiting and diarrhoea. Acute infection most commonly occurs in children, and normally lasts 2-3 months, after which the disease enters the indeterminate phase. This is silent or asymptomatic; 10-30% of those in the indeterminate phase may develop chronic Chagas disease years or decades after the acute episode, or may be asymptotically infected for the rest of their lives. Cardiomyopathy is a common feature, causing disability and mortality in endemic areas. Once the symptoms of myocarditis develop, death follows within 6-12 months. Cardiac lesions are observed principally in the 20-40 year age group.

Efforts at control are problematic as communities are often unaware of how the disease is caused. Research in a rural Bolivian community showed that 59% of women did not understand the relationship between the vectors and the disease, although they were familiar with the triatomine insects and had seen them in their houses.

In common with other tropical diseases, the economic costs of Chagas disease are high. In Brazil alone, it has been estimated that it is responsible for the loss of 1363 working years per 100,000 women. Since the disease results in disability, the sufferer becomes a financial burden to her family. As many as 10-20 years may elapse before the cardiac lesions characteristic of the disease occur. As the disease is often contracted in childhood, its effects generally develop at a time when the economic productivity of the individual affected would normally be highest. In developing countries women and children account for at least 50% of all food production, so in areas where the disease is endemic, the economic and nutritional status of entire communities is at risk.

A further complication of chronic infection is dilation of tubular organs, known as the "mega" phenomenon, common in certain endemic areas of South America. Thyroiditis and hypothyroidism have also been associated with chronic Chagas disease. Studies on the effects of both the mega phenomenon and thyroid disorders on women's health and on reproduction are lacking. Again, due to the frequent early age of infection, the entire reproductive years of a woman may be affected. In endemic areas, 10% of all spontaneous abortions are attributed to placental transmission. If a fetus survives, it is born prematurely and usually dies within a few weeks. The *T. cruzi* parasite has also been located in amniotic fluid, therefore representing a potential hazard to medical and auxiliary health personnel in hospitals, clinics and health posts. It has already been established that the parasite is transmitted by breastmilk. Blood transfusion is another important route of transmission.

### **Inadequacy and inaccessibility of treatment**

Treatment is possible only during the acute phase, but does not alter the progression of the late phase myocarditis; treated individuals show electrocardiogram disturbances as frequently as untreated patients, and the chemotherapeutic drugs used can have numerous undesirable side effects. Given that Chagas is a disease of poor rural areas, it can be assumed that a large proportion of those infected neither have access to nor are in a position to pay for such symptomatic treatment as is available.

Although research on the effects of Chagas disease on women is sparse, it can be anticipated that in endemic areas a large proportion of poor, rural women (i.e. those least able to support the economic losses deriving from the disease, or to pay for mitigating or palliative treatment) are affected. The limited existing information shows that Chagas disease has a significant impact on women's lives. In Brazil, for example, it was found that 14% of infected women lost their jobs due to trypanosome-related illness, and in many Latin American cities, rural immigrants are refused



employment if they test positive for the infection. And since increased cardiac disease morbidity due to Chagas' disease occurs among women aged between 15 and 53 years, a woman's ability to care for and economically maintain or contribute to the household is reduced when it is most needed.

The social impact of Chagas disease is likely to be greater on poor women than on any other population group. But as family educators, caregivers and home-makers, they are in a good position to help reduce transmission to family members. If they were fully informed through extensive health education efforts of the nature and extent of the disease and its modes of transmission, they could educate their children in its prevention and control. Chagas disease therefore illustrates how the health status of entire communities could be improved by specifically focusing on women in terms of further research efforts, and educational, preventive and economic measures.

*Summary of the work of:*

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## Housing and family maintenance

In most developing countries, the role of breadwinner is ascribed to the male head of household. Yet a study in Nigeria found that the economic contribution of women working in the informal sector is often greater — even when considered separately from the value of their household and reproductive work — than that of husbands employed in the formal sector. Housing policies in Nigeria are nevertheless designed solely around the needs of the male labour force, and neglect aspects of location, design and planning that are crucial to facilitating the large input of women to the family economy.

An investigation was undertaken in Port Harcourt, Nigeria, to monitor the income generation and spending patterns of women working in small businesses. Women are expected to supplement their husbands' contributions to family upkeep. Of 118 women surveyed, 84% were members of male-headed households. Almost two-thirds (64%) of all employees in the neighbourhood were women, of whom almost half (46%) were in retailing, operating with minimal capital and running costs. Most women were engaged in foodstuffs and provisions businesses because this meant they could feed the family from existing stocks. On average, they spent 10 hours a day on their own business activities, or about 3 hours after a day in the formal sector. Additionally, they performed all the traditional cooking, cleaning and childcare tasks. These women were unable to quantify their income as so much earned per day, week or month, but they did assess it in terms of how well they could feed and clothe their children and pay school fees, and whether or not they could reinvest some money in their business. Income was therefore best assessed by examining the women's spending patterns.

The survey revealed that women funded 55% of household expenditure on average, with the proportion as high as 80% for some items. Most of the women's money was spent on food, clothes, education and health care for their children. Men's money was then freed for investment in construction of a house or purchasing of property or a car (items then regarded as belonging solely to them). Rent was the responsibility of their husbands, so none of the women surveyed paid rent. In the case of divorce or separation, therefore, the woman moves out, even if she has contributed substantially to house maintenance during the marriage.

The earnings of husband and wife were clearly demarcated. There was no concept of pooled income and neither was aware of how much the other received. The wife perceived the household as consisting of her children and herself. In the case of plural wives, each wife and her children formed a separate economic unit with each mother largely responsible for financing her own unit.

The women studied were largely illiterate or had received very little schooling. They had gone into business in order to support themselves and their children, recognizing that husbands, particularly if shared with other wives, would not be able to support them. Initial financing, although sometimes provided by the husband, was more often supplied by the woman's kin or a credit network. Although in most cases the husband gave his wife only a token amount of money for food, he expected to be fed three times a day. Husbands generally bought clothes for their children once a year only, during the Christmas celebrations. In these conditions, sickness could be catastrophic to their family's well-being. If sickness occurred, the woman's business was closed down and revived when she recovered. Under such circumstances, saving for old age is impossible and security depends ultimately on children and kin.

Share of essential household expenditure contributed by men/women in the informal sector		
Item	Percentage	
	Wife	Husband
Food	73	27
Clothes for children	76	24
Health care	68	32
House rent	-	100
House-help	82	18
Entertainment of friends and visitors	35	65
Children's education	50	50
<b>TOTAL</b>	<b>55</b>	<b>45</b>

Source: Oruwari, Field Survey, 1990.

## Housing location and design affect women's earning power

Although wives contribute more to household finances than husbands, the location of the family is normally decided in the following order: husband's place of work, children's schools, women's business opportunities. Likewise, physical planning practices usually fail to accommodate women's need for income-generating space within the community, again due to the assumption that the breadwinner is working "outside" the community and that women are dependents. Finally, zoning legislation often prevents the development of income generating activities in residential areas, thus preventing women from carrying on their trades in the vicinity of their homes.

It was concluded that site designs for impoverished neighbourhoods should recognize the importance of home-based businesses and provide for the essential informal sector activities that are crucial to family survival. A major redefinition of the household is required, one which moves away from the classic assumption of a group sharing one roof and one budget. The nuclear family concept is not relevant in Nigeria, since here the strongest ties of parents may be with kin elsewhere, rather than with their partners. Thus it is unfortunate that under current housing policies, all benefits accrue to the husband, putting the well-being of women and their children at risk. The regulations governing allocation of plots and low-income housing schemes which stipulate one plot per family only is based on the false assumption that a family comprises one homogenous unit, effectively denying women the right of independent access to shelter for themselves and their children.

This study illustrates the situation of countless women in many countries. The obligation of urban poor and frequently illiterate women to generate income in order to feed their families and secure at least some education for their children is discharged against a background of relentless hard work, chronic stress and insecurity, adverse physical conditions and surroundings, and often legal harassment. Their difficulties may be exacerbated by unemployment or underemployment of husbands, leading to frustration and embitterment, which can in turn lead to alcoholism and domestic violence. A vicious downward spiral results which undermines women's health. The belief that the husband is the breadwinner and the wife a dependent is therefore erroneous, and reflects a set of values and concepts which have no reality for this level of Nigerian society.

*Summary of the work of:*

Oruwari Y. The changing role of women in families and their housing needs: a case study of Port Harcourt, Nigeria. *Environment and urbanization*, 1991, 3(2):6-12.



## Do self-construction schemes help women-headed households?

As urbanization and male out-migration increase, so too does the percentage of women-headed households. It is estimated that one-third of the world's households are headed by women, while in urban areas of Latin America and Africa, the figures may be as high as 50%. Given that women-headed households are among the poorest in all societies, they have the greatest difficulty in obtaining adequate housing. Self-construction — building a house oneself with construction materials wholly or partially provided by the government — is one potential solution attempted in some countries, but poor women face a number of obstacles both in qualifying to participate in such schemes and in successfully achieving the construction.

In Argentina, various economic policies and structural adjustment over the last decade have led to falling incomes, rising prices, rising unemployment and government cuts in social spending, thereby increasing the level of poverty among large sectors of the population. Because of the social roles assigned to women within the family and community, the negative impact on them has been far greater than on men. This is particularly true of women in the poorest groups. While men are responsible only for productive work, women's duties include reproduction, care and raising of children, administration of household budgets, and working to earn a second income, often in low-paid jobs. Additionally, women take care of the sick and elderly. The economic crisis in Argentina has increased their workload in all these areas. For example, women must compensate for the rising costs of food and shelter, the lack of day-care centres and school support, and cuts in public service. This has led to a great increase in the number and extent of community tasks performed without pay by women.

A study was undertaken against this background to examine the implications for poor women of a project to relocate a squatter settlement in a major city in Argentina, using a self-help construction scheme. A survey was carried out involving 397 of those who relocated. This revealed a smaller percentage (16%) of women heads of household than that depicted (30%) by the most recent public census. The reasons for this lay in the method used to categorize households, which "concealed" some of the women heads, coupled with the failure to allocate a plot in the

relocation scheme to all women-headed households and the failure of some women selected to complete the project.

The "concealed" women-headed households comprised common-law unions, offspring of these and previous unions on both sides, plus other relatives and/or unrelated members. In these cases, it was observed that the common-law male partner was often temporary or transient, that his contribution was mainly limited to his own offspring, and that the women assumed the principal reproductive and management responsibilities for the whole dwelling. A further hidden category consisted of young women supporting children, but living with close relatives and without a male partner. Disaggregated in this way, the total percentage of relocated women-headed households rose to 33%.

Of the four types of dwelling available through the project, the survey showed that women-headed households tended to be allocated the two smallest, which had the least functional efficiency. Of the four types, one was self-constructed while the others were built by a contractor. The self-constructed houses were functionally the least efficient of all types, and were allocated to a high percentage of women-headed households. None of the housing types, however, fulfilled the needs of any of the household categories. All were viewed as "core" houses to which occupants could add rooms. However, 50% of women could not afford any modifications, while the remaining 50% managed only basic additions such as erection of a crude fence around the property for security reasons.

Women indicated mixed feelings about their participation in the self-construction process. Against a general feeling of achievement and enhanced self-confidence about a difficult task accomplished against great odds, some significant drawbacks for women emerged. Due to time constraints, nearly all the women had to obtain assistance during the construction, which always came at a certain price, even when provided by family members. Women stated clearly that without help, the construction would have been impossible. Their own contribution was seen to have been at a cost to their health and also reduced the time they could spend on childcare and income-generating activities. The long time period and inevitable delays were seen as demotivating, as was the factor that they did not know which house they would finally be allocated.

The problems identified in this study have been echoed by others elsewhere. In Sri Lanka, for example, similar problems concerning the lack of participation of women in housing and planning exercises have been noted, along with comparatively greater investment of time by women-headed households in self-help construction, despite their handicap of lack of time and skills. Women-headed households, by definition among the poorest, often had to employ others to build for them, were

frequently cheated financially by builders if illiterate, and experienced difficulty in protecting the building materials from thieves.

The Argentinian project suffered from mistaken assumptions regarding the time women could freely contribute, relative to their other responsibilities. This is a common error in development planning. The findings of the study also confirm the theory that urban planning is based on inaccurate stereotypes and incorrect paradigms regarding the nature of the household, including a failure to recognize the triple role of poor urban women, particularly those who head households. In sum, it can be said that while self-help construction projects can help to overcome shelter problems, they tend to contain structural weaknesses and deficiencies which can exclude a main class of potential beneficiaries — women-headed households, one of the least well-off groups in terms of free time and physical resources.

*Summary of the work of:*

Falu A, Curutchet M. Rehousing the urban poor: looking at women first. *Environment and urbanization*, 1991, 3(2):23-38.

Rasanayagam Y. Women as agents and beneficiaries of rural housing programmes in Sri Lanka. Unpublished paper, 1989. (See Appendix for contact address.)

## Widowhood practices in Nigeria

The customs and behaviour relating to spouse bereavement differ greatly between men and women in many African countries. This paper describes the social environment of widows in Igboland, Nigeria, with particular reference to Imo State. It identifies the socioeconomic, mental and physical health impacts of widowhood practices on women, and highlights the socially unjust treatment of widows. While the widowhood practices described are probably similar throughout many African cultures, differences exist on the basis of tradition and religion, which in Nigeria is principally Islamic or Christian.

In Nigeria, family law permits certain widowhood practices which discriminate against women, particularly those who were married according to customary rather than statutory law. This is at variance with the Nigerian constitution, which states (section 33 (1)) that every individual is entitled to respect for the dignity of *his* person and that no person shall be subjected to any form of torture or to inhuman or degrading treatment.

Some of the negative practices affecting women derive from the Igbo belief that "the beauty of a woman is her husband." This investment of a woman's entire worth in her husband causes her to be viewed, at his death, as unclean and impure — a possible source of contamination to herself and others. A woman's ordeal begins with the customs she must observe in the weeks following her husband's death, which, coupled with the shock of bereavement, can undermine her health. For a widower, restrictions on mobility, dress and behaviour are substantially less, and the required mourning period much shorter, so that normal life patterns are resumed fairly soon after bereavement.

A widow's economic situation becomes precarious if she has no adult male children. She may be ejected from her husband's house as both it and his land will have been inherited by his eldest brother. Even her husband's clothes are taken over as part of this inheritance, and any opposition on the part of the widow may result in an accusation of responsibility for his death. When male offspring of the widow become adult, they may demand the return of the land and property of their deceased father, but with no guarantee of success. In most cases, the husband's kin do not provide the

widow with any economic support, particularly if she will not accept the status of additional wife to one of her husband's brothers.

### **Health impact of widowhood practices**

Interviews and discussions were held with traditional rulers, leaders of women's organizations and widows, and questionnaires were administered by village health workers deployed in 12 communities with a total population of 148,966. The aim was to establish which widowhood practices were followed in which areas, to determine which practices have negative health, social, political or economic impact on women's lives, and to identify those which might be changed and how government intervention might be induced. The results ranked the following five factors in terms of their influence on the health and economic status of widows:

**Long period of incarceration during mourning.** During the three months following bereavement, a new widow may not leave the house for any reason, and the resources remaining to her are seriously depleted. Children may have to drop out of school and nutrition may be poor. Loneliness and lack of any social interaction are likely to have adverse psychological effects, although no studies have been carried out on this aspect. Assistance is usually forthcoming only from the widow's natal family.

**Obligatory poor standard of hygiene.** Where mourning practices stipulate neglect of bathing and other personal care (including hand washing before meals), the widow's health is at risk. She may have to be fed by another woman with unclean hands, and may use only broken pots and plates, which may be unhygienic. Studies are needed to ascertain the risk of skin diseases, lice infestation, gastro-enteric infections, and typhoid.

**Deprivation of husband's property and maltreatment by his relatives.** In these circumstances, the widow is left without the economic resources to meet either her own or her children's basic needs. Women of low skills and literacy may be compelled to turn to commercialized sex as a means of financial support; this exposes them to, and makes them a channel for, sexually transmitted diseases, including HIV.

**Enforced persistent walling.** This practice is physically and psychologically debilitating and disruptive.

**Forced to sit beside husband's corpse.** Some traditional cultures demand that a widow sits in the same room with her husband's body until he is buried. Most women fear the dead and this practice is liable to have adverse psychological reactions.

*The Better Life for Rural Women Programme*, founded in 1987 by Nigeria's First Lady, acknowledged that over 70% of the country's population lived in rural areas in which women were subject to harmful widowhood practices. Efforts were made to broaden public awareness of the humiliating and degrading nature of these practices, and to prevent the marginalization of widows within their communities. It was hoped that these would lead to a national policy on widowhood. This has not yet occurred, although awareness of the plight of widows has been greatly increased. Schemes have been launched in various states, including scholarships for the children of indigent widows, and housing schemes for widows.

More, however, is needed. Discrimination between statutory and customary wives regarding inheritance of husband's property should be eliminated as both are valid forms of marriage. With or without children, widows should share in their husbands' property, including land. Legislation to establish joint ownership of land would ensure that widows are not evicted from land they have long cultivated. Improved literacy levels for all are important so that the social and economic empowerment of women can occur. Above all, it is important that harmful practices such as the inheritance of a widow as a chattel by a member of her husband's family, and often against her own wishes, should cease. Studies are needed to identify and document the nature and extent of harmful widowhood practices throughout the world, and to establish the relationship of these to physical and mental health.

It can be surmised that discriminatory widowhood practices exist in many African countries and other parts of the developing world, and continue because they have never been seriously addressed and challenged. Yet these issues must be addressed on a global level as part of the overall development effort, since sustainable development cannot take place within a discriminatory setting. To achieve such changes, the strong and organized support of world bodies committed to opposing oppression is necessary.

*Summary of the work of:*

Amadi IR. Women and widowhood practices in Imo State, Nigeria. Unpublished paper, 1993, prepared for this *Anthology*. (See Appendix for contact address.)

## Women and natural disasters in Bangladesh

Cyclones, floods and other natural disasters occur frequently in Bangladesh. Following the particularly severe cyclone and tidal flooding of April 1991, it has been estimated that approximately 20 million people were affected, with a total death toll of 150,000. About 90% of crops in the affected region were destroyed, several million head of livestock killed, and 3 million made homeless. Of the 150,000 who died, 140,000 were women and children. This paper suggests some of the reasons for the much higher survival rate of men of natural catastrophe in Bangladesh.

From the perspective of any socioeconomic indicator, women in Bangladesh are disadvantaged in comparison to their male counterparts. For example, literacy among men is over 30%, whereas for women it is less than 15%. Women are more malnourished, and their life expectancy, in contrast with most other countries, is shorter than for males. In terms of employment, income and economic resources, women are widely discriminated against. This leaves them relatively helpless if natural disaster strikes.

Bangladesh is a patriarchal society which expects women to play a subordinate role, mainly confined to the home, and comprising the bearing and rearing of children. For a woman in Bangladesh, her home is virtually her whole world. If it disappears in a cyclone or flood, she has lost everything. This deep and exclusive attachment to the home exacerbates the loss if it is destroyed, and no temporary relief measures can compensate.

Women, whether young or old, cannot live alone in Bangladeshi society. A male "protector" is necessary, whether father, brother or husband. If women lose their "protectors" in a natural disaster they can be exposed to dangers greater than the disaster itself. For female orphans, adolescents, young adults or widows, no shelter may be safe, and it is commonplace for women left alone in the wake of disasters to become victims of gangsters who kidnap and sell them into prostitution or slavery.

Obtaining relief is particularly difficult for women due to the restrictions of purdah and their seclusion from men. It is therefore almost exclusively male members of the family who go out to obtain relief supplies. Single women, widows, and those separated from their husbands or forsaken by them, are usually unable to leave their homes and thus often deprived of relief goods. In the absence of reliable distribution networks, goods will reach only those who appear in person at relief centres. In crowds fighting for such benefits, it is mainly men who secure the goods, rather than the few women who may have succeeded in reaching the centre. Relief workers have apparently not yet understood that the vast majority of women cannot or will not present themselves in public to receive assistance.

This holds true for medical relief also. Most physicians and health workers who volunteer for relief work in flood or cyclone devastated areas are male. Most rural women in purdah are unable to consult a male physician for treatment, and continue to suffer their illness or injuries. Medicines freely distributed may be dangerous as people do not know their purpose and how to use them. It was reported that water purification tablets were confused with treatment for diarrhoea in the aftermath of the 1991 cyclone, and that the condition of many people deteriorated as a result of this confusion.

### **Constraints to social change**

Physical and social factors interact to inhibit quick and decisive action on the part of Bangladeshi women when faced with a crisis. The restraining nature of their dress, for example, adds to their difficulties when struggling for survival, encumbered with children and possessions, in the face of a disaster. Other, mental, restraints derive from the subordinate role they must play at home. In conforming to this role, Bangladeshi women have lost much of their natural strength and courage, as they must look always to men to lead and guide them, and give orders. As they are seldom in a position to take initiatives in relation to the outside world, they also fail to do so at a time of disaster. This is one reason why women often do not go to a cyclone shelter even if one is within reach. However, a more important reason is the strength of their attachment to their home, domestic animals and small properties, and the knowledge that these will be at risk if the family is removed. Currently, provisions for cyclone shelters are grossly insufficient in any case. Before planning additional shelters, however, the psychological attitudes of women regarding their homes and property, and the issue of security for a temporarily deserted home, need to be closely investigated.



At the same time the role of the media regarding women in Bangladesh also needs to be changed. Following any natural disaster, depictions of women's losses and tragedies make up the bulk of the reportage. These same media vehicles, however, are silent on the questions of the large-scale discrimination against women which create their vulnerability to tragedy. Socioeconomic and cultural traditions impose a distorted view of female destitution and misery as natural conditions.

A deep fatalism in relation to issues such as natural disaster, poverty, illiteracy and ill-health is common to both men and women, and impedes social change. Mass education and repeated practical instruction and demonstration are required concerning how to act, for example, in preparation for a natural disaster. Without adequate social mobilization, the distribution of temporary relief and the construction of more cyclone shelters will achieve nothing.

The areas where devastating cyclones and tidal floods strike repeatedly could provide the ground for social reconstruction and rehabilitation. People living in these areas must be encouraged to evolve new lifestyles and livelihoods suited to the demands of their hostile environment. For such efforts to succeed, the place of women in society must be redefined, so that they can be properly involved at all levels. It is unrealistic to address the position of Bangladeshi women in situations of natural disaster without considering their overall position in society, which so easily renders them victims of catastrophe.

*Summary of the work of:*  
Rowshan R. Women in disaster. *Journal of social studies*, 1992, 57:81-88.

## Domestic fuel shortage and indoor air pollution

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The obligation to provide both water and fuel for domestic use, particularly in conditions of increasing environmental degradation, is a massive burden on poor urban and rural women and girls. In addition, the health effects of domestic use of biomass fuels (wood, dung, agricultural residues) and coal are suffered largely by women. Important issues can be summarized as follows:

- women are hit hardest by shortage of fuel, since the onus is on them to find solutions
- household coping strategies can affect nutritional status since fuel availability affects cooking habits and food availability
- better understanding is needed of the health impact of restricting poor communities' access to natural resources
- the linkages between fuel, food, water, women's time and women's health warrant further exploration
- dung-work illustrates the linkage between women's work and their status
- where biomass fuels are commonly used, similar rates in women and men are now being found for diseases such as chronic bronchitis and *cor pulmonale*; onset of *cor pulmonale* in women generally occurs at an early age
- women's respiratory disorders in India are linked to domestic exposure to cooking smoke; however, respiratory disease in women often goes untreated
- undetected pneumoconiosis in rural women may be caused by a combination of dust from maize grinding and smoke from biomass fuel
- high lung cancer rates in Chinese women can be attributed to the combined effects of passive smoking and the domestic use of poor quality coal.

## Energy and rural women's work

The world has entered an era of higher energy costs. Until recently, the impact of these was cushioned by large reserves of "free" wood and other biomass fuels. But the distinction between "free" traditional fuels and modern "expensive" fuels has become meaningless since environmental degradation has resulted in reduced supplies and increased costs. In many urban areas, woodfuel may be as expensive as kerosene or gas, and in rural areas the costs of free collection in terms of women's time, energy and wellbeing are excessive.

In most developing countries, the household sector is still the largest single energy consumer, and the poorer the country, the more likely this is. In low-income countries such as Burkina Faso, Ethiopia and Nepal, the household sector accounts for more than 90% of total energy consumption. Deforestation and desertification are the most serious consequences of the reliance on "free" biomass fuels. But agricultural productivity begins to fall well before these disasters strike. Use of tree, crop and animal residues for fuel deprives the soil of recycled nutrients and reduces crop yields along with the land's capacity to support livestock.

Women are hardest hit by this crisis since they are largely responsible for subsistence food production and must increase their labour inputs when productivity decreases. Moreover, male assistance for land clearing and ploughing is often no longer available due to migration — an avenue often closed to women for social mobility reasons. Similarly, as the quality and quantity of forest and water resources decline, the time and effort that must be devoted to fuel and water collection, two of women's traditional tasks, also increase. Women therefore have to work harder and longer, using child labour to help them. They are forced to cut down on family living standards, while at the same time they try to squeeze more output and income from the land — thereby often contributing to the destruction of the ecological base.

These are among the major findings of an ILO research project on energy and rural women's work in several Asian, African and Latin American countries, carried out by multidisciplinary national teams. The studies showed that, confronted with changes in fuel availability due to deforestation, rural households are being forced to make various

adjustments that adversely affect their living standards. The adjustments produce negative effects on work patterns, family nutrition and health, the environment, agricultural productivity, and incomes. These in turn have a bearing on the urban fuel crisis.

The double and triple burden on rural women of household maintenance, family agricultural tasks and income generation, means that in the countries studied, women work considerably longer hours (11-14 hours daily) than men (8-10 hours daily). In virtually all the villages observed, cooking and fuel collection were two of the most time-consuming activities.

### **Energy shortages imposes lifestyle changes**

In villages where women have to spend more time on fuel collection, they compensate by spending less time on cooking, which can result in lower nutritional levels. Spending less time on cooking is an extreme reaction to fuel shortage. Cooking fewer meals, eating cold or leftover foods, snacks or processed foods and even changing diet have been reported as fuel-saving strategies in the Sahel countries, Haiti, Mexico and Nepal. Additionally, many of women's key income-generating activities such as food processing, beer brewing, and fish smoking are fuel-intensive and difficulties in procuring adequate supplies of fuel threaten this income.

The quantities and types of foods cooked play an important role in determining fuel use per head. Coastal villages in Peru and Ghana where fish consumption is high use much less cooking fuel than inland villages relying on hard staples such as maize, cereals, potatoes and cassava. This suggests that studies on fuel-saving methods should look carefully at foods requiring high energy inputs.

This research indicates that between 5 and 20% of household expenditure goes on fuel — mainly kerosene — and between 50 and 91% on the food budget. Due to low cash incomes, even this minor use of commercial fuel affects food and other expenditure. This trend will continue unless rural incomes rise.

Water boiling and heating were found to be "luxury" uses of fuel and are frequently curtailed when fuel is scarce. However, washing is essential for health and heating is often essential for survival. In cold mountainous regions such as the Andes, Himalayas and Ethiopian highlands, as much fuel may be used for heating as for cooking. Indoor air pollution is a further health problem in biomass-dependent areas.

The heavy overall workload imposed on women, including carrying of fuelwood, affects their health, particularly if their energy output exceeds their intake. Fuel loads weighing 25–35 kg on average, and often much more, are carried over long distances. And while forest workers are provided with special equipment for their work, women who collect fuel for subsistence must do so with their bare hands and primitive tools.

### **Fuel scarcity hits urban poor hard**

The urban poor may have even greater problems with fuel scarcity as their incomes have not kept pace with the rising prices and they cannot fall back on subsistence production or their own labour in fuel gathering. A recent survey in Addis Ababa found that over two-thirds of the cash income of the lowest income group is spent on cooking fuel. Many of the fuel-saving strategies adopted by this group are deleterious to nutrition and health. Because they cannot afford the kind of stoves needed to burn more efficient fuels, the poor continue to rely on woodfuels even though their cost is as high or higher than kerosene, gas or electricity. Official subsidies often favour modern fuels, overlooking the inability of the poor to either switch to a modern fuel or support the costs of traditional fuels. Measures are therefore urgently needed to enable poor urban households to meet their basic energy needs.

Women are disproportionately affected by the effects of environmental degradation on incomes and family welfare. The most important of these is long-term decline in agricultural productivity, and hence in food production. To compensate for reduced yields, women are forced to cultivate their millet or sorghum over larger areas and to work harder to achieve the same output. Yet the connections between the water, food and fuel crisis and the impact on women are only beginning to be made. Clearly, energy provides a very effective starting-point for addressing rural and urban women's priority concerns over food, income and time saving.

*Summary of the work of:*

Cecelski E. Energy and rural women's work: crisis, response and policy alternatives. *International labour review*, 1987, 126(1):41–64.

## Domestic energy shortage in northern India

Perception is still widespread that inefficient domestic cooking stoves are a major cause of deforestation. Domestic energy issues in developing countries, therefore, often remain centred around fuel saving. But fuel saving makes sense only to people experiencing fuel shortage. And even then, fuel efficient stoves can provide no more than a partial coping mechanism; they cannot address the underlying causes of fuel shortage, which need to be dealt with simultaneously.

A number of lessons have been learned following the large-scale and mainly unsuccessful attempts of the 1970s and 1980s to encourage use of improved stoves as a means of saving fuel and reducing deforestation. Among the most important of these is the finding that domestic firewood consumption is often only a minor contributor to deforestation, that energy saving may not be the first priority of women end-users of domestic energy, and that if stove design is not based on women's priorities, large-scale use of improved stoves cannot be expected. These lessons must be put into practice in the context of a broader understanding of the underlying problems if current efforts are to be more successful.

Scarcity of biomass fuels is often part of a much larger problem related to the source of people's livelihood. In other words, the domestic energy problem cannot be dealt with in isolation. For people whose basis for survival is being destroyed along with their sources of domestic energy, attempts to increase the amount of energy available are meaningless.

Field experience in India shows that saving biomass energy is only one of rural women's priorities. They are equally or more interested in removing smoke from the kitchen, having cleaner pots to minimize daily scrubbing, protecting themselves from the heat of the fire during the hot summer months, maintaining cleaner kitchens or cooking areas, and, above all, increasing personal comfort while cooking. Women are, in other words, more concerned about saving their own energy during cooking-related tasks than simply reducing cooking fuel consumption. It is only in those areas where collecting firewood is a burdensome task that reducing firewood consumption is a major priority.

In less than three decades, increased commercialization of forests and forest produce, coupled with the conversion of forests into agricultural land under the "grow more food" campaign of the 1960s, has led to significant deforestation and fuel scarcity in northern India. Periodic failure of the rains, and the resultant drying up of wells, streams and ponds, has compounded these problems and drinking water supplies are threatened. Few income-generating opportunities are available to compensate for the loss of natural resources. Cattle have perished in large numbers, and malnutrition and disease have become rife. Out-migration is now common. The very foundation of the subsistence economy collapsed, largely as a result of unsustainable exploitation of the forests. In these circumstances, the energy crisis was only one facet of a much larger crisis which could not be addressed in isolation. The only real solution lay in environmental rehabilitation of the area.

### **Loss of control over local resources**

Examining the factors responsible for the massive destruction of forests in northern India showed that, despite a growing population, local requirements for firewood and timber played only a minor role. More destruction had been caused by clearance of forest land by local people for conversion to agricultural use. The most important factor, however, had been the nationalization of forests. Through that single measure, the local population's access to natural resources had been drastically curtailed and these rights transferred to the industrial/commercial/urban sector. The energy crisis was thus only one aspect of the local population's general impoverishment.

With assistance, some villages are now rehabilitating the common lands. Initially, the produce from these efforts will be used only within the village concerned. Only when a surplus has been established will it be sold outside. Re-establishment of vegetation on the denuded lands, together with soil conservation measures, will slowly rebuild the ecological cycle. Through this process, the domestic energy crisis will also slowly resolve itself.

Many areas of the developing world suffer similar problems. Unorganized, underprivileged people, particularly women, are increasingly deprived of access to local natural resources in favour of powerful and organized urban industrial groups. Attempts to deal with domestic energy issues in these areas through partial interventions such as improved stoves make little sense unless the larger processes are also taken into account. It is the destruction of local control and over-exploitation of local resources for consumption in the urban industrial sector which has created the energy crisis in such areas. Solutions to domestic energy shortages must therefore

be based on re-establishing more equitable access to natural resources, and ensuring local management and control. Only within this framework can improved stoves find a meaningful place.

This is an excellent clarification of the problems underlying domestic fuel shortage and the necessity of adopting a holistic approach to such problems. However, the health aspects of indoor smoke exposure, which are not addressed in the context of this article, provide a justification for continuing to encourage use of improved stoves, while linking such work with the issues raised here.

*Summary of the work of:*

Sarin M. Improved stoves, women, and domestic energy. *Environment and urbanization*, 1991, 3(2):51-56.



## Dung, women's work and women's status

Below is an examination of the role of cattle-dung and its place in the life and economy of north Indian villages. This throws light on some neglected aspects of agrarian organization and illustrates the relationship between women's low status and the type of work assigned to them. This in turn has implications for women's health.

Cattle dung plays a central part in everyday life in rural north India. Dung collection is considered as exclusively women's work; although dung is acknowledged as a resource, men will not handle it and are ridiculed if mentioned in connection with such work. Men's refusal to be contaminated leaves women with no option but to perform this work.

Research was carried out in two villages of Uttar Pradesh, one Hindu and the other Muslim. The sex ratio of the villages is 1175 males per 1000 females. Farming patterns have changed rapidly in the last 80 years, and the main staples are now wheat, rice, and the main cash crop, sugar-cane. These are grown on more extensive areas of cultivated land than hitherto.

Over 80% of households in the two villages own an average of three animals. Dung is privately owned; only if it is lying in a public place can it be gathered by those who do not own cattle. All cattle are owned by men, but dung work is largely a matter for women. Their access to dung is through the complex relationships of production operating among men. These involve women in intricate animal care rotas.

### Recent switch to dung as fuel

There is some evidence to indicate low-caste men's involvement in dung work in the past, but more showing that low-caste women performed dung-work for higher-status Hindu and Muslim women. This is now uncommon, and even the richest peasant households have to do most of their own dung work. Older residents of the villages remember when most cooking was done with wood, gathered from land now under sugar-cane. It is only within living memory that ecological changes have compelled women to

cook with dung-cakes, and that its use has spread to women in higher status groups.

Dung is used for three purposes: as building material and plaster, in work undertaken only by women; as cooking fuel, for which it is much appreciated since it burns slowly and produces good simmering heat; and as fertilizer. Making dung-cakes can take up to two hours a day, depending on how much dung a woman has access to and the amount of cooking fuel required. Dung-cakes are not produced during the hot pre-monsoon period, when grubs destroy them, or during the monsoon itself, when they cannot be dried.

Dung and dung-cakes are produced primarily for home use. Villagers therefore have difficulty in placing a monetary value on them, although limited sale of dung-cakes takes place in the local town. As the work involved is regarded as family labour, women are not paid for their dung-work, nor do they obtain any acknowledgement of the contribution this work makes to household production.

Dung-work receives little attention in development literature, despite its use as a major household fuel source. It has been estimated that 30% of India's rural energy consumption is derived from animal wastes, while a figure as high as 80% has been cited for Pakistan. The authors refer to a frequently cited source claiming that 400 million tonnes of cattle-dung are burned annually in Asia and Africa, leading to the loss of 20 million tonnes of potential grain output. However, it is portrayed as a cooking fuel used only in the absence of other, better, fuels.

### **The valuation of work by gender**

Women's work is closely linked with the land in terms of water, fuel and fodder collection, and processing of foodcrops. The increase in cultivated land and the corresponding loss of grazing land has resulted in a decrease in the number of animals supported in the villages, and a correspondingly smaller amount of dung. Of this, proportionately more must be used as fuel due to shortage of wood. This has the effect of increasing women's work, as does the practice of stall-feeding animals rather than grazing them, which requires the investment of more time in fetching fodder and water.

Women's obligation to undertake tasks refused by men can be interpreted as both cause and effect of their overall low status. The unusual sex ratio — among the most extreme in India — and the high female mortality rates, strongly suggest neglect of both infant and adult females. In some lower-caste groups, social patterns now appear to be changing from bridewealth

(payment to the bride's family), in favour of the dowry system (payment to the groom's family). This could be a result of the increasing difficulty women experience in finding paid labour, or due to male reluctance to permit their presence in the labour force. Consequently, women's economic value has declined, and there has been a corresponding rise in dowry deaths and harassment of brides.

This example of dung-work illustrates how social norms permit a job involving hard labour and considerable economic value to be performed by women without this input generating any additional entitlements. Because the work is derided, and women share in its negative valuation, it is seen as drudgery and can provide no self-esteem for women. In addition, the task is not perceived as significant to the household economy — a false perception derived from the negative valuation. In common with all other "women's work", it is not the importance or otherwise of the task itself, but the low value assigned it because it is done by women, that creates this vicious circle, the outcome of which is women's restricted access to resources and the fruits of their own labour. Unless these deep-rooted prejudices change, women's status and hence their health will continue to be jeopardized.

*Summary of the work of:*

Jeffery R, Jeffery P, Lyon A. Cattle-dung and dung-work. An aspect of the value of women's work in rural North India. *Internationales asienforum*, 1989, 20(1-2):21-42.

## Health effects of indoor air pollution in rural India and Nepal

This review discusses the health impact of indoor air pollution from biomass fuel in India and Nepal. Among the most significant findings is earlier onset in women than in men in north India of *cor pulmonale* (right-sided heart failure), and more severe congestive heart failure. This is attributed to exposure to domestic smoke. In Nepal, in contrast with earlier studies, high prevalence rates for chronic bronchitis were found in both men and women, and a cause-effect relationship between domestic smoke pollution and chronic bronchitis was established. It is only comparatively recently that the extent of women's exposure to risk from indoor air pollution has been recognized and research in this direction begun.

### India

In several states of India, a high incidence of chronic *cor pulmonale* has been observed, amounting to 10-30% of cardiac cases. One hospital-based study noted a similarity of incidence in the two sexes over a 15-year period despite statistical evidence that 75% of men, but only 10% of women, were smokers. In addition, the age of onset of *cor pulmonale* in women was 10-15 years earlier than in men. Tobacco smoking is an important cause of chronic bronchitis in men, but is relatively less important in women. The study concluded that among women these illnesses were due to exposure to primitive smoky fireplaces from childhood onwards.

Among the women studied, not only was onset of *cor pulmonale* earlier, but congestive heart failure was more severe, and cardiac enlargement and disturbance of pulmonary function greater, with a severe loss of exercise tolerance. Autopsy findings in women showed pulmonary disease, although cough and expectoration may not always have been important symptoms. It therefore appears that in Delhi, domestic air pollution is probably the cause of the higher prevalence and earlier onset of *cor pulmonale* in women, while in southern India, lower incidence of *cor pulmonale* may be attributed to generally better ventilated cooking areas.

In Ahmedabad, a study of incidence of cough, cough with expectoration, dyspnea (difficulty in breathing), and lung abnormalities found a statistically significant higher incidence among women cooking with smoky fuels. Women also complained frequently of eye irritation due to cooking smoke.

A three-year prospective study in Bombay of urban and rural areas found that many of the respiratory symptoms exhibited by the rural populations were similar to those reported for moderately or severely polluted urban areas. Use of woodfuel was given as one of the explanations of this finding.

## Nepal

A study in one urban and three rural areas of Nepal in 1988 recorded a very high prevalence rate of chronic bronchitis and *cor pulmonale*. A striking feature of this study was the similarly high prevalence rate for chronic bronchitis in both men and women. This contrasts with earlier studies which showed lower prevalence rates among women. Tobacco smoking is common in both men and women in all of the study areas except in urban Kathmandu, where the smoking prevalence rate for women is only 14.2%. However, most women in the rural areas were light smokers (less than 10 cigarettes/day), suggesting that the high prevalence of chronic bronchitis was probably primarily due to their exposure to domestic smoke while cooking. The difference in exposure hours was statistically significant in women in all study areas.

This study attempted to quantify the hours of exposure to domestic smoke pollution and to clarify its relationship to chronic bronchitis. It was the first study to document definitive evidence regarding this relationship, which had been suggested by previous studies. In two areas, a statistically significant positive correlation was found between prevalence of chronic bronchitis and exposure to domestic smoke pollution in both smokers and non-smokers. In one cold, high-altitude area, all members of the community were exposed, so it was not possible to compare the prevalence of exposed and non-exposed groups. In these circumstances, a large number were also exposed for more than eight hours a day, which provided the opportunity to observe the effect of longer hours of exposure versus shorter hours elsewhere. A significant correlation was found among smokers of both sexes at eight or more hours of exposure. This study has been taken as establishing a dose-response, and hence cause-and-effect relationship, between domestic smoke pollution and chronic bronchitis.

All cases of chronic *cor pulmonale* in this Nepalese study were complications of chronic bronchitis. Although most of the women who smoked were light smokers, the prevalence of chronic *cor pulmonale* was similar for the two sexes. This suggests domestic smoke pollution to be an important factor in producing *cor pulmonale*, although statistical tests to establish this relationship could not be performed due to small numbers.

A 1985 study of lung function in Nepalese women established a decline in function as duration of exposure to smoke increased. The study was carried out in a rural area where indoor air pollution is severe, but which is free of industrial and atmospheric pollution. The decline was found to be statistically significant among smokers, but not among non-smokers. This indicates synergism between domestic smoke pollution and smoking. Deterioration of lung function ultimately leads to disability and loss of productivity through shortness of breath.

Work carried out in high-altitude areas of Nepal also points to a correlation between acute respiratory infection (ARI) in infants and exposure to domestic smoke. ARI is a leading cause of infant mortality in the developing world. Further studies in Nepal and elsewhere are currently attempting to establish this relationship.

This review, as well as other contributions in this section, points out that lung disease associated with indoor smoke exposure may be asymptomatic for a prolonged period, masking the extent of ill-health from this cause and contributing to under-reporting. In a number of other countries where the problem can be expected to be severe due to reliance on traditional biomass fuels by large proportions of the population, it is unrecognized or poorly recognized as a health issue with particular implications for women and infants.

*Summary of the work of:*

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Pandey MR, Basnyat B, Neupane RP. *Chronic bronchitis and cor pulmonale in Nepal*. Monograph published by Mrigendra Medical Trust, Kathmandu, Nepal, 1988. (See Appendix for contact address.)

Smith KR. *Biofuels, air pollution, and health — a global review*. New York, Plenum Press, 1987.

## Carbon monoxide exposure from various cooking fuels

Biomass fuels are used widely in developing countries, mostly in rural and poor urban areas. They are composed of complex organic matter, vegetable protein, and carbohydrates incorporating carbon, nitrogen, oxygen, hydrogen, and certain other elements in trace amounts. Smoke emission from domestic fuels is a major source of indoor air pollution, especially in the rural communities of developing countries, and contains pollutants that adversely affect health. Chronic bronchitis and *cor pulmonale* are reported to be associated with the use of this fuel in non-smoking rural women in India and Nepal. This study in Chandigarh, India measured blood carboxyhaemoglobin (COHb) levels in non-smoking women and related these to the cooking fuel used.

Fuels commonly used for cooking and other domestic purposes in India include biomass, kerosene oil, and liquid petroleum gas (LPG). The pollutants derived from these fuels include several known carcinogens, such as benzo(a)pyrene (BaP), and various toxic substances, among them carbon monoxide, sulphur dioxide, nitrogen dioxide, formaldehyde, asbestos fibres, microorganisms, and aeroallergens. In an earlier study, the authors found high blood carboxyhaemoglobin concentrations after acute exposure to smoke from biomass fuel. This study extends these observations, documenting the level of indoor air pollution produced by fuels commonly used for cooking in India — specifically kerosene, LPG, and biomass fuel.

The study was carried out on 114 women exposed to different cooking fuels and residing in Chandigarh and adjoining areas. Of these, 29 women used kerosene, 28 used biomass fuel and 30 used LPG. Women using gas as cooking fuel were mostly from the middle class and those using kerosene or biomass were representative of the lower socioeconomic class. Women who smoked and those with any existing respiratory disease were excluded from the study. The type of fuel used, average duration of cooking and number of years of cooking were noted. Controls were selected from hospital attendants who had done no cooking for seven days. An exposure index was calculated by multiplying the number of years of cooking and the average hours of cooking per day.

### All three fuels produce high COHb levels in cooks

It was found that there was no significant difference in COHb levels between the three groups of fuel users. The subjects exposed to the three different fuels did, however, show significantly higher COHb levels than the controls who had not been exposed to these fuels during the previous week. LPG users had the highest values, followed by biomass and kerosene users. The COHb concentration and the time interval between the last exposure and blood sampling showed a negative correlation in all three groups, though this was significant only for the women using biomass fuel and LPG. COHb was lower in women whose sample was taken 60 minutes or more after the last exposure. Although COHb tended to rise with exposure index in all three fuel groups, the trend was significant only in those using LPG.

The blood COHb concentrations in non-smoking healthy subjects exposed to three different types of cooking fuel were two to five times higher than those in a non-smoking healthy control population. The difference was significant. The COHb values are similar to those observed in chronic tobacco smokers. The relatively high mean COHb concentration among healthy controls of 3.52% was possibly a result of their exposure to environmental smoke and pollution. The high concentrations of COHb in biomass fuel users conform with the findings of other studies of women working in poorly ventilated kitchens in India and Guatemala.

In the case of liquid petroleum gas stoves, COHb concentrations were surprisingly high. The emission from this type of stove contains a small amount of carbon monoxide. This is normally converted rapidly into carbon dioxide, but if the burner of the stove is not cleaned properly and the holes are blocked, there will be significant emission of carbon monoxide. Encouraging proper cleaning of stove vents and providing adequate ventilation in kitchens could prevent some respiratory illness in developing countries.

This study showed that three different cooking fuels produced unacceptable levels of indoor air pollution during cooking, as indicated indirectly by blood COHb concentrations. The findings are of concern as many people in developing countries make their first move up the fuel ladder from biomass fuels to kerosene and gas. Without adequate control of emissions and proper ventilation, such a move may not necessarily remove the health risks.



N.B. A further issue of concern not addressed in this study is carbon monoxide (CO) uptake by the fetus. Fetal blood is more susceptible to CO than is maternal blood. There is some evidence that CO exposures result in higher fetal COHb levels over time than maternal levels, and that fetuses take longer than their mothers to eliminate CO when the exposure has ended. This has implications for pregnant women as low birth weight and fetal damage is associated with CO exposure. Where women are cooking in poorly ventilated conditions using traditional fuels, the dangers of prolonged or repeated exposure are great and cooking frequency therefore needs to be considered in addition to emission levels in estimating the health risk to mother and fetus.

*Summary of the work of:*

Behera D, Dash S, Yadav SP. Carboxyhaemoglobin in women exposed to different cooking fuels. *Thorax*, 1991, 46:344-346.

## Chronic respiratory disorders among women

Chronic respiratory diseases, particularly chronic bronchitis and emphysema, are a major cause of disability, second only to cardiovascular diseases. Various studies have identified chronic bronchitis as the commonest respiratory disorder in chest clinics in north India. However, these have been mixed population studies in which males outnumbered females. Very little research has been carried out to establish the risks to women. In a hospital which accepts only women, the authors investigated chest clinic patients to identify the pattern of chronic respiratory disorders in women of Delhi.

A retrospective analysis was carried out between 1973 and 1986 on 1532 female patients who attended a chest clinic in New Delhi. The patients were aged between 12 and 83 years. The proportion of smokers in this study was 6.6%, which is high compared to the 2.2% among the urban female population of Delhi, but low in comparison to the 11% among the rural population of Delhi. Prevalence of smoking was high in the elderly age group, possibly explained by the fact that older women have an established status in the family and are less bound by cultural constraints and social taboos.

High prevalence of exposure to kitchen smoke was an important observation of this study. A total of 705 patients (46%) reported regular exposure to kitchen smoke, as a result of cooking with coal, wood and cowdung; exposure was high in those aged over 40 years, and highest (71.2%) in the 50-59 year age group. It was low among the younger women (12.3% in the 12-19 year age group and 30% in the 20-29 year age group); this can probably be explained by shifts in recent years to smokeless fuels such as cooking gas and kerosene, and to electric cooking appliances.

Nearly one-third of patients showed evidence of chronic bronchitis, and one-quarter of bronchial asthma. Bronchial asthma is said to be a disease affecting younger age groups. It is common in males, with a 2:1 ratio, but becomes equalized between the sexes by the age of 30. Of the 1532 women, 399 (26%) were found to be asthmatic. The prevalence of bronchial asthma reported from two other chest clinics was 13% and 24%

respectively. In this study, the highest prevalence (44%) was recorded in the second decade of life and became progressively lower for subsequent age groups.

Chronic bronchitis with or without emphysema was found to be the commonest disorder in this study. Nearly 32% of the patients showed evidence of chronic bronchitis. This figure corresponds to that reported for various chest clinics where male patients outnumber women, for example 30%, 31.3% and 35% for three other clinics. Thus, although chronic bronchitis is thought to be more common in men due to exposure to environmental and industrial dust and smoke, and higher incidence of smoking, this study shows that the rates of chronic bronchitis among men and women are equal.

**Age distribution, trend of smoking and incidence of exposure to kitchen smoke in patients studied**

Age group in years	No. patients studied	No. smokers	No. patients exposed to kitchen smoke
12-19	201 (13.1%)	3 (1.5%)	25 (12.3%)
20-29	385 (25.1%)	15 (3.9%)	116 (30%)
30-39	297 (19.4%)	13 (4.3%)	137 (46.1%)
40-49	328 (21.4%)	25 (7.6%)	224 (68.3%)
50-59	170 (11.1%)	19 (11.2%)	121 (71.2%)
60+	151 (9.9%)	26 (17%)	82 (54%)
<b>TOTAL</b>	<b>1532 (100%)</b>	<b>101 (6.6%)</b>	<b>705 (46%)</b>

**Agewise distribution of *cor pulmonale***

Age group in years	No. patients studied	No. patients with <i>cor pulmonale</i>
12-19	201	3 (0.8%)
20-29	385	12 (4%)
30-39	297	35 (10.7%)
40-49	328	37 (21.8%)
50-59	170	43 (28.0%)
60+	151	
<b>TOTAL</b>	<b>1532</b>	<b>130 (8.5%)</b>

Nearly 42% of all patients over 40 (total 649) showed evidence of chronic bronchitis. Prevalence of exposure to kitchen smoke was also high in this group (427 out of 649 reported cooking with coal, dung, or wood) as was smoking incidence. The high prevalence of chronic bronchitis in these middle-aged and elderly women can probably be attributed to these factors.

A total of 223 patients were found to have bronchiectasis, and an additional 86 had bronchiectasis together with chronic bronchitis. Thus, nearly 20% of patients had clinical or radiological evidence of bronchiectasis. These figures are high compared to those for other chest clinics where male patients outnumbered females, showing that bronchiectasis is more common in women. The high prevalence can probably be attributed to repeated untreated respiratory tract infections in women. In addition to their high prevalence of kitchen smoke exposure (66%) and smoking (11%), women are often deprived of much needed medical attention due to social, cultural and economic constraints.

Pulmonary tuberculosis was diagnosed in 363 patients, most commonly women in their thirties. However, accurate estimates for women cannot be obtained from this study as most pulmonary tuberculosis patients are referred to tuberculosis clinics and not treated in chest clinics.

Evidence of *cor pulmonale* was found among 130 patients. This is high in comparison to the 0.8% and 2% reported from other clinics, but again no conclusions can be drawn as the majority of *cor pulmonale* patients seem to receive treatment at cardiac rather than chest clinics. Various cardiac clinics in India attribute between 10 and 40% of their attendance to *cor pulmonale* patients. Maximum prevalence of *cor pulmonale* was found in the over-60 age group, although prevalence was also high in patients over 40. Chronic bronchitis with or without emphysema was found to be the commonest cause of *cor pulmonale* (63.8%), followed by bronchiectasis (21.8%), pulmonary tuberculosis (7.7%) and bronchial asthma (5.4%).

It appears that exposure to kitchen smoke, coupled with tobacco smoking, is a major cause of chronic bronchitis in women, and that chronic bronchitis plays a persistent role in the evolution of *cor pulmonale*. The promotion of smokeless appliances for cooking, and health education campaigns against smoking, are therefore strongly advocated.

*Summary of the work of:*

Mishra VN, Malhotra M, Gupta S. Chronic respiratory disorders in females of Delhi. *Journal of the Indian Medical Association*, 1990, 88(3):77-80.

## Pneumoconiosis in rural women

A form of pneumoconiosis has been observed in rural African women, termed "Transkei silicosis" or "Hut Lung". A cluster of 25 women was investigated in whom the disease was diagnosed. The cause was attributed to silica particles inhaled while hand-grinding maize between rocks, in addition to inhaling smoke emissions from biomass fires. It is thought that biomass emissions are more significant in the etiology of this condition than exposure to quartz dust. This is important given the large numbers of women in developing countries whose domestic duties regularly include hand-grinding and cooking with biomass fuel.

In rural Transkei, women cook on biomass fires inside poorly ventilated huts without chimneys. From the age of 10 years, girls and women grind maize for about 45 minutes each day to produce the grain required for the staple diet of the average rural family. Dry maize kernels are crushed into a fine powder with an oval hand-held grinding rock. The preferred rock is sandstone, composed of almost 100% quartz, but dolerite, which contains almost no quartz, is more freely available and more commonly used. It has been estimated that the average young woman aged between 20 and 25 years has already ground maize daily for at least 8 years. By their fifth decade, when most cases of Transkei silicosis are discovered, lengthy exposure has already occurred. On the basis of this evidence a preventive programme was launched to encourage the use of hand- or motor-driven machinery to replace traditional methods.

Patients with symptoms of Transkei silicosis are commonly seen in one major South African hospital, and the authors here report the clinical, radiological, physiological, histological and other abnormalities found in a cluster of 25 women with the condition. All conformed to the following criteria: rural residence; exposure to smoke from cooking fires or habitually grinding grain; no history of industrial or mining exposure; radiographic changes compatible with pneumoconiosis; lung biopsy evidence of pneumoconiosis; no bacteriological or histological evidence of active tuberculosis. As relatively few quartz particles were identified in lung sections, concentrations of respirable quartz dust, non-quartz-containing dust, and smoke were examined in rural houses.

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Methods of traditional food preparation and cooking, and the conditions under which these take place, were observed in two villages. Smoke levels were measured during cooking on open fires fuelled with maize cobs, wood, and dried cowdung. Personal samplers were used to measure respirable dust concentrations during maize grinding. Measurements were taken both during grinding and stamping of maize.

An appreciable though low concentration of respirable quartz was liberated during grinding with sandstone but not with dolerite or through stamping. The most exposed maize grinder was exposed to time-weighted averages for quartz similar to those of the least exposed gold miner. These values are well within the recommended limits for time-weighted averages of industrial quartz exposure, and are within the levels at which disease is not expected to occur within 35 years.

The total respirable dust concentrations during maize grinding approached those of the dustiest mine activities and often exceeded the recommended industrial time-weighted averages. In addition, the average smoke concentrations during cooking far exceeded those permitted in industry. Three of the women did not grind maize, but experienced similar exposure to smoke in poorly ventilated dwellings. Total respirable dust concentrations approached those seen in the most heavily exposed gold miners, and smoke concentrations were unacceptably high. Women are exposed to smoke for longer each day than to the dust of grinding, particularly in cold weather.

Of the 25 women examined (mean age 43, range 20-84 years) 17 were non-smokers, 5 were tobacco pipe smokers, and 3 smoked under 11 cigarettes a day. Seven of the women had evidence of previous tuberculosis, 14 were without symptoms but had been referred for investigation of abnormal chest radiographs, 13 had mild acute respiratory tract symptoms suggesting acute infective bronchitis, and only 4 had presented because of chronic respiratory symptoms. The radiological features were compatible with pneumoconiosis. One patient had *cor pulmonale* and 6 showed radiological changes compatible with healed tuberculosis. Lung function tests showed airflow limitation in 16 patients, suggesting airway disease which could not be attributed to tobacco smoke or previous tuberculosis, and so likely to be the result of smoke inhalation.

### **Dust and smoke combine to cause Hut Lung**

The data suggest that domestic smoke may be more important than maize grinding in causing pneumoconiosis in these women. As the study included patients in their early 20s, heavy dust exposure from an early age appears likely. The combined evidence suggests that "Transkei silicosis"

is a pneumoconiosis of mixed etiology, with major contributions from "nuisance dust" of inorganic origin and smoke from biomass fires. Quartz dust seems to contribute in some patients but probably to a minor degree. The term "Hut Lung" seems appropriate for this condition, in recognition of its mixed etiology and occurrence in other areas of southern Africa where similar domestic conditions prevail.

More detailed studies are required to establish whether women with more severe forms of this condition have been exposed to respirable quartz. Another variable might be the young age at which women are first exposed to the dust. Infants secured to their mothers' back during grinding and food preparation, for example, are in close proximity to the source. The role of previous tuberculosis also remains to be defined. We may also speculate whether Hut Lung predisposes the affected individual to tuberculosis, as is the case with occupational silicosis.

Hut Lung appears to progress slowly over many years of exposure, without causing illness or disability. Most patients had no respiratory symptoms and only mild radiological and physiological abnormalities. Attention is usually drawn to their radiographs when they present with incidental acute bronchitis. Progressive massive fibrosis develops in a minority and may progress to respiratory failure with *cor pulmonale* and death. The radiological appearance is that of pneumoconiosis and histologically it ranges from simple anthracosis to progressive massive fibrosis.

Hut Lung occurs as a result of exposure to both quartz- and non-quartz-containing dusts as well as smoke from biomass fires. The implications for the large numbers of women exposed to risk from both cooking and grinding operations, and with limited access to health care, are great. Preventive campaigns in rural areas are needed, focusing on improved ventilation of cooking huts through the use of chimneys, general reduction of nuisance dust and exposure, and grinding with quartz-free rock or preferably mechanized grinders. Such measures need to be applied in all rural communities practising similar traditional cooking methods.

These interesting conclusions are available because South Africa is in the unique position of combining sophisticated medical and technological services with the problems of the poorest developing countries. It should be noted that this disease could be detected only through radiographs administered for other purposes, to which poor urban and rural populations of most developing countries have little access.

*Summary of the work of:*

Grobbelaar JP, Bateman ED. Hut Lung: a domestically acquired pneumoconiosis of mixed aetiology in rural women. *Thorax*, 1991, 46:334-340.



## Lung cancer and indoor air pollution in China

The lung cancer mortality rate in Xuan Wei County, Yunnan Province, China, is one of the country's highest. Particularly among Chinese women, lung cancer mortality is more closely associated with indoor burning of "smoky" coal than with tobacco smoking. In contrast to wood and smokeless coal, smoky coal emissions have high concentrations of particles containing mutagenic organics. This study suggests an etiologic link between domestic smoky coal burning and lung cancer in Xuan Wei.

Among the predominantly farming population of about 1 million in Xuan Wei County, tobacco smoking is common in males (40% or more), but rare in women (less than 0.1%). Local residents have traditionally used one of three major fuel types for domestic cooking and heating, namely "smoky" coal, "smokeless" coal, or wood. Cooking is carried out in shallow, unvented pits, resulting in high indoor air pollution levels. Women are customarily responsible for tending the fire and cooking, while men generally spend most daylight hours outside the home.

Annual age-adjusted lung cancer rates for the period 1973-1979 in Xuan Wei county were 27.7 in males (among China's highest), and 25.3 in females (China's highest). The similarity in rates between men and women is unusual. In Xuan Wei, lung cancer was the only surveyed cancer for which mortality exceeded the national average. Unadjusted annual lung cancer mortality rates vary greatly among the county's communes, but are highest in those where smoky coal is burned in more than 80% of homes. Rates are also highest in the central communes where smoky coal mines are situated. Lung cancer mortality in Xuan Wei is therefore thought to be associated with the domestic use of smoky coal. This association is particularly strong in women, who rarely smoke. However, given the broad variation in mortality across communes with smoky coal mines, the possibility that other specific environmental determinants of lung cancer play a role cannot be ruled out.

## Comparison between two communes

To further evaluate the relationship between smoky coal use and lung cancer in Xuan Wei, a comparison was made between two communes. In one, mortality was high and smoky coal the predominant fuel, while in the other, mortality was low and the main fuels used were wood and smokeless coal. Concentrations of airborne particles inside homes using smoky coal and wood were very high; they were considerably lower in homes using smokeless coal. The smoky coal samples also revealed the highest mutagenic activity, and were consistent with the epidemiologic findings — that is, the samples with the highest mutagenic activity came from areas with the highest rates of lung cancer mortality, while those with low mutagenic activity were derived from communes with low lung cancer mortality.

In one commune, where lung cancer rates are highest and smoky fuel is used, residents are exposed to very high indoor particulate concentrations — more than 100 times the US ambient air 24-hour standard. The particles from smoky coal combustion are mainly of a size that remain longer in the air and which can be effectively deposited in the lung after inhalation. These contain high levels of carcinogenic polycyclic aromatic hydrocarbon (PAH) compounds. Indoor benzo(a)pyrene (BaP) concentrations during cooking are comparable to occupational exposure levels, such as those in coke oven plants.

The differences in PAH concentrations and mutagenicity in the two high-mortality communes are mainly due to differences in the particulate concentrations during cooking. Differences in particulate concentration are chiefly the result of differences in cooking habits. In one commune only breakfast and supper are cooked each day, whereas in two others, three meals are usually cooked with a fire lit for shorter periods. This requires more frequent starting and stoking, and hence generates higher smoke emissions than a steady fire. The presence in the smoky coal samples of several chemical compounds known to be carcinogenic may contribute to the high lung cancer rates in the two communes where smoky coal consumption is highest. Other compounds also showed significant mutagenicity in the smoky coal samples.

This study, like others, does not suggest any association between domestic open-fire woodsmoke and lung cancer. Both the less efficient lung deposition of the large particles from wood combustion, and the lower concentrations of biologically active compounds may contribute to the low rate of lung cancer in the commune using predominantly wood for fuel. Unlike smoky coal, 90% of the particles from smokeless coal were soot and unburned fuel, which may explain the lower lung cancer rates in the commune where it is widely used. The accumulated epidemiological,

physical, chemical and toxicological findings of this study therefore suggest an etiological link between indoor smoky coal burning and lung cancer.

Coal is already a major domestic fuel for poorer communities in many countries — for example India, China, South Africa, and Vietnam, and may come to be used in many more as pressure on woodfuel resources increases. In view of the health risks to women of domestic coal use, it is essential that poor quality coal is processed adequately or that adequate smoke evacuation measures are installed in homes prior to further promotion of coal and coal-stoves.

*Summary of the work of:*

Mumford JL et al. Lung cancer and indoor air pollution in Xuan Wei, China. *Science*, 1987, 235:217-220.

## Respiratory effects of passive smoking and coal heating in China

In many parts of the world, including China, a major source of indoor air pollution is the use of free-standing, unvented coal stoves for home heating. There is growing evidence that indoor air pollution can affect respiratory health adversely; recent research in Beijing indicates that reduced pulmonary function in adults is associated with indoor air pollution from coal heating. This study of women who had never smoked evaluates the combined effects of passive cigarette smoking and domestic coal heating on reported prevalence of respiratory symptoms.

A survey of 973 women, working in three similar textile mills in Anhui Province, China, was undertaken in 1992. All were between 20 and 40 years of age, had never smoked, and had been educated to middle or high level. 35% of the women lived in homes heated with coal stoves.

Prevalence of four symptoms out of five — chest illness, cough, phlegm, and shortness of breath (SOB) — was found to be generally higher for women living in homes where both coal heating and smokers were present. The effects of passive smoking were more pronounced in homes using coal heating. Prevalence of chest illness, cough, phlegm, and SOB were found to be approximately 2.4, 2.1, 2.8, and 2.2 times higher, respectively, for women living in homes with both coal heating and more than one smoker than for women in homes without coal heating and with no smokers. The prevalence of a fifth symptom — wheeze (wheezing or whistling from the chest) — was not positively associated with cigarette smoke, but was positively associated with coal heating.

Multiple logistic regression analysis of these data, controlling for age, job title, and mill of employment, produced similar results. Prevalence of chest illness, cough, phlegm, and SOB was significantly associated with women living in homes with smokers and coal heating.

To determine whether socioeconomic differences between households may partially confound the association between respiratory symptoms and indoor air pollution, the living space in square metres per person resident in each home was calculated for a subset of 909 participants in the study.

Logistic regression analysis, controlling for square meters living space per household member and combined income of each woman and her husband, in addition to age, job title, and mill of employment, suggested that the association between indoor air pollution and respiratory symptoms was not due to inadequate control of income or crowding.

In this study, when evaluated separately from coal heating, the association between passive cigarette smoking and respiratory symptoms was relatively weak. However, the combined effect of both passive cigarette smoke and coal heating was pronounced and statistically significant. Both these patterns are largely consistent with other studies. While associations between passive cigarette smoke and increased respiratory symptoms have been observed in children, this association is not as well established in adults.

Significant differences in prevalence of respiratory symptoms were observed between women working in administrative areas at the textile mill versus those who working in manufacturing, suggesting differences in occupational exposures. Nevertheless, the association with domestic passive cigarette smoking and coal heating did not diminish after controlling for age, mill, and type of work.

A major implication of this study is that health effects of passive cigarette smoking need to be evaluated within the context of combined exposures to multiple sources of indoor air pollution. Effects of passive cigarette smoke and effects of coal heating respectively were larger when both sources of indoor pollution were present. In homes with no other major indoor air pollution sources, the health effects of passive cigarette smoke on adults may be relatively small. However, in many parts of the world where the majority of homes are heated by unvented combustion, combined respiratory health effects may be substantial.

*Summary of the work of:*

Pope III CA, Xu XP. Passive cigarette smoke, coal heating, and respiratory symptoms of non-smoking women in China. *Environmental health perspectives*, 1993 101(4):314-316

## Occupational hazards

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Only a fraction of the myriad hazards faced by women in their paid and unpaid work can be addressed here. Of those selected, some address actual or potential health effects arising directly from exposure to specific hazards; some stress the dearth of information on the health effects of work allocated to women; others point out that jobs allocated to women purportedly to protect their health may, on investigation, be found to pose greater risks than "non-female" jobs. Key points include the following:

- repetitive motions and fast work speed in factories or at home is being increasingly linked to disablement; more pieceworkers are disabled than fixed wage workers, and repetitive strain injury is common among assembly line workers
- investigating the reproductive risks and outcomes from exposure to toxic substances is methodologically difficult, but essential, given the rapidly-increasing use of chemicals in industry and agriculture
- behavioural problems in women traditionally attributed to mass hysteria may result from occupational exposure to neurotoxins
- subjective factors appear to be an important determinant of women's health status in Mexico, a consideration which is often neglected in epidemiological studies
- silicosis in women, although rare in developed countries, is usually contracted in the pottery industry and tends to progress more rapidly in women than in men; many women in developing countries are exposed to silica dust through pottery work or hand-grinding of grain
- "fetal protection" policies often serve to protect the employer rather than the employee or the fetus
- low social and economic status, combined with outdoor work in poor environmental conditions, leads to permanent chronic ill-health in women.

## Women's job ghettos — the fish-processing industry

Women workers are often concentrated in female employment "ghettos": that is, job categories where the majority of workers are women. Biological explanations concerning size, strength, hormones, the reproductive system, or the need for women to be "protected", are often used to justify differential job assignment, although there is little information on the health effects of the types of work usually allocated to women. This study analyses work conditions and related health effects in male and female job ghettos in fish-processing plants in Quebec, Canada.

A 1980 study included a self-administered questionnaire on workers' environmental and socioeconomic conditions, and their health-related symptoms. The questionnaire was not specifically designed to examine the health effects of women's work. But in view of the paucity of data on this issue, the authors examined the responses as a function of the gender of the 209 respondents (94 women and 115 men).

Work in fish-processing plants is seasonal (April to November). At the time of the study, work was available for an average of 25.2 weeks. The majority of workers (95%) lived on unemployment insurance or welfare for the rest of the year. Women earned a lower hourly rate than men, and worked slightly fewer hours. Of the women, 82.4% worked in jobs categorized as female ghettos (over 75% of workers performing the function were women), and 87.5% of men were employed in exclusively "male" jobs. It was found that even if men and women held the same job title, their tasks often differed. For the purpose of analysis, each job title was therefore assumed to be completely gender segregated.

Most of the women worked as either a checker, sorter or packer. This involved standing in a fixed position and making small movements with the hands. Checkers removed with scissors any remaining skin and bone from filleted fish arriving on a moving conveyor; sorters examined shrimp arriving on conveyor belts for imperfections and remaining bits of shell. Both jobs involved working very quickly to supply other lines and keep up with arriving loads. Packers put the fish into packages and then loaded them into larger boxes.

<b>Task characteristics and health problems reported by sex</b>				
	<b>% women (n=94)</b>	<b>% men (n=115)</b>	<b>Ratio women /men</b>	<b>Signifi- cance<sup>a</sup></b>
<b>Task characteristics</b>				
Shift work	35.8	22.0	1.63	*
Interest relatively low	41.8	27.4	1.53	*
Immobility	75.6	50.4	1.50	***
Work speed fast	63.2	45.8	1.38	*
Weight lifted regularly	41.9	42.4	0.99	n.s.
<b>Health problems reported</b>				
Insomnia	33.7	8.3	4.06	***
Aches and pains	45.2	19.1	2.37	***
Digestive problems	27.7	13.4	2.07	**
Hair loss	40.2	26.0	1.55	n.s.
Headaches	59.3	39.1	1.52	*
Colds, flu	69.9	58.0	1.21	n.s.
Back problems	10.6	9.9	1.07	n.s.
Skin irritations	26.1	25.5	1.02	n.s.
**p<0.05			**p<0.01	
***p<0.001			n.s. = not significant	

In terms of noise and temperature, factory conditions were poor. Wherever measured, noise levels were at or above the permitted regulations for an 8-hour day (90 dbA). Women reported significantly more noise at their work sites than did men, and more often claimed that noise levels were too high for communication.

All factories were cold and humid, with temperatures of 13–16°C recorded at checkers' and sorters' positions respectively. Of the women, 81.8% worked with their hands in water, and 70.1% worked with their feet in water. In the fall, the water was colder. Women reported this as a source of discomfort more often than men. However, this perception may be influenced by the relative immobility of their jobs compared to the men's.

### **Work speed and potential health impact**

Women reported more often than men that their jobs were uninteresting, that they could not move around, and that their work speed was fast. They also reported doing more night and weekend shifts (possibly for economic reasons). All job categories entailed lifting.



Women reported feelings of fatigue and stress, and tired hands, feet, back and legs more often than men, as well as greater insomnia, more aches and pains, digestive problems, and headaches. Taken in conjunction with their reports of more uncomfortable environments and more unpleasant working conditions than men, the question therefore arises as to whether these health problems are related to the sex difference itself, to differences in reporting between the two sexes, or to differences in working conditions. Work speed in relation to the health variables was therefore examined, for two reasons. Firstly, in a large study of poultry slaughterhouse workers, women reported a much higher work speed than men. Secondly, other workers' reports seemed to indicate fast work speed as a fairly constant characteristic of women's factory and hospital jobs. In the fish factory, fast work speed was found to be associated with fatigue, stress, insomnia, and digestive problems in both sexes, and with aches and pains in women.

Clearly, the methodology used restricted analysis to workers' own perceptions of their health problems. But it did reveal some additional data not perceptible through routine measurements. A measurement of temperature alone, for example, cannot determine the influence of worker immobility, degree of humidity, or whether adequate protective clothing is worn. Similarly, physical medical examinations may not detect the role of symptoms such as stress, insomnia, and random aches and pains, and the beginnings of acute conditions with a long latency period. This analysis therefore related perceived environmental variables to perceived health effects. Workers reporting a specific problem in their micro-environment tended to report the same health effect, which suggested that such a correlation actually existed. The best control, however, for a cause and effect association between an environmental hazard and a health effect is the removal or attenuation of the hazard, with consequent verification of the health effect.

It remains to be explained why women in the fish-processing and poultry slaughtering industries manifested higher health risk factors in relation to fast work speed. The traditional explanations of less tolerance in women are unsatisfactory. The authors suggest that women's factory work often requires them to work at a faster and more constant rate than men, even if men describe their work speed as fast. Women also do housework and undertake childcare, which may have a synergistic effect on the health symptoms reported through factory work. All women's tasks must be taken into account in estimating occupational health risk.

*Summary of the work of:*

Messing K, Reveret J-P. Are women in female jobs for their health? A study of working conditions and health effects in the fish-processing industry in Quebec. *International journal of health services*, 1983, 13(4):635-648.

## Parental exposure to lead and solvents

Conflicting results have been obtained from studies of maternal occupational exposure to solvents and lead, and its effects on spontaneous abortion. Lead and solvent exposure has also been linked to male reproductive problems, although there is little information on spontaneous abortion following paternal exposure.

Six Finnish studies of parental occupational exposure to organic solvents or inorganic lead in relation to spontaneous abortion were reviewed by the authors. Solvent exposure in pharmaceutical factory workers, laundry and dry-cleaning workers, and the records of men and women biologically monitored for solvent exposure, were also examined, as was lead exposure among workers biologically monitored for inorganic lead.

Study populations were identified through Finnish national registers, workers' records, workers' unions and employers' files. All men and women who had been biologically monitored at the Institute of Occupational Health for exposure to solvents (styrene, toluene, trichloroethylene, tetrachloroethylene, and 1,1,1-trichloroethane) or lead, formed the cohorts of workers for the solvent and lead studies. The pregnancies of workers, or wives of male workers, were identified from the nationwide database on births and spontaneous abortions in hospitals for the years 1973-1983, which covered 94% of all officially recorded births. It is estimated that 80-90% of all recognized spontaneous abortions can be detected from the database. A case-referent design was used; each wife of a male worker or woman who had a spontaneous abortion was defined as a case. Two or three referents were selected for every case from among the women who had given birth. The referents were individually matched for age with the cases. The woman's occupational exposure was assessed for the first trimester of pregnancy and the husband's exposure for the time of spermatogenesis of the study pregnancy (80 days before conception).

Results showed that the odds ratio of spontaneous abortion for maternal exposure to solvents was increased among the pharmaceutical factory workers, and significantly increased among the women monitored for solvents. In terms of exposure to individual solvents, high exposure to

methylene chloride, tetrachloroethylene, and aliphatic hydrocarbons was associated with the occurrence of spontaneous abortion. Analysis by occupational task showed that the odds ratio for toluene was elevated in a small group of shoe workers.

### Paternal exposure

The odds ratios for spontaneous abortion in relation to paternal exposure to organic solvents in general, and high exposure to toluene and miscellaneous solvents such as thinners, were significantly increased. Analysis by occupation revealed that the wives of solvent-exposed painters and woodworkers had an increased odds ratio. Maternal exposure to lead was not found to be related to spontaneous abortion at these low levels.

The analysis of all the men biologically monitored for lead did not show a statistically significant association between paternal lead exposure and spontaneous abortion, although women whose husbands had been monitored during or close to the relevant period of spermatogenesis were found to have an increased odds ratio. The association between the husband's exposure to lead and spontaneous abortion was modified by the age of the wife. The odds ratio for lead exposure was increased for women under 27 years but not for wives over this age.

The results of the studies suggested that maternal occupational exposure to certain organic solvents may increase the risk of spontaneous abortion. An increased risk of abortion was observed for exposure to organic solvents in general, and for high exposure to some specific solvents, such as tetrachloroethylene, methylene chloride, and aliphatic hydrocarbons. Paternal occupational exposure to solvents in general, and high exposure to toluene or miscellaneous solvents in particular, was also associated with spontaneous abortion. Maternal exposure to lead during pregnancy was not related to spontaneous abortion, although it should be noted that exposure among Finnish women is generally quite low. Thus an increased risk at high exposure levels cannot be ruled out. The study among the lead-exposed men suggested that there may be an association between paternal exposure to inorganic lead and spontaneous abortion, and further study of paternal occupational exposure on pregnancy outcome is warranted.

#### *Summary of the work of:*

Lindbohm M-L et al. Effects of parental occupational exposure to solvents and lead on spontaneous abortion. *Scandinavian journal of work, environment and health*, 1992, 18(Suppl.2):37-39.

## Pesticides exposure and reproductive outcomes

Of the 350 million cut flowers imported every year into the United States, 90% are grown in Colombia. Although a relatively new industry, floriculture employs large numbers of Colombians. Floriculture workers risk exposure to 127 different kinds of pesticides. A study was undertaken among 8867 employees of 58 companies who had worked for at least six months in the flower growing industry to ascertain the occurrence of certain reproductive events among a population occupationally exposed to a heterogeneous group of pesticides, and to assess the possible association between adverse reproductive events and such exposure.

A questionnaire administered through an interviewer was used to obtain information on the occurrence of fetal loss, prematurity, congenital malformation, and cancer among the offspring of workers (female employees, or wives of male employees) in Bogota. "Exposed" pregnancies were defined as those occurring during the time the relevant parent worked in floriculture; "unexposed" pregnancies were those occurring before this time.

The following variables were used to assess different exposures: size of employing company, quantity of pesticides used, job category, and length of time worked in floriculture. Information on these variables was obtained during a survey on patterns of pesticide use conducted in each of the 58 companies. Jobs were classified on a 6-point scale from no exposure (administration) to high exposure (sorting and packing). In terms of time worked, 6-11 months was considered as low exposure, 12-36 months as medium exposure, and over 36 months as high exposure.

Of the 8867 workers, 33% were men and 67% women, with mean ages of 29.2 and 27.0 years respectively. Most of the workers had been educated to primary level. The mean length of time worked in floriculture was about three years. The total number of pregnancies included in the analysis was 13,984; 10,481 were pregnancies of female employees and 3,503 of wives of male workers.

## Various adverse outcomes

The rates and odds ratios for the various adverse outcomes of pregnancies before and after exposure to pesticides in floriculture are shown in the table below. All rates, except for stillbirths, were higher for pregnancies occurring after exposure for both female workers and wives of male workers. This gave significantly higher odds ratios for abortions, premature births, and malformed babies. No dose-response relationship with any of the variables used as indicators of degree of exposure was observed for either spontaneous abortion or prematurity; an inverse relationship was observed with the two variables which could be regarded as more objective (type of job and length of time worked in floriculture). The highest odds ratios were observed for the unexposed jobs — administration, and those with 6-11 months experience. These results are not surprising considering that exposure only during a short critical period is relevant in the induction of embryotoxic effects.

An increased risk among female workers and wives of male workers was observed in relation to congenital malformation, spontaneous abortion and prematurity in pregnancies after having worked in floriculture. Subsequent physical examination of the children showed though that about half the children reported as malformed by their parents were in fact normal, while about 10% of those reported as normal were malformed. All confirmed cases of cancer proved to have occurred before the parents began working in floriculture.

Regarding spontaneous abortion, the risk ratios may have been increased by recall bias rather than exposure to pesticides. While spontaneous abortion occurring early in pregnancy is an excellent indicator of embryotoxicity, it is very difficult to record accurately. It is highly probable that if a spontaneous abortion occurs very early in pregnancy, the woman will not recognize it as such, but perceive it as a delayed menstrual period. Alternatively, if identified correctly, it may be forgotten over time.

The rates obtained in this study indicated a significant under-reporting of spontaneous abortion, which was more pronounced when the information on a woman's reproductive history was given by her husband. Lack of perception of the event by husbands is an adequate explanation in the case of wives of male workers, as is early unrecognized spontaneous abortion in the case of the female employees. In this instance, an environmental embryotoxic agent could be suspected. However, the data in this study cannot support this explanation given that the problem of perception was the same for the pregnancies occurring before and after work in floriculture, and that the actual rates for spontaneous abortion from 1978-81 were shown to be very similar to those reported for other population groups.

Rates and odds ratios (OR) for various adverse pregnancy outcomes before and after work in floriculture (95% CI=95% confidence interval)

Pregnancy outcome	Female workers					Wives of male workers				
	Prevalence rates (%)					Prevalence rates (%)				
	Before exposure	After exposure	OR	95% CI	Before exposure	After exposure	OR	95% CI		
Induced abortion	1.46	2.84	1.98**	1.47-2.67	0.29	1.06	3.63**	1.51-8.70		
Spontaneous abortion	3.55	7.50	2.20**	1.82-2.66	1.85	3.27	1.79**	1.16-2.77		
Premature baby	6.20	10.95	1.86**	1.59-2.17	2.91	7.61	2.75**	2.01-3.76		
Stillbirth	1.37	1.34	0.99	0.66-1.48	1.01	0.89	0.87	0.42-1.83		
Malformed baby	3.78	5.00	1.34*	1.07-1.68	2.76	4.16	1.53*	1.04-2.25		

\* P = 0.05-0.01

\*\* P = &lt;0.01

## Multiple exposures

Multiple exposures pose the problem of identifying the toxic chemical responsible, but also of interaction between chemicals and the resulting toxic effects. Given the assumptions made in this study to estimate exposure and the multiple nature of the exposure, a random misclassification of exposure may have played a role in underestimating the observed effects. It was not possible here to estimate the degree of such a bias or, if present, to correct it.

The overall results of no association or a moderate increase in risk for some adverse pregnancy outcomes, with the possibility that these are due to recall bias and/or misclassification of exposure, accord with the results reported previously for other populations. Although some studies in Seveso, Italy, and in Vietnam suggested an increase in spontaneous abortions after possible maternal exposure to phenoxy herbicides and dioxins, methodological problems relating to difficulties in assessing exposure, and in eliminating possible confounding and bias, prevented definitive conclusions. Similar limitations apply to studies on paternal exposure to these substances.

This and previous studies should be considered as preliminary approaches to a very complex problem which needs considerable further research. Further research is urgent for two reasons. First, the use of pesticides — especially in developing countries — is increasing rapidly and is often uncontrolled. Second, in this example, two-thirds of the workers questioned were women of reproductive age, indicating a large population at risk.

*Summary of the work of:*

Restrepo M et al. Prevalence of adverse reproductive outcomes in a population occupationally exposed to pesticides in Colombia. *Scandinavian journal of work, environment and health*, 1990, 16:232-238.

## Exposure to neurotoxins in the microelectronics industry

Women are employed in the majority of production and assembly jobs in the microelectronics industry. Organic solvents are used in many of the industry's production and assembly processes. Neurotoxic effects of organic solvent exposure include abnormalities and impairments in the behavioural area, notably mood change, irritability, anxiety, fatigue, depression, mood lability, defective impulse control, personality change, and development of psychosis. Emotional and personality changes are among the first symptoms reported by persons exposed to neurotoxins. In many cases, affective changes are present even when neuropsychological or neurologic effects cannot be detected.

Despite evidence that microelectronics work is ergonomically stressful and involves the handling of hazardous substances, the industry gives the impression of being well-organized and clean. This may provide some explanation as to why, for over 20 years, complaints from female workers have often been ascribed to problems of mass psychogenic illness.

Persistent long-term effects of solvent exposure are being reported with increasing frequency. One study found no evidence of recovery when retesting solvent-exposed patients 8 months after exposure had ceased. Another found that two years after removal from solvent exposure, subjects continued to report negative effects on their personal, social, and employment situations.

### Effects on former workers

A study was carried out to evaluate the stability of affective and personality disturbance among former electronics workers over a two-year period. The Minnesota Multiphasic Personality Inventory (MMPI) — the most widely used standardized adult mood and personality measure — was used to evaluate 79 former microelectronics workers, all of whom had been awarded compensation for work-related injuries. Review of work medical records showed that they had complained frequently of headaches, dizziness, respiratory distress and skin irritation, suggesting high exposure levels. Two years after the initial evaluation, a second MMPI was



undertaken involving 63 of the original 79 workers. This sample consisted of 56 women and 7 men, who had worked in the plant for an average of 6.8 years, and had ceased working there an average of 5.7 years previously.

Prior to employment, all the workers had been screened for good health and mental stability. Reference data were obtained by matching the former employees with current workers involved in a neurotoxic effects study in the same plant.

Work in the plant involved direct handling of organic solvents, without adequate ventilation and/or without respiratory protection. The solvents included fluorochlorohydrocarbons, chlorinated hydrocarbons, glycol ethers, isopropanol, acetone, toluene, ethyl alcohol and xylene, used in a variety of cleaning and degreasing operations. The former workers reported having handled these substances with bare hands and without protective equipment.

Analysis of the MMPI scores revealed that the workers manifested affective and personality disturbances that persisted over the two-year period between testings. The score elevations were remarkably stable over time, with slight but significant increases on the depression (D), psychasthenia (Pt) and schizophrenia (Sc) scales. These findings indicate that affective and personality disorders diagnosed 5-6 years after cessation of employment appear to be long-lasting disabling psychiatric conditions. As is the case with most retrospective studies, no pre-employment personality profiles were available. However, in pre-employment screening, each individual had been considered mentally stable.

The MMPI profiles of this group are very similar to profiles reported by other investigators studying workers with a history of solvent exposure. The findings are also similar to studies of Vietnam combat veterans exposed to Agent Orange; with the exception of two categories, the veterans' MMPI scores were lower than those of the former microelectronics workers.

Previous studies of women microelectronics workers have tended to attribute the type of affective and personality disturbance observed in this study to mass hysteria. It has been assumed that an "hysterical" personality structure attributed to women workers was the source of these outbreaks. MMPI reports of hysteria and other work injuries show elevations on the hysteria (Hy), depression (D) and hypochondriasis (Hs) scales, whereas reports of organic solvent effects show elevations for psychasthenia (Pt) and schizophrenia (Sc), reflecting high anxiety and a psychotic process.

### **Mass psychogenic illness — hitherto defined as a women's illness**

Investigation of the mass psychogenic literature shows that women comprise the majority of those afflicted, making up 82% of all reports of so-called hysteria. The authors suggest that this is not a gender effect but a reflection of the percentage of women at risk in this industry. In this study, the low percentage of participating men corresponded to the gender distribution within the assembly plant. Although there were few men among the former workers tested, the scores of men and women were very similar, except for the men's higher scores on the hypochondriasis (Hs), depression (D) and hysteria (Hy) scales. This may be explained by the potentially higher exposure in men's jobs, which often involved cleaning large tanks of organic solvents or painting with oil-based paints, without protection.

It is also possible that psychological and psychosocial factors exacerbate or interact with the physical problems of disabled workers. Workers who become disabled frequently experience difficulty in adjusting to being non-working members of society and may suffer loss of status and diminished feelings of self-worth. These in turn may lead to family disruption. Loss of health benefits and access to medical treatment may also result. Assessment of the effects of neurotoxic exposure should include the levels of social support and treatment available to victims.

This study raises doubts concerning one traditional explanation of the behavioural symptoms observed among microelectronic workers, and suggests that these could be the result of overexposure to organic solvents in the workplace. The findings here suggest that work rather than gender may be the cause of the problem.

*Summary of the work of:*

Bowler RM et al. Stability of psychological impairment: two-year follow-up of former microelectronics workers' affective and personality disturbance. *Women and health*, 1992, 18(3):27-48.

## Psychological and ergonomic stressors in garment workers

Women's jobs are often seen as low-risk in terms of severe work accidents and specific industrial diseases. Consequently, the health problems of women's work have not been adequately researched, with the exception of risks associated with pregnancy. However, adverse health effects are associated with female-dominated jobs, including those in the manufacturing and service industries, involving high time pressure. This study documents the psychological and ergonomic stressors which can, over time, lead to adverse health effects.

The work speed of many assembly lines and other jobs continues to be determined by machines. Previous studies have demonstrated that workers employed in jobs involving high time pressure experience an elevated frequency of physiological, musculoskeletal and psychological symptoms. Little is known about these symptoms or the more severe adverse health conditions that may ensue.

Garment workers represent a valuable study population as they fall into two natural categories: those operating on a piecework basis and those on hourly wages. The purpose of this study was to demonstrate that piecework involves more time pressure than hourly wage jobs, and that long-term employment in jobs involving high time pressure leads to a deterioration of health which manifests itself in greater reliance on medicine, increased anxiety and depression, and the development of permanent disability.

The study population comprised 800 women who had worked in unionized garment factories in Québec between 1976 and 1985. At the time of the study, each woman was between 45 and 70 years of age and had been employed as a sewing machine operator (either piecework rate or hourly wage) for at least five consecutive years at 1000 hours per year. Of the total sample, 267 were still employed. This population was thought to be fairly homogenous and likely to reflect the long-term effects of garment work. For some comparisons, an external population of 1300 women employed in clerical work, services, or manufacturing was used. Disability was defined as the presence of one or more disabling conditions for at least the twelve preceding months and categorized as: i) no disability; ii)

slight restriction of non-work activities; iii) moderate restriction of major activity such as paid employment or housework; iv) severe restriction (unable to maintain major activity). Yearly data on job title, type of remuneration and number of hours worked were obtained from a labour organization for each worker, for the 1956 to 1985 period.

Results showed that when compared with the external population, garment workers were more often disabled than women in other occupations (see figure). Garment workers currently employed had an increased prevalence of moderate and slight disability, while garment workers no longer employed had an increased prevalence of severe disability. Employed garment workers had higher levels of symptoms of anxiety and depression than workers in other types of employment.

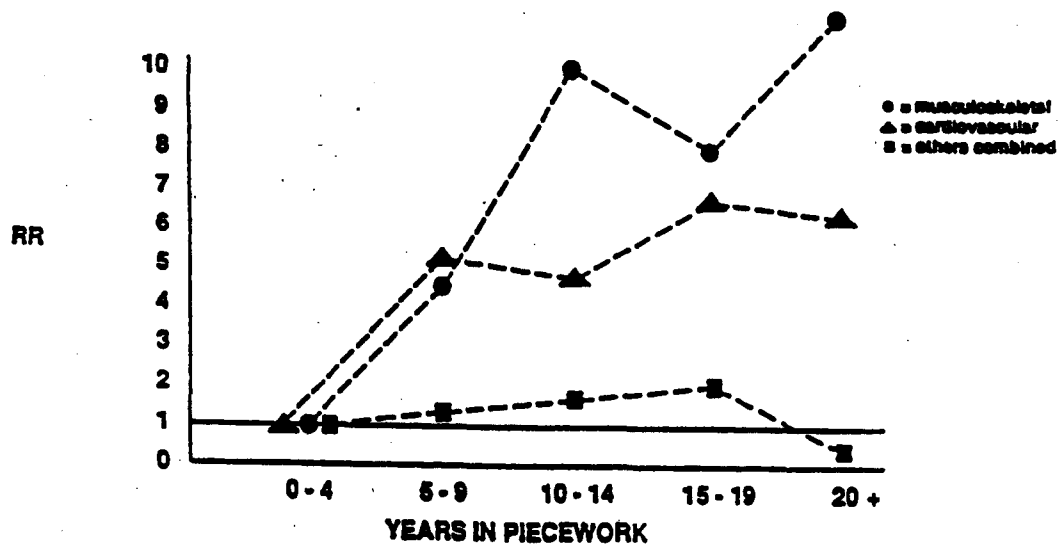
Comparison of pieceworkers and hourly wage workers showed that the prevalence of severe disability among those no longer employed increased with the number of years the workers had spent in piecework jobs. In a separate analysis conducted for disability due to specific causes, the association with duration of employment in piecework appeared to be linked to musculoskeletal problems, and, to a lesser extent, cardiovascular problems, although the small numbers produced unstable effect estimates. Among workers currently employed, pieceworkers took medication for stomach problems in greater proportion than hourly wage workers.

### **Mental workload and psychological stress**

The level of psychological stress of pieceworkers is likely to be greater than that of hourly wage workers due to greater time pressure which directly increases their mental work load. The mental work-load associated with garment work is determined mainly by the complexity of the task and its speed. A high level of mental activity, visual attention and precision movement, in which eyes, hands and feet must be constantly coordinated, is required. Garment workers' task complexity tends to be identical for piecework and hourly wage work as the end result is the same, and equipment and indoor environment are similar. The main variation, therefore, relates to the time constraint under which pieceworkers operate.

An increased mental workload may represent a source of psychological stress. Under stress, complex adaptive mechanisms are activated and several parts of the endocrine system react simultaneously. Prolonged activation of the adaptive mechanisms is believed to be involved in the genesis of various chronic diseases (cardiovascular, gastrointestinal, musculoskeletal).

**Risk ratios<sup>a</sup> (RR) for severe disability from specific causes by duration of employment in piecework among garment workers who left employment<sup>b</sup>**



<sup>a</sup> Adjusted by binomial regression for age, smoking, type of task and total length of employment.

<sup>b</sup> Quit during the 10 years preceding the interview.

Regarding ergonomic stressors, the work of an operator in the garment industry necessitates a sitting position with the head bent forward, which must be sustained for long periods, coupled with repetitive movements of the upper limbs. Studies have shown that these characteristics are two of the six principal causes of absence from work due to back disorders. Also, repeated use of the same joints has been associated with the development of osteo-arthritis. It is possible that piecework acts directly on the biomechanical load by increasing the number of motions per unit of time, or by influencing the temporal distribution of work and rest. Evidence suggests that psychological tension associated with time pressure may play a direct role in the development of musculoskeletal disorders, since muscle tension, measured by continuous electromyographic recording, increases with psychological tension.

The results of this study indicated that moderate and slight disability, anxiety and depression, and the use of medication tend to reflect mild conditions, while severe disability involves health problems serious enough to prevent workers from remaining employed or doing housework. Short-term and non-disabling conditions identified by previous authors may therefore prove to have more important long-term sequelae than hitherto documented. These could be due either to the physiological reactions associated with psychological stress, or the enhancement of the ergonomic stressors involved in garment work. These findings are of interest given the large numbers of women employed in piece-work either at home or in factories in developing countries.

*Summary of the work of:*

Brisson C, Vézina M, Vinet A. Health problems of women employed in jobs involving psychological and ergonomic stressors: the case of garment workers in Quebec. *Women and health*, 1992, 18(3):49-65.

## Health consequences of "maquiladora" work

Foreign-owned assembly plants in Mexico (maquiladoras) enable these industries to operate with low labour and operation costs, and to avoid stringent health and safety regulations enforced at home. The plants employ large numbers of predominantly young women (over 60% of the total maquiladora workforce). Adverse working conditions are frequently reported in the plants, including poor ventilation, few rest periods, excessive noise levels, unsafe machinery, long hours of microscopic assembly work, and exposure to toxic chemicals and carcinogens. The work requires high production quotas and repetitive tasks which, coupled with lack of decision-making capacity and often poor supervisory relations, add to stressful work conditions. However, empirical data concerning the health issues are scarce.

High levels of stress among maquiladora workers have been associated with generic symptoms such as gastric disorders, menstrual problems, depression, and mass hysteria. Pulmonary and eye problems, dermatitis, hand injuries, and musculoskeletal disorders have been reported among textile and garment workers, while eye irritations, visual acuity loss, headaches, nervousness, allergies, and adverse pregnancy outcomes have been identified among electronic assembly plant workers. This evidence is, however, derived from studies with many methodological shortcomings and which did not control for multiple risk factors, including factors inherent to the living conditions in the urban shantytowns from which most of the female labour force is recruited.

A study was carried out to assess the health and lifestyle of women employed in electronic and garment assembly plants, comparing them with two reference groups: women employed in the service sector and women who were never part of the labour force. Thus the demographic, occupational, and psychosocial characteristics of maquiladora workers were compared with those of the two reference groups. The impact of maquiladora work on the health status and well-being of women was then examined, controlling for a number of social and occupational variables.

The total sample comprised 480 non-pregnant women between the ages of 16 and 28 years (mean age 21 years), divided into four groups: electronics workers, garment workers, service sector workers, and women with no work history. Over 70% were single and more than two-thirds were childless and lived with their families of origin. Housing conditions among all four groups were similar, although service sector workers were more likely to own a car and/or a telephone. Household incomes were lowest among housewives, followed by electronics workers. The number of years of formal education was lower for maquiladora workers than for the two reference groups. On average, both electronics and garment workers worked 48 hours per week, and 6 hours longer than service sector workers. The mean hourly wage was US\$ 1.02 for electronics workers, US\$ 1.09 for garment workers, and US\$ 1.32 for women in services.

Identified sources of strain in maquiladora workers included few opportunities for skill development, and reduced autonomy in decision-making compared with service sector workers. Garment workers appeared to receive less support from colleagues and supervisors than other categories. Yet despite longer working hours at lower wages and with less freedom to make decisions, maquiladora workers reported job satisfaction levels equalling those of women in services. Although maquiladora workers received more benefits such as health insurance and performance incentives, these did not seem to be associated with job satisfaction. All four groups felt that the basic income of their household was too limited to satisfy basic needs, and levels of self-denigration were high, suggesting internalized strain related to low self-esteem. All groups perceived their health status to be fairly good, although women in garment plants were more likely to report lower health status than electronics workers.

### **Health outcomes better than anticipated**

Given that women employed in electronics and garment maquiladoras are less well educated, earn less, work longer hours, and perceive themselves as having less control at work than service workers, worse health outcomes from these groups could have been expected. Evidence suggested, however, that they did not suffer more functional impediments than service workers or housewives. Neither did they experience more depression (all four groups had similar mean depression scores) and electronics workers reported nervousness significantly less frequently than service workers.

All four groups showed high stress scores on the control scale, indicating a low sense of control over their lives. The one factor which consistently "predicted" the four outcomes of health and wellbeing (functional impediment, nervousness, depression, and sense of control) was lack of financial resources. This was followed by work dissatisfaction, which



predicted three health outcomes. Factors associated with family life and self-denigration were significant predictors of depression and sense of control. Demographic factors, such as education, number of children, and housing conditions, were important predictors of nervousness.

The main finding — that maquiladora workers did not suffer more depression or lack of control than other occupational groups — persisted in the multivariate analysis, which also confirmed that the two consistently strong and most significant predictors of health and wellbeing (negative attitude toward economic adversity, and dissatisfaction with work) were subjective indicators — negative attitude towards economic adversity, and dissatisfaction with work. The intensity of these two subjective factors was directly associated with depression, nervousness, and lack of control over life.

It is possible, however, that more job dissatisfaction was not reported by maquiladora workers due to their young age, which dampens awareness of occupational stress. Or, particularly in the case of electronics workers, their jobs may reflect some degree of upward mobility as they are in the most modern and dynamic industrial sector, and the factories tend to be physically attractive places with cafeterias, air conditioning, heating, piped music, and other comforts unavailable in the shantytowns where most of the workers reside. This may explain the particularly favourable health outcomes of the electronics workers.

Subjective factors beyond the working environment were found to be of great relevance to the health and wellbeing of poor Mexican women. Issues of self-esteem and lack of personal control seem particularly important to health outcome. Future studies should take account of feelings, attitudes and beliefs in order to fully understand disease patterns. These subjective or social measures do not compete with conventional indicators, but rather complement them.

*Summary of the work of:*

Guendelman S, Jasis Silberg M. Health consequences of maquiladora work: women on the US-Mexican border. *American journal of public health*, 1993, 83(1):37-44.

## Repetitive strain injury and occupational tasks

Repetitive strain injury (RSI) is the term commonly used to describe a set of musculoskeletal symptoms affecting large numbers of people, often women, in many countries. It occurs in workers who perform repetitive tasks over a prolonged period, most commonly in the hands, wrists, and arms, although other areas may be affected depending on the type of work performed. RSI causes considerable pain and discomfort in the affected areas, including loss of grip strength in the hand. Over time, disability can become so severe that temporary or permanent cessation of employment results.

When 12 women patients involved in highly repetitive occupational tasks were referred by their trade unions' solicitors for medical and legal adjudication on their cases, an opportunity arose to document symptoms and physical signs that could be of diagnostic value. An attempt was also made to clarify the natural history of the disorder and to estimate its prevalence in conveyor belt workers.

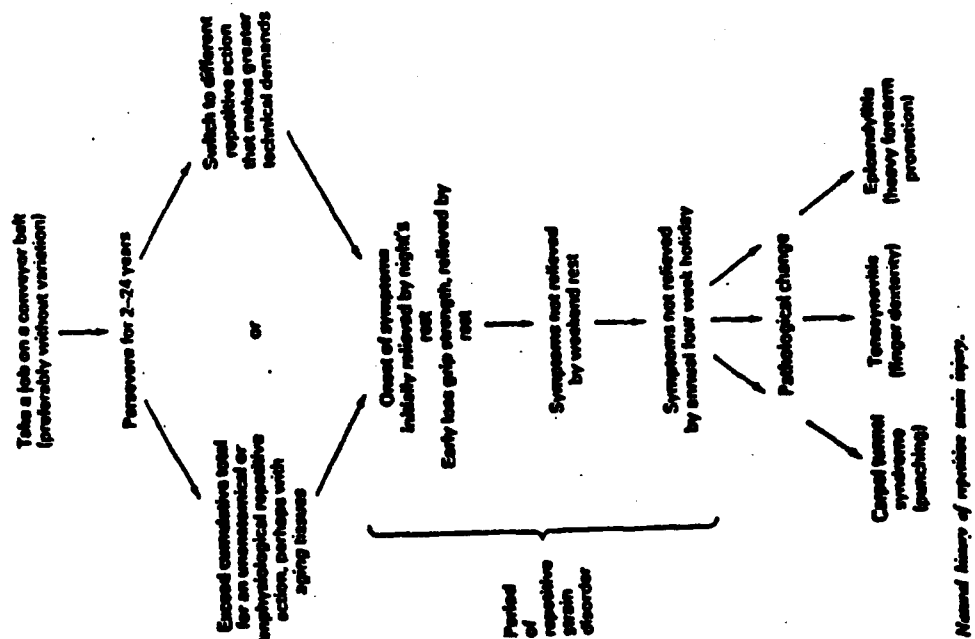
The mean age of the group was 48.2 years (range 25-60 years) and duration in employment ranged from six to 26 years. There was no consistent type of activity after which symptoms invariably occurred, although most women attributed the onset of symptoms to a change in technique or, more frequently, a move to a different conveyor line. Two women worked in an electrical factory, and 10 in the packing department of a biscuit factory. Six women had been operated on; in each of these cases, the particular pathology had always been preceded by a period of symptoms typical of those described in repetitive strain disorder.

In the biscuit factory, all staff worked an 8-hour shift, packing at a rate predetermined by management, with two 10-minute tea-breaks and one half-hour meal-break. Once present, symptoms were not relieved by the 10-minute or 30-minute breaks, although in the early stages a night's rest provided relief. After a period of three to four months, symptoms were not relieved by the weekend break from work. Ultimately, one or two years after the onset of symptoms, there was no relief following two or four weeks' vacation. This progressive resistance to relief by rest appeared characteristic.

The particular task performed by each worker was invariably correlated with the site of symptoms. Lifting heavy boxes caused shoulder symptoms, twisting heavy packs caused forearm symptoms, and repeated use of the fingers caused symptoms in wrists and fingers. Specific pathologies later emerged: tendon inflammation for those using fingers or twisting the forearm, and frozen shoulder for those lifting the heaviest weights.

The work of the two women employed in the electrical accessories factory involved a repetitive punching action with a stapler. Both experienced the same preliminary symptoms as the biscuit workers, but these later developed into carpal tunnel syndrome. These women were ostensibly working at their own speed; however, they were paid a low basic wage with a high supplement for performance. In practice this meant that adequate wages could only be earned by maintaining a fast work speed.

#### Natural history of repetitive strain injury



Symptoms in all patients in the preliminary phase invariably included weakness and pain in the affected areas. Reduced grip strength was a consistent clinical finding once symptoms were present. Compared with a control group of women matched for age and without RSI symptoms, the grip strength in both hands of the study group was significantly weaker ( $p < 0.001$ ). Even the two women with the fewest clinical signs showed the characteristic reduced grip strength that appeared consistently throughout the group. On this basis it was judged that most if not all the women suffered from repetitive strain injury. This allowed delineation of the natural history of the disease as shown in the figure.

Social and economic factors also contribute to the disease. The biscuit factory was a monopoly employer in an area where there was little other work for women. Their choice of employment was therefore restricted. Moreover, women worked exclusively on the conveyor belts, while men employed in the factory tended to perform only cleaning and maintenance tasks.

In an effort to assist women with painful symptoms, the factory management invariably moved them to a production line where weights were lighter. However, ergonomic comparison of the two tasks suggested that the speed of the packing cycle was faster on this line. So this move simply tended to transfer the strain from the forearm to the fingers.

It has been estimated that approximately 2% of the biscuit factory workers experienced symptoms of repetitive strain injury at any one time. However, accurate estimates are difficult to arrive at, given that the symptoms tend to fluctuate, and the tolerance of individuals differs. In the women studied here, the strong association between their occupational activities and the location of their symptoms tends to support the notion of a causal effect. Further well-designed studies are needed to identify which women are more likely to develop this painful and handicapping condition. These findings are representative of the situation of many women in occupations where repetitive tasks are carried out at a particularly fast or predetermined speed, beyond the control of the worker. Several occupations covered in this *Anthology* meet these criteria. The diagnosis of this condition in a wide variety of occupations, countries and conditions would assist in negating claims that the symptoms of this disorder are imaginary, or a wilful attempt to acquire disability compensation.

*Summary of the work of:*

Bird HA, Hill J. Repetitive strain disorder: towards diagnostic criteria. *Annals of the rheumatic diseases*, 1992, 51:974-977.

## Silicosis in Swedish women

Silicosis remains primarily a "male disease", and hence pneumoconiosis in women has received little attention in the literature. In Sweden, only about 1% of registered cases are women, employed mainly in potteries. Indeed, most silicosis in women, in Sweden and elsewhere, is contracted in the ceramic industry. Two earlier studies noted that the duration of exposure to pottery dust in the women studied was appreciably shorter than that of a comparable male group. Since the issue of greater sensitivity (or otherwise) of women to inhaled silica dust was not demonstrated in previous research, an analysis of silicotic women observed over a long period was considered useful in clarifying the incidence, course and evidence of progression of this disease. The effects on this small group may be relevant to many women in other parts of the world who are engaged in pottery work or employed in the ceramics industry.

The study used data from the Swedish Pneumoconiosis Register for the period 1931-1980. The register comprises details of all cases of the disease reported to insurance authorities during this time. It contains 4,700 records; 53 are of women with silicosis, the last of which was reported in 1975. According to normal practice, three stages of the disease were distinguished: Stage 1, up to pinhead-sized opacities; Stage 2, up to pea-sized lesions; and Stage 3, coalescence of these lesions into massive shadows.

Of the 53 silicotic women in the register, 42 had contracted the disease while working in the ceramic industry. Four others had worked in iron ore mines, and five in small factories producing scouring powder which contained silica. To facilitate comparison with silicosis in men, a group was selected for whom essential uniformity of dust exposure could be assumed — the 38 women who had contracted silicosis while working in potteries. Their data were compared with 128 silicotic male pottery workers.

An important factor in assessing silicosis risk and the course of the disease is the length of time during which quartz-bearing dust has been inhaled before the disease is diagnosed. As a rule, the shorter this time, the more intense the dust exposure, and the more severe the course of the disease. Conversely, if there has been a very long period of prediagnosis exposure

to dust, the intensity of exposure has usually been less and a proportionately mild course of silicosis can be anticipated.

For the total group of 53 women, the prediagnosis duration of dust exposure fell from a previous mean level of about 20 years to about 13 years in the period 1961-1975. This decrease was attributable in part to the five cases of silicosis in workers who manufactured scouring powder, and for whom silicosis was diagnosed after only 5-10 years of exposure. Among the women employed in pottery shops, the average duration of exposure to dust in the period 1931-1975 was significantly shorter than for men.

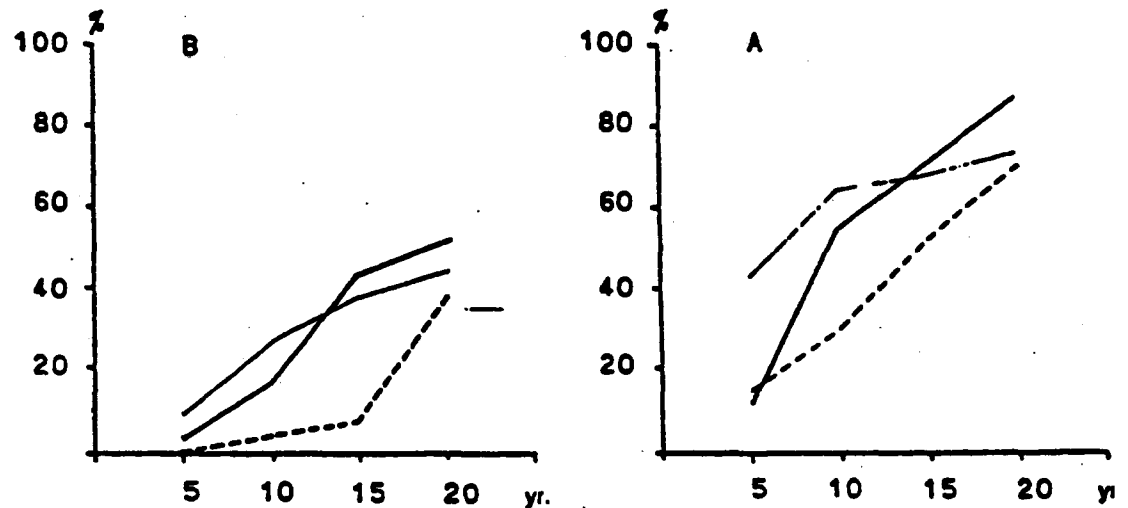
In examining progression of the disease, it was found that the tendency to advance from Stage 1 to Stage 2 or 3 was strong among the affected women, and particularly marked after cessation of exposure. The disease progression for men performing similar work was considerably slower. The difference was most striking during the first 15 years of the study period.

Approximately half the total group of 53 women died during the study period; 45% of deaths were due solely to silicosis, while silicotuberculosis accounted for about 10%. Similar death rates and causes of death were found among both male and female pottery workers.

In terms of age, calendar time of diagnosis, initially detected stage of silicosis, and mortality from the disease, there were similarities between both sexes of pottery workers. Incidence of tuberculosis was somewhat higher among the men up to 1950, declining sharply thereafter as a result of the general use of anti-tubercular drugs. Average duration of exposure to the causal dust before detection of silicosis in these workers was significantly shorter among women than men.

### **Comparison with male quartz workers**

In accordance with the principle that short-term prediagnosis exposure is associated with greater intensity of dust and more serious symptoms, the progression of silicosis in female pottery workers in this study was more rapid and severe than in male potters. The female group was therefore compared with male quartz workers — an industrial group usually regarded as at special risk because of its heavy exposure to quartz. After 15 years of observation slightly more progression of silicosis was seen in the female potter group than in the male quartz workers. This was despite an indication that the quartz content of airborne dust is much higher in cutting and processing quartz (74%) than in pottery work (15%). Small particles were more numerous in potteries — 30% as compared with 24% in quartz works.



Cumulative percentage of known radiographic progression of silicosis after five-year intervals. Baseline starts at intersect of x and y axis and not at year 5. (Calculated according to technique that states cumulative percentage of progression, including progression in subjects who died during five-year interval and in non-attenders). Thick solid line indicates female pottery-forming shop workers; dashed line, male pottery-forming shop workers; and thin solid line, male quartz workers. A indicates progression from stage I to II or III; B, progression from stage I to III.

Silicosis contracted by women working in potteries has thus shown a more pronounced progression than silicosis in other Swedish occupational groups. Several explanations may be considered. Women could have been exposed to higher concentrations of dust than men at the same work sites, although no separate measurements of dust concentrations inhaled by men and women are available to support this assumption. Many of the silicotic women were employed as finishers of fired wares — dry work which generates large amounts of dust. It is therefore possible that they were exposed to more quartz in dust than the silicotic men, who worked mainly with moist materials, and that the dust inhaled by women had a somewhat higher content of small particles. It is also possible that the men were on average in better physical condition than their female colleagues, who thus had to ventilate more for the same occupational performance, thereby receiving a higher dust load in the lungs. However, as the women's work was relatively light, this explanation does not seem adequate, although poorer physical condition may have been a contributory factor.

This study raises a number of significant issues despite the small numbers affected in Sweden. Many women in developing countries make their own pots or are engaged in ceramics work and pottery industries. The relationship to other contributions in this *Anthology* addressing illness from particle-laden dusts or smoke should also be noted. The designation of silicosis as a "male" disease, coupled with its long latency period, enhances the risks of its remaining undiagnosed and untreated in women. Similar issues are raised in the study on "Hut Lung" in South Africa, which addresses problems of pneumoconiosis in rural women. Women acquiring pneumoconiosis or silicosis in developing countries risk doing so in circumstances where the possibility of diagnosis and treatment are small.

*Summary of the work of:*

Gerhardsson L, Ahlmark A. Silicosis in women: experience from the Swedish pneumoconiosis register. *Journal of occupational medicine*, 1985, 27(5):347-50.



## Cassava processing and cyanide poisoning

Cassava is the third most important food crop in the tropical world, following rice and maize. Although it is low in protein, production is increasing because it grows well in poor soils and tolerates drought. But it has a major disadvantage in that its preparation as a food liberates hydrogen cyanide, a deadly poison. Careful preparation is therefore needed to initiate the various chemical interactions needed to eliminate this poison. Cassava is largely grown and processed by women.

Now the major food crop throughout tropical Africa, cassava is also widely grown in many Pacific countries. It is often produced commercially in many countries, since it is easy to grow and reliable. In Nigeria, cassava is a major food staple and the production of processed cassava — known as gari — is carried out on a large scale. Like all traditional cassava processing, gari production is labour intensive. It is usually undertaken by a small group of people on behalf of a larger community, either at village level, or in large gari kitchens in towns, with many people working together in one unit. This tedious and potentially dangerous work is carried out mainly by women.

To make gari, women peel, wash and grate the tubers. Then they put the grated pulp in cloth bags and leave it to ferment for several days. If the bags are placed under weights or put in a press, water containing some of the hydrogen cyanide is squeezed out. After three days or so the pulp is removed and heated in shallow, open pans to expel residual water and cyanide. Finally, the relatively dry gari is stored, during which time any remaining cyanide disappears. Prepared in this way, or by an assortment of traditional methods in Latin America, Africa and the Pacific, cassava becomes quite safe to eat.

### The health risks related to cassava

Several problems remain, however. Firstly, in times of famine, starving consumers do not wait for the cassava to lose all its cyanide properties before eating it, and may suffer serious health problems as a result. Death

is rare, but sublethal effects of cyanide inhalation are common. These include spastic paraparesis, a condition which afflicts the motor nervous system and leaves the victim permanently crippled. Problems of goitre, where this is endemic, may also be exacerbated. Secondly, the women in the gari kitchens or elsewhere who process the cassava may be exposed to hydrogen cyanide fumes during their work and experience related health effects. Thirdly, farm animals may also suffer toxic effects if they are fed with cassava scraps and peelings.

Various solutions are being sought for these problems. For example, cassava varieties are being screened to identify those naturally low in cyanide content. Simple testing methods to determine cyanide content are also being developed. One difficulty in measuring and comparing the cyanide content of different cassava varieties is that this varies in different parts of the plant. Drought conditions tend to have the effect of increasing cyanide content, as do mechanical damage and pest attack. The effects of environmental factors may be so great that an inherently low cyanide variety grown under drought conditions may have a higher cyanide content than a high cyanide variety grown under favourable conditions. A range of varieties are therefore being grown in Nigeria to measure in detail the effects of various environmental factors.

### **Exposure monitoring and protective measures**

To help protect the women in the gari industry, a simple means of monitoring their exposure to hydrogen cyanide fumes has been developed. This consists of a treated test-paper which is colourless, but which turns blue when exposed to hydrogen cyanide gas. It is proposed to introduce this for use by women and children gari workers so that they will realize when they are being exposed to dangerous fumes. (The personal monitoring badges of radiation workers perform a similar function.)

A typical gari preparation area consists of a large, open-sided shed, often poorly ventilated. Many women work in these sheds, often with children around them. Hydrogen cyanide is generated at various stages of preparation, particularly when the fermented gari is fried in open pans. Better ventilation systems for gari kitchens, and improved processing equipment to ensure that women and children are successfully isolated from the source of cyanide, are therefore required.

Given the ubiquity of cassava as a staple food, and women's responsibility for its processing on a domestic and commercial basis, the implications for women's health are important. Aside from the effects of eating toxic cassava, women are exposed to the air pollution connected with its processing. The potential synergistic effects with goitre (which afflicts mainly women) need further investigation. This is only one of many dangerous agricultural processes to which women are exposed.

*Summary of the work of:*

Ferrar P. Food laced with cyanide. *Partners in research for development* (Australia), 1992, 5:29-33.

## Plantation workers and ethnicity in Sri Lanka

Despite Sri Lanka's status as a low-income country, the physical quality of life of its citizens is fairly high; the gender gap in terms of physical well-being is narrowing. Yet minorities such as Indian Tamil plantation workers continue to form a disadvantaged group. A combination of minority status and patriarchal social norms pose particular risks to Tamil women.

Indian Tamils were first brought to the island in the middle of the 19th Century by the British, to work as labourers on newly-established tea, rubber and coconut plantations. As the plantations were clustered together in the central highlands, the immigrants were spatially segregated. Separated also by ethnicity, religion, language and economy from the native Sinhalese, they became a separate "enclave". Their food rations, wages and health care facilities were very poor, and education non-existent.

Following independence in 1948, education and health services were made freely available to all citizens with voting rights. Tamils were disenfranchised, however. Bypassed by the major welfare schemes, they remained dependent on their employers for basic needs. But plantation managers made no real effort to match state welfare measures, and the physical well-being of the Tamil population deteriorated further.

Plantation estates were nationalized in 1975. But although employment is high in the plantation sector and the state heavily involved in its management, low wages keep Tamil plantation workers trapped in the poverty cycle.

### **Poor diet, poor education, poor health**

For Tamil women, patriarchal cultural norms further limit opportunities for meeting basic needs. Their physical quality of life is well below the national average. The maternal and infant mortality rates for 1972-1980 for the Nuwara Eliya district (where many of Sri Lanka's tea plantations

are found) were consistently higher than the national norm. In addition, life expectancy in Nuwara Eliya was also lower than that of other districts for 1971 and 1980, and lower among women than men.

Poor diet is probably related to these findings. Although per capita calorie intake on plantations has been recorded as around 2,000 per day, one of the highest among all population groups in Sri Lanka, the rate of chronic undernutrition in the plantation sector was also high (60%). Three interlinked factors are relevant here. Most importantly, Tamil women lack time due to their outside wage employment. Secondly, in plantation households food preparation is regarded as women's work. And thirdly, the educational levels of these women tends to be low.

For a female tea plucker with a home and family to attend to, the daily schedule is long and arduous. Starting as early as 4 am, and often not finishing until 10.30 pm, she is usually the last to go to bed and generally sleeps on a mat or gunny bag (unlike her husband who will probably use the one string cot of the household). Her paid work involves climbing steep slopes, exposure to rain, cold winds and hot sun, and carrying a weight of up to 20-25 kilos on her back. Preparing food in the traditional manner is time-consuming, and the household technology and food supplies available to her are limited. Fish or meat are rarely included in the diet.

Tamil women's lack of time also affects their access to health care. Plantations usually have health facilities, but often women will not visit them for fear of losing working time. Illnesses among these women are frequently respiratory or bowel related. Exposure to bad weather, overcrowded dwellings and poor diet contribute to the incidence of respiratory illness, while polluted water, inadequate sanitation facilities and poor personal hygiene lead to diarrhoea and abdominal complaints.

Only rudimentary educational facilities are provided for plantation workers. Even then, girls may be discouraged from going to school, or kept at home to look after younger siblings while parents are working. The expectation that daughters will be employed as tea pluckers by the time they are 14 years of age also discourages education. Better education would improve the decision-making ability of Tamil women not only in relation to nutrition but also on issues such as fertility control, and maternal and child care. It might also lead them to question patriarchal norms, such as the collection of a woman's wages by her husband or another male relative, and so reduce the conflicts which arise when husbands spend their wives' hard-earned wages on gambling and alcohol.

In common with plantation areas in other countries, a concerted effort on several fronts (for example education, redistribution of household labour, further state intervention, and improved access to health services) will be necessary to secure any lasting improvements in the health of female plantation workers.

*Summary of the work of:*

*Samarsinghe V. Access of female plantation workers in Sri Lanka to basic needs provisions. Unpublished paper presented at Commonwealth Geographical Bureau Workshop on Gender and Development, UK, 1989. (See Appendix for contact address.)*

## Fetal protection policies

In March 1991 the US Supreme Court ruled that personnel practices limiting the employment of fertile women in jobs posing reproductive health hazards constitute illegal sex discrimination. The ruling has important implications for public policy in other situations in which vulnerability to the health effects of toxic substances is associated with real or perceived biological differences between the sexes.

The fetal protection policy of Johnson Controls, the largest producer of batteries in the US, excluded women from jobs involving significant exposure to lead. As lead is a basic raw material in battery manufacture, this effectively excludes women from all production jobs. The only exceptions permitted were women whose sterility was medically documented. In 1984 the Union of Automobile Workers (UAW) sued Johnson Controls, arguing that the corporation's fetal protection policy constituted explicit gender-based discrimination, rather than a gender-neutral policy to protect fetuses that happened to exclude women rather than men. Initial hearings upheld the Johnson Controls policy, and the case went to the US Supreme Court.

This "gender-neutral with disparate impact upon women" argument had been successfully used by employers in past cases concerning fetal protection policies. The plaintiffs presented scientific evidence that lead harms male reproductive capacity, possibly produces defects in fetuses by damaging male germ cells, and produces non-reproductive health damage at low-exposure levels in both men and women. The plaintiffs examined the processes by which employers arrive at exclusionary hiring policies, contrasting the large number of jobs which actually pose fetal hazards (speculated at up to 20 million) with the relatively small number covered by fetal protection policies.

If employers were as concerned for fetal safety as they claimed, why were gender-specific policies found only in male-dominated, high-wage industries

## Environmental and occupational health problems in rural Nigeria

Akwa Ibom State in south-east Nigeria is a traditional society with a population of over 2 million; 35% of the population is urban-based, while 65% lives in rural or riverine areas. Women of child-bearing age (15-49 years) comprise 20% of the population (471,947). All women confront myriad problems which affect their health, development and economic participation in society. Women's roles, including reproduction, farming, and home management, are perceived as secondary, although they are often major breadwinners and responsible for their children's education, food, clothing, and general family upbringing, and receive little or no assistance from their male counterparts.

### Environment

There are three types of environmental settlement in Akwa Ibom State: riverine, rural on-shore, and urban. Environmental health hazards occur in each.

#### Riverine settlements

Forty percent of all women of child-bearing age live in riverine areas, where they compete with men in the principal occupation for both sexes, namely fishing. Women live in swamps, in thatch and bamboo houses raised above the water. There is no sanitation so the river water, used for all purposes, is highly contaminated. Typical diseases suffered by women in these areas include malaria, diarrhoea, dysentery, cholera, typhoid, guinea-worm, and onchocerciasis. Musculoskeletal disorders such as rheumatism and arthritis due to prolonged cold and damp are common. Families in these areas tend to be large and poor with an unbalanced diet, prone to malnourishment and debilitating diseases. With settlements concentrated on river banks, overcrowding is inevitable and rates of respiratory illness such as coughs, catarrh, pneumonia, and tuberculosis are highly prevalent. In the dry season, fire risk is very high due to the practice of smoking fish. Loss of life and property is common.

Women's daily fishing activities consist of paddling their canoes in all weathers, with nursing infants strapped to their backs. Even women in



advanced stages of pregnancy continue fishing to support their families. During the rainy season, canoes may capsize and river banks overflow, causing loss of life and property, and sometimes destroying homes.

#### **Rural on-shore settlements**

Approximately 50% of women of child-bearing age live in rural environments. Their main occupations are farming and petty trading, sometimes through barter if cash is lacking. To maintain the home, women must fetch water, often from distant sources, and cut and collect firewood.

In years of drought and famine, malnutrition is widespread. A case-study carried out on the nutritional status of women in low-income groups in this area showed that their staple foods — cocoyams, cassava, garri from cassava, and yams — consist mainly of carbohydrates and lack protein. Peptic ulcer is a frequent complaint in women, induced by overlong intervals between meals.

Housing in rural areas tends to be overcrowded and poorly ventilated, and the local environment is often malarial. Respiratory diseases are rife.

#### **Urban settlements**

Only 10% of women of childbearing age are urban-based. Of these, 4% are waged or salaried workers, while 6% are petty traders. Husbands tend to control the incomes of their working wives, who may retain little for the upkeep of the family. Petty traders in salt, vegetables, fruits, rice, yams, and garri, rise very early to get to the market and purchase their stocks, and return home late. Medical care is limited due to low income, although traditional healers and prayer houses are used for treatment.

### **Occupational hazards and health effects**

Employment statistics show that 44% of women are farmers, 40% fisherwomen, 8% petty traders, 5% salaried workers, and 3% housewives. The 3% who depend solely on husbands for their upkeep are poorly nourished as they receive insufficient money to feed each member of their family. Women who undertake income generating activities face long and hard days which expose them to a variety of occupational hazards. Some of these are examined below.

### Farming

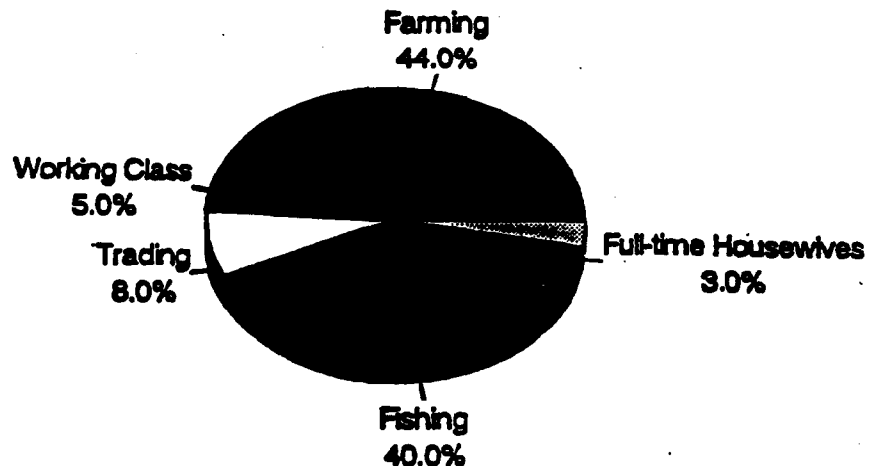
This remains one of the most arduous and tedious jobs for women. It entails manual clearing of bushes, burning, planting, weeding, harvesting and sale of crops. Women rise as early as 4 am to trek to the farmlands, work under the scorching sun with little food, and return home late where they then perform domestic chores. Men may do a little agricultural work, but then return home to relax, or visit palmwine bars where they drink away money which would be better spent on family upkeep. The health problems for women include peptic ulcer, anaemia due to protein malnutrition, accidents and injuries, body pains and hypertension, arthritis and rheumatism, and premature and still-births attributed to lack of rest.

### Palm oil processing

Palm oil processing, exclusively the work of women, involves obtaining palm fruits from thick bush or plantations, fetching water and firewood, boiling and pounding of palm fruits, and squeezing the hot pounded mixture to produce oil. Potential health risks associated with this work include accidents and injuries in the bush when collecting the fruits, water and fuel; hypertension; burns; dermatitis; and chest, back, and other body pains. If pregnant, women risk premature labour or accidental haemorrhage.

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Women of reproductive age by occupation



### **Illicit gin processing**

Illicit gin processing, usually done by women, entails boiling fermented palm wine. It involves collecting wood from the bush and forest, which exposes them to accidents and injuries. Associated risks include burns, dermatitis, and eye problems such as pain and watery discharge due to exposure to heat and the smoke from the fires. The women may also develop ulcers and heartburn if they drink the gin on empty stomachs. Some become alcoholics.

### **Garri processing**

Garri processing is also women's work and involves peeling, grating, extracting water, and finally frying cassava. The frying requires a big fire and a large open container for the cassava. Associated health problems include chest pains from grating the cassava, and dermatitis and eye problems due to exposure to excessive heat. (See also Section 9, of this chapter, concerning the toxic effects of cassava processing.)

### **Labouring**

Women labour on plantations and construction sites. On construction sites they are often required to carry mixed concrete from ground level to upper storeys via scaffolding or inclined planks. Falls from faulty scaffolding occur frequently. Pregnant women also engage in this work, which can lead to miscarriage, premature delivery and death. Women also carry blocks for brick-layers and off-load cement from trucks. Chest pains occur from excessive lifting and carrying, and respiratory and lung diseases from inhalation of brick and cement dusts.

## **Women's social status**

Women are regarded as second class citizens whose primary purposes are to reproduce and generate income on behalf of men. This applies to all women, regardless of whether or not they are educated. Women's secondary status is reflected in their nutritional status and deprives them of control over food sources. For example, if a woman has a goat or hen which produces male young, these young automatically belong to the husband. Certain foods may not be eaten by women on pain of punishment as severe as banishment from the home. Women are, in fact, treated as slaves. In this condition they are vulnerable to disease and death arising from low resistance. Moreover, harmful practices such as

female circumcision, forced marriage, and widowhood doom, further undermine women's health.

Food taboos for pregnant women abound, particularly in connection with high protein items. Women accordingly suffer from anaemia, malnutrition and lowered resistance to infection.

The community believes that uncircumcised women are promiscuous and women are therefore circumcised between the ages of 10 and 18 years. Efforts are currently being made to counteract this practice since it is highly dangerous, exposing the woman to multiple risks during the difficult childbirth which follows. Obstructed labour, recto-vaginal fistulae and uterine prolapse are frequent effects of female circumcision.

Large families are the norm, the average mother producing between six and ten children. Approximately 60% of families are polygamous, and 40% monogamous. Women are exposed to high morbidity and mortality rates from gynaecological disorders following multiple and closely-spaced births, as well as the above-mentioned problems due to female genital mutilation. They have little or no knowledge of family planning procedures, and religious or cultural beliefs may inhibit the use of contraceptives. Pressure to produce male children to inherit the father's property is strong, and women who fail to produce male children risk being driven out of their marital homes. To avoid this, they undergo successive pregnancies.

Young girls are often compelled to marry men considerably older than themselves, and undergo pregnancy when they are too young for such responsibility. Obstetrical complications and death are frequent as young girls' pelvic bones are usually insufficiently developed for delivery.

Widows are often forced to marry a man from their late husband's family, regardless of the number of his existing wives and children, or of the number of children the widow already has from her first marriage. This practice compels widows to bear children for the new husband in order to receive a share of the family resources, even if further childbearing is dangerous. The widow's own property and that of her late husband is always seized on his death, exacerbating her grief, frustrating her and generally impairing her physical and mental well-being. Measures are needed to save widows from the risks and humiliations they are forced to undergo.

The social structure of Akwa Ibom State, coupled with environmental conditions, creates levels of suffering for women which exceed those of men. Women experience high morbidity and mortality rates due to their exposure to numerous hazards in their daily activities and specific environments. The biological functions of women also expose them to

risk. Provision of modern equipment to reduce manual labour, training to enable women to manufacture such equipment, training in crafts, provision of community health activities, creation of self-development programmes, and the provision of credit for small-scale trading and farming, could all help to improve the health status of women in this region.

Taken in conjunction with evidence from other traditional societies in Africa and elsewhere, it can be assumed that the conditions outlined here are relevant to the position of women in many other areas and regions. This contribution supports the implicit and explicit message that poor women everywhere struggle to discharge major responsibilities in relation to their social and occupational environments with minimal resources and the added burden of powerlessness. The effect on their health needs no clarification.

*Summary of the work of:*

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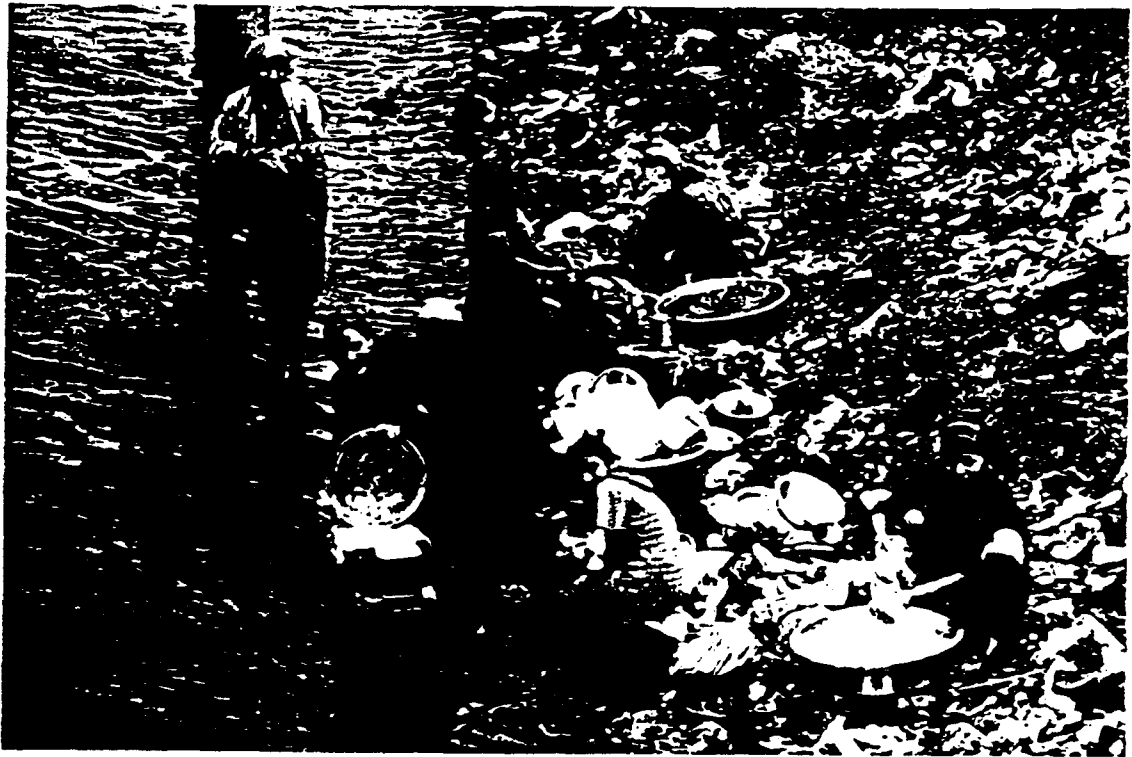
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## X Beijing and Beyond



## BEYOND BEIJING

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Twenty years following "The International Year of the Women" in 1975, and ten years after the 1985 Nairobi Conference and the "Forward Looking Strategies" brought the United Nations Decade for Women in to a close, the Fourth World Conference on Women was convened in China. A compelling call to delegates at the Beijing Conference came from the Australian delegation, urging participants to pledge themselves to a "Conference of Commitments". Non-governmental organizations celebrating unparalleled participation in the Conference NGO Forum, also called for closer coordination across the series of recent global conferences and international commitments in the 1980s and 1990s - though the instrument of the NGO "Linkage Caucuses".

Issues of gender, health and the environment remain relative newcomers on the international landscape. However, closely complimentary global conferences, particularly the 1992 United Nations Conference on Environment and Development and the 1994 International Conference on Population and Development have deepened the debate and sharpened the focus. The 1995 "Platform for Action" emerging from the Beijing Conference provides a framework for action. It is hope that this Directory will provide an important basis for beginning to identify partners and models for action in the implementation of current commitments at this interface in the 1995 Platform for Action and encourage enhanced attention, action and focus on the field in future agendas.

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UNITED  
NATIONS



FOURTH WORLD  
CONFERENCE ON WOMEN

Beijing, China  
4-15 September 1995

Distr.  
LIMITED

A/CONF.177/L.1  
24 May 1995

ORIGINAL: ENGLISH

PROPOSALS FOR CONSIDERATION IN THE  
PREPARATION OF A DRAFT DECLARATION

DRAFT PLATFORM FOR ACTION

Note by the Secretary-General

At its thirty-ninth session, held at United Nations Headquarters from 15 March to 7 April 1995, the Commission on the Status of Women, acting as the preparatory body for the Fourth World Conference on Women: Action for Equality, Development and Peace, decided to transmit to the Conference, for its consideration, the material for a draft declaration, contained in an informal paper, and the draft platform for action, contained in documents E/CN.6/1995/L.17 and the relevant addenda, as amended by the Commission.

PLEASE NOTE THAT THIS IS THE MAY 1995 VERSION OF THE PLATFORM FOR ACTION. THE FINAL VERSION WAS NOT AVAILABLE AT THE TIME OF PUBLICATION.



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I. PROPOSED BEIJING DECLARATION TO ACCOMPANY THE DRAFT PLATFORM  
FOR ACTION: MATERIAL SUBMITTED BY PATRICIA B. LICUANAN  
(PHILIPPINES), CHAIRPERSON OF THE THIRTY-NINTH SESSION OF  
THE COMMISSION ON THE STATUS OF WOMEN

Representatives of regional groups and of countries at the consultations all agreed that there should be a declaration accompanying the Platform for Action. It was also agreed that negotiations on the text of the declaration were not yet possible but that ideas should first be solicited.

Below are the main points raised during the discussion.

General characteristics of the Declaration

1. Short and concise.
2. Understandable and appealing to a wide range of audiences. It should be able to communicate to parliamentarians and rural women alike what the Fourth World Conference on Women was about.
3. Focused on main (a few) "cross-cutting" themes rather than covering the 12 areas of concern in the Platform. It should present main messages rather than a summary.
4. Broad rather than specific or detailed.
5. Rousing and inspiring:

Main elements of the Declaration

Preamble

1. Expression of concern about the situation of women. A sense of urgency; need to act now.
2. Goals/objectives (what do we want from the Fourth World Conference on Women?)
  - Equality, development and peace (old goals which still have to be attained)
  - Themes that cut across all areas of concern:
    - Empowerment of women
    - Full and equal partnership between women and men
    - Mainstreaming women in the development process as agents as well as beneficiaries
    - Diversity of women and their situations

3. Previous international instruments:

- Charter of the United Nations
- Universal Declaration of Human Rights
- Convention on the Elimination of All Forms of Discrimination against Women
- Nairobi Forward-looking Strategies for the Advancement of Women

4. Link with the past/historical context (what has been achieved so far?):

- 1945, United Nations
- 1975, Mexico
- 1980, Copenhagen
- 1985, Nairobi

Global environment (descriptive)

1. World changes, new century, new millennium
2. Situation of women

Enabling environment (prescriptive)

1. Empowerment of women
2. Full and equal partnership between women and men
3. Mainstreaming women in development
4. Faith/hope in future generations

Commitments

1. Conference on commitments
2. High-level political commitment to the implementation of the Platform for Action
3. Actions required at national and international levels

Finally, it was decided that the above summary, along with the four texts submitted, should be presented to the Commission in plenary meeting for submission to the Conference. It is intended that these texts serve as the basis for drafting a Beijing declaration. The texts submitted by the Group of 77, the European Union, the United States of America and Canada are contained in annexes I to IV below.

Annex I

INITIAL POSITION OF THE GROUP OF 77  
(To be developed further by the Group of 77)

Beijing Declaration

We, the Governments, the women and men, participating in the Fourth World Conference on Women,

gathered here in Beijing, in September 1995, on the eve of the fiftieth anniversary of the founding of the United Nations,

Reaffirming:

faith in the equal rights of women and men enshrined in the Charter of the United Nations,

the objectives of equality, development and peace in the Nairobi Forward-looking Strategies for the Advancement of Women,

the commitment made through the Convention on the Elimination of All Forms of Discrimination against Women,

Convinced:

that equal rights, equitable sharing of responsibilities, opportunities and harmonious partnership between women and men are vital to the well-being of humanity,

that sustained economic growth and sustainable development require full and equal participation of women and men as both agents and beneficiaries,

that national, regional and global peace is attainable and women are a fundamental force in leadership and for the promotion of lasting peace,

Determined:

to intensify efforts to achieve the goals of the Nairobi Forward-looking Strategies for the Advancement of Women by the end of this century,

to take all necessary measures to eliminate all forms of discrimination against girls and women and remove all obstacles to gender equality and empowerment of women and girls,

to promote and respect the human rights of women and girls,

to develop and mobilize the fullest potential of girls and women of all ages to build a better world for all,

Hereby adopt and commit ourselves to implement the following Platform for Action of the Fourth World Conference on Women.



Annex II

EUROPEAN UNION POSITION ON THE DRAFT DECLARATION  
SUBMITTED BY THE GROUP OF 77

The European Union supports the principle of a concise declaration drafted in language that is clear and understandable to all.

The Group of 77 text contains positive elements, but does not meet the expectations of the European Union. At this stage in the negotiations, however, it does not appear to be necessary to enter into a difficult drafting exercise.

The European Union would nevertheless like to bring to the attention of delegations a non-exhaustive list of important points which should be included in the Beijing Declaration:

- Promotion of women's economic independence, realization of their economic potential and the eradication of poverty
- Women's contribution to sustainable development
- Equal sharing of power and responsibility
- Respect for the human rights of women and girls
- Equal access to education and health care
- The role of women in promoting peace
- "Integration" of the question of the relationship between the sexes in all programmes and policies
- Reconciliation of family and professional life for women and men
- An end to violence
- Encouragement of women and men to work together for equality
- Empowerment of women

Annex III

AMENDMENTS TO THE INITIAL POSITION OF THE GROUP OF 77,  
SUBMITTED BY THE UNITED STATES OF AMERICA

Beijing Declaration

We, the Governments, the women and men, participating in the Fourth World Conference on Women, gathered here in Beijing, in September 1995, on the eve of the fiftieth anniversary of the founding of the United Nations,

Celebrating the voices of women from throughout the world, the work of women who paved the way before us and the hope present in our youth,

Recognizing:

that the world has undergone significant change in the past decade that has advanced the status of women in many aspects,

that now, more than ever before, the critical and multi-faceted roles of women in economic, social, cultural and political life are being duly affirmed,

that continuing poverty and failure to adhere to human rights threaten further improvements in the status of women,

Reaffirming:

faith in the equal rights of women and men enshrined in the Charter of the United Nations,

all the rights and freedoms set forth in the Universal Declaration of Human Rights, without distinction of any kind, such as race, colour, sex, language, religion, political or other opinion, national or social origin, property, birth or other status,

the objectives of equality, development and peace in the Nairobi Forward-looking Strategies for the Advancement of Women, the commitment made through the Convention on the Elimination of All Forms of Discrimination against Women,

that the Fourth World Conference on Women builds upon the fundamental progress made at previous United Nations conferences - on women in Nairobi in 1985, on environment and development in Rio de Janeiro in 1992, on human rights in Vienna in 1993 and on population and development in Cairo in 1994 - and at the World Summit for Social Development in Copenhagen in 1995,

Convinced:

that equal rights, equal sharing of responsibilities, opportunities and harmonious partnership between women and men are vital to the well-being of humanity,

that sustainable development requires full and equal participation of women and men as both agents and beneficiaries,

that national, regional and global peace is attainable and women are a fundamental force in leadership and for the promotion of lasting peace.

Annex IV

AMENDMENTS TO THE INITIAL POSITION OF THE GROUP OF 77,  
SUBMITTED BY CANADA

Beijing Declaration

We, the Governments participating in the Fourth World Conference on Women, gathered here in Beijing, in September 1995, on the eve of the fiftieth anniversary of the founding of the United Nations, recognize that the status of women has advanced in important respects in the past decade but that progress has been uneven and inequalities between women and men have continued. This has serious consequences for the well-being of all people and requires urgent action in a spirit of hope and determination, now and to carry us forward into the next century.

We reaffirm:

our commitment to the equal rights of women and men enshrined in the Charter of the United Nations, to the objectives of equality, development and peace in the Nairobi Forward-looking Strategies for the Advancement of Women, our obligations under the Convention on the Elimination of All Forms of Discrimination against Women and the commitments made at previous United Nations summits and world conferences.

We are convinced that:

- equal rights, equal sharing of responsibilities and opportunities in all aspects of life and harmonious partnership between women and men are critical to the well-being of humanity
- people-centred sustainable development requires the full and equal participation of women and men as both agents and beneficiaries
- national, regional and global peace is attainable and women are a fundamental force in leadership and for the promotion of lasting peace
- it is both essential and possible to design and implement effective, efficient and mutually reinforcing policies that will foster equality, development and peace.

We are determined to:

- intensify efforts to achieve the goals of the Nairobi Forward-looking Strategies for the Advancement of Women by the end of this century
- take all necessary measures to eliminate all forms of discrimination against girls and women and remove all obstacles to gender equality and the empowerment of women and girls
- promote and protect the human rights of all women and girls

- promote the full and equal participation of girls and women of all ages in building a better world for all.

We hereby adopt and commit ourselves, as Governments, to implement the following Platform for Action of the Fourth World Conference on Women. We call upon the United Nations system, non-governmental organizations and all other actors in civil society, as well as individual women and men, to fully contribute to the implementation of this agenda for action.

## II. DRAFT PLATFORM FOR ACTION

### Chapter I

#### MISSION STATEMENT

1. The Platform for Action is an agenda for women's empowerment. It aims at accelerating the implementation of the Nairobi Forward-looking Strategies for the Advancement of Women 1/ and at removing the all obstacles to women's active participation in all spheres of public and private life through a full and equal share in economic, social, cultural and political decision-making. This means that the principle of shared power and responsibility should be established between women and men at home, in the workplace and in the wider national and international communities. Equality between women and men is a matter of human rights and a condition for social justice and is also a necessary and fundamental prerequisite for equality, development and peace. A transformed partnership based on equality between women and men is a condition for people-centred sustainable development. A sustained and long-term commitment is essential, so that women and men can work together for themselves, for their children and for society to meet the challenges of the twenty-first century.
2. [The Platform for Action reaffirms the fundamental principle, set forth in the Vienna Declaration and Programme of Action, 2/ adopted by the World Conference on Human Rights that the human rights of women and of the girl child are an inalienable, integral and indivisible part of universal human rights.] As an agenda for action, the Platform seeks to promote and protect [the full enjoyment of all universal] all human rights and the fundamental freedoms of all women throughout their life cycle.
3. The Platform for Action emphasizes that women share common concerns that can be addressed only by working together and in partnership with men towards the common goal of gender equality around the world. It respects and values the full diversity of women's situations and conditions and recognizes that some women face particular barriers to their empowerment.
4. The Platform for Action requires immediate and concerted action by all to create a peaceful, just, humane and [equitable] world based on the [universal human rights and fundamental freedoms, including the] principle of equality [and equity] for all people of all ages and from all walks of life.
5. The success of the Platform for Action will require a strong commitment on the part of Governments, international organizations and institutions at all levels as well as [adequate] [new and additional] resources for the implementation of the agreements made; a commitment to equal rights, equal responsibilities and equal opportunities and to the equal participation of women and men in all national, regional and international bodies and policy-making processes; and the establishment or strengthening of mechanisms at all levels for accountability to the world's women.

## Chapter II

### GLOBAL FRAMEWORK

6. The Fourth World Conference on Women: Action for Equality, Development and Peace is taking place as the world stands poised on the threshold of a new millennium.

7. The present Platform for Action upholds the Convention on the Elimination of All Forms of Discrimination against Women 3/ and builds upon the Nairobi Forward-looking Strategies for the Advancement of Women, as well as relevant resolutions adopted by the Economic and Social Council and the General Assembly. The formulation of the Platform for Action is aimed at establishing a basic group of priority actions that should be carried out during the next five years.

8. The Platform for Action recognizes the importance of the agreements reached at the World Summit for Children, the United Nations Conference on Environment and Development, the World Conference on Human Rights, the International Conference on Population and Development and the World Summit for Social Development which set out specific approaches and commitments to fostering sustainable development and international cooperation and to strengthening the role of the United Nations to that end. Similarly, the Global Conference on the Sustainable Development of Small Island Developing States, the International Conference on Nutrition, the International Conference on Primary Health Care and the World Conference on Education for All have addressed the various facets of development and [universally recognized] human rights, within their specific perspectives, paying significant attention to the role of women and girls. In addition, the International Year for the World's Indigenous People, 4/ the International Year of the Family, 5/ the United Nations Year for Tolerance, 6/ the Geneva Declaration for Rural Women, 7/ and the Declaration on the Elimination of Violence against Women 8/ have also emphasized the issues of women's empowerment and equality.

9. [The Platform for Action is drawn up in full conformity with the purposes and principles of the Charter of the United Nations and international law. It is recognized that the formulation and implementation of strategies, policies, programmes and actions in all areas of concern are the responsibility of each country, with full respect for the various [religious and ethical values, cultural background and philosophical convictions of all its people] and in conformity with all [universal] human rights and fundamental freedoms.]

10. Since the World Conference to Review and Appraise the Achievements of the United Nations Decade for Women: Equality, Development and Peace, held at Nairobi in 1985, and the adoption of the Nairobi Forward-looking Strategies for the Advancement of Women, the world has experienced profound political, economic, social and cultural changes, which have had both positive and negative effects on women.

11. [The World Conference on Human Rights recognized that the human rights of women and the girl child are an inalienable, integral and indivisible part of universal human rights. [The universal nature of these human rights and freedoms is beyond question.] The full and equal participation of women in

political, civil, economic, social and cultural life at the national, regional and international levels, and the eradication of all forms of discrimination on the grounds of sex are priority objectives of the international community.]

12. [The World Conference on Human Rights reaffirmed the solemn commitment of all States to fulfil their obligations to promote universal respect for, and observance and protection of, all human rights and fundamental freedoms for all in accordance with the Charter of the United Nations, other instruments related to human rights and international law. The universal nature of these rights and freedoms is beyond question.]

13. The end of the cold war has resulted in international changes and diminished competition between the super-Powers. The threat of a global armed conflict has diminished, while international relations have improved and prospects for peace among nations have increased. Although the threat of global conflict has been reduced, wars of aggression, armed conflicts, [alien domination and foreign occupation], civil wars, terrorism and [extremist violence] continue to plague many parts of the world. Grave violations of the human rights of women occur, particularly in times of armed conflict, and include murder, torture, systematic rape, [forced pregnancy] and forced abortion, in particular under policies of "ethnic cleansing".

14. The maintenance of peace and security at the global, regional and local levels, together with the prevention of policies of aggression and ethnic cleansing and the resolution of armed conflict, is crucial for the protection of the [universal] human rights of women and girl children, as well as for the elimination of all forms of violence against them and of their use as a weapon of war.

15. [Consequently, a huge portion of global expenditures has been devoted to the production of arms and trafficking and trade in arms, thus substantially reducing resources for social development. Moreover, the debt burden has forced many developing countries to undertake structural adjustment policies that are detrimental to their social development. The number of people living in poverty has therefore increased disproportionately in most developing countries, particularly the heavily indebted countries, during the past decade.]

16. [In this context, the social dimension of development should be emphasized. Accelerated economic growth, although necessary for social development, does not by itself improve the quality of life of the population: indeed, it can aggravate social inequality and marginalization. Hence, it is indispensable to search for new alternatives based on a holistic approach to all aspects of development: growth, equity, sustainable development, solidarity, participation, peace and respect for human rights.]

17. A worldwide movement towards democratization has opened up the political process in many nations, but the popular participation of women in key decision-making as full and equal partners with men, particularly in politics, has not yet been achieved. [South Africa's policy of institutionalized racism - apartheid - has been dismantled and a peaceful and democratic transfer of power has occurred.] [Similarly, in Central and Eastern Europe the transition to parliamentary democracy has been rapid and relatively peaceful. In some



countries of the same region, this process has been followed by armed conflict that has resulted in grave violations of human rights.]

18. Widespread economic recession, as well as political instability in some regions, has been responsible for setting back development goals in many countries. This has led to the expansion of unspeakable poverty. Of the more than 1 billion people living in abject poverty, women are an overwhelming majority. The rapid process of change and adjustment in all sectors has also led to increased unemployment and underemployment, with particular impact on women. In [many] cases, structural adjustment programmes have not been designed to minimize their negative effects on vulnerable and disadvantaged groups or on women, nor have they been designed to assure positive effects on those groups by preventing their marginalization in economic and social activities. The Final Act of the Uruguay Round of multilateral trade negotiations <sup>2/</sup> underscored the increasing interdependence of national economies, as well as the importance of trade liberalization and access to open, dynamic markets. There has also been heavy military spending in some regions. Despite increases in official development assistance (ODA) by some countries, ODA has recently declined overall.

19. Absolute poverty and the feminization of poverty, unemployment, the increasing fragility of the environment, continued violence against women and the widespread exclusion of half of humanity from institutions of power and governance underscore the need to continue the search for development, peace and security and for ways of assuring people-centred sustainable development. The participation and leadership of the half of humanity that is female is essential to the success of that search. Therefore, only [a just and equitable social and economic international order and] a radical transformation of the relationship between women and men to one of full and equal partnership will enable the world to meet the challenges of the twenty-first century.

20. Recent international economic developments have had in many cases a disproportionate impact on women and children, the majority of whom live in developing countries. For those States that have carried a large burden of foreign debt, structural adjustment programmes and measures, though beneficial in the long term, have led to a reduction in social expenditures, thereby adversely affecting women, particularly in Africa and the least developed countries. This is exacerbated when responsibilities for basic social services have shifted from Governments to women.

21. Economic recession in many developed and developing countries, as well as ongoing restructuring in countries with economies in transition, have had a disproportionately negative impact on women's employment. Women often have no choice but to take employment that lacks long-term job security or involves dangerous working conditions, to work in unprotected home-based production or to be unemployed. Many women enter the labour market in under-remunerated and undervalued jobs, seeking to improve their household income; others decide to migrate for the same purpose. Without any reduction in their other responsibilities, this has increased the total burden of work for women.

22. Macro and microeconomic policies and programmes, including structural adjustment, have not always been designed to take account of their impact on

women and girl children, especially those living in poverty. Poverty has increased in both absolute and relative terms, and the number of women living in poverty has increased in most regions. There are many urban women living in poverty; however, the plight of women living in rural and remote areas deserves special attention given the stagnation of development in such areas. In developing countries, even those in which national indicators have shown improvement, the majority of rural women continue to live in conditions of economic underdevelopment and social marginalization.

23. Women are key contributors to the economy and to combating poverty through both remunerated and unremunerated work at home, in the community and in the workplace. Growing numbers of women have achieved economic independence through gainful employment.

24. One fourth of all households worldwide are headed by women and many other households are dependent on female income even where men are present. Female-maintained households are very often among the poorest because of wage discrimination, occupational segregation patterns in the labour market and other gender-based barriers. Family disintegration, population movements between urban and rural areas within countries, international migration, war and internal displacements are factors contributing to the rise of female-headed households.

25. Recognizing that the achievement and maintenance of peace and security are a precondition for economic and social progress, women are increasingly establishing themselves as central actors in a variety of capacities in the movement of humanity for peace. Their full participation in decision-making, conflict prevention and resolution and all other peace initiatives is essential to the realization of lasting peace.

26. The Fourth World Conference on Women: Action for Equality, Development and Peace should accelerate the process that formally began in 1975, which was proclaimed International Women's Year by the United Nations General Assembly. The Year was a turning-point in that it put women's issues on the agenda. The United Nations Decade for Women (1976-1985) was a worldwide effort to examine the status and rights of women and to bring women into decision-making at all levels. In 1979, the General Assembly adopted the Convention on the Elimination of All Forms of Discrimination against Women, which entered into force in 1981 and set an international standard for what was meant by equality between women and men. In 1985, the World Conference to Review and Appraise the Achievements of the United Nations Decade for Women: Equality, Development and Peace adopted the Nairobi Forward-looking Strategies for the Advancement of Women, to be implemented by the year 2000. There has been important progress in achieving equality between women and men. Many Governments have enacted legislation to promote equality between women and men and have established national machineries to ensure the mainstreaming of gender perspectives in all spheres of society. International agencies have focused greater attention on women's status and roles.

27. The growing strength of the non-governmental sector, particularly women's organizations [and others that support feminist ideals] has become a driving force for change. Non-governmental organizations have played an important

advocacy role in advancing legislation or mechanisms to ensure the promotion of women. They have also become catalysts for new approaches to development. Many Governments have increasingly recognized the important role that non-governmental organizations play and the importance of working with them for progress. [Yet, in some countries, Governments continue to restrict the ability of non-governmental organizations to operate freely.] Women, through non-governmental organizations, have participated in and strongly influenced community, national, regional and global forums and international debates.

28. Since 1975, knowledge of the status of women and men, respectively, has increased and is contributing to further actions aimed at promoting equality between women and men. In several countries, there have been important changes in the relationships between women and men, especially where there have been major advances in education for women and significant increases in their participation in the paid labour force. The boundaries of the gender division of labour between productive and reproductive roles are gradually being crossed as women have started to enter formerly male-dominated areas of work and men have started to accept greater responsibility for domestic tasks, including child care. However, changes in women's roles have been greater and much more rapid than changes in men's roles. In many countries, the differences between women's and men's achievements and activities are still not recognized as the consequences of socially constructed gender roles rather than immutable biological differences.

29. Moreover, 10 years after the Nairobi Conference equality between women and men has still not been achieved. On average, women represent a mere 10 per cent of all elected legislators worldwide and in most national and international administrative structures, both public and private, they remain underrepresented. The United Nations is no exception. Fifty years after its creation, the United Nations is continuing to deny itself the benefits of women's leadership by their underrepresentation at decision-making levels within the Secretariat and the specialized agencies.

30. [Women play a critical role in the family, the basic unit of society. States Parties that have ratified the Convention on the Elimination of All Forms of Discrimination against Women have done so bearing in mind the great contribution of women to the welfare of the family and to the development of society, which is still not fully recognized. They have also borne in mind the social significance of maternity and the role of both parents in the family and in the upbringing of children, and are aware that the role of women in procreation should not be a basis for discrimination but that the upbringing of children requires a sharing of responsibility between women and men and society as a whole.]

31. [Religion plays a central role in the lives of millions of women, in the way they live and the aspirations they have for the future. While any form of extremism, religious or secular, has a negative impact on women in the form of violence and discrimination, a moral and ethical climate that prevents all forms of corruption in society and exploitation of women is needed if equality, development and peace are to be realized. The serious issues with which the world is confronted today require a more effective response by societies not

only to the material but also to the spiritual needs of individuals, including women.]

32. While the rate of growth of world population is on the decline, world population is at an all-time high in absolute numbers, with current increments approaching 90 million persons annually. Two other major demographic trends have had profound repercussions on the dependency ratio within families. In many developing countries, 45 to 50 per cent of the population is less than 25 years old, while in industrialized nations both the number and proportion of elderly people are increasing. According to United Nations estimates, by the year 2025 70 per cent of the population over 60 years of age will be living in developing countries, and more than half of that population will be women. Care of children, the sick and the elderly is a responsibility that falls disproportionately on women, owing to lack of equality and the unbalanced distribution of remunerated and unremunerated work between women and men.

33. Many women face particular barriers because of various diverse factors in addition to their gender. Often these diverse factors isolate or marginalize such women - they are, inter alia denied their [universal] human rights, they lack access or are denied access to education and vocational training, employment, housing and economic self-sufficiency and they are excluded from decision-making processes. Such women are often denied the opportunity to contribute to their communities as part of the mainstream.

34. The past decade has also witnessed a growing recognition of the distinct interests and concerns of indigenous women, whose identity, cultural traditions and forms of social organization enhance and strengthen the communities in which they live. Indigenous women often face barriers both as women and as members of indigenous communities.

35. In the past 20 years, the world has seen an explosion in the field of communications. With advances in computer technology and satellite and cable television, global access to information continues to increase and expand, creating new opportunities for the participation of women in communications and the mass media and for the dissemination of information about women. On the other hand, the global communication networks have been used to spread stereotyped and demeaning images of women for narrow commercial and consumerist purposes. Until women participate equally in both the technical and decision-making areas of communications and the mass media, including the arts, they will continue to be misrepresented and awareness of the reality of women's lives will continue to be lacking. [The commitment to promoting human values and dignity on the part of the mass media is seriously lacking].

36. Continuing environmental degradation that affects all human lives often has a more direct impact on women. Women's health and their livelihood are threatened by pollution and toxic wastes, large-scale deforestation, desertification, drought and depletion of the soil and of coastal and marine resources, with a rising incidence of environmentally related health problems and even death reported among women and girls. Those most affected are rural and indigenous women, whose livelihood and daily subsistence depends directly on sustainable ecosystems.

37. [The major cause of the continued deterioration of the global environment is the unsustainable patterns of consumption and production, particularly in industrialized countries, which is a matter of grave concern, aggravating poverty and imbalances.] Therefore, equitable social development that recognizes empowering people living in poverty, particularly women, to utilize environmental resources sustainably is a necessary foundation for sustainable development. Women as citizens can help change consumption patterns in their multiple role as consumers, householders, workers and voters.

38. Global trends have brought profound changes in family survival strategies and structure[s]. Rural to urban migration has increased substantially in all regions. The global urban population is projected to reach 57 per cent of the total population by the year 2000. An estimated 125 million people are migrants, refugees and displaced persons, half of whom live in developing countries. These massive movements of people have profound consequences for family structure[s] and well-being and have unequal consequences for women and men, including in many cases the sexual exploitation of women.

39. According to World Health Organization (WHO) estimates, by the beginning of 1995 the number of cumulative cases of acquired immunodeficiency syndrome (AIDS) was 4.5 million. An estimated 19.5 million men, women and children have been infected with the human immunodeficiency virus (HIV) since it was first diagnosed and it is projected that another 20 million will be infected by the end of the decade. Among new cases, women are twice as likely to be infected as men. In the early stage of the AIDS pandemic, women were not infected in large numbers; however, about 8 million women are now infected. Young women and adolescents are particularly vulnerable. It is estimated that by the year 2000 more than 13 million women will be infected and 4 million women will have died from AIDS-related conditions. In addition, about 250 million new cases of sexually transmitted diseases are estimated to occur every year. The rate of transmission of sexually transmitted diseases, including HIV/AIDS, is increasing at an alarming rate among women and girls, especially in developing countries.

40. Since 1975, significant knowledge and information has been generated about the status of women and the conditions in which they live. Throughout their entire life cycle, women's daily existence and long-term aspirations are restricted by discriminatory attitudes, unjust social and economic structures, and a lack of resources in most countries that prevent their full and equal participation. In a number of countries, the practice of prenatal sex selection, higher rates of mortality among very young girls and lower rates of school enrolment for girls as compared with boys suggest that "son preference" is curtailing the access of girl children to food, education and health care [and even life itself]. [Discrimination against women begins even before birth and must therefore be addressed from birth/then onwards.]

41. [Girls of today are the women of tomorrow. The skills, ideas and energy of girls are vital for full attainment of the goals of equality, development and peace. [For a girl to develop her full potential she needs to be nurtured in an enabling environment, where her needs for survival, protection and development are met and her equal rights safeguarded.] [If women are to be equal partners with men, now is the time to recognize the [human] dignity and worth of the girl child and to ensure the full enjoyment of her human rights and fundamental

freedoms.] [If tomorrow's women are to become equal partners with men in social change and development, now is the time to [accord the girl child her rightful share of human dignity and opportunity and ensure the full enjoyment [respect] of all human rights [and fundamental freedoms] [including by universal ratification of the Convention on the Rights of the Child 10/ of the girl child]. Yet there exists worldwide evidence of discrimination and violence against girls [that begins even before they are born [from conception] and continues unabated throughout their lives.] They often have less access to nutrition, physical and mental health care and education and enjoy fewer rights, fewer opportunities and fewer benefits of childhood and adolescence than do boys. They are often subjected to sexual and economic exploitation, violence and harmful practices such as [foeticide], infanticide [at conception], [prenatal sex selection], incest female genital mutilation and early marriage. Their daily existence and long-term aspirations are restricted by attitudes, structures and lack of resources that prevent their full and equal participation in society.]

42. More than half the world's population is under the age of 25 and most of the world's youth - more than 80 per cent - live in developing countries. Policy makers must recognize the implications of these demographic factors. Special measures must be taken to ensure that young women have the life skills necessary for active and effective participation in all levels of social, cultural, political and economic leadership. It will be critical for the international community to demonstrate a new commitment to the future - a commitment to inspiring a new generation of women and men to work together for a more just society. This new generation of leaders must accept and promote a world in which every child is free from injustice, oppression and inequality and free to develop her/his own potential. The principle of equality [and equity] of women and men must therefore be integral to the socialization process.

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The following paragraph is proposed for inclusion in chapter IV:

[Short-term measures and the reformulation of long-term social policies and investments are required for a more [equitable] [equal] sharing of family responsibilities between women and men. [Women have different requirements at various stages of their life cycle, which need to be addressed by policy planning and programme and project implementation based on gender-sensitive analyses.]]

The following paragraph is proposed for inclusion in chapter V:

[The international conferences, summits and processes described above are evidence that there are significant challenges facing the world that the world is prepared to meet. Recognition of the role of women in meeting these challenges is a prerequisite for achieving equality and for the shared responsibility of women and men. International consensus exists on the role of women in development and the international community must commit itself to action to implement the strategies outlined in the Platform for Action. However, implementation also requires commitments from Governments. Thus, as the Fourth World Conference on Women is a conference of commitment and action,

/...

States have responded to the challenge by separately stating national commitments for national action within the context of the Platform for Action, which will result in practical outcomes for girls and women of all ages. The specific commitments of each nation appear in an annex to the present Platform for Action.]

### Chapter III

#### CRITICAL AREAS OF CONCERN

43. The advancement of women and the achievement of [respect for their innate dignity and the fundamental] equality between women and men are [a matter of human rights and a condition for] [not simply an issue of] social justice and should not be seen in isolation as a women's issue. They are the only way to build a sustainable, just and developed society. Empowerment of women and equality [and equity] between women and men are prerequisites for achieving political, social, economic, cultural and environmental security among all peoples.

44. Most of the goals set out in the Nairobi Forward-looking Strategies for the Advancement of Women have not been achieved. Barriers to women's empowerment remain, despite the efforts of Governments, as well as non-governmental organizations and women and men everywhere. [Vast political, economic and ecological crises, systemic or de facto discrimination, armed conflict [colonial and other forms of alien domination or foreign occupation] [failure to protect all human rights and fundamental freedoms of all women, including the right to development] and ingrained prejudicial attitudes towards women and girls are but a few of the impediments encountered since the World Conference to Review and Appraise the Achievements of the United Nations Decade for Women: Equality, Development and Peace, in 1985].

45. A review of progress since the Nairobi Conference highlights special concerns - areas of particular urgency that stand out as priorities for action. All actors should focus action and resources on the strategic objectives relating to the critical areas of concern which are, necessarily, interrelated, interdependent and of high priority. There is a need for these actors to develop and implement mechanisms of accountability for all the areas of concern.

46. To this end, Governments, the international community and civil society, including non-governmental organizations and the private sector, are called upon to take strategic action in the following critical areas of concern [with full respect for religious and ethical values, cultural backgrounds and philosophical convictions and in conformity with all human rights and fundamental freedoms]:

- The persistent and increasing burden of poverty on women
- Unequal access to or inadequate educational and training opportunities of good quality at all levels
- Inequalities in health care and related services

- All forms of violence against women [and the girl child]
- Effects of persecution and armed or other kinds of conflict on women [in particular those living under foreign occupation or alien domination]
- Inequality in women's access to and participation in the definition of economic structures and policies and the productive process itself
- Inequality between men and women in the sharing of power and decision-making at all levels
- Insufficient mechanisms at all levels to promote the advancement of women
- Promotion and protection of all [universal] human rights of women
- Women and the media
- Women and the environment
- [Persistent discrimination against and violation of the rights of] [Survival, protection and development of] the girl child

#### Chapter IV

##### STRATEGIC OBJECTIVES AND ACTIONS

47. In each critical area of concern, the problem is diagnosed and strategic objectives are proposed with concrete actions to be taken by various actors in order to achieve those objectives. The strategic objectives are derived from the critical areas of concern, and specific actions to be taken to achieve them cut across boundaries of equality, development and peace - the goals of the Nairobi Forward-looking Strategies for the Advancement of Women - and reflect their interdependence. The objectives and actions are interlinked, of high priority and mutually reinforcing. [The programme is intended to improve the condition of all women, irrespective of age, and, while recognizing the differences among women, it seeks to pay special attention to the groups of women that are at highest risk, as well as to rural, indigenous, disabled, refugee and displaced women.]

48. [The actions are directed towards improving the status and situation of all women and therefore recognize that many women face particular barriers because of such factors as their race, age, language, ethnicity, culture, religion, [sexual orientation,] or disability, or because they are indigenous people. Many women face barriers related to their family status, particularly as single parents to their socio-economic status, including their living conditions in rural or isolated areas and in impoverished areas in rural and urban environments, or to their status as immigrants. Particular barriers also exist for refugee, migrant and displaced women, as well as for those who are affected



by environmental disasters, serious and infectious diseases, addiction and various forms of violence against women.]

A. The persistent and increasing burden of poverty on women

49. More than 1 billion people in the world today, the great majority of whom are women, live in unacceptable conditions of poverty, mostly in the developing countries. Poverty has various causes, including structural ones. Poverty is a complex, multidimensional problem, with origins in both the national and international domains. [The uncertain global economic climate has been accompanied by economic restructuring, persistent external debt problems and structural adjustment programmes.] [All types of conflict, displacement of people and environmental degradation have also further undermined the capacity of Governments to meet the basic needs of their populations.] The global transformations of the world economy are profoundly changing the parameters of social development in all countries. One significant trend has been the increased poverty of women, the extent of which varies from region to region. The gender disparities in economic power-sharing are also an important contributing factor to the poverty of women. [Full text on unemployment and underemployment to come.] Migration and consequent changes in family structures have placed additional burdens on women, especially those who provide for several dependants. Macroeconomic policies need rethinking and reformulation to address such trends. These policies focus almost exclusively on the formal sector. They also tend to impede the initiatives of women and fail to consider the differential impact on women and men. The application of gender analysis to a wide range of policies and programmes is therefore critical to poverty reduction strategies. [In order to eradicate poverty and achieve sustainable development, women and men must participate fully and equally in the formulation of macroeconomic and social policies and strategies for the eradication of poverty.] The eradication of poverty cannot be accomplished through anti-poverty programmes alone but will require democratic participation and changes in economic structures in order to ensure access for all women to resources, opportunities and public services. Poverty has various manifestations, including lack of income and productive resources sufficient to ensure a sustainable livelihood; hunger and malnutrition; ill health; limited or lack of access to education and other basic services; increasing morbidity and mortality from illness; homelessness and inadequate housing; unsafe environments; and social discrimination and exclusion. It is also characterized by lack of participation in decision-making and in civil, social and cultural life. It occurs in all countries - as mass poverty in many developing countries and as pockets of poverty amidst wealth in developed countries. Poverty may be caused by an economic recession that results in loss of livelihood or by disaster or conflict. There is also the poverty of low-wage workers and the utter destitution of people who fall outside family support systems, social institutions and safety nets.

50. In the past decade the number of women living in poverty has increased disproportionately to the number of men, particularly in the developing countries. The feminization of poverty has also recently become a significant problem in the countries with economies in transition as a short-term consequence of the process of political, economic and social transformation. In

addition to economic factors, the rigidity of socially ascribed gender roles and women's limited access to power, education, training and productive resources [as well as emerging cultural and social factors that lead to instability and the deterioration of families] are also responsible. The failure to adequately mainstream a gender perspective in all economic analysis and planning and to address the structural causes of poverty is also a contributing factor.

51. Women contribute to the economy and to combating poverty through both remunerated and unremunerated work at home, in the community and in the workplace. The empowerment of women is a critical factor in the eradication of poverty.

52. While poverty affects households as a whole, because of the gender division of labour and responsibilities for household welfare, women bear a disproportionate burden, attempting to manage household consumption and production under conditions of increasing scarcity. Poverty is particularly acute for women living in rural households.

53. Women's poverty is directly related to the absence of economic opportunities and autonomy, lack of access to economic resources, including credit, land ownership and inheritance, lack of access to education and support services and their minimal participation in the decision-making process. Poverty can also force women into situations in which they are vulnerable to sexual exploitation.

54. In too many countries, social welfare systems do not take sufficient account of the specific conditions of women living in poverty, and there is a tendency to scale back the services provided by such systems. The risk of falling into poverty is greater for women than for men, particularly in old age, where social security systems are based on the principle of continuous remunerated employment. In some cases, women do not fulfil this requirement because of interruptions in their work, due to the unbalanced distribution of remunerated and unremunerated work. Moreover, older women also face greater obstacles to labour-market re-entry.

55. In many developed countries, where the level of general education and professional training of women and men are similar and where systems of protection against discrimination are available, in some sectors the economic transformations of the past decade have strongly increased either the unemployment of women or the precarious nature of their employment. The proportion of women among the poor has consequently increased. In countries with a high level of school enrolment of girls, those who leave the educational system the earliest, without any qualification, are among the most vulnerable in the labour market.

56. In countries with economies in transition and in other countries undergoing fundamental political, economic and social transformations, these transformations have often led to a reduction in women's income or to women being deprived of income.

57. Particularly in developing countries, the productive capacity of women should be increased through access to capital, resources, credit, land,

technology, information, technical assistance and training so as to raise their income and improve nutrition, education and health care and status within the household. The release of women's productive potential is pivotal to breaking the cycle of poverty so that women can share fully in the benefits of development and in the products of their own labour.

58. Sustainable development and economic growth that is both sustained and sustainable are possible only through improving the economic, social, political, legal and cultural status of women. Equitable social development that recognizes empowering the poor, particularly women, to utilize environmental resources sustainably is a necessary foundation for sustainable development.

59. The success of policies and measures aimed at supporting or strengthening the promotion of gender equality and the improvement of the status of women should be based on the integration of the gender perspective in general policies relating to all spheres of society as well as the implementation of positive measures [with adequate institutional and financial support at all levels].

[Enable women to overcome poverty]

Strategic objective A.1. Review, adopt and maintain macroeconomic policies and development strategies that address the needs and efforts of women to overcome poverty within the framework of sustainable development

Actions to be taken

60. By Governments:

- (a) [Review and modify, with the full and equal participation of women, macroeconomic and social policies with a view to achieving the objectives of the Platform for Action;]
- (b) [Analyse, from a gender perspective, policies and programmes - including those related to macroeconomic stability, structural adjustment, external debt problems, taxation, investments, employment, markets and all relevant sectors of the economy - with respect to their impact on poverty, on inequality and particularly on women; assess their impact on family well-being and conditions; and adjust them, as appropriate, to promote more equitable distribution of productive assets, wealth, opportunities, income and services;]
- (c) [Pursue and implement sound and stable macroeconomic and sectoral policies, designed with the full and equal participation of women, that encourage broad-based sustained economic growth [in the context of people-centred sustainable development] [sustainable development centred on human beings], address the structural causes of poverty and are geared towards eradicating poverty and reducing gender-based inequality;]

- (d) [Implement sound macroeconomic and sectoral policies, designed and monitored with the full participation of women, that encourage broad-based sustained economic growth in the context of [people-centred] sustainable development [centred on human beings], address the structural causes of poverty and are geared to eradicating poverty and reducing gender-based inequality;]
- (e) Restructure and target the allocation of public expenditures to promote women's economic opportunities and equal [and more equitable] access to productive resources and to address the basic social, educational and health needs of women, particularly those living in poverty;
- (f) Develop agricultural and fishing sectors, where and as necessary, in order to ensure, as appropriate, household and national food security and food self-sufficiency, by allocating the necessary financial, technical and human resources;
- (g) Develop policies and programmes to promote equitable distribution of food within the household;
- (h) Provide adequate safety nets and strengthen State-based [and community-based] support systems, as an integral part of social policy, in order to enable women living in poverty to withstand adverse economic environments and preserve their livelihood, assets and revenues in times of crisis;
- (i) Generate economic policies that have a positive impact on the employment and income of women workers in both the formal and informal sectors and adopt specific measures to address women's unemployment, in particular their long-term unemployment;
- (j) Formulate and implement, when necessary, specific economic, social, agricultural and related policies in support of female-headed households;
- (k) Develop and implement anti-poverty programmes, including employment schemes, that improve the access to food for women living in poverty, including through the use of appropriate pricing and distribution mechanisms;
- (l) [Introduce measures for the empowerment of women migrants and internally displaced women through the easing of stringent and restrictive migration policies, recognition of qualifications and skills of documented immigrants and their full integration into the labour force, and the undertaking of other measures necessary for the full realization of the human rights of internally displaced persons];
- (m) [Introduce measures to integrate or reintegrate women living in poverty and socially marginalized women into productive employment and the economic mainstream, ensure that internally displaced women have

full access to economic opportunities, and that the qualifications and skills of immigrant and refugee women are recognized;]

- (n) Enable women to obtain affordable housing and access to land, by, among other things, removing all obstacles to access, with special emphasis on meeting the needs of women, especially those living in poverty and female heads of household;
- (o) [In the event of a modification to paragraph 48 above or if an earlier section indicating groups of special concern is approved, subparagraph (o) will be deleted: Develop special programmes that reflect the specific needs of children, particularly girls, young women, older women and women with disabilities who are least able to gain access to social services and productive resources, as applicable;]
- (p) Formulate and implement policies and programmes that enhance the access of women agricultural and fisheries producers (including subsistence farmers and producers, especially in rural areas) to financial, technical, extension and marketing services; provide access to and control of land, appropriate infrastructure and technology in order to increase women's incomes and promote household food security, especially in rural areas and, where appropriate, encourage the development of producer-owned, market-based cooperatives;
- (q) Create social security systems wherever they do not exist, or review them with a view to placing individual women and men on an equal footing, at every stage of their lives;
- (r) Ensure access to free or low-cost legal services, including legal literacy, especially designed to reach women living in poverty;
- (s) Take particular measures to promote and strengthen policies and programmes for indigenous women with their full participation and respect for their cultural diversity, so that they have opportunities and the possibility of choice in the development process in order to eradicate the poverty that affects them.

61. By multilateral financial and development institutions, including the World Bank, the International Monetary Fund and regional development institutions, and through bilateral development cooperation:

- (a) [[Increase resources allocated] [Allocate resources as appropriate] to the elimination of [absolute] poverty and target women [and families] in poverty.] [Support the developing countries through the allocation of new and additional resources for the eradication of poverty and target women living in poverty];
- (b) Strengthen analytical capacity in order to more systematically strengthen gender perspectives and integrate them into the design and implementation of lending programmes, including structural adjustment and economic recovery programmes;

- (c) [Cancel or substantially reduce the debt burden, or convert the debt service of developing countries, in particular the highly indebted low-income countries, in order to help them to finance programmes and projects targeted at development, including the advancement of women, and to achieve sustained economic growth and sustainable development without falling into a new debt crisis;]
- (d) Ensure that structural adjustment programmes are designed to minimize their negative effects on vulnerable and disadvantaged groups and communities and to assure their positive effects on such groups and communities by preventing their marginalization in economic and social activities and devising measures to ensure that they gain access to and control over economic resources and economic and social activities; actions should be taken to reduce inequality and economic disparity;
- (e) Review the impact of structural adjustment programmes on social development by means of gender-sensitive social impact assessments and other relevant methods, in order to develop policies to reduce their negative effects and improve their positive impact, ensuring that women do not bear a disproportionate burden of transition costs; complement adjustment lending with enhanced, targeted social development lending;
- (f) Create an enabling environment that allows women to build and maintain sustainable livelihoods.

62. [By national and international non-governmental organizations and women's groups:

- (a) All parties involved in the development process, including academic institutions, non-governmental organizations and grass-roots and women's groups, should mobilize to improve the effectiveness of anti-poverty programmes directed towards the poorest and most disadvantaged groups of women, such as rural and indigenous women, female heads of households, young women and older women, refugees and migrant women and women with disabilities. However, Governments should not abrogate their responsibility for providing for social well-being by shifting social responsibility to non-governmental organizations and women;
- (b) Non-governmental organizations and women's organizations should organize pressure groups and establish monitoring mechanisms and other relevant activities to ensure implementation of the recommendations on poverty outlined in the Platform for Action. These activities should aim at ensuring accountability and transparency from the State and private sectors;
- (c) Women's organizations should include in their activities women with diverse needs by age, ethnicity and culture. They should recognize that youth organizations are increasingly becoming effective partners in development programmes;

- (d) Women's organizations and other non-governmental organizations, in cooperation with the Government and private sectors, should develop a comprehensive national strategy for improving health, education and social services so that girls and women of all ages living in poverty have full access to such services. Funding should be sought to secure access to services with a gender perspective and to extend those services in order to reach the rural and remote areas that are not covered by government institutions;
- (e) Women's organizations and non-governmental organizations, in cooperation with Governments, employers, other social partners and relevant parties, should develop education and training and retraining policies to ensure that women can acquire a wide range of skills to meet new demands. Policies are needed to ensure the provision of basic education, to provide vocational and technical training for girls and women of all ages and to increase access to education in science and technology, mathematics, engineering, information technology and high technology, as well as management training;
- (f) Women's human right to equal access to and control of land, property and credit must be upheld, regardless of customary laws, traditions and practices related to inheritance and marriage. Non-governmental organizations and women's organizations should mobilize to protect the traditional land and property rights of all women, including pastoralists, fishery workers and nomadic groups, indigenous peoples, refugees and migrant workers.]

\*Strategic objective A.2. Revise laws and administrative practices to recognize women's rights to economic resources and to ensure women's access to economic resources

Actions to be taken

63. By Governments:

- (a) Ensure access to free or low-cost legal services, including legal literacy, especially designed to reach women living in poverty;
- (b) Undertake legislative and administrative reforms to give women full and equal access to economic resources, including the right to inheritance and to [ownership of land] and other property, credit, natural resources and appropriate technologies;
- (c) Consider ratification of Convention No. 169 of the International Labour Organization (ILO) as part of their efforts to promote and protect the rights of indigenous people.

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\* It is proposed to move this section to F.2.

Strategic objective A.3. Provide women with access to savings mechanisms and institutions and to credit

Actions to be taken

64. By Governments:

- (a) Enhance the access of disadvantaged women, including women entrepreneurs, in rural, remote and urban areas to financial services through strengthening links between the formal banks and intermediary lending organizations, including legislative support, training for women and institutional strengthening for intermediary institutions with a view to mobilizing capital for those institutions and increasing the availability of credit;
- (b) Encourage links between financial institutions and non-governmental organizations and support innovative lending practices, including those that integrate credit with women's services and training and provide credit facilities to rural women.

65. By commercial banks, specialized financial institutions and the private sector in examining their policies:

- (a) Use credit and savings methodologies that are effective in reaching women in poverty and innovative in reducing transaction costs and redefining risk;
- (b) Open special windows for lending to women, including young women, who lack access to traditional sources of collateral;
- (c) Simplify banking practices, for example by reducing the minimum deposit and other requirements for opening bank accounts;
- (d) Ensure the participation and joint ownership, where possible, of women clients in the decision-making of institutions providing credit and financial services.

66. By multilateral and bilateral development cooperation organizations:

Support, through the provision of capital and/or resources, financial institutions that serve low-income, small-scale and micro-scale women entrepreneurs and producers, in both the formal and informal sectors.

67. By Governments and multilateral financial institutions, as appropriate:

Support institutions that meet performance standards in reaching large numbers of low-income women and men through capitalization, refinancing and institutional development support in forms that foster self-sufficiency.

68. By international organizations:



[Increase] [Provide adequate] funding for programmes and projects designed to promote sustainable and productive entrepreneurial activities for income-generation among disadvantaged women and women living in poverty.

Strategic objective A.4. Conduct research in order to enable women to overcome poverty

Actions to be taken

69. By Governments, intergovernmental organizations, academic and research institutions and the private sector:

- (a) Develop conceptual and practical methodologies for incorporating gender perspectives into all aspects of economic policy-making, including structural adjustment planning and programmes;
- (b) Apply these methodologies in conducting gender-impact analyses of all policies and programmes, including structural adjustment programmes, and disseminate the research findings.

70. By national and international statistical organizations:

- (a) Collect gender and age-disaggregated data on poverty and all aspects of economic activity and develop qualitative and quantitative statistical indicators to facilitate the assessment of economic performance from a gender perspective;
- (b) Devise suitable statistical means to recognize and make visible the full extent of the work of women and all their contributions to the national economy, including their contribution in the unremunerated and domestic sectors, and examine the relationship of women's unremunerated work to the incidence of and their vulnerability to poverty.

B. Unequal access to and inadequate educational opportunities

71. Education is a basic [human] right and an essential tool for achieving the goals of equality, development and peace. Non-discriminatory education benefits both girls and boys, and thus ultimately contributes to more equal relationships between women and men. Equality of access to and attainment of educational qualifications is necessary if more women are to become agents of change. Literacy of women is an important key to improving health, nutrition and education in the family and to empowering women to participate in decision-making in society. Investing in formal and non-formal education and training for girls and women, with its exceptionally high social and economic return, has proved to be one of the best means of achieving sustainable development and economic growth that is both sustained and sustainable.

72. On a regional level, girls and boys have achieved equal access to primary education, except in some parts of Africa, in particular sub-Saharan Africa, and Central Asia, where access to education facilities is still inadequate. Progress has been made in secondary education, where equal access of girls and boys has been achieved in some countries. Enrolment of girls and women in tertiary education has increased considerably. In many countries, private schools have also played an important complementary role in improving access to education at all levels. Yet, more than five years after the World Conference on Education for All (Jomtien, Thailand, 1990) adopted the World Declaration on Education for All and the Framework for Action to Meet Basic Learning Needs, 11/ approximately 100 million children, including at least 60 million girls, are without access to primary schooling, and more than two thirds of the world's 960 million illiterate adults are women. The high rate of illiteracy prevailing in most developing countries, in particular in sub-Saharan Africa and some Arab States, remains a severe impediment to the advancement of women and to development.

73. Discrimination in girls' access to education persists in many areas, owing to customary attitudes, [early marriages] and pregnancies, inadequate and gender-biased teaching and educational materials, [sexual harassment] and lack of adequate and physically and otherwise accessible schooling facilities. Girls undertake heavy domestic work at a very early age. Girls and young women are expected to manage both educational and domestic responsibilities, often resulting in poor scholastic performance and early drop-out from the educational system. This has long-lasting consequences for all aspects of women's lives.

74. [Creation of a healthy educational and social environment, in which all human beings, men and women, boys and girls, are consistently encouraged to foster moral and spiritual values, would be extremely effective in the elimination of causes of discrimination against women and inequalities between men and women.]

75. Women should be enabled to benefit from an ongoing acquisition of knowledge and skills beyond those acquired during youth. This concept of lifelong learning includes knowledge and skills gained in formal education and training, as well as learning that occurs in informal ways, including volunteer activity, unremunerated work and traditional knowledge.

76. Curricula and teaching materials remain gender-biased to a large degree, and are rarely sensitive to the specific needs of girls and women. This reinforces traditional female and male roles that deny women opportunities for full and equal partnership in society. Lack of gender awareness by educators at all levels strengthens existing inequities between males and females by reinforcing discriminatory tendencies and undermining girls' self-esteem. [The lack of sexual and reproductive education has a profound impact on women and men] [taking into account the rights, duties and responsibilities of parents and other persons legally responsible for children and consistent with the Convention on the Rights of the Child].

77. Science curricula in particular are gender-biased. Science textbooks do not relate to women's and girls' daily experience and fail to give recognition to women scientists. Girls are often deprived of basic education in mathematics

and science and technical training, which provide knowledge they could apply to improve their daily lives and enhance their employment opportunities. Advanced study in science and technology prepares women to take an active role in the technological and industrial development of their countries, thus necessitating a diverse approach to vocational and technical training. Technology is rapidly changing the world and has also affected the developing countries. It is essential that women not only benefit from technology, but also participate in the process from the design to the application, monitoring and evaluation stages.

78. [It can be ascertained that, particularly in the developed countries, a substantial improvement in the situation of girls at all levels of education, including the higher level, is one of the factors of their continued progress in professional activities. Nevertheless, it can be noted that girls are still concentrated in a [too] limited number of [the higher] branches.] Even at a higher level of educational qualification, women encounter more prejudices than men in a number of sectors, which makes it difficult for them to maximize the use of their degrees.

79. The mass media are a powerful means of education. As an educational tool the mass media can be an instrument for educators and governmental and non-governmental institutions for the advancement of women and for development. Computerized education and information systems are increasingly becoming an important element in learning and dissemination of knowledge. Television especially has the greatest impact on young people and, as such, has the ability to shape values, attitudes and perceptions of women and girls in both positive and negative ways. It is therefore essential that educators teach critical judgement and analytical skills.

80. [Resources allocated to education in many countries are insufficient and where structural adjustment programmes are in place, are sometimes further diminished. This has a long-term adverse effect on human development, particularly on the development of women.

81. In addressing unequal access to and inadequate educational opportunities, Governments and other actors should promote an active and visible policy of mainstreaming a gender perspective into all policies and programmes, so that, before decisions are taken, an analysis is made of the effects on women and men, respectively.

[Ensure women's access to quality education and training for self-reliance at all levels and in all fields and sectors]

Strategic objective B.1. Ensure equal access to education

Actions to be taken

82. By Governments:

- (a) [Attain the goals of equal access to education without distinction as to sex, race, national origin, age or disability, or any other form of

discrimination and ensure that procedures to address grievances are established;]

- (b) By the year 2000, universal access to basic education and completion of primary education by at least 80 per cent of primary school-age children; closing the gender gap in primary and secondary school education by the year 2005; universal primary education in all countries before the year 2015;
- (c) Eliminate gender disparities in access to all areas of tertiary education by ensuring that women have equal access to career development, training, scholarship and fellowship, and by adopting positive action when appropriate;
- (d) Create a gender-sensitive educational system in order to ensure equal educational and training opportunities and full and equal participation of women in educational administration and policy- and decision-making;
- (e) Provide - in collaboration with parents, non-governmental organizations, including youth organizations, communities and the private sector - young women with academic and technical training, career planning, leadership and social skills and work experience to prepare them to participate fully in society;
- (f) Increase enrolment and retention rates of girls by allocating appropriate budgetary resources and by enlisting the support of parents and the community, as well as through campaigns, flexible school schedules, incentives, scholarships and other means to minimize the costs of girls' education to their families [and to facilitate parents' ability to choose quality education for the girl child];  
  
[by ensuring that the rights of women and girls to freedom of conscience and religion are respected in educational institutions] [through repealing any discriminatory laws or legislation based on religion, race or culture];
- (g) Promote an educational setting that eliminates all barriers that impede the schooling of pregnant adolescents and young mothers, including, as appropriate, affordable and physically accessible child-care facilities and parental education to encourage those who are responsible for the care of their children and siblings during their school years, to return to, or continue with and complete schooling;
- (h) [Improve the equality of education to ensure that women of all ages are provided with the knowledge, reasoning ability, skills and ethical values required to develop their full capacities in health and dignity and to participate fully in the social, economic and political process of development. In this regard, women and girls should be considered a priority group;]

- (i) Make available non-discriminatory and gender-sensitive professional school counselling and career education programmes to encourage girls to pursue academic and technical curricula in order to widen their future career opportunities;
- (j) Encourage ratification of the International Covenant on Economic, Social and Cultural Rights 12/ where they have not already done so.

Strategic objective B.2. Eradicate illiteracy among women worldwide [by the year 2000]

Actions to be taken

83. By Governments, national, regional and international bodies, bilateral and multilateral donors and non-governmental organizations:

- (a) Reduce the female illiteracy rate to at least half its 1990 level, with emphasis on rural women, migrant, refugee and internally displaced women and women with disabilities;
- (b) Provide universal access to, and seek to ensure gender equality in the completion of, primary education for girls by the year 2000;
- (c) Eliminate the gender gap in basic and functional literacy, as recommended in the World Declaration on Education for All (Jomtien);
- (d) Narrow the disparities between developed and developing countries;
- (e) Encourage adult and family engagement in learning to promote total literacy for all people;
- (f) [Expand the definition of literacy to include scientific and technological knowledge.]

Strategic objective B.3. Improve women's access to vocational training, science and technology and continuing education

Actions to be taken

84. By Governments, in cooperation with employers, workers and trade unions, international and non-governmental organizations, including women's and youth organizations, and educational institutions:

- (a) Develop and implement education, training and retraining policies for women, especially young women and women re-entering the labour market, to provide skills to meet the needs of a changing socio-economic context for improving their employment opportunities;

- (b) Provide recognition to non-formal educational opportunities for girls and women in the educational system;
- (c) Provide information to women and girls on the availability and benefits of vocational training, training programmes in science and technology and programmes of continuing education;
- (d) Design educational and training programmes for women who are unemployed in order to provide them with new knowledge and skills that will enhance and broaden their employment opportunities, including self-employment, and development of their entrepreneurial skills;
- (e) Diversify vocational and technical training and improve access for and retention of girls and women in education and vocational training in such fields as science, mathematics, engineering, environmental sciences and technology, information technology and high technology, as well as management training;
- (f) Promote women's central role in food and agricultural research, extension and education programmes;
- (g) Encourage the adaptation of curricula and teaching materials, encourage a supportive training environment and take positive measures to promote training for the full range of occupational choices of non-traditional careers for women and men, including the development of multidisciplinary courses for science and mathematics teachers to sensitize them to the relevance of science and technology to women's lives;
- (h) Develop curricula and teaching materials and formulate and take positive measures to ensure women better access to and participation in technical and scientific areas, especially areas where they are not represented or are underrepresented;
- (i) Develop policies and programmes to encourage women to participate in all apprenticeship programmes;
- (j) Increase training in technical, managerial, agricultural extension and marketing areas for women in agriculture, fisheries, industry and business, arts and crafts, to increase income-generating opportunities, women's participation in economic decision-making, in particular through women's organizations at the grass-roots level, and their contribution to production, marketing, business, and science and technology;
- (k) Ensure access to [quality] education and training at all appropriate levels for adult women with little or no education, for women with disabilities and for documented migrant, refugee and displaced women to improve their work opportunities.

Strategic objective B.4. Develop non-discriminatory  
education and training

Actions to be taken

85. By Governments, educational authorities and other educational and academic institutions:

- (a) Elaborate recommendations and develop curricula, textbooks and teaching aids free of gender-stereotypes for all levels of education, including teacher training, in association with all concerned: publishers, teachers, public authorities and parents associations;
- (b) [Develop training programmes and materials for teachers and educators that raise awareness about the status, role and contribution of women and men in the family and society; in this context, promote equality, [equity], cooperation, mutual respect and shared responsibilities between girls and boys [at an appropriate age, consistent with the Convention on the Rights of the Child and recognizing the rights, duties and responsibilities of parents and other persons legally responsible for children] [from pre-school level onward] [and develop, in particular, educational modules to ensure that boys have the skills necessary to take care of their own domestic needs and to share responsibility for their household and for the care of dependants];]
- (c) Develop training programmes and materials for teachers and educators that raise awareness of their own role in the educational process, with a view to providing them with effective strategies for gender-sensitive teaching;
- (d) Take actions to ensure that female teachers and professors have the same opportunities as and equal status with male teachers and professors, in view of the importance of having female teachers at all levels and in order to attract girls to school and retain them in school;
- (e) Introduce and promote training in peaceful conflict resolution;
- (f) Take positive measures to increase the proportion of women gaining access to educational policy- and decision-making, particularly women teachers at all levels of education and in academic disciplines that are traditionally male-dominated, such as the scientific and technological fields;
- (g) Support and develop gender studies and research at all levels of education, especially at the postgraduate level of academic institutions, and apply them in the development of curricula, including university curricula, textbooks and teaching aids, and in teacher training;

- (h) Develop leadership training and opportunities for all women to encourage them to take leadership roles both as students and as adults in civil society;
- (i) Develop appropriate education and information programmes with due respect to multilingualism, particularly in conjunction with the mass media, that make the public, particularly parents, aware of the importance of non-discriminatory education for children and the equal sharing of family responsibilities between girls and boys;
- (j) Develop human rights education programmes that incorporate the gender dimension at all levels of education, in particular by encouraging higher education institutions, especially in their graduate and postgraduate juridical, social and political science curricula, to include the study of the human rights of women as they appear in United Nations conventions;
- (k) Remove legal and regulatory barriers to [sexual and reproductive health] education within formal education [regarding women's health issues];
- (l) [Encourage, with the support of their parents and in cooperation with educational staff and institutions, the elaboration of educational programmes for girls and boys and the creation of integrated services related to youth sexuality, to raise awareness of their responsibilities and to help them to assume those responsibilities, taking into account the importance of such education and services to personal development and self-esteem, as well as the urgent need to avoid unwanted pregnancy, the spread of sexually transmitted diseases, especially HIV/AIDS, and phenomena such as sexual violence and abuse];
- (m) Provide accessible recreational and sports facilities and establish and strengthen gender-sensitive programmes for girls and women of all ages in education and community institutions and support the advancement of women in all areas of sport and physical activity, including coaching, training and administration, and as participants at the national, regional and international levels;
- (n) Recognize and support the right of indigenous women and girls to education; promote a multicultural approach to education that is responsive to the needs, aspirations and cultures of indigenous women, including by developing appropriate education programmes, curricula and teaching aids, to the extent possible in the languages of indigenous people and by providing for the participation of indigenous women in these processes;
- (o) Acknowledge and respect the artistic, spiritual and cultural activities of indigenous women;
- (p) [Ensure that gender, cultural and religious diversity are respected in educational institutions and reflected in educational materials;]



- (q) Promote education, training and relevant information programmes for rural and farming women through the use of affordable and appropriate technologies and the mass media - for example, radio programmes, cassettes and mobile units;
- (r) Provide non-formal education, especially for rural women, in order to realize their potential with regard to health, micro-enterprise, agriculture and legal rights;
- (s) [Remove all barriers to the schooling of pregnant girls and young mothers and provide child care and other support services.]

\*Strategic objective B.5. Allocate sufficient resources for educational reforms and monitor implementation

Actions to be taken

86. By Governments:

- (a) Provide the required budgetary resources to the educational sector, with reallocation within the educational sector to ensure increased funds for basic education, as appropriate;
- (b) Establish a mechanism at appropriate levels to monitor the implementation of educational reforms and measures in relevant ministries, and establish technical assistance programmes, as appropriate, to address issues raised by the monitoring efforts.

87. [By Governments,] [Invite] private and public institutions, foundations, research institutes and non-governmental organizations:

- (a) [[to] mobilize additional funds [from organizations in the private sector] [, whenever necessary,] [to meet] [to assist in meeting] the costs of education [for all girls and women with a particular emphasis on under-served populations];]
- (b) Provide funding for special programmes, such as programmes in mathematics, science and computer technology, to advance opportunities for all girls and women.

88. By multilateral development institutions, including the World Bank, regional development banks, bilateral donors and foundations [, consider]:

- (a) Increase[ing] funding for the education and training needs of girls and women as a priority in development assistance programmes;

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\* It is proposed to consider this section in chapters V and VI.

- (b) [Maintain[ing] or increase[ing] funding levels for education in structural adjustment and economic recovery programmes, including lending and stabilization programmes.]

89. By international and intergovernmental organizations, especially the United Nations Educational, Scientific and Cultural Organization (UNESCO), at the global level:

- (a) [Monitor progress, using educational indicators generated by national, regional and international bodies, and make Governments accountable for implementing measures to close the gap between women and men in education and training opportunities, and in the levels of achievement in all fields, particularly primary and literacy programmes];
- (b) Provide technical assistance upon request to developing countries to strengthen the capacity to monitor progress in closing the gap between women and men in education, training and research, and in levels of achievement in all fields, particularly basic education and elimination of illiteracy;
- (c) Conduct an international campaign promoting the right of women and girls to education;
- (d) [Allocate a minimum percentage of assistance to basic education for women and girls.]

Strategic objective B.6. [To promote lifelong learning [educational processes] for girls and women]

Actions to be taken

90. By Governments, educational institutions and communities:

- (a) Ensure the availability of a broad range of educational and training programmes that lead to ongoing acquisition by women and girls of the knowledge and skills required for living in, contributing to and benefiting from, their communities and nations;
- (b) Provide support for child care and other services to enable mothers to continue their schooling;
- (c) Create flexible education, training and retraining programmes for lifelong learning that facilitate transitions between women's activities at all stages of their lives.

C. Inequalities in access to health and related services

91. Women have the right to the enjoyment of the highest attainable standard of physical and mental health. The enjoyment of this right is vital to their life and well-being and their ability to participate in all areas of public and

private life. Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity. Women's health involves their emotional, social and physical well-being, and is determined by the social, political and economic context of their lives, as well as by biology. However, health and well-being elude the majority of women. [The major] barrier for women to the achievement of the highest attainable standard of health is inequality, both between men and women and [among women]. In national and international forums, women have emphasized that to attain optimal health throughout the life cycle, equality, including the sharing of family responsibilities, development and peace are necessary conditions.

92. Women have different and unequal access to and use of basic health resources, including primary health services for the prevention and treatment of childhood diseases, malnutrition, anaemia, diarrhoeal diseases, communicable diseases, malaria and other tropical diseases and tuberculosis, among others. Women also have different and unequal opportunities for the protection, promotion and maintenance of their health. In many developing countries, the lack of emergency obstetric services is also of particular concern. Health policies and programmes often perpetuate [gender] stereotypes and fail to consider socio-economic disparities and other differences among women and may not fully take account of the lack of autonomy of women regarding their health. Women's health is also affected by [gender] bias in the health system and by the provision of inadequate and inappropriate medical services to women.

93. In many countries, in particular developing and least-developed countries, [structural adjustment,] [the deterioration of public health systems, a decrease in public health spending and, in some cases, increasing privatization of health-care systems without appropriate guarantees of universal access] further reduce health-care availability. This situation not only directly affects the health of girls and women, but also places disproportionate responsibilities on women, whose multiple roles, including their roles within the family and the community, are often not acknowledged; hence they do not receive the necessary social, psychological and economic support.

94. Women's right to the enjoyment of the highest standard of health must be secured throughout the whole life cycle in equality with men. Women are affected by many of the same health conditions as men, but women experience them differently. The prevalence among women of poverty and economic dependence, their experience of violence, negative attitudes towards women and girls, discrimination due to race and other forms of discrimination, [the limited power many women have over their sexual and reproductive lives] and lack of influence in decision-making are social realities which have an adverse impact on their health. Lack of and inequitable distribution of food for girls and women in the household, inadequate access to safe water, sanitation facilities and fuel supplies, particularly in rural and poor urban areas, and deficient housing conditions, all overburden women and their families and have a negative effect on their health. Good health is essential to leading a productive and fulfilling life [and the right of all women to control their own fertility is basic to their empowerment].

95. Discrimination against girls, often resulting from son preference, in access to nutrition and health-care services endangers their current and future

health and well-being. Conditions that force girls into early marriage, pregnancy and child-bearing and subject them to harmful practices, such as female genital mutilation, pose grave health risks. Adolescent girls need, but too often do not have, access to necessary health and nutrition services as they mature. [Counselling and access to sexual and reproductive health information and services for adolescents are still inadequate or lacking completely, and a young woman's right to privacy, confidentiality, respect and informed consent is often not considered, taking into account the parents' responsibilities] Adolescent girls are both biologically and psychosocially more vulnerable than boys to sexual abuse, violence and prostitution, and to the consequences of [unprotected] [premature] sexual relations. The trend towards early sexual experience, combined with a lack of information and services, increases the risk of [unwanted] and too early pregnancy, HIV infection and other sexually transmitted diseases, as well as [unsafe abortions]. Early child-bearing continues to be an impediment to improvements in the educational, economic and social status of women in all parts of the world. Overall, for young women early marriage and early motherhood can severely curtail educational and employment opportunities and are likely to have a long-term, adverse impact on the quality of their lives and the lives of their children. Young men are often not educated to respect [women's self-determination] and to share responsibility with women in matters of sexuality and reproduction.

96. [Reproductive health is a state of complete physical, mental and social well-being, and not merely the absence of disease or infirmity, in all matters relating to the reproductive system and to its functions and processes. Reproductive health therefore implies that people are able to have a satisfying and safe sex life and that they have the capability to reproduce and the freedom to decide if, when and how often to do so. Reproductive rights rest on the recognition of the basic right of all couples and individuals to decide freely and responsibly the number, spacing and timing of their children and to have the information and means to do so, and the right to attain the highest standard of sexual and reproductive health. It also includes their right to make decisions concerning reproduction free of discrimination, coercion and violence, as expressed in human rights documents. Sexual health enhances life and personal relations, and does not merely involve counselling and care related to reproduction and sexually transmitted diseases.]

97. [Sexual rights include the individual's right to have control over and decide freely on matters related to her or his sexuality, free of coercion, discrimination and violence. Equal relationships between women and men in matters of sexual relations and reproduction, including full respect for the physical integrity of the human body, require mutual consent and willingness to accept responsibility for the consequences of sexual behaviour.]

\*98. Further, women are subject to particular health risks due to inadequate responsiveness and lack of services to meet health needs related to sexuality and reproduction. Complications related to pregnancy and childbirth are among the leading causes of mortality and morbidity of women of reproductive age in many parts of the developing world. Similar problems exist to a certain degree

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\* The placement of the paragraph has not yet been determined.

in some countries with economies in transition.\* [Unsafe abortions] threaten the lives of a large number of women, representing a grave public health problem as it is primarily the poorest and youngest who take the highest risk. [Most of these deaths, health problems and injuries are preventable, [through improved access to adequate health-care services including safe and effective family planning methods and emergency obstetric care] [recognizing the right of women and men to be informed and to have access to safe, effective, affordable and acceptable methods of family planning of their choice, as well as other methods of their choice for regulation of fertility which are not against the law, and the right of access to appropriate health-care services that will enable women to go safely through pregnancy and childbirth and provide couples with the best chance of having a healthy infant.] [These problems and means should be addressed on the basis of the report of the International Conference on Population and Development, with particular reference to paragraphs [1.15], [7.1], 7.2, 7.3, 7.6 and 8.25, among others, of the Programme of Action of the Conference. 13/] In most countries, the neglect of women's [reproductive rights] severely limits their opportunities in public and private life, including opportunities for education and economic and political empowerment. [The ability of women to control their own fertility forms an important basis for the enjoyment of other rights.] Shared responsibility between women and men in matters related to sexual and reproductive behaviour is also essential to improving women's health.

99. HIV/AIDS and other sexually transmitted diseases, the transmission of which is sometimes a consequence of sexual violence, are having a devastating effect on women's health, particularly the health of adolescent girls and young women. Women [and adolescent girls often do not have the power to insist on safe sex practices] [are not able to insist on responsible sexual behaviour on the part of their partners] and have little access to information and services for prevention and treatment. Women, who represent half of all adults newly infected with HIV/AIDS and other sexually transmitted diseases, have emphasized that social vulnerability and the unequal power relationships between women and men [are obstacles to negotiating safe sex], in their efforts to control the spread of sexually transmitted diseases. The consequences of HIV/AIDS reach beyond women's health to their role as [mothers,] caregivers and their contribution to the economic support of their families. The social, developmental and health consequences of HIV/AIDS and other sexually transmitted diseases need to be seen from a [gender] perspective.

100. Sexual and [gender-based] violence, including physical and psychological abuse, trafficking in women and girls, other forms of abuse [and prostitution] place girls and women at high risk of physical and mental trauma, disease [and unwanted pregnancy]. Such situations often deter women from using health and other services.

101. Mental disorders related to [alienation] [marginalization], powerlessness and poverty, along with overwork and stress and the growing incidence of domestic violence as well as substance abuse are among other health issues of growing concern to women. Women throughout the world, especially young women,

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\* Suitable published statistics may be added here.

are increasing their use of tobacco with serious effects on their health and that of their children. Occupational health issues are also growing in importance, as a large number of women work in low-paid jobs either in the formal or the informal labour market under tedious and unhealthy conditions and the number is rising. Cancers of the breast and cervix and other cancers of the reproductive system as well as infertility affect growing numbers of women and may be preventable, or curable, if detected early.

102. With the increase in life expectancy and the growing numbers of older women, their health concerns require particular attention. The long-term health prospects of women are influenced by changes at menopause, which, in combination with life-long conditions and other factors, such as poor nutrition and lack of physical activity, may increase the risk of cardiovascular disease and osteoporosis. Other diseases of ageing and the interrelationships of ageing and disability among women also need particular attention.

103. Women, like men, particularly in rural areas and poor urban areas, are increasingly exposed to environmental health hazards owing to environmental catastrophes and degradation. Women have a different susceptibility to various environmental hazards, contaminants and substances and they suffer different consequences from exposure to them.

104. The quality of women's health care is often deficient in various ways, depending on local circumstances. [Women are frequently not treated with respect, nor are they guaranteed privacy and confidentiality, nor do they always receive full information about the options and services available.] Furthermore, in some countries, over-medicating women's life events is common, leading to unnecessary surgical intervention and inappropriate medication.

105. Statistical data on health are often not systematically collected, disaggregated and analysed by age, sex and socio-economic status, and [race and ethnicity] [and other relevant variables] among others. Recent and reliable data on mortality and morbidity of women and conditions and diseases particularly affecting women are not available in many countries. Relatively little is known about how social and economic factors affect the health of girls and women of all ages, about the provision of health services to girls and women and the patterns of their use of such services, and about the value of disease prevention and health promotion programmes for women. Subjects of importance to women's health have not been adequately researched and women's health research often lacks funding. Medical research, on heart disease for example, and epidemiological studies in many countries are often based solely on men; they are not gender specific. Clinical trials involving women to establish basic information about dosage, side-effects and effectiveness [including contraceptives] are noticeably absent and do not always conform to ethical standards for research and testing. Many drug therapy protocols and other medical treatments and interventions administered to women are based on research on men without any investigation and adjustment for gender differences.

106. In addressing inequalities in health status and unequal access to and inadequate health care services between women and men, Governments and other actors should promote an active and visible policy of mainstreaming a gender

perspective in all policies and programmes, so that, before decisions are taken, an analysis is made of the effects for women and men, respectively.

[Increase women's full access throughout the life cycle to appropriate, affordable and quality health care and related services]

Strategic objective C.1. Increase women's access throughout the life cycle to appropriate free or affordable and good quality health care and related information and services[\*]

Actions to be taken

107. By Governments, [in collaboration with non-governmental organizations and employers and with the support of international institutions]:

- (a) Support and implement [their commitments] [the commitments made] [to the report of the International Conference on Population and Development] [in the Programme of Action of the International Conference on Population and Development, taking into account the reservations and declarations made in that document] and the Copenhagen Declaration on Social Development and Programme of Action of the World Summit for Social Development 14/ and relevant international agreements, to meet the health needs of girls and women of all ages;
- (b) Reaffirm the right to the enjoyment of the highest attainable standards of physical and mental health, protect and promote the attainment of this right for women and girls and incorporate it in national legislation, for example; review existing legislation, including health legislation, as well as policies, where necessary, to reflect a commitment to women's health and to ensure that they meet the changing roles and responsibilities of women wherever they reside;
- (c) Design and implement, in cooperation with women and community-based organizations, gender-sensitive health programmes, including decentralized health services, that address the needs of women throughout their lives and take into account their multiple roles and responsibilities, the demands on their time, the special needs of rural women and women with disabilities and the diversity of women's

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[\* The implementation of the actions to be taken contained in the section on health are the sovereign right of each country, consistent with national laws and development priorities, with full respect for the various religious and ethical values and cultural backgrounds of its people and in conformity with universally recognized international human rights.] [The section on health is especially guided by the principles contained in chapter II of the Programme of Action of the International Conference on Population and Development, in particular the introductory paragraphs.]

needs arising from age, socio-economic and cultural differences, among others, and include women, especially local and indigenous women, in the identification and planning of health-care priorities and programmes; [and remove all barriers to women's health services] [and provide the widest possible access to a broad range of health-care services];

- (d) [Allow women access to social security systems in equality with men throughout the whole life cycle;]
- (e) Provide more accessible, available and affordable primary health-care services of high quality, including [sexual and reproductive health care as well as family planning information and services] and giving particular attention to maternal and emergency obstetric care [as contained in the report of the International Conference on Population and Development] [as agreed in the Programme of Action of the International Conference on Population and Development];
- (f) Redesign health information, services and training for health workers, so they are [gender] sensitive and reflect the user's perspectives with regard to interpersonal and communications skills and the user's right to privacy and confidentiality. [recognizing the rights, duties and responsibilities of parents and other persons legally responsible for children, and consistent with the Convention on the Rights of the Child] These services, information and training should adopt a holistic approach [as defined by WHO];
- (g) [Ensure that all health services and workers conform to human rights and to ethical, professional and gender-sensitive standards in the delivery of women's health services aimed at ensuring responsible, voluntary and informed consent.] [Develop, implement and disseminate widely codes of ethics in this regard.] [Nothing, however, in the present Platform for Action is intended to require any health professional or health facility to provide (or refer for) services to which they have objections on the basis of religious belief or moral conviction as a violation of conscience];
- (h) [Take all appropriate measures to eliminate harmful, medically unnecessary or coercive medical interventions, as well as inappropriate medication and over-medication of women. All women should be fully informed of their options, including likely benefits and potential side effects;]

(First alternative)

[Ensure that women are fully informed by properly trained personnel orally, and in writing where appropriate, of the potential dangers, side effects and contraindications as well as the likely benefits of their health-care options, including medication and any surgical interventions, among others; all appropriate measures should be taken to eliminate harmful, medically unnecessary or coercive medical interventions, as well as inappropriate medication and over-medication



of women; ensure that immunization is provided to women and girls according to established ethical medical standards;]

(Second alternative)

[Ensure that before medication is prescribed, mechanical devices inserted or sterilization performed, women are examined by a physician, who must give them full information, orally and in writing, on the potential dangers, side effects and contraindications of all the available methods of family planning; ensure that immunization of women and girls does not include experimental drugs, vaccines or abortifacients;]

- (i) Strengthen and reorient health services, particularly primary health care, in order to ensure universal access to quality health services for women and girls, [recognizing the rights, duties and responsibilities of parents and other persons legally responsible for children and consistent with the Convention on the Rights of the Child] to reduce ill health and maternal morbidity and to achieve worldwide the agreed-upon goal of reducing maternal mortality by at least 50 per cent of the 1990 levels by the year 2000 and a further one half by the year 2015; ensure that the necessary services are available at each level of the health system; and make reproductive health care accessible, through the primary health-care system, to all individuals of appropriate ages as soon as possible and no later than the year 2015;
- (j) [Recognize and deal with the health impact of unsafe abortion as a major public health concern, as agreed in the Programme of Action of the International Conference on Population and Development;]

[Paragraph 8.25 of the Programme of Action of the International Conference on Population and Development states: "In no case should abortion be promoted as a method of family planning. All Governments and relevant intergovernmental and non-governmental organizations are urged to strengthen their commitment to women's health, to deal with the health impact of unsafe abortion 15/ as a major public health concern and to reduce the recourse to abortion through expanded and improved family-planning services. Prevention of unwanted pregnancies must always be given the highest priority and every attempt should be made to eliminate the need for abortion. Women who have unwanted pregnancies should have ready access to reliable information and compassionate counselling. Any measures or changes related to abortion within the health system can only be determined at the national or local level according to the national legislative process. In circumstances where abortion is not against the law, such abortion should be safe. In all cases, women should have access to quality services for the management of complications arising from abortion. Post-abortion counselling, education and family-planning services should be offered promptly, which will also help to avoid repeat abortions."]

- (k) [Consider reviewing laws containing punitive measures against women who have undergone illegal abortions;]
- (l) Give particular attention to the needs of girls [taking into account the rights, duties and responsibilities of parents and other persons legally responsible for children and consistent with the Convention on the Rights of the Child] especially the promotion of healthy behaviour, including physical activities; take specific measures for closing the gender gaps in morbidity and mortality where girls are disadvantaged, while achieving internationally approved goals for the reduction of infant and child mortality - specifically, by the year 2000, the reduction of mortality rates of infants and children under five years of age by one third of the 1990 level, or 50 to 70 per 1,000 live births, whichever is less; by the year 2015 an infant mortality rate below 35 per 1,000 live births and an under-five mortality rate below 45 per 1,000;
- (m) Ensure that girls [taking into account the rights, duties and responsibilities of parents and other persons legally responsible for children and consistent with the Convention on the Rights of the Child] have continuing access to necessary health and nutrition information and services as they mature, to facilitate a healthful transition from childhood to adulthood;
- (n) Develop information, programmes and services to assist women to understand and adapt to changes associated with ageing; and to address and treat the health needs of older women, paying particular attention to those who are physically or psychologically dependent;
- (o) Ensure that girls and women of all ages with any form of disability receive supportive services;
- (p) Formulate special policies, design programmes and enact the legislation necessary to alleviate and eliminate environmental and occupational health hazards associated with work in the home, in the workplace and elsewhere [with special attention to pregnant and lactating women];
- (q) Integrate mental health services into primary health care systems or other appropriate levels, develop supportive programmes and train primary health workers to recognize and care for girls and women of all ages who have experienced any form of violence especially domestic violence, sexual abuse or other abuse resulting from armed and non-armed conflict;
- (r) Promote public information on the benefits of breast-feeding; examine ways and means of implementing fully the WHO/UNICEF International Code of Marketing of Breast-milk Substitutes, and enable mothers to breast-feed their infants by providing legal, economic, practical and emotional support;

- (s) Establish mechanisms to support and involve non-governmental organizations, particularly women's organizations, professional groups and other bodies working to improve the health of girls and women, in government policy-making, programme design, as appropriate, and implementation within the health sector and related sectors at all levels;
- (t) Support non-governmental organizations working on women's health and help develop networks aimed at improving coordination and collaboration between all sectors that affect health;
- (u) Rationalize drug procurement and ensure a reliable, continuous supply of high-quality pharmaceutical, [contraceptive] and other supplies and equipment, [using the WHO Model List of Essential Drugs as a guide,] and ensure the safety of drugs and devices through national regulatory drug approval processes;
- (v) Provide improved access to appropriate treatment and rehabilitation services for women substance abusers and their families;
- (w) Promote and ensure household and national food security, as appropriate, and implement programmes aimed at improving the nutritional status of all girls and women by implementing the commitments made in the Plan of Action on Nutrition of the International Conference on Nutrition 16/ including a reduction worldwide of severe and moderate malnutrition among children under the age of five by one half of 1990 levels by the year 2000, giving special attention to the gender gap in nutrition, and a reduction in iron deficiency anaemia in girls and women by one third of the 1990 levels by the year 2000;
- (x) Ensure the availability of and universal access to safe drinking water and sanitation and put in place effective public distribution systems as soon as possible;
- (y) Ensure full and equal access to health care infrastructure and services for indigenous women.

Strategic objective C.2. Strengthen preventive programmes that address threats to women's health

Actions to be taken

108. By Governments, in cooperation with non-governmental organizations, the mass media, the private sector and relevant international organizations, including United Nations bodies, as appropriate:

- (a) [Give priority to both formal and informal educational programmes that support and enable women to develop self-esteem, acquire knowledge, make decisions on and take responsibility for their own health, [achieve mutual respect in matters concerning] sexuality and fertility

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and educate men regarding the importance of women's health and well-being, placing special focus on programmes for both men and women that emphasize the elimination of harmful attitudes and practices, including female genital mutilation, son preference (which results in female infanticide and prenatal sex selection), early marriage, violence against women, [prostitution], sexual abuse, which at times is conducive to infection with HIV/AIDS and other sexually transmitted diseases, drug abuse, discrimination against girls and women in food allocation and other harmful attitudes and practices related to the life, health and well-being of women, and recognizing that some of these practices can be violations of human rights and ethical medical principles;]

- (b) Pursue social, human development, education and employment policies to eliminate poverty among women in order to reduce their susceptibility to ill health and to improve their health;
- (c) Encourage men to share equally in child care and household work and to provide their share of [adequate] financial support for their families, even if they do not live with them;
- (d) [Reinforce laws, reform institutions and promote norms and practices that eliminate discrimination against women and encourage both women and men to take responsibility for their sexual and reproductive behaviour; [ensure full respect for the physical integrity of the human body]; [and take action to ensure the conditions necessary for women to exercise their reproductive rights] [and eliminate, where possible, coercive laws and practices];]
- (e) [Prepare and disseminate accessible information, through public health campaigns, the media, reliable counselling and the education system, designed to ensure that women and men, particularly young people, can acquire knowledge about their health, especially information on sexuality and reproduction, [taking into account the rights, duties and responsibilities of parents and other persons legally responsible for children and consistent with the Convention on the Rights of the Child] [as agreed in the Programme of Action of the International Conference on Population and Development] and [as contained in the report of the International Conference on Population and Development];]
- (f) Create and support programmes in the educational system, in the workplace and in the community to make opportunities to participate in sport, physical activity and recreation available to girls and women of all ages on the same basis as they are made available to men and boys;
- (g) [Recognize the specific needs of adolescents, [boys and girls] and implement specific appropriate programmes, such as information [on sexual and reproductive health issues and] on sexually transmitted diseases including HIV/AIDS, and recognize their right to privacy, confidentiality, respect and informed consent; [taking into account

the rights, duties and responsibilities of parents and other persons legally responsible for children and consistent with the Convention on the Rights of the Child]];

- (h) Develop policies that reduce the disproportionate and increasing burden on [mothers] women [who have multiple roles within the family and the community] by providing women with adequate support and programmes from health and social services;
- (i) Adopt regulations to ensure that the working conditions, including remuneration and promotion of women at all levels of the health system, are non-discriminatory and meet fair and professional standards to enable them to work effectively;
- (j) Ensure that health and nutritional information and training form an integral part of all adult literacy programmes and school curricula from the primary level;
- (k) Develop and undertake media campaigns and information and educational programmes that inform women and girls of the health and related risks of substance abuse and addiction and pursue strategies and programmes that discourage substance abuse and addiction and promote rehabilitation and recovery;
- (l) Devise and implement comprehensive and coherent programmes for the prevention, diagnosis and treatment of osteoporosis, a condition that predominantly affects women;
- (m) Establish and/or strengthen programmes and services, including media campaigns, that address the prevention, early detection and [treatment of breast, cervical and other cancers of the reproductive system];
- (n) Reduce environmental hazards that pose a growing threat to health, especially in poor regions and communities; apply a precautionary approach, as agreed to in the Rio Declaration on Environment and Development, adopted by the United Nations Conference on Environment and Development, 17/ and include reporting on women's health risks related to the environment in monitoring the implementation of Agenda 21;
- (o) Create awareness among women, health professionals, policy makers and the general public about the serious but preventable health hazards stemming from tobacco consumption and the need for regulatory and education measures to reduce smoking as important health promotion and disease prevention activities;
- (p) [Ensure that medical school curricula and other health care training include comprehensive and mandatory courses on women's health as defined in paragraph 91 above];
- (q) Adopt specific preventive measures to protect women, youth and [children] from any abuse - sexual abuse, exploitation, trafficking

and violence, for example - including the formulation and enforcement of laws and provide legal protection and medical and other assistance.

Strategic objective C.3. Undertake [gender-sensitive] multisectoral initiatives that address sexually transmitted diseases, the HIV/AIDS pandemic and other [sexual and reproductive health] issues

Actions to be taken

109. By Governments, international bodies including relevant United Nations organizations, bilateral and multilateral donors and non-governmental organizations:

- (a) Ensure the involvement of women, especially those infected with HIV/AIDS or other sexually transmitted diseases or affected by the HIV/AIDS pandemic, in all decision-making relating to the development, implementation, monitoring and evaluation of policies and programmes on HIV/AIDS and other sexually transmitted diseases;
- (b) [Review and amend laws and practices, as appropriate, that may contribute to women's susceptibility to HIV infection and other sexually transmitted diseases, including enacting legislation against [those socio-cultural practices] that contribute to it], and implement legislation, policies and practices to protect women, adolescents and young girls from discrimination related to HIV/AIDS;
- (c) Encourage all sectors of society, including the public sector, as well as international organizations, to develop compassionate and supportive, non-discriminatory AIDS/HIV-related policies and practices that protect the rights of infected individuals;
- (d) Recognize the extent of the HIV/AIDS pandemic in their countries, taking particularly into account its impact on women, with a view to ensuring that infected women not suffer stigmatization and discrimination [including during travel];
- (e) Develop [gender-sensitive] multisectoral programmes and strategies to end social subordination of women and girls and to ensure their social and economic empowerment and equality; and facilitate promotion of programmes to educate and enable men to assume their responsibilities to prevent HIV/AIDS and other sexually transmitted diseases;
- (f) Facilitate the development of community strategies that will protect women of all ages from HIV and other sexually transmitted diseases, provide care and support to infected girls, women and their families and mobilize all parts of the community in response to the HIV/AIDS pandemic to exert pressure on all responsible authorities to respond in a timely, effective, sustainable and [gender-sensitive] manner;

- (g) Support and strengthen national capacity to create and improve [gender-sensitive] policies and programmes on HIV/AIDS and other sexually transmitted diseases, including the provision of resources and facilities to women who find themselves the principal caregivers or economic support for those infected with HIV/AIDS or affected by the pandemic, and the survivors, particularly children and older persons;
- (h) Provide workshops and specialized education and training to parents, decision makers and opinion leaders at all levels of the community, including religious and traditional authorities, on prevention of HIV/AIDS and other sexually transmitted diseases, and their repercussions on both women and men of all ages; [parental language]
- (i) [Give all women all relevant information about HIV/AIDS and pregnancy and the implications for the baby, including breast-feeding;]
- (j) Assist women [of all ages] [recognizing the rights, duties and responsibilities of parents and other persons legally responsible for children and consistent with the Convention on the Rights of the Child] and their formal and informal organizations to establish and expand effective peer education and outreach programmes and to participate in the design, implementation and monitoring of these programmes; [recognizing the rights, duties and responsibilities of parents and other persons legally responsible for children and consistent with the Convention on the Rights of the Child];
- (k) Give full attention to the promotion of mutually respectful and equitable [gender relations] and, in particular, to meeting the educational and service needs of adolescents to enable them to deal in a positive and responsible way with their sexuality, [as agreed in the Programme of Action of the International Conference on Population and Development] [as contained in the report of the International Conference on Population and Development];
- (l) [Design specific programmes for boys, adolescents, [with the support and guidance of their parents,] [recognizing the rights, duties and responsibilities of parents and other persons legally responsible for children and consistent with the Convention on the Rights of the Child] and men of all ages, aimed at providing [reliable] [complete and accurate] information and encouraging [abstinence until marriage as responsible sexual behaviour.] safe and responsible sexual and reproductive behaviour, including voluntary, appropriate and effective male methods for the prevention of HIV/AIDS and other sexually transmitted diseases.] [training in the promotion of safe and responsible sexual behaviour, including voluntary abstinence and [condom use]];
- (m) Ensure the provision, through the primary health care system, of [universal access of individuals and couples] to appropriate and affordable preventive services with respect to sexually transmitted diseases, including HIV/AIDS, and expand the provision of counselling

- and voluntary and confidential diagnostic and treatment services for women; [and ensure that high-quality condoms as well as] drugs for the treatment of sexually transmitted diseases are, where possible, supplied and distributed to health services;
- (n) Support programmes which acknowledge that the higher risk among women of contracting HIV is linked to high-risk behaviour, including intravenous substance use and substance-influenced [unprotected] [irresponsible] sexual behaviour and take appropriate preventive measures;
  - (o) Support and expedite action-oriented research on affordable methods, controlled by women, to prevent HIV and other sexually transmitted diseases, on strategies empowering women to protect themselves from sexually transmitted diseases, including HIV/AIDS, and on methods of care, support and treatment of women, ensuring their involvement in all aspects of such research;
  - (p) [Support and initiate research that addresses women's needs and situations, including research on HIV infection and other sexually transmitted diseases in women, on women-controlled methods of protection, such as non-spermicidal microbicides, and on male and female risk-taking attitudes and practices;].

Strategic objective C.4. Promote research and information dissemination on women's health

Actions to be taken

110. By Governments, the United Nations system, health professions, research institutions, non-governmental organizations, donors, pharmaceutical industries and the mass media, as appropriate:

- (a) Train researchers and introduce systems that allow for the use of data collected, analysed and disaggregated by, among other factors, sex and age, [race and ethnicity] and socio-economic variables, in policy-making, as appropriate, planning, monitoring and evaluation;
- (b) Promote gender-sensitive and women-centred health research, treatment and technology and link traditional and indigenous knowledge with modern medicine, making information available to women to enable them to make informed and responsible decisions;
- (c) Increase the number of women in leadership positions in the health professions, including researchers and scientists, to achieve equality at the earliest possible date;
- (d) Increase financial and other support from all sources for preventive, appropriate biomedical, behavioural, epidemiological and health service research on women's health issues and for research on the social, economic and political causes of women's health problems, and



their consequences, including the impact of [gender and] age inequalities, especially with respect to chronic and non-communicable diseases, particularly cardio-vascular diseases and conditions, cancers, reproductive tract infections and injuries, HIV/AIDS and other sexually transmitted diseases, domestic violence, occupational health, disabilities, environmentally related health problems, tropical diseases and health aspects of ageing;

- (e) [Inform women about data which show that hormonal contraception, abortion and promiscuity increase risks of developing cancers and infections of the reproductive tract, so that they can make informed decisions about their health];
- (f) Support and fund social, economic, political and cultural research on how gender-based inequalities affect women's health, including etiology, epidemiology, provision and utilization of services and eventual outcome of treatment;
- (g) Support health service systems and operations research to strengthen access and improve the quality of service delivery, to ensure appropriate support for women as health-care providers and to examine patterns of provision of health services to women and use of such services by women;
- (h) Provide financial and institutional support for research on safe, effective, affordable and acceptable [drugs and] technologies for [reproductive and sexual health] of women and men, including more safe, effective, affordable and acceptable methods [such as natural family planning] [for the regulation of fertility] for both sexes, methods to protect against HIV/AIDS and other sexually transmitted diseases and simple and inexpensive methods of diagnosing such diseases, among others. This research needs to be guided at all stages by users and from the perspective of gender, particularly the perspective of women, and should be carried out in strict conformity with internationally accepted legal, ethical, medical and scientific standards for biomedical research;
- (i) Since [unsafe abortion] 15/ is a major threat to the health and life of women, research to understand and better address the determinants and consequences of induced abortion, including its effects on subsequent fertility, reproductive and mental health and [contraceptive] practice, should be promoted, as well as research on treatment of complications of abortions and post-abortion care;
- (j) Acknowledge and encourage beneficial traditional health care, especially that practised by indigenous women, with a view to preserving and incorporating the value of traditional health care in the provision of health services, and support research directed towards achieving this aim;

- (k) Develop mechanisms to evaluate and disseminate available data and research findings to researchers, policy makers, health professionals and women's groups, among others;
- (l) [Report on all genome and genetic engineering research.]

Strategic objective C.5. Increase resources and monitor follow-up for women's health

Actions to be taken

111. By Governments [at all levels, in collaboration with non-governmental organizations, especially women's and youth organizations]:

- (a) Increase [where necessary] budgetary allocations for [basic] [primary] health care and social services, with adequate support for secondary and tertiary levels, and give special attention to the [reproductive and sexual] health of girls and women; priority should be given to health programmes in rural and poor urban areas;
- (b) Develop [where necessary] innovative approaches to funding health services through promoting community participation and local financing; increase [where necessary] budgetary allocations for community health centres and community-based programmes and services that address women's specific health needs;
- (c) Develop [where appropriate] local health services, promoting the incorporation of gender-sensitive community-based participation and self-care and specially designed preventive health programmes;
- (d) Develop goals and time-frames, where appropriate, for improving women's health and for planning, implementing, monitoring and evaluating programmes, based on gender-impact assessments using qualitative and quantitative data disaggregated by sex, age, [race and ethnicity] and socio-economic variables;
- (e) [Strive to establish [as appropriate] ministerial and interministerial mechanisms, with the participation of non-governmental organizations, responsible for monitoring the implementation of women's health policy and programme reforms and establish focal points in high-level national planning ministries responsible for monitoring to ensure that women's health concerns are mainstreamed in all relevant government agencies and programmes.]

112. By Governments, the United Nations and its specialized agencies, international financial institutions, bilateral donors and the private sector, as appropriate:

- (a) Formulate policies favourable to [public] investment in women's health and [where appropriate] increase allocations for such investment;

- (b) [Provide appropriate material, financial and logistical assistance to youth non-governmental organizations in order to strengthen them to address youth concerns in the area of health [including sexual and reproductive health];
- (c) [Give higher priority to women's health and develop mechanisms for coordinating and implementing the health objectives of the Platform for Action and relevant [international agreements] to ensure progress.]

#### D. Violence against women

113. Violence against women is an obstacle to the achievement of the objectives of equality, development and peace.\* Violence against women both violates and impairs or nullifies the enjoyment by women of [their universal] human rights and fundamental freedoms.\* The long-standing failure to protect and promote those rights and freedoms in the case of violence against women is a matter of concern to all States and should be addressed. Knowledge about its causes and consequences, as well as its incidence and measures to combat it, have been greatly expanded since the Nairobi Conference. In [all] societies, to a greater or lesser degree, women and girls are subjected to physical, sexual and psychological abuse that cuts across lines of income, class and culture. The low social and economic status of women can be both a cause and a consequence of violence against women.

114. The term "violence against women" means any act of gender-based violence that results in, or is likely to result in, physical, sexual or psychological harm or suffering to women, including threats of such acts, coercion or arbitrary deprivation of liberty, whether occurring in public or private life. Accordingly, violence against women encompasses but is not limited to the following:

(a) Physical, sexual and psychological violence occurring in the family, including battering, sexual abuse of female children in the household, dowry-related violence, marital rape, female genital mutilation and other traditional practices harmful to women, non-spousal violence and violence related to exploitation;

(b) Physical, sexual and psychological violence occurring within the general community, including rape, sexual abuse, sexual harassment and intimidation at work, in educational institutions and elsewhere, trafficking in women and forced prostitution;

(c) Physical, sexual and psychological violence perpetrated or condoned by the State, wherever it occurs.

115. Other acts of violence against women include violation of the human rights of women in situations of armed conflict, in particular murder, systematic rape,

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\* The placement of this sentence has not yet been determined.

sexual slavery and [forced pregnancy]. [Acts of violence against women also include terrorism, forced sterilization and [forced abortion], coercive/forced use of contraceptives, [female foeticide/prenatal sex selection and female infanticide].

116. Some groups of women, such as women belonging to minority groups, indigenous women, refugee women, migrant women, women in poverty living in rural or remote communities, destitute women, women in institutions or in detention, female children, women with disabilities, elderly women and women in situations of armed conflict are also particularly vulnerable to violence.

117. [Internally] displaced women, repatriated women, women migrant workers, women living in poverty and [women living in areas under foreign occupation or where acts of terrorism occur] are also particularly vulnerable to violence.

118. Acts or threats of violence, whether occurring within the home or in the community, or perpetrated or condoned by the State, instil fear and insecurity in women's lives and are obstacles to the achievement of equality [and equity] and for development and peace. The fear of violence, including harassment, is a permanent constraint on the mobility of women and limits their access to resources and basic activities. High social, health and economic costs to the individual and society are associated with violence against women. Violence against women is one of the crucial social mechanisms by which women are forced into a subordinate position compared with men. In many cases, violence against women and girls occurs in the family or within the home, where violence is often tolerated. The neglect, physical and sexual abuse, and rape of girl-children and women by family members and other members of the household, as well as incidences of spousal and non-spousal abuse, often go unreported and are thus difficult to detect. Even when such violence is reported, there is often a failure to protect victims or punish perpetrators.

119. Violence against women is a manifestation of the historically unequal power relations between men and women, which have led to domination over and discrimination against women by men and to the prevention of women's full advancement. Violence against women throughout the life cycle derives essentially from cultural patterns, in particular the harmful effects of certain traditional or customary practices and all acts of extremism linked to race, sex, language or religion that perpetuate the lower status accorded to women in the family, in the workplace, in the community and in society. Violence against women is exacerbated by social pressures, notably the shame of denouncing certain acts that have been perpetrated against women; women's lack of access to legal information, aid or protection; the lack of laws that effectively prohibit violence against women; failure to reform existing laws; inadequate efforts on the part of public authorities to promote awareness of and to enforce existing laws; and the absence of educational and other means to address the causes and consequences of violence. Images in the media of violence against women, in particular those that depict rape or sexual slavery as well as the use of women and girls as sex objects, including pornography, [are] factors contributing to the continued prevalence of such violence, adversely influencing the community at large, in particular children and young people.

120. Developing a holistic and multidisciplinary approach to the challenging task of promoting families, communities and States that are free of violence against women is necessary and achievable. Equality, partnership between women and men and respect for human dignity must permeate all stages of the socialization process. Educational systems should promote self-respect, mutual respect, and cooperation between women and men.

121. The absence of adequate gender-disaggregated data and statistics on the incidence of violence make the elaboration of programmes and monitoring of changes difficult. Lack of or inadequate documentation and research on domestic violence, sexual harassment and violence against women and girls in private and in public, including in the workplace, impede efforts to design specific intervention strategies. Experience in a number of countries shows that women and men can be mobilized to overcome violence in all its forms and that effective public measures can be taken to address both the causes and the consequences of violence. Men's groups mobilizing against gender violence are necessary allies for change.

122. [Refugee, [internally] displaced and migrant girls and women, including women migrant workers, as well as women in detention, and women in situations of armed conflict or [women living under foreign occupation or alien domination] are especially vulnerable to all types of violence, including terrorism, murder, torture, prostitution, including forced prostitution, rape, in particular its systematic use as a weapon of war, [forced pregnancy], sexual abuse, slavery, harassment and other forms of violence, which are often perpetrated by persons in positions of authority. Such practices constitute crimes against humanity and violations of human rights [and relevant Geneva conventions]]. Training of all officials in humanitarian and human rights law and the punishment of perpetrators of violent acts against women would help to ensure that such violence does not take place at the hands of public officials in whom women should be able to place trust, including police and prison officials and security forces.

123. The effective suppression of trafficking in women and girls for the sex trade is a matter of pressing international concern. Implementation of the 1949 Convention for the Suppression of the Traffic in Persons and of the Exploitation of the Prostitution of Others, 18/ as well as other relevant instruments, needs to be reviewed and strengthened. The use of women in international prostitution and trafficking networks has become a major focus of international organized crime. The Special Rapporteur of the Commission on Human Rights on violence against women [who has explored these act as an additional cause of the violation of the human rights and fundamental freedoms of women and girls,] is invited to address, within her mandate and as a matter of urgency, the issue of international trafficking for the purposes of the sex trade, as well as the issues of forced prostitution, rape, sexual abuse and sex tourism. Women and girls who are victims of this international trade are at an increased risk of further violence, as well as [unwanted pregnancy] and sexually transmitted infection, including infection with HIV/AIDS.

124. In addressing violence against women, Governments and other actors should promote an active and visible policy of mainstreaming a gender perspective in

all policies and programmes so that before decisions are taken an analysis may be made of their effects on women and men, respectively.

[Eliminate violence against women]

Strategic objective D.1. Take integrated measures to prevent and eliminate violence against women

Actions to be taken

125. By Governments:

- (a) Condemn violence against women and refrain from invoking any custom, tradition or religious consideration to avoid their obligations with respect to its elimination [consistent with the Declaration on the Elimination of Violence against Women];
- (b) Refrain from engaging in violence against women and exercise due diligence to prevent, investigate and, in accordance with national legislation, punish acts of violence against women, whether those acts are perpetrated by the State or by private persons;
- (c) Enact and/or reinforce penal, civil, labour and administrative sanctions in domestic legislation to punish and redress the wrongs done to women and girls who are subjected to any form of violence, whether in the home, in the workplace, in the community or in society;
- (d) Adopt and/or implement and periodically review and analyse legislation to ensure its effectiveness in eliminating violence against women, emphasizing the prevention of violence and the prosecution of offenders; take measures to ensure the protection of women subjected to violence, [compensation for] and healing of victims, and rehabilitation of perpetrators;
- (e) [Consider,] [ratify and] implement [all relevant] [universally accepted] international human rights [norms] [instruments] as they relate to violence against women, including those contained in the Universal Declaration of Human Rights, 19/ the International Covenant on Civil and Political Rights, 12/ the International Covenant on Economic, Social and Cultural Rights, 12/ and the Convention against Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment; 20/
- (f) Implement [the norms contained in] the Convention on the Elimination of All Forms of Discrimination against Women, taking into account general recommendation 19 adopted by the Committee on the Elimination of Discrimination against Women at its eleventh session; 21/
- (g) Promote an active and visible policy of mainstreaming a gender perspective in all policies and programmes related to violence against women and actively encourage, support and implement measures and

/...

programmes aimed at increasing the knowledge and understanding of the causes, consequences and mechanisms of violence against women among those responsible for implementing these policies, such as law enforcement officers, police personnel and judicial, medical and social workers, as well as those who deal with minority, migration and refugee issues, and develop strategies to ensure that the revictimization of women victims of violence does not occur because of gender-insensitive laws or judicial or enforcement practices;

- (h) Provide women who are subjected to violence with access to the mechanisms of justice and, as provided for by national legislation, to just and effective remedies for the harm they have suffered and inform women of their rights in seeking redress through such mechanisms;
- (i) Enact and enforce legislation against the perpetrators of practices and acts of violence against women, such as female genital mutilation, [female foeticide/prenatal sex selection] infanticide and dowry-related violence and give vigorous support to efforts of non-governmental and community organizations to eliminate such practices;
- (j) Formulate and implement [national and local] plans of action to eliminate violence against women;
- (k) Adopt all appropriate measures, especially in the field of education, to modify the social and cultural patterns of conduct of men and women, and to eliminate prejudices, customary practices and all other practices based on the idea of the inferiority or superiority of either of the sexes and on stereotyped roles for men and women;
- (l) Create or strengthen institutional mechanisms so that women and girls can report acts of violence against them in a safe and confidential environment, free from the fear of penalties or retaliation, and file charges;
- (m) Ensure that women with disabilities have access to information and services in the field of violence against women;
- (n) [Create, fund and improve] or develop, as appropriate, the training of judicial, legal, medical, social, educational and police and immigration personnel, in order to avoid the abuse of power leading to violence against women and sensitize such personnel to the nature of gender-based acts and threats of violence so that fair treatment of female victims can be assured;
- (o) Adopt laws, where necessary, and reinforce existing laws that punish police, security forces or any other agents of the State who engage in acts of violence against women in the course of the performance of their duties, review existing legislation and take effective measures against the perpetrators of such violence;

- (p) Allocate adequate resources within the government budget and mobilize community resources for activities related to the elimination of violence against women, including resources for the implementation of [national and local] plans of action;
- (q) Include in reports submitted in accordance with the provisions of relevant United Nations human rights instruments, information pertaining to violence against women and measures taken to implement the Declaration on the Elimination of Violence against Women;
- (r) Cooperate with and assist the Special Rapporteur of the Commission on Human Rights on violence against women, in the performance of her mandate and furnish all information requested; cooperate also with other competent mechanisms, such as the Special Rapporteur of the Commission on Human Rights on torture and the Special Rapporteur of the Commission on Human Rights on summary, extrajudiciary and arbitrary executions, in relation to violence against women;
- (s) Recommend that the Commission on Human Rights renew the mandate of the Special Rapporteur on violence against women when her term ends in 1997 and, if warranted, to [update and] strengthen it.

126. By Governments, including local governments, and community organizations, non-governmental organizations, educational institutions, the public and private sectors, particularly enterprises, and the mass media, as appropriate:

- (a) Provide well-funded shelters and relief support for girls and women subjected to violence, as well as medical, psychological and other counselling services and free or low-cost legal aid, where it is needed, as well as appropriate assistance to enable them to find a means of subsistence;
- (b) Establish linguistically and culturally accessible services for migrant women and girls, including women migrant workers who are victims of gender-based violence;
- (c) Recognize the vulnerability to violence and other forms of abuse of women migrants, including women migrant workers, whose legal status in the host country depends on employers who may exploit their situation;
- (d) Support initiatives of women's organizations and non-governmental organizations all over the world to raise awareness on the issue of violence against women and to contribute to its elimination;
- (e) Organize, support and fund community-based education and training campaigns to raise awareness about violence against women as a violation of women's enjoyment of their human rights and mobilize local communities to use appropriate gender-sensitive traditional and innovative methods of conflict resolution;
- (f) Recognize, support and promote the fundamental role of intermediate institutions, such as primary-health-care centres, [family-planning



centres, existing school health services], mother and baby protection services, centres for migrant families and so forth in the field of information and education related to abuse;

- (g) [Organize [and fund] information campaigns, educational and training programmes for girls and boys and women and men, in particular those at high risk for violence, about the personal and social detrimental effects of violence in the family, community and society [how to communicate without violence] so that they can learn to protect themselves and others against such violence];
- (h) Disseminate information on the assistance available to women and families who are victims of violence;
- (i) [Encourage the provision of] [provide] [initiate and fund] counselling and rehabilitation for the perpetrators of violence, and promote research to further efforts concerning such counselling and rehabilitation so as to prevent the recurrence of such violence;
- (j) [Raise awareness of the responsibility of the media in promoting non-stereotyped images of women and men, as well as in eliminating patterns of media presentation that generate violence, and encourage those responsible for media content to establish professional guidelines and codes of conduct; and also raise awareness of the important role of the media in informing and educate people about the causes and effects of violence against women and in stimulating public debate on the topic.]

127. By Governments, employers, trade unions, community and youth organizations and non-governmental organizations, as appropriate:

- (a) Develop programmes and procedures to eliminate sexual harassment and other forms of violence against women in all educational institutions, workplaces and elsewhere;
- (b) Develop programmes and procedures to educate and raise awareness of acts of violence against women that constitute a crime and a violation of the human rights of women;
- (c) Develop counselling, healing and support programmes for girls, adolescents and young women who have been or are involved in abusive relationships, particularly those who live in homes or institutions where abuse occurs;
- (d) Take special measures to eliminate violence against women, particularly those in vulnerable situations, such as young women, refugee, displaced and internally displaced women, women with disabilities and women migrant workers, including enforcing any existing legislation and developing, as appropriate, new legislation for women migrant workers in both sending and receiving countries.

128. By the Secretary-General of the United Nations:

Provide the Special Rapporteur of the Commission on Human Rights on violence against women with all necessary assistance, in particular staff and resources required to perform all mandated functions, especially in carrying out and following up on missions [undertaken either separately or jointly with other special rapporteurs and working groups], and adequate assistance for periodic consultations with the Committee on the Elimination of Discrimination against Women and all treaty bodies.

129. By Governments, international organizations and non-governmental organizations:

Encourage the dissemination and implementation of the UNHCR Guidelines on the Protection of Refugee Women and the UNHCR Guidelines on the Prevention of and Response to Sexual Violence against Refugees.

Strategic objective D.2. Study the causes of violence against women and effective methods of prevention strategies

Actions to be taken

130. By Governments, regional organizations, the United Nations, other international organizations, research institutions, women's and youth organizations and non-governmental organizations, as appropriate:

- (a) Promote research, collect data and compile statistics, especially concerning domestic violence relating to the prevalence of different forms of violence against women and encourage research into the causes, nature, seriousness and consequences of violence against women and the effectiveness of measures implemented to prevent and redress violence against women [in their social, economic, cultural and political context];
- (b) Disseminate findings of research and studies widely;
- (c) Support and initiate research on the impact of violence, such as rape, on women and girl children, and make the resulting information and statistics available to the public;
- (d) Encourage the media to examine the impact of gender role stereotypes, including those perpetuated by commercial advertisements [which foster] gender-based violence and inequalities, and how they are transmitted during the life cycle and take measures to eliminate these negative images with a view to promoting a violence-free society.

Strategic objective D.3 Adopt special measures to eliminate trafficking in women and to assist female victims of violence due to prostitution and trafficking

Actions to be taken

131. By Governments of countries of origin, transit and destination, regional and international organizations, as appropriate:

- (a) Consider the ratification and enforcement of international conventions on trafficking in persons and on slavery;
- (b) Take appropriate measures to address the root factors, including external factors, that encourage trafficking in women and girls for prostitution, [other commercial sex work], forced marriages and forced labour in order to eliminate trafficking in women, including by strengthening existing legislation with a view to providing better protection of the rights of women and girls and to punishing the perpetrators, through both criminal and civil measures;
- (c) Step up cooperation and concerted action by all relevant law enforcement authorities and institutions with a view to dismantling [national and international] networks in trafficking;
- (d) [Allocate resources to provide comprehensive programmes designed [to heal victims of trafficking] including through job training, legal assistance and confidential health care] and take measures to cooperate with non-governmental organizations to provide for the social, medical and psychological care of the victims of trafficking;
- (e) Develop educational and training programmes and policies and consider enacting legislation aimed at preventing sex tourism and trafficking, giving special emphasis to the protection of young women and children.

E. Advance peace, promote conflict resolution and reduce the impact of armed or other conflict on women

132. [An environment which maintains world peace and promotes [universal] human rights, democracy and the peaceful settlement of disputes, [upholding the principles of non-threat or non-use of force and of mutual respect of territorial integrity and sovereignty is a precondition for the advancement of women.] [Without peace, there will be no equality or development.] Armed and other types of conflicts have not decreased since the end of the cold war; aggression, [foreign occupation] ethnic and religious and [other types of] conflicts are an ongoing reality affecting women in nearly every region. Gross and systematic violations and situations that constitute serious obstacles to the full enjoyment of human rights continue to occur in different parts of the world. Such violations and obstacles include, as well as torture and cruel, inhuman and degrading treatment or summary and arbitrary detention, all forms of racism, racial discrimination, xenophobia, denial of economic, social and

cultural rights and religious intolerance. Terrorism is a new and emerging global phenomenon. International humanitarian law, prohibiting attacks on civilian populations, is systematically ignored; [human rights are being violated by [all] parties in armed conflicts.] Armed conflict has resulted in serious violations of the human rights of women, including murder, torture, systematic rape and [forced pregnancy,] especially in ethnic cleansing as a strategy of war and its consequences. Some of these situations of armed conflict have their origin in the conquest or colonialization of a country by another country or State and the perpetuation of that colonial situation through State and military repression.]

133. The Geneva Convention relative to the Protection of Civilian Persons in Time of War, of 1949 [and the Additional Protocols], that women shall especially be protected against any attack on their honour, in particular against humiliating and degrading treatment, rape, enforced prostitution or any form of indecent assault. 22/ The Vienna Declaration and Programme of Action, adopted by the World Conference on Human Rights, states that "Violations of the human rights of women in situations of armed conflict are violations of the fundamental principles of international human rights and humanitarian law". 23/ Gross and systematic violations and situations that constitute serious obstacles to the full enjoyment of human rights continue to occur in different parts of the world. Such violations and obstacles include, as well as torture and cruel, inhuman and degrading treatment or summary and arbitrary detention, all forms of racism, racial discrimination, xenophobia, denial of economic, social and cultural rights and religious intolerance.

134. Violations of human rights in situations of armed conflict and military occupation are violations of the fundamental principles of international human rights and humanitarian law as embodied in international human rights instruments and in the Geneva Conventions of 1949 and the Additional Protocols thereto. [Humanitarian law, prohibiting attacks on civilian populations, and international human rights law are systematically ignored and violated by armed and security forces and other parties to armed conflicts.] Gross human rights violations and policies of ethnic cleansing in war-torn and occupied areas continue to be carried out. These practices have created, inter alia, a mass flow of refugees and [internally] displaced persons, the majority of whom are women, adolescent girls and children. Civilian victims, mostly women and children, often outnumber casualties among combatants. In addition, women often become caregivers for injured combatants and find themselves, as a result of conflict, unexpectedly cast as sole manager of household, sole parent, and caretaker of elderly relatives.

135. In a world of continuing instability and violence, the implementation of cooperative approaches to peace and security is urgently needed. [[In implementing cooperative approaches to peace and security] [This requires that] emphasis [should] be given to preventive strategies and to peace-building as a particular prevention-oriented concept. The perspective of women would provide a more constructive approach to the use of power and the resolution of conflict.] Although women have begun to play an important role in conflict resolution, peace-keeping, and defence and foreign affairs mechanisms, they are still underrepresented in decision-making positions. If women are to play an

equal part in securing and maintaining peace, they must be empowered politically and economically and represented adequately at all levels of decision-making.

136. [While entire communities suffer the consequences of armed conflict, terrorism and [foreign occupation and alien domination], women and girls are particularly affected because of their status in society and their [sex/gender]. Parties to conflict often rape women with impunity, sometimes using systematic rape as a tactic of war and terrorism. The impact of violence against women and violation of the human rights of women in such situations is experienced by women of all ages, who suffer displacement, loss of home and property, loss or involuntary disappearance of close relatives, poverty and family separation and disintegration and who are victims of acts of murder, terrorism, torture, involuntary disappearance, sexual slavery, rape [and its consequences], sexual abuse and [forced pregnancy], especially as a result of policies of ethnic cleansing and other new and emerging forms of violence. This is compounded by the life-long social, economic and psychologically traumatic consequences of armed conflict and [foreign occupation].]

137. Women and children constitute some 80 per cent of the 23 million refugees and of the 26 million [internally] displaced persons in the world. They are threatened by deprivation of property, goods and services and deprivation of their [basic] right to return to their homes of origin as well as by violence and insecurity. Particular attention should be paid to sexual violence against uprooted women and girls employed as a method of persecution in systematic campaigns of terror and intimidation and forcing members of a particular ethnic, cultural or religious group to flee their homes. [Women may also be forced to flee because of [gender-based/through sexual violence,] persecution and they continue to be vulnerable to violence and exploitation while in flight, in countries of asylum and resettlement, and during and after repatriation. Women often experience difficulty in some countries of asylum in being recognized as refugees on the grounds of [gender-based/through sexual violence] persecution.]

138. Refugee, displaced and migrant women in most cases display strength, endurance and resourcefulness and can contribute positively to countries of resettlement or to their countries of origin on their return. They need to be appropriately involved in decisions that affect them.

139. Many women's non-governmental organizations have called for reductions in military expenditures worldwide, as well as in international trade and trafficking in and the proliferation of weapons. Those affected most negatively by [conflict] [excessive military spending] are people living in poverty, who are deprived because of the lack of investment in basic services. Women living in poverty, particularly rural women, also suffer because of the use of arms that are particularly injurious or have indiscriminate effects. There are more than 100 million anti-personnel land-mines scattered in 64 countries globally. [Excessive military spending is one of the main constraints to development.] [At the same time, maintenance of national security and peace [is an important factor] [is essential] for economic growth and development and the empowerment of women.]

140. [International stability and security are prerequisites for economic growth and development. In the new international setting, military strength is no

guarantee of security. The effects of mass migration, crime, the drug problem, disease, human rights violations, environmental degradation, pressures of population growth and underdevelopment transcend national borders. These new challenges to peace and security have implications at the local, regional and global levels.]

141. During times of armed conflict and the collapse of communities, the role of women is crucial. They often work to preserve social order in the midst of armed and other conflicts. [Women make an important but often unrecognized contribution as peace educators both in the family/families and in society.]

142. Education to foster a culture of peace that upholds justice and tolerance for all nations and peoples is essential to attaining lasting peace and should be begun at an early age. It should include elements of conflict resolution, mediation, reduction of prejudice and respect for diversity.

143. In addressing armed or other conflicts, an active and visible policy of mainstreaming a gender perspective into all policies and programmes should be promoted so that before decisions are taken an analysis is made of the effects on women and men, respectively.

[Increase the participation of women in conflict resolution and protect women in armed and other kinds of conflict and under foreign occupation]

Strategic objective E.1. Increase and strengthen the participation of women in conflict resolution and decision-making and leadership in peace and security activities and protect women in armed and other conflicts [and living under foreign occupation]

Actions to be taken

144. By Governments and international and regional intergovernmental institutions:

- (a) [Take action to establish a critical mass to promote gender balance and to ensure equal participation of women with due regard to equitable geographical distribution numerically, at all levels, and ensure that opportunities are made available for qualified women to participate in all United Nations forums and peace activities at ambassadorial and decision-making levels, including the United Nations Secretariat;]
- (b) Strengthen the role of women and [increase the percentage of women at all decision-making levels in national and international institutions which may make or influence policy with regard to matters related to peace-keeping] [including observer missions] [peace-building, fact-finding and preventive diplomacy activities,] and in all stages of peace mediation and negotiations; [in line with the specific

recommendations of the Secretary-General in his strategic plan of action for the improvement of the status of women in the Secretariat (1995-2000) (A/49/587, sect. IV)];

- (c) [Integrate a [gender perspective] in the result of armed or other conflicts [and foreign occupation] and aim for gender balance when promoting candidates for judicial and other positions in such international bodies as [war crime tribunals, including the United Nations International Tribunals for the former Yugoslavia and for Rwanda,] the International Court of Justice [as well as in other bodies related to the peaceful settlement of disputes;]]
- (d) Ensure that these bodies are able to properly address gender issues by providing appropriate training to prosecutors and judges and other officials in handling cases involving rape [and its consequences], [forced pregnancy], indecent assault and other forms of violence against women [in armed conflicts and foreign occupation and integrate a gender perspective into their work];
- (e) Strengthen the participation of women in processes of national reconciliation and reconstruction after all forms of conflict.

Strategic objective E.2. [Reduce military expenditures and control the availability of armaments] [Reduce and eliminate the availability of instruments of violence against women]

Actions to be taken

145. By Governments:

- (a) Increase and hasten, as appropriate, subject to national security considerations, the conversion of military resources and related industries to [development/peaceful] purposes;
- (b) Undertake to explore new ways of generating new public and private financial resources, inter alia, through the appropriate reduction of excessive military expenditures, including global military expenditures, trade in arms and investment in arms production and acquisition, taking into consideration national security requirements, so as to permit the possible allocation of additional funds for social and economic development, [in particular for the advancement of women];
- (c) [[Submit data to the United Nations Register of Conventional Arms and consider expanding the Register to widen the scope of weapons covered] [Improve the universality of the United Nations Register of Conventional Arms as an effective measure for building confidence at the global level [and include in their annual reports information on military holdings and procurement through national production]. Register, and ultimately eliminate, offensive weapons development,

production, deployment and sales and, as a first step, expand the [United Nations Register of Conventional Arms to include production and marketing], making reporting obligatory, and to include all types of weapons, such as nuclear, chemical and biological weapons];

- (d) [Recognize and address the dangers to society of armed conflict, the excessive production of and illicit trade in arms, linked to money-laundering and the sale of arms that are particularly injurious or have indiscriminate effects, terrorism, violence, crime, the production and use of and trafficking in illicit drugs and trafficking in women and children.] While acknowledging legitimate national defence needs, the dangers to society of armed conflict and the negative effect of excessive military expenditures, trade in arms, especially those arms that are particularly injurious or have indiscriminate effects, and excessive investment in arms production and acquisition should be recognized and addressed. Similarly, the need to combat illicit arms trafficking, violence, crime, the production and use of and trafficking in illicit drugs, and trafficking in women and children should be recognized;
- (e) [Immediately adopt/Consider the adoption of a moratorium on the export and planting of anti-personnel land-mines, and facilitate the transfer of mine clearance technology without restriction or discrimination; undertake to destroy current stockpiles of anti-personnel land-mines; promote assistance in mine clearance, in particular to promote scientific research aimed at rapid advancement of mine detection and clearance technology; and consider ratifying the 1981 Convention on Prohibitions or Restrictions on the Use of Certain Conventional Weapons Which May Be Deemed to Be Excessively Injurious or to Have Indiscriminate Effects 24/ and the Protocol on Prohibitions or Restrictions on the Use of Mines, Booby Traps and Other Devices 24/ (Protocol II);]
- (f) [Promote the elimination of all weapons of mass destruction, especially nuclear weapons.]

Strategic objective E.3. Promote non-violent forms of conflict resolution and reduce the incidence of human rights abuse in conflict situations

Actions to be taken

146. By Governments:

- (a) Consider the ratification of or accession to international instruments containing provisions relative to the protection of women and children in armed conflicts, including the Geneva Convention relative to the Protection of Civilian Persons in Time of War, of 1949, the Protocols Additional to the Geneva Conventions of 1949 relating to the Protection of Victims of International Armed Conflicts (Protocol I)



and to the Protection of Victims of Non-International Armed Conflicts (Protocol II);

- (b) Respect fully the norms of international humanitarian law in armed conflicts and take all measures required for the protection of women and children, in particular against rape, forced prostitution and any other form of indecent assault.

147. By Governments and international and regional organizations:

- (a) Reaffirm the right of self-determination of all peoples, in particular of peoples under colonial or other forms of alien domination or foreign occupation, and the importance of the effective realization of this right, as enunciated, inter alia, in the Vienna Declaration and Programme of Action, 2/ adopted by the World Conference on Human Rights;
- (b) [Encourage diplomacy, [preventive diplomacy,] negotiation and peaceful settlement of disputes in accordance with the Charter of the United Nations, in particular Article 2, paragraphs 3 and 4 thereof;]
- (c) [Consider the establishment of a special United Nations unit for third-party conflict prevention and resolution and the gender composition of any such unit;]
- (d) Urge the identification and condemnation of the systematic practice of rape and other forms of inhuman and degrading treatment of women as a deliberate instrument of war and ethnic cleansing and take steps to ensure that full assistance is provided to the victims of such abuse for their physical and mental rehabilitation;
- (e) [Declare that rape in the conduct of armed conflict can constitute a war crime and a crime against humanity and under certain circumstances may constitute an act of genocide, take all measures required for the protection of women and children and strengthen mechanisms to investigate and punish rape and other such acts;]
- (f) Uphold and reinforce standards set out in international humanitarian law and international human rights instruments to prevent all acts of violence against women in situations of armed and other acts of conflict and undertake full investigations of all acts of violence against women committed during war, in particular [systematic rape] and sexual slavery, prosecute all criminals responsible for war crimes against women and provide full redress to women victims;
- (g) [Call upon the international community to condemn and act against terrorism;]
- (h) Take action to investigate and punish members of the police, security, and armed forces and others who perpetrate acts of violence against women, violations of [international humanitarian law] and violations

of the human rights of women [who violate the human rights of women] in situations of armed conflict;

- (i) Take into account gender-sensitive concerns in developing training programmes for all relevant personnel on international humanitarian law and [international] human rights awareness and recommend such training for those involved in United Nations peace-keeping and humanitarian aid, with a view to preventing violence against women, in particular;
- (j) [Encourage the elimination of and abstain from adopting unilateral coercive measures, in violation of international law and the Charter of the United Nations, that go against the population of affected countries and, in particular, women and that could provoke situations leading to conflicts;]
- (k) [Take measures in accordance with international law [and legitimacy] with a view to alleviating the negative impact of economic sanctions on women and children.]

Strategic objective E.4. Promote women's contribution to fostering a culture of peace

Actions to be taken

148. By Governments, international and regional intergovernmental institutions and non-governmental organizations:

- (a) Promote peaceful conflict resolution and peace, reconciliation and tolerance through education, training, community actions and youth exchange programmes, in particular for young women;
- (b) [During future] reviews of the implementation of the plan of action for the United Nations Decade for Human Rights Education (1995-2004), take into account the results of the Fourth World Conference on Women: Action for Equality, Development and Peace; [Move subpara. to chap. IV, sect. I.]
- (c) Encourage the further development of peace research, involving the participation of women, to examine the impact of armed conflict on women and children and the nature and contribution of women's participation in national, regional and international peace movements; engage in research and identify innovative mechanisms for containing violence and for conflict resolution for public dissemination and for use by women and men;
- (d) Develop and disseminate research on the physical, psychological, economic and social effects of armed conflicts on women, particularly young women and girls, with a view to developing policies and programmes to address the consequences of conflicts;

- (e) Consider establishing educational programmes for girls and boys to foster a culture of peace, focusing on conflict resolution. [These programmes should promote, among other things, positive models for men and boys that encourage them to use non-violent means to settle conflicts].

Strategic objective E.5. Provide protection, assistance and training to refugee and displaced women [including internally displaced women]

Actions to be taken

149. By Governments, intergovernmental and non-governmental organizations and other institutions involved in providing protection, assistance and training to refugees and [internally] displaced persons, including the Office of the United Nations High Commissioner for Refugees and the World Food Programme, as appropriate:

- (a) Take steps to ensure that women are fully involved in the planning, design, implementation, monitoring and evaluation of all short-term and long-term projects and programmes providing assistance to refugees and [internally] displaced women, including the management of refugee camps and resources. Ensure that refugees and displaced women and girls have direct access to services provided;
- (b) Offer adequate protection and assistance to women and children displaced within their country and find solutions to the root causes of their displacement with a view to preventing it and, when appropriate, facilitate their return or resettlement;
- (c) Take steps to protect the safety and physical integrity of refugee and [internally] displaced women during their displacement and upon their return to their communities of origin, including programmes of rehabilitation; take effective measures to protect from violence women who are refugees or displaced, hold an impartial and thorough investigation of any such violations and bring those responsible to justice;
- (d) [Take all the necessary steps to ensure the right of refugee and displaced women to safe and protected return to their homes;]
- (e) Take measures, at the national level with international cooperation, as appropriate, in accordance with the Charter of the United Nations, to find lasting solutions to questions related to internally displaced women, including their right to voluntary and safe return to their home of origin;
- (f) [Take account of the specific needs and resources of refugee and displaced women and children, especially their access to appropriate and adequate food, water, shelter and health-care services, including reproductive health services, in the provision of emergency relief and

- longer term assistance] [Ensure that the international community and the international organizations provide financial and other resources to Governments in [countries of asylum] in order to provide emergency relief and longer term assistance that takes into account the specific needs and resources of refugee and displaced women and children, especially their access to appropriate and adequate food, water, shelter and health-care services including reproductive health services] [including vaccinations; provision of basic medicines and medicines related to tropical diseases, such as malaria and typhoid fever; full maternity care, including prenatal and postnatal care; dental care; and reproductive health care];
- (g) Facilitate the availability of educational material in the appropriate language - in emergency situations also - in order to minimize disruption of schooling among refugee and displaced children;
- (h) Apply international norms to ensure equal access and equal treatment of women and men in refugee determination procedures and the granting of asylum, including full respect and strict observation of the principle of non-refoulement [particularly for women and child refugees] through, inter alia, bringing national immigration regulations into conformity with relevant international instruments, and consider [gender factors in] recognizing as refugees those women whose claim to refugee status is based [upon the well-founded fear of persecution through sexual violence/gender factors for] [on] reasons enumerated in the 1951 Convention relating to the Status of Refugees and the 1967 Protocol and provide access to specially trained officers, including female officials, to interview women regarding sensitive or painful experiences, such as sexual assault;
- (i) [Support and promote efforts] by States towards [Consider] the development of criteria and guidelines on responses to persecution specifically aimed at women, by sharing information on States' initiatives to develop such criteria and guidelines and by monitoring to ensure their fair and consistent application;
- (j) Promote the self-reliant capacities of refugee and [internally] displaced women and provide programmes for women, particularly young women, in leadership and decision-making within refugee and returnee communities;
- (k) Ensure that the human rights of refugee and displaced women are protected and that refugee and displaced women are made aware of these rights; ensure that the vital importance of family reunification is recognized;
- (l) [Adopt special measures, as appropriate, to provide women who have been determined refugees with access to vocational/professional training programmes, including language training, small-scale enterprise development training and planning and counselling on all forms of violence against women, which should include rehabilitation programmes for victims of torture and trauma, and substantially

increase the international contribution to general programmes for assistance to refugees, particularly in countries which host the largest number of refugees;]

- (m) Raise public awareness of the contribution made by refugee women to their countries of resettlement, promote understanding of their human rights and of their needs and abilities, and encourage mutual understanding and acceptance through educational programmes promoting cross-cultural and interracial harmony;
- (n) [Provide basic and support services to women who are displaced from their place of origin as a result of terrorism, violence, drug trafficking or other reasons linked to violence situations;]
- (o) Develop awareness of women's [international] human rights and provide, as appropriate, human rights education and training to military and police personnel operating in areas of armed conflict and areas where there are refugees.

150. By Governments:

- (a) Disseminate and implement the UNHCR Guidelines on the Protection of Refugee Women and the UNHCR Guidelines on Evaluation and Care of Victims of Trauma and Violence, or provide similar guidance, in close cooperation with refugee women and in all sectors of refugee programmes;
- (b) [Protect women and children who migrate as family members from abuse or denial of their human rights by sponsors and consider extending their stay, should the family relationship dissolve, within the limits of national legislation;] [Subpara. to be moved.]

[New strategic objective E.6. Provide assistance to the women of the colonies

Actions to be taken

151. By Governments, intergovernmental and non-governmental organizations:

- (a) [Support and promote the recognition and implementation of the universal right of all peoples to self-determination and ensure that, by virtue of that right, they freely determine their political status and freely pursue their economic, social and cultural development, taking into account the interests of women of the colonies and providing special programmes in leadership and in training for decision-making;]
- (b) [Raise public awareness through the mass media, education at all levels and special programmes to create a better understanding of the situation of women of the colonies].]

F. [Inequality in women's access to and participation in the definition of economic structures and policies [and the productive process itself]]  
[Economic potential and independence of women]  
[Gender equality in economic structures, policies and all forms of productive activity]

152. There are considerable differences in women's and men's access and opportunities to exert power over economic structures in their societies. In most parts of the world, women are virtually absent from or are poorly represented in economic decision-making, including the formulation of financial, monetary, commercial and other economic policies, as well as tax systems and rules governing pay. Since it is often within the framework of such policies that individual men and women make their decisions, *inter alia*, on how to divide their time between remunerated and unremunerated work, the actual development of these economic structures and policies has a direct impact on women's and men's access to economic resources, their economic power and consequently the extent of equality between them at the individual and family levels as well as in society as a whole.

153. In many regions, women's participation in remunerated work in the formal and non-formal labour market increased significantly and changed during the past decade. [While women continued to work in agriculture and fisheries, they also became increasingly involved in micro, small and medium-scale enterprises and became more dominant in the expanding informal sector. On the negative side, they were impelled into the workplace by economic hardship and became preferred workers, often with low pay and poor working conditions, because they were seen as easier to subordinate. On the positive side, some entered the workforce by choice as they became more aware of their rights.] [In other regions, women's participation in economic life changed as part of the restructuring process that resulted in a loss of jobs for many professional and skilled women.] Gender segregated employment is still the dominant pattern of the economy, and gaps between female and male wages for equal work and work of equal value continue to be prevalent in both the private and public sectors. Women have increasingly become owners and managers of small and medium-scale enterprises but remain underrepresented in economic decision-making at both the national and international levels. [Similarly, women and gender concerns are largely absent from the policy formulation process in the multilateral institutions [that define the terms of structural adjustment programmes, loans and grants].]

154. Discrimination in education and training, hiring and remuneration, promotion and horizontal mobility practices, as well as inflexible working conditions, lack of access to productive resources and inadequate sharing of family responsibilities, combined with a lack of or insufficient services such as child care, continue to restrict employment, economic, professional and other opportunities and mobility for women and make their involvement stressful. Moreover, attitudinal obstacles inhibit women's participation in developing economic policy and [in some regions, restrict girls' access to] education and training for economic management.

155. Women's share in the labour force continues to rise and almost everywhere women are working more outside the household, although there has not been a

parallel lightening of responsibility for unremunerated work in the household and community. Women's income is becoming increasingly necessary to households of all types. In some regions, there has been a growth in women's entrepreneurship and other self-reliant activities, particularly in the informal sector. In many countries, women are the majority of workers in non-standard work, such as temporary, casual, multiple part-time, contract and home-based employment.

156. [Women migrants, especially domestic workers, contribute to the economy of the sending country through their remittances and at the same time contribute to the economy of the receiving country by taking over the domestic work of women nationals who are then able to engage in productive work in the receiving country.]

157. Insufficient attention to gender analysis has meant that women's contributions and concerns remain too often ignored in economic structures, such as financial markets and institutions, labour markets, economics as an academic discipline, economic and social infrastructure, taxation and social security systems, as well as in families and households. As a result, many policies and programmes may continue to contribute to inequalities between women and men. Where progress has been made in integrating gender perspectives, programme and policy effectiveness has also been enhanced.

158. Although many women have advanced in economic structures, for the majority of women, particularly those who face additional barriers, continuing obstacles have hindered women's ability to achieve economic autonomy and to ensure sustainable livelihoods for themselves and their dependants. Women are active in a variety of economic areas, which they often combine, ranging from wage labour and subsistence farming and fishing to the informal sector. However, legal and customary barriers to ownership of or access to land, natural resources, capital, credit, technology and other means of production, as well as wage differentials, contribute to impeding the economic progress of women. [The value of women's unremunerated contribution to the economy, whether working in [the home,] agriculture, food production, family enterprises, community service or [domestic work], is still often undervalued and unrecorded and therefore not reflected in current labour statistics and national accounts.] [Progress is needed in statistical concepts and methods of measuring and [valuing] unremunerated productive activity in the development of economic and social policy.]

159. [Although some new employment opportunities have been created for women as a result of [recent economic events] [the globalization of the economy], there are also trends that have exacerbated inequalities between women and men. In some cases, globalization is undermining women's self-reliant initiatives in savings, production and trade. In some regions, the international and gender division of labour has often reinforced the segregation of women into a limited number of occupations.]

160. These trends have been characterized by low wages, little or no labour standards protection, poor working conditions, particularly with regard to women's occupational health and safety, low skill levels, and a lack of job security and social security, in both the formal and informal sectors. Women's

unemployment is a serious and increasing problem in many countries and sectors. Young workers in the informal and rural sectors and migrant female workers remain the least protected by labour and immigration laws. Women, particularly those who are heads of households with young children, are limited in their employment opportunities for reasons that include inflexible working conditions and inadequate sharing, by men and by society, of family responsibilities.

161. [In countries that are undergoing fundamental political, economic and social transformation, the skills of women have constituted a major contribution to the economic life of their countries, but these skills are not well utilized in the emerging new economies.]

162. Lack of employment in the private sector and reductions in public services and public service jobs have affected women disproportionately. In some countries, women take on more unpaid work [by replacing public services], such as the care of children and those who are ill or elderly and in compensating for lost household income [particularly when public services are not available]. In many cases, [employment creation strategies, however, have tended to focus on traditional male occupations and sectors].

163. [For those women in paid work, many experience obstacles that prevent them from achieving their potential. While some are increasingly found in lower levels of management, attitudinal discrimination often prevents them from being promoted further. The experience of sexual harassment is an affront to a worker's dignity and prevents women from making a contribution commensurate with their abilities. The lack of a family-friendly work environment, including a lack of appropriate and affordable child care, and inflexible working hours further prevent women from achieving their full potential.]

164. In the private sector [including transnational and national enterprises,] women are largely absent from management and policy levels, denoting discriminatory hiring and promotion policies and practices. The unfavourable work environment as well as the limited number of employment opportunities available have led many women to seek alternatives. Women have increasingly become self-employed and owners and managers of micro, small and medium-scale enterprises. The expansion of the informal sector, in many countries, and of self-organized and independent enterprise is in large part due to women, whose [collaborative, self-help and traditional practices and] initiatives in production and trade represent a vital economic resource. When they gain access to and control over capital, credit and other resources, technology and training, women can increase production, marketing and income for sustainable development.

165. Taking into account the fact that continuing inequalities and noticeable progress coexist, rethinking employment policies is necessary in order to integrate the gender perspective and to draw attention to a wider range of opportunities as well as to address any negative gender implications of current patterns of work and employment. To realize fully equality between women and men in their contribution to the economy, active efforts are required for equal recognition and appreciation of the influence that the work, experience, knowledge and values of both women and men have in society.



166. In addressing the economic potential and independence of women, Governments and other actors should promote an active and visible policy of mainstreaming a gender perspective in all policies and programmes so that before decisions are taken, an analysis is made of the effects on women and men respectively.

[Promote women's economic self-reliance, including access to employment, appropriate working conditions and control over economic resources - land, capital and technology]

Strategic objective F.1. [Promote women's self-reliance, including access to employment, appropriate working conditions and control over economic resources - land, capital, credit and technology - and guarantee economic opportunities for women] [Secure economic rights for women]

Actions to be taken

167. By Governments:

- (a) Enact and enforce legislation to guarantee the rights of women and men to equal pay for equal work or work of equal value;
- (b) Adopt and implement laws against discrimination based on sex [age, race and religion] in the labour market, hiring and promotion, the extension of employment benefits and social security, and working conditions;
- (c) Eliminate discriminatory practices by employers and take appropriate measures in consideration of women's reproductive role and functions, such as the denial of employment and dismissal due to pregnancy or breast-feeding, or requiring proof of contraceptive use, and take effective measures to ensure that pregnant women, women on maternity leave or women re-entering the labour market after childbearing are not discriminated against;
- (d) Devise mechanisms and take positive action to enable women to gain access to full and equal participation in the formulation of policies and definition of structures through such bodies as ministries of finance and trade, national economic commissions, economic research institutes and other key agencies, as well as through their participation in appropriate international bodies;
- (e) [Undertake legislative and administrative reforms to give women equal rights [equitable rights] with men to economic resources, including access to ownership and control over land and other properties, credit inheritance, natural resources and appropriate new technology;]
- (f) Conduct reviews of national income and inheritance tax and social security systems to eliminate any existing bias against women;

/...

- (g) [Seek to] Develop a more comprehensive knowledge of work and employment through, inter alia, efforts to measure and better understand the type, extent and distribution of unremunerated work, particularly work in caring for dependants and unremunerated work done for family farms or businesses, and encourage the sharing and dissemination of information on studies and experience in this field, including the development of methods for assessing its value in quantitative terms, for possible reflection in accounts that may be produced separately from, but consistent with, core national accounts;
- (h) [Provide developing countries with technical assistance and funding to collect data on unpaid work and to incorporate them into their national accounts and other economic statistics;]
- (i) Review and amend laws governing the operation of financial institutions to ensure that they provide services to women and men on an equal basis;
- (j) [Make efforts to facilitate more open and transparent budget processes;]
- (k) Revise and implement national policies that support the traditional savings, credit and lending mechanisms for women;
- (l) Seek to ensure that national policies related to international and regional trade agreements do not adversely impact women's new and traditional economic activities;
- (m) [Ensure that transnational corporations comply with national laws and codes, social security regulations, international environmental laws and other relevant laws;]
- (n) Adjust employment policies to facilitate the restructuring of work patterns in order to promote the sharing of family responsibilities;
- (o) Establish mechanisms and other forums to enable women entrepreneurs and women workers to contribute to the formulation of policies and programmes being developed by economic ministries and financial institutions;
- (p) Enact and enforce equal opportunity laws, take positive action and ensure compliance by the public and private sectors through various means;
- (q) Use gender-impact analysis in the development of [macro- and micro-] economic and social policies in order to monitor such impact and restructure policies in cases where harmful impact occurs;
- (r) Promote gender-sensitive policies and measures to empower women as equal partners with men in technical, managerial and entrepreneurial fields;

- (s) Reform laws or enact national policies that support the establishment of labour laws to ensure the protection of all women workers, including safe work practices, the right to organize and access to justice.

Strategic objective F.2. Take positive action to facilitate women's equal access to resources, employment, markets and trade

Actions to be taken

168. By Governments:

- (a) Promote and support women's self-employment and the development of small enterprises, and strengthen women's access to credit and capital on appropriate terms equal to that of men through the scaling-up of institutions dedicated to promoting women's entrepreneurship, including, as appropriate, non-traditional and mutual credit schemes, as well as innovative linkages with financial institutions;
- (b) Strengthen the incentive role of the State as employer to develop a policy of equal [equitable] opportunities for women and men;
- (c) Enhance, at the national and local levels, rural women's income-generating potential by facilitating their equal access to and control over productive resources, land, credit, capital, property rights, development programmes and cooperative structures;
- (d) Promote and strengthen micro-enterprises, new small businesses, cooperative enterprises, expanded markets and other employment opportunities and, where appropriate, facilitate the transition from the informal to the formal sector, especially in rural areas;
- (e) Create and modify programmes and policies that recognize and strengthen women's vital role in food security and provide paid and unpaid women producers, especially those involved in food production, such as farming, fishing and aquaculture, as well as urban enterprises, with equal access to appropriate technologies, transportation, extension services, marketing and credit facilities at the local and community levels;
- (f) Establish appropriate mechanisms and encourage intersectoral institutions that enable women's cooperatives to optimize access to necessary services;
- (g) Increase the proportion of women extension workers and other government personnel who provide technical assistance or administer economic programmes;
- (h) Review, reformulate, if necessary, and implement policies, including business, commercial and contract law and government regulations, to

ensure that they do not discriminate against micro, small and medium-scale enterprises owned by women in rural and urban areas;

- (i) Analyse, advise on, coordinate and implement policies that integrate the needs and interests of employed, self-employed and entrepreneurial women into sectoral and inter-ministerial policies, programmes and budgets;
- (j) Ensure equal access for women to effective job training, retraining, counselling and placement services that are not limited to traditional employment areas;
- (k) Remove policy and regulatory obstacles faced by women in social and development programmes that discourage private and individual initiative;
- (l) Safeguard and promote respect for basic workers' rights, including the prohibition of forced labour and child labour, freedom of association and the right to organize and bargain collectively, equal remuneration for men and women for work of equal value, and non-discrimination in employment, and fully implement the conventions of the International Labour Organization in the case of States party to those conventions and, taking into account the principles embodied in those conventions in the case of those countries that are not party to those conventions, to thus achieve truly sustained economic growth and sustainable development.

169. By Governments, central banks and national development banks, and private banking institutions, as appropriate:

- (a) Increase the participation of women, including women entrepreneurs, in advisory boards and other forums to enable women entrepreneurs from all sectors and their organizations to contribute to the formulation and review of policies and programmes being developed by economic ministries and banking institutions;
- (b) Mobilize the banking sector to increase lending and refinancing through incentives and the development of intermediaries that serve the needs of women entrepreneurs and producers in both rural and urban areas, and include women in their leadership, planning and decision-making;
- (c) Structure services to reach rural and urban women involved in micro, small and medium-scale enterprises, with special attention to young women, low-income women, those belonging to ethnic and racial minorities, and indigenous women who lack access to capital and assets, expand women's access to financial markets by identifying and encouraging financial supervisory and regulatory reforms that support financial institutions' direct and indirect efforts to better meet the credit and other financial needs of the micro, small and medium-scale enterprises of women;

- (d) Ensure that women's priorities are included in public investment programmes for economic infrastructure, such as water and sanitation, electrification and energy conservation, transport and road construction. Promote greater involvement of women beneficiaries at the project planning and implementation stages to ensure access to jobs and contracts.

170. By Governments and non-governmental organizations:

- (a) Pay special attention to women's needs when disseminating market, trade and resource information and provide appropriate training in these fields;
- (b) Encourage community economic development strategies that build on partnerships among Governments, and encourage members of civil society to create jobs and address the social circumstances of individuals, families and communities.

171. By multilateral funders and regional development banks, as well as bilateral and private funding agencies, at the international, regional and subregional levels:

- (a) Review, where necessary reformulate, and implement policies, programmes and projects to ensure that a [higher] [more equitable] proportion of resources reach women in rural and remote areas [without attendant conditions that could place women under pressure to act against their ethical and religious values];
- (b) Develop flexible funding arrangements to finance intermediary institutions that target women's economic activities, and promote self-sufficiency and increased capacity in and profitability of women's economic enterprises;
- (c) [Develop strategies for international [development] financial institutions and regional development banks to consolidate and strengthen their assistance to the micro, small and medium-scale enterprise sector, and work together with bilateral agencies to coordinate and enhance the effectiveness of this sector, drawing upon the expertise and financial resources from within their own organizations as well as from bilateral agencies, Governments and non-governmental organizations.]

172. By international, multilateral and bilateral development cooperation organizations:

Support, through the provision of capital and/or resources, financial institutions that serve low-income, small and micro-scale women entrepreneurs and producers in both the formal and informal sectors.

173. By Governments and/or multilateral financial institutions:

Review rules and procedures of formal national and international financial institutions that obstruct replication of the Grameen Bank prototype, which provides credit facilities to rural women.

174. By international organizations:

[Seek to] Provide adequate support for programmes and projects designed to promote sustainable and productive entrepreneurial activities among women, in particular the disadvantaged.

Strategic objective F.3. Provide business services and access to markets, information and technology to low-income women

Actions to be taken

175. By Governments [in cooperation with non-governmental organizations and the private sector]:

- (a) Provide public infrastructure to [ensure] [facilitate] equal market access for women and men entrepreneurs;
- (b) Develop programmes that provide training and retraining, particularly in new technologies and affordable services to women in business management, product development, financing, production and quality control, marketing and the legal aspects of business;
- (c) Provide outreach programmes to inform low-income and poor women, particularly in rural and remote areas, of opportunities for market and technology access, and provide assistance in taking advantage of such opportunities;
- (d) Create non-discriminatory [investment funds] [support services] for women's businesses, and target women, particularly low-income women, in trade promotion programmes;
- (e) Disseminate information about successful women entrepreneurs in both traditional and non-traditional economic activities and the skills necessary to achieve success; facilitate networking and the exchange of information;
- (f) Take measures to ensure equal access of women to ongoing training in the workplace, including unemployed women, single parents, women re-entering the labour market after an extended temporary exit from employment owing to family responsibilities and other causes, and women displaced by new forms of production or by retrenchment, and increase incentives to enterprises to expand the number of vocational and training centres that provide training for women in non-traditional areas;

- (g) Provide affordable support services, such as high-quality, flexible and affordable child-care services, that take into account the needs of working men and women.

176. By local, national, regional and international business organizations and non-governmental organizations concerned with women's issues:

Advocate, at all levels, for the promotion and support of women's businesses and enterprises, including those in the informal sector, and the equal access of women to productive resources.

Strategic objective F.4. Strengthen women's economic capacity and commercial networks

Actions to be taken

177. By Governments:

- (a) Adopt policies that support business organizations, non-governmental organizations, cooperatives, revolving loan funds, credit unions, grass-roots organizations, women's self-help groups and other groups in order to provide services to women entrepreneurs in rural and urban areas;
- (b) [Design special programmes for women that are affected by economic restructuring [and structural adjustment programmes] and the process of transition to market economies and for women who work in the informal sector;]
- (c) [Adopt policies that strengthen women's self-help groups and workers' associations through non-conventional forms of support;]
- (d) Support programmes that enhance the self-reliance of special groups of women, such as young women, women with disabilities, elderly women and women belonging to racial and ethnic minorities;
- (e) [Use the research of economists, scientists and technologists to promote gender equality;]
- (f) Support the economic activities of indigenous women, taking into account their traditional knowledge, so as to improve their situation and development;
- (g) [Adopt policies to extend or maintain the protection of labour laws and social security provisions for those who do paid work in the home;]
- (h) Recognize and encourage the contribution of research by women scientists and technologists;

- (i) Ensure that policies and regulations do not discriminate against micro, small and medium-scale enterprises run by women.

178. By [encouraging] financial intermediaries, national training institutes, credit unions, non-governmental organizations, women's associations, professional organizations and the private sector, as appropriate:

- (a) Provide, at national, regional and international levels, training in a variety of business-related and financial management and technical skills to enable women, especially young women, to participate in economic policy-making at those levels;
- (b) Provide business services, including marketing and trade information, product design and innovation, technology transfer and quality control, to women's business enterprises, including those in export sectors of the economy;
- (c) Promote technical and commercial links and establish joint ventures among women entrepreneurs at the national, regional and international levels to support community-based initiatives;
- (d) Strengthen women's participation in production and marketing cooperatives by providing marketing and financial support, especially in rural and remote areas, including marginalized women;
- (e) Promote and strengthen women's micro-enterprises, new small businesses, cooperative enterprises, expanded markets and other employment opportunities and, where appropriate, facilitate the transition from the informal to the formal sector, in rural and urban areas;
- (f) Invest capital and develop investment portfolios to finance women's business enterprises;
- (g) Give adequate attention to providing technical assistance, advisory services, training and retraining for women connected with the entry to the market economy;
- (h) Support credit networks and innovative ventures, including traditional savings schemes;
- (i) Provide networking arrangements for entrepreneurial women, including opportunities for the mentoring of inexperienced women by the more experienced;
- (j) Encourage community organizations and public authorities to establish loan pools for women entrepreneurs, drawing on successful small-scale cooperative models.

179. By [encouraging] [transnational and national corporations] [the private sector]:



- (a) Adopt policies and establish mechanisms to grant contracts on a non-discriminatory basis;
- (b) Recruit women for leadership, decision-making and management, and provide training programmes, all on an equal basis with men;
- (c) Observe national labour environment, consumer, health and safety laws, particularly those that affect women.

Strategic objective F.5. Eliminate occupational segregation and all forms of employment discrimination

Actions to be taken

180. By Governments, employers, employees, trade unions and women's organizations:

- (a) [Implement and enforce laws, regulations and codes of conduct that extend international labour standards and workers' rights to female workers in export processing zones;]
- (b) [Enact and enforce laws and introduce implementing measures, including means of redress and access to justice in case of non-compliance, to prohibit direct and indirect discrimination on grounds of sex, sexual orientation and parental status in relation to access to employment, conditions of employment, including training, promotion, health and safety, as well as termination of employment and social security of workers, including legal protection against sexual and racial harassment;]
- (c) Enact and enforce laws and develop workplace policies against [age and] gender discrimination in the labour market, in hiring and promotion, and in the extension of employment benefits and social security, as well as regarding discriminatory working conditions and sexual harassment; mechanisms should be developed for the regular review and monitoring of such laws;
- (d) Eliminate discriminatory practices by employers on the basis of women's reproductive roles and functions, including refusal of employment and dismissal of women due to pregnancy and breast-feeding responsibilities;
- (e) [Develop and promote employment programmes and services for women entering and/or re-entering the labour market, especially poor urban, rural and young women and those affected by structural adjustment programmes, including self-employment;]
- (f) Implement and monitor positive public and private-sector employment equity and positive action programmes to address systemic discrimination against women in the labour force, in particular women with disabilities and women belonging to other disadvantaged groups,

- with respect to [employment,] hiring, retention and promotion, and vocational training of women in all sectors;
- (g) Eliminate occupational segregation, especially by promoting the equal participation of women in highly skilled jobs and senior management positions and other measures, such as counselling and placement, that stimulate their on-the-job career development and upward mobility in the labour market, and by stimulating the diversification of occupational choices by both women and men. Encourage women to take up non-traditional jobs, especially in science and technology [and encourage men to seek employment in the social sector];
  - (h) Recognize collective bargaining as a right and as an important mechanism for eliminating wage inequality for women and to improve working conditions;
  - (i) Promote the election of women trade union officials and ensure that trade union officials elected to represent women are given job protection and physical security in connection with the discharge of their functions;
  - (j) [Ensure] access to and develop special programmes to enable women with disabilities to obtain and retain employment, and [ensure] access to education and training at all proper levels, in accordance with the Standard Rules on the Equalization of Opportunities for People with Disabilities; <sup>25/</sup> adjust, to the extent possible, working conditions in order to suit the needs of women with disabilities, who should be secured legal protection against unfounded job loss on account of their disabilities;
  - (k) Increase efforts to close the gap between women's and men's pay, take steps to implement the principle of equal remuneration for equal work or work of equal value by strengthening legislation, including compliance with international labour laws and standards, and encourage job evaluation schemes with gender-neutral criteria;
  - (l) Establish and/or strengthen mechanisms to adjudicate matters relating to wage discrimination;
  - (m) Set specific target dates for [eliminating] all forms of child labour that are contrary to accepted international standards and ensure the full enforcement of relevant existing laws and, where appropriate, enact the legislation necessary to implement the Convention on the Rights of the Child and International Labour Organization standards, ensuring the protection of working children, in particular, street children, through the provision of appropriate health, education and other social services;
  - (n) [Ensure that the strategies to eliminate child labour recognize the excessive demands made on some girls for unpaid work in the household;]

- (o) Review and analyse [reformulate] the wage structures in female-dominated professions, such as teaching, nursing and child care, with a view to raising their low status and earnings;
- (p) Facilitate the productive employment of documented migrant women (including women who have been determined refugees according to the 1951 Convention relating to the Status of Refugees) through greater recognition of foreign education and credentials and by adopting an integrated approach to labour market training that incorporates language training.

Strategic objective F.6. [Create a flexible work environment]  
[Better harmonization of work and family responsibilities for women and men]

Actions to be taken

181. By Governments:

- (a) [Adopt policies to extend the protection of labour and social security laws to part-time and temporary jobs and to seasonal and home-based workers, and enact laws to promote career development based on flexible work conditions;]
- (b) [Ensure that full and part-time work can be freely chosen by women and men on an equal basis, and consider appropriate protection for atypical workers in terms of access to employment, working conditions, and social security;]
- (c) [Enact and enforce laws that grant parental leave and parental benefits to both women and men, and promote the equitable sharing of responsibilities for the family by men and women, including through appropriate legislation, incentives and/or encouragement;]

(Alternative)

- [Ensure, through appropriate legislation, incentives and/or encouragement, adequate opportunities for women and men to take parental leave and receive parental benefits;]
- (d) Develop policies, inter alia, in education to change attitudes that reinforce the division of labour based on gender in order to promote the concept of shared family responsibility for work in the home, particularly in relation to children and elder care;
- (e) Improve the development of, and access to, technologies that facilitate occupational as well as domestic work, encourage self-support, generate income, transform gender-prescribed roles within the productive process and enable women to move out of low-paying jobs;

- (f) Examine a range of policies and programmes, including social security legislation and taxation systems, in accordance with national priorities and policies, to determine how to promote gender equality and flexibility in the way people divide their time between and derive benefits from education and training, paid employment, family responsibilities, volunteer activity and other socially useful forms of work, rest and leisure.

182. By Governments, the private sector and non-governmental organizations, trade unions and the United Nations, as appropriate:

- (a) Adopt appropriate measures involving relevant governmental bodies and employers' and employees' associations so that women and men are able to take temporary leave from employment, have transferable employment and retirement benefits and make arrangements to modify work hours without sacrificing their prospects for development and advancement at work and in their careers;
- (b) Design and provide educational programmes through innovative media campaigns and school and community education programmes to raise awareness on gender equality and non-stereotyped gender roles of women and men within the family; provide support services and facilities, such as on-site child care at workplaces and flexible working arrangements;
- (c) Enact and enforce laws against sexual and other forms of harassment in all workplaces.

G. [Inequality between men and women in the sharing of power [family responsibilities] and decision-making at all levels] [Shared power: women in decision-making]

183. The Universal Declaration of Human Rights states that everyone has the right to take part in the Government of his/her country. The empowerment and autonomy of women and the improvement of women's social, economic and political status is essential for the achievement of both transparent and accountable government and administration and sustainable development in all areas of life. The power relations that impede women's attainment of fulfilling lives operate at many levels of society, from the most personal to the highly public. Achieving the goal of equal participation of women and men in decision-making will provide a balance that more accurately reflects the composition of society [and is a prerequisite for the proper functioning of democracy] [and promotes the proper functioning of democracy]. Equality in political decision-making performs a leverage function without which it is highly unlikely that a real integration of the equality dimension in government policy-making is feasible. In this respect, women's equal participation in political life plays a pivotal role in the general process of the advancement of women. Women's equal participation in decision-making is not only a demand for simple justice or democracy but can also be seen as a necessary condition for women's interests to be taken into account. Without the active participation of women and the

incorporation of women's perspective at all levels of decision-making, the goals of equality, development and peace cannot be achieved.

184. Despite the widespread movement towards democratization in most countries, women are largely underrepresented at most levels of government, especially in ministerial and other executive bodies, and have made little progress in attaining political power in legislative bodies or in achieving the target endorsed by the Economic and Social Council of having 30 per cent women in positions at decision-making levels by 1995. Globally, only 10 per cent of the members of legislative bodies and a lower percentage of ministerial positions are now held by women. Indeed, some countries, including those that are undergoing fundamental political, economic and social changes, have seen a significant decrease in the number of women represented in legislative bodies. Although women make up at least half of the electorate in almost all countries and have attained the right to vote and hold office in almost all States Members of the United Nations, women continue to be seriously underrepresented as candidates for public office. The traditional working patterns of many political parties and government structures continue to be barriers to women's participation in public life. Women may be discouraged from seeking political office by discriminatory attitudes and practices, family and child-care responsibilities, and the high cost of seeking and holding public office. Women in politics and decision-making positions in Governments and legislative bodies contribute to redefining political priorities, placing new items on the political agenda that reflect and address women's gender-specific concerns, values and experiences, and providing new perspectives on mainstream political issues.

185. Women have demonstrated considerable leadership in community and informal organizations, as well as in public office. However, socialization and negative stereotyping of women and men, including stereotyping through the media, reinforces the tendency for political decision-making to remain the domain of men. Likewise, the underrepresentation of women in decision-making positions in the areas of art, culture, sports, the media, education, religion and law have prevented women from having a significant impact on many key institutions.

186. Owing to their limited access to the traditional avenues to power, such as the decision-making bodies of political parties, employer organizations and trade unions, women have gained access to power through alternative structures, particularly in the non-governmental organization sector. Through non-governmental organizations and grass-roots organizations, women have been able to articulate their interests and concerns and have placed women's issues on the national, regional and international agendas.

187. Inequality in the public arena can often start [within the family when power relations between men and women are unbalanced] [with discriminatory attitudes and practices within the family]. The unequal division of labour and responsibilities within households based on unequal power relations also limits women's potential to find the time and develop the skills required for participation in decision-making in wider public forums. A more equal sharing of those responsibilities between women and men not only provides a better quality of life for women and their daughters but also enhances their opportunities to shape and design public policy, practice and expenditure so

that their interests may be recognized and addressed. [Non-formal networks and patterns of decision-making at the local community level that reflect a dominant male ethos restrict women's ability to participate equally in political, economic and social life.]

188. The low proportion of women among economic and political decision makers at the local, national, regional and international levels reflects structural and attitudinal barriers that need to be addressed through positive measures. Governments, transnational and national corporations, the mass media, banks, academic and scientific institutions, and regional and international organizations, including those in the United Nations system, do not make full use of women's talents as top-level managers, policy makers, [diplomats and negotiators].

189. The equitable distribution of power and decision-making at all levels is dependent on Governments and other actors undertaking statistical gender analysis and mainstreaming a gender perspective in policy development and the implementation of programmes. [Affirmative action in some countries with 33.3 per cent representation in national and local government has empowered women in the decision-making process.]

190. National, regional and international statistical institutions still have insufficient knowledge of how to present the issues related to the equal treatment of women and men in the economic and social spheres. In particular, there is insufficient use of existing databases and methodologies in the important sphere of decision-making.

191. In addressing the inequality between men and women in the sharing of power and decision-making at all levels, Governments and other actors should promote an active and visible policy of mainstreaming a gender perspective in all policies and programmes so that before decisions are taken, an analysis is made of the effects on women and men respectively.

[Strengthen factors that promote the full and equal participation of women in power structures and decision-making at all levels and in all areas]

Strategic objective G.1. [Take special measures to ensure women's equal access to and full participation in power structures and decision-making]

#### Actions to be taken

192. By Governments:

- (a) Commit themselves to establishing the goal of gender balance in governmental bodies and committees, as well as in public administrative entities, and in the judiciary, including [setting specific targets and] implementing measures to substantially increase the number of women [with a view to achieving equal representation of

women and men] in all governmental and public administration positions;

- (b) [Consider measures in electoral systems that encourage political parties to integrate women in elective and non-elective public positions in the same proportion and levels as men;]
- (c) Protect and promote the equal rights of women and men to engage in political activities and to freedom of association, including membership in political parties and trade unions;
- (d) [Review the differential impact of electoral systems on the political representation of women in elected bodies and consider, where appropriate, the adjustment or reform of those systems;]
- (e) Monitor and evaluate progress on the representation of women through the regular collection, analysis and dissemination of quantitative and qualitative data on women and men at all levels in various decision-making positions in the public and private sectors, and disseminate data on the number of women and men employed at various levels in Governments on a yearly basis; ensure that women and men have equal access to the full range of public appointments and set up mechanisms within governmental structures for monitoring progress in this field;
- (f) Support non-governmental organizations and research institutes that conduct studies on women's participation in and impact on decision-making and the decision-making environment;
- (g) Encourage greater involvement of indigenous women in decision-making at all levels;
- (h) [Encourage] [Ensure] that government-funded organizations adopt non-discriminatory policies and practices [in order to increase the number and raise the position of women in their organizations;]
- (i) [Recognize that shared work and parental responsibilities between women and men promote women's increased participation in public life, and take appropriate measures to achieve this, including measures to reconcile family and professional life;]
- (j) Aim at gender balance in the lists of national candidates nominated for election or appointment to United Nations bodies, specialized agencies and other autonomous organizations of the United Nations system, particularly for posts at the senior level.

193. By political parties:

- (a) Consider examining party structures and procedures to remove all barriers that directly or indirectly discriminate against the participation of women;

- (b) Consider developing initiatives that allow women to participate fully in all internal policy-making structures and appointive and electoral nominating processes;
- (c) Consider incorporating gender issues in their political agenda [and ensuring the participation of women in the leadership of political parties so as to accomplish parity and the integration of both genders].

194. By Governments, national bodies, the private sector, political parties, trade unions, employers' organizations, research and academic institutions, subregional and regional bodies, and non-governmental and international organizations:

- (a) Take positive action to build a critical mass of women leaders, executives and managers [with the requisite qualifications] in strategic decision-making positions;
- (b) [Create regulatory bodies and enforcement mechanisms to monitor women's access to senior levels of decision-making;]
- (c) Review the criteria for recruitment and appointment to advisory and decision-making bodies and promotion to senior positions to ensure that such criteria are relevant and do not discriminate against women;
- (d) Encourage efforts by non-governmental organizations, trade unions and the private sector to achieve equality [and equity] between women and men in their ranks, including equal participation in their decision-making bodies and in negotiations in all areas and at all levels;
- (e) Develop communications strategies to promote public debate on the new roles of men and women in society [and in the family];
- (f) Restructure recruitment and career-development programmes to ensure that all women, especially young women, have equal access to managerial, entrepreneurial, technical and leadership training, including on-the-job training;
- (g) Develop career advancement programmes for women of all ages, that include career planning, tracking, mentoring, coaching, training and retraining;
- (h) Encourage and support the participation of women's non-governmental organizations in United Nations conferences and their preparatory processes;
- (i) Aim at and support gender balance in the composition of delegations to the United Nations and other international forums.

195. By the United Nations:



- (a) [Implement existing and adopt new policies and measures relating to all contracts in order to achieve overall gender parity in employment, particularly at the Professional level, by the year 2000, taking into account equitable geographical distribution in conformity with Article 101, paragraph 3, of the Charter of the United Nations;]
- (b) Develop mechanisms to nominate women candidates for appointment to senior posts in the United Nations, the specialized agencies and other organizations and bodies of the United Nations system;
- (c) Continue to collect and disseminate quantitative and qualitative data on women and men in decision-making [and analyse their differential impact on decision-making and monitor progress towards achieving the Secretary-General's target of having women hold 50 per cent, but at least 40 per cent, of managerial and decision-making positions by the year 2000].

196. By women's organizations, non-governmental organizations, trade unions, social partners, producers, and industrial and professional organizations:

- (a) Build and strengthen solidarity among women through information, education and sensitization activities;
- (b) Advocate at all levels to enable women to influence political, economic and social decisions, processes and systems, and work towards seeking accountability from elected representatives on their commitment to gender concerns;
- (c) [Establish databases on women and their qualifications for use in appointing women to senior decision-making and advisory positions, for dissemination to Governments, regional and international organizations and private enterprise.]

Strategic objective G.2. Increase women's capacity to participate in decision-making and leadership

Actions to be taken

197. By Governments, national bodies, the private sector, political parties, trade unions, employers' organizations, subregional and regional bodies, non-governmental and international organizations and educational institutions:

- (a) Provide leadership and self-esteem training to assist women and girls, particularly those with special needs, women with disabilities, and women belonging to racial and ethnic minorities to strengthen their self-esteem and to encourage them to take decision-making positions;
- (b) Have transparent criteria for decision-making positions and ensure that the selecting bodies have a gender-balanced composition;

- (c) Create a system of mentoring for inexperienced women and, in particular, offer training, including training in leadership and decision-making, public speaking and self-assertion, as well as in political campaigning;
- (d) Provide gender-sensitive training for women and men to promote non-discriminatory working relationships and respect for diversity in work and management styles;
- (e) Develop mechanisms and training to encourage women to participate in the electoral process, political activities and other leadership areas.

H. Insufficient mechanisms at all levels  
to promote the advancement of women

198. National machineries for the advancement of women have been established in almost every Member State to, inter alia, design, promote the implementation of, [execute,] monitor, evaluate, advocate and mobilize support for policies that promote the advancement of women. National machineries are diverse in form and uneven in their effectiveness, and in some cases have declined. Often marginalized in national government structures, these mechanisms are frequently hampered by unclear mandates, lack of adequate staff, training, data and sufficient resources, and insufficient support from national political leadership.

199. At the regional and international levels, mechanisms and institutions to promote the advancement of women as an integral part of mainstream political, economic, social and cultural development, and of initiatives on development and human rights, encounter similar problems emanating from a lack of commitment at the highest levels.

200. Successive international conferences have underscored the need to take gender factors into account in policy and programme planning. However, in many instances this has not been done.

201. [Regional bodies concerned with the advancement of women have been strengthened, together with international machinery, such as the Commission on the Status of Women and the Committee on the Elimination of Discrimination against Women. However, the limited resources available continue to impede full implementation of their mandates.]

202. Methodologies for conducting gender-based analysis in policies and programmes and for dealing with the differential effects of policies on women and men have been developed in many organizations and are available for application but are often not being applied or are not being applied consistently.

203. A national machinery for the advancement of women is the central policy-coordinating unit inside government. Its main task is to support government-wide mainstreaming of a gender-equality perspective in all policy areas. The

necessary conditions for an effective functioning of such national machineries include:

- (a) Location at the highest possible level in the government, [falling under the responsibility of a Cabinet minister];
- (b) [Institutional mechanisms or processes that facilitate, as appropriate, decentralized planning, implementation and monitoring with a view to involving non-governmental organizations and community organizations from the grass roots upwards;]
- (c) Sufficient resources in terms of budget and professional capacity;
- (d) Opportunity to influence development of all government policies.

204. [In addressing the issue of mechanisms for promoting the advancement of women, Governments and other actors should promote an active and visible policy of mainstreaming a gender perspective in all policies and programmes so that, before decisions are taken, an analysis is made of the effects on women and men respectively.]

[Integrate gender-equality dimensions into policy and programme planning and implementation at all levels and in all areas]

Strategic objective H.1. Create or strengthen national machineries and other governmental bodies

Actions to be taken

205. By Governments:

- (a) Ensure that responsibility for the advancement of women is vested in the highest possible level of government; in many cases, this could be at the level of a Cabinet minister;
- (b) [Based on a strong political commitment, create a national machinery, where it does not exist, and strengthen, as appropriate, existing national machineries, for the advancement of women at the highest possible level of government;] it should have clearly defined mandates and authority; critical elements would be adequate resources, ability and competence to influence policy and formulate and review legislation. Among other things, it should perform policy analysis, undertake advocacy, communication, coordination and monitoring of implementation;
- (c) Provide staff training in designing and analysing data from a gender perspective;
- (d) Establish procedures to allow the machinery to gather information on government-wide policy issues at an early stage and continuously use it in the policy development and review process within the Government;

- (e) [Report, on a regular basis, to legislative bodies and the Cabinet on the progress of efforts, as appropriate, to mainstream gender concerns, taking into account the implementation of the Platform for Action;]
- (f) Encourage and promote the active involvement of the broad and diverse range of institutional actors in the public, private and voluntary sectors to work for equality between women and men.

\*[206. By regional and international organizations, in particular development institutions, especially the International Research and Training Institute for the Advancement of Women (INSTRAW), the United Nations Development Fund for Women (UNIFEM) and bilateral donors:

- (a) Provide financial and advisory assistance to national machinery in order to increase its ability to gather information, develop networks and carry out its mandate;
- (b) Strengthen international mechanisms to promote the advancement of women through their respective mandates, in cooperation with Governments.]

Strategic objective H.2. Integrate gender perspectives in [all legislation, public policies, programmes and projects

Actions to be taken

207. By Governments:

- (a) Seek to ensure that before policy decisions are taken, [as appropriate] an analysis of their impact on women and men, respectively, is carried out;
- (b) [Systematically review policies, programmes and projects, as well as their implementation, to ensure that they reflect the differential impact of general measures on women and men and their respective contribution to development, taking into account existing inequalities, develop methods of gender-impact analysis, and introduce practical ways and means for applying it at an early stage of the policy development process [especially in terms of the impact of employment and income policies];]

(Alternative)

[Regularly review and implement national policies, programmes and projects, as well as their implementation, evaluating the impact of employment and income policies in order to guarantee that women are

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\* It is proposed to place this paragraph in chapter V.

the direct beneficiaries of development [and that their contribution is considered in national accounts];]

- (c) Promote national strategies and aims on equality between women and men in order to eliminate obstacles to the exercise of women's rights and eradicate all forms of discrimination against women;
- (d) Work with members of legislative bodies, as appropriate, to promote a gender perspective in all legislation and policies;
- (e) [Establish networks of focal points in all ministries and agencies with a mandate to review policies and programmes, and create mechanisms for the focal points to meet regularly with national machinery in order to monitor progress in the implementation of the Platform for Action.]

206. By national machinery:

- (a) Facilitate the formulation and implementation of government policies on equality between women and men, develop appropriate strategies and methodologies, and promote coordination and cooperation within the central government in order to ensure mainstreaming of a gender perspective in all policy-making processes;
- (b) Promote and establish cooperative relationships with relevant branches of government, centres for women's studies and research, academic and educational institutions, the private sector, the media, non-governmental organizations, especially women's organizations, and all other actors of civil society;
- (c) [Undertake activities focusing on legal reform with regard to the family, conditions of employment, social security, income tax, equal opportunity in education, positive measures to promote the advancement of women, and the perception of attitudes and a culture favourable to equality;]
- (d) [Promote a gender perspective in legal reforms, inter alia, with regard to employment, social security, taxation and education;]
- (e) [Promote the increased participation of women as both active agents in and beneficiaries of the development process to improve the quality of life for all;]
- (f) Establish direct links with national, regional and international bodies dealing with the advancement of women;
- (g) Provide training and advisory assistance to government agencies in order to integrate a gender perspective in their policies and programmes.

Strategic objective H.3. Generate and disseminate gender-disaggregated data and information for planning and evaluation

Actions to be taken

209. By national, regional and international statistical services, and relevant governmental and United Nations agencies, in cooperation with research and documentation organizations, in their respective areas of responsibility:

- (a) [Aim to] Ensure that [all] statistics related to individuals are collected, compiled, analysed and presented by sex and age [and reflect problems and questions related to women and men in society];
- (b) Collect, compile, analyse and present on a regular basis data disaggregated by age, sex, socio-economic and other relevant indicators, including number of dependants, for utilization in policy and programme planning and implementation [and to reflect problems and questions related to men and women in society];
- (c) Involve centres for women's studies and research organizations in developing and testing [appropriate indicators and] research methodologies to strengthen gender analysis, as well as in monitoring and evaluating the implementation of the goals of the Platform for Action;
- (d) Designate or appoint staff to strengthen gender-statistics programmes and ensure coordination, monitoring and linkage to all fields of statistical work, and prepare output that integrates statistics from the various subject areas;
- (e) [Take steps to] Improve [and adopt] the [concepts and methods of] data collection on the full contribution of women and men to the economy [by taking steps] to [measure] [make visible] their participation in the informal sector(s);
- (f) [[Seek to] Develop a more comprehensive knowledge of work and employment through, inter alia, efforts to measure and better understand the type, extent and distribution of unremunerated work, particularly work in caring for dependants and unremunerated work done for family farms or businesses, and encouraging, sharing and disseminating information, studies and experience in this field, including information on the development of methods for assessing the value of such work in quantitative terms, for possible reflection in accounts that may be produced separately from but are consistent with core national accounts;]
- (g) [Develop an international classification of activities for time-use statistics, with Governments also undertaking time-use studies, and prioritize further work at the national level to prepare satellite or parallel accounts of women's and men's unremunerated economic contribution, including quantifying household responsibilities as

appropriate, producing such accounts separately from but making them consistent with core national accounts, defining the unremunerated worker as a worker in the System of National Accounts and mainstreaming the distinction between paid and unpaid work in employment statistics;]

- (h) Improve concepts and methods of data collection on the measurement of poverty among women and men, including their access to resources;
- (i) Strengthen vital statistical systems and incorporate gender analysis into publications and research; give priority to gender differences in research design and in data collection and analysis in order to improve data on morbidity; and improve data collection on access to health services [including access to comprehensive sexual and reproductive health services, maternal care and family planning, with special priority for adolescent mothers and for elder care];
- (j) Develop improved gender-disaggregated and age-specific data on the victims and perpetrators of [all forms of] violence against women, such as domestic violence, sexual harassment, rape, incest and sexual abuse, and trafficking in women and girls, as well as on violence by the agents of the State;
- (k) Improve concepts and methods of data collection on the participation of women and men with disabilities, including their access to resources.

210. By Governments:

- (a) Ensure the regular production of a statistical publication on gender that presents and interprets topical data on women and men in a form suitable for a wide range of non-technical users;
- (b) Ensure that producers and users of statistics in each country regularly review the adequacy of the official statistical system and its coverage of gender issues, and prepare a plan for needed improvements, where necessary;
- (c) Develop and encourage the development of quantitative and qualitative studies by research organizations, trade unions, employers, the private sector and non-governmental organizations on the sharing of power and influence in society, including the number of women and men in senior decision-making positions in both the public and private sectors;
- (d) Use more gender-sensitive data in the formulation of policy and implementation of programmes and projects.

211. By the United Nations:

- (a) Promote the development of [statistical] methods to find better ways to collect, collate and analyse data that may relate to the human

rights of women, including violence against women [for use by the Commission on the Status of Women, the Commission on Human Rights, the Committee on the Elimination of Discrimination against Women and human rights treaty bodies];

- (b) Promote the further development of statistical methods to improve data that relate to women in economic, social, cultural and political development;
- (c) Prepare a new issue of The World's Women at regular five-year intervals and distribute it widely;
- (d) Assist countries, upon request, in the development of gender [concepts and] programmes;
- (e) [Report periodically on progress at the national and international levels to the United Nations Statistical Commission, INSTRAW and the Commission on the Status of Women, in a coordinated fashion.]

212. [By multilateral development financial institutions and bilateral donors:

Support the development of national capacity in developing countries and in countries with economies in transition to fully measure the work done by women, including both remunerated and unremunerated work.] [Produce satellite accounts on unremunerated work that may be produced separately from but are consistent with core national accounts, while recognizing that such satellite accounts are to be used independently of national accounts.]

- I. [Lack of awareness of and commitment to [internationally and nationally recognized] human rights of women] [The enjoyment of [all] [universal] human rights by women]

\*[213. Human rights and fundamental freedoms are the birthright of all human beings; their protection and promotion is the first responsibility of Governments.

\*The World Conference on Human Rights reaffirmed the solemn commitment of all States to fulfil their obligation to promote universal respect for, and observance and protection of, all human rights and fundamental freedoms for all, in accordance with the Charter of the United Nations, other instruments relating to human rights, and international law. The universal nature of these rights and freedoms is beyond question.

\*The Platform for Action reaffirms that all human rights - civil, cultural, economic, political and social, including the right to development - are universal, indivisible, interdependent and interrelated, as expressed in the Vienna Declaration and Programme of Action. The World Conference on Human

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\* The placement and the coherence of the text have not yet been agreed.



Rights reaffirms that the human rights of women and the girl child are an inalienable, integral and indivisible part of universal human rights. The full and equal enjoyment of all [universal] human rights and fundamental freedoms by women and girls [is a requirement of international law] [is essential for advancement of women].]

214. Equal rights of men and women are explicitly mentioned in the Preamble to the Charter of the United Nations. [All the major international human rights instruments include sex as one of the grounds upon which States may not discriminate, including the Universal Declaration of Human Rights, the International Covenant on Civil and Political Rights and the International Covenant on Economic, Social and Cultural Rights, the Convention on the Elimination of All Forms of Discrimination against Women, the International Convention on the Elimination of All Forms of Racial Discrimination 26/ and the Convention on the Rights of the Child, as well as the Declaration on the Right to Development 27/ and the Declaration on the Elimination of Violence against Women.]

215. Governments must not only refrain from violating the human rights of all women, but must work actively to promote and protect these rights. [Nevertheless, it should be taken into account that the activities of the United Nations in the area of human rights should be rationalized, streamlined and reinforced [taking into account the need to] [in order to] avoid unnecessary duplication.] Recognition of the importance of the human rights of women is reflected in the fact that three quarters of the States Members of the United Nations have become parties to the Convention on the Elimination of All Forms of Discrimination against Women.

216. [The World Conference on Human Rights reaffirmed clearly that the human rights of women throughout the life cycle are an inalienable, integral and indivisible part of universal human rights. The International Conference on Population and Development reaffirmed women's reproductive rights and the right to development. Both the Declaration of the Rights of the Child and the Convention on the Rights of the Child guarantee children's rights and uphold the principle of non-discrimination on the grounds of gender. Three quarters of the States Members of the United Nations have become parties to the Convention on the Elimination of All Forms of Discrimination against Women. An increasing number of countries have established mechanisms to enable women to exercise their rights.]

217. The gap between the existence of rights and their effective enjoyment derives from a lack of commitment by Governments to promoting and protecting those rights and the failure of Governments to inform women and men alike about them. The lack of appropriate recourse mechanisms at the national and international levels, and inadequate resources at both levels, compound the problem. In most countries, steps have been taken to reflect the rights guaranteed by the Convention on the Elimination of All Forms of Discrimination against Women in national law. A number of countries have established mechanisms to strengthen women's ability to exercise their rights.

218. In order to protect the human rights of women, it is necessary to avoid, as far as possible, resorting to reservations and to ensure that no reservation is

incompatible with the object and purpose of the Convention [or is otherwise contrary to international treaty law]. Unless the human rights of women, as defined by international human rights instruments, are fully recognized and effectively protected, applied, implemented and enforced in national law as well as in national practice in family, civil, penal, labour and commercial codes and administrative rules and regulations, they will exist in name only.

219. In those countries that have not yet become parties to the Convention on the Elimination of All Forms of Discrimination against Women and other international human rights instruments, or where reservations that are incompatible with the object or purpose of the Convention have been entered, or where national laws have not yet been revised to implement international norms and standards, women's [de jure] equality is not yet secured. [Women's full enjoyment of equal rights is undermined by the discrepancies between some national legislation and international law and international instruments on human rights, overly complex administrative procedures, lack of awareness within the judicial process and inadequate monitoring of the violation of the human rights of all women, coupled with the underrepresentation of women in justice systems, insufficient information on existing rights and persistent attitudes and practices that perpetuate women's inequality.] [Lack of enforcement of family, civil, penal, labour and commercial codes or administrative rules and regulations have undermined women's access to the protection offered under international human rights instruments.]

220. Every person should be entitled to participate, to contribute to and to enjoy cultural, economic, political and social development. In many cases women and girls suffer discrimination in the allocation of economic and social resources. This directly violates their economic, social and cultural rights. [They also suffer from the negative effects of structural adjustment policies.]

221. [The human rights of all women and girls [should form an integral part of] [must be integrated in] United Nations human rights activities.] Intensified efforts are needed to integrate the equal status and the human rights of all women and girls into the mainstream of United Nations system-wide activities and to address these issues regularly and systematically throughout relevant bodies and mechanisms. This requires, inter alia, improved cooperation and coordination between the Commission on the Status of Women, the United Nations High Commissioner for Human Rights, the Commission on Human Rights, including its special and thematic rapporteurs, independent experts, working groups and its Subcommission on Prevention of Discrimination and Protection of Minorities, the Commission on Sustainable Development, the Commission for Social Development, the Commission on Crime Prevention and Criminal Justice, and the Committee on the Elimination of Discrimination against Women and other human rights treaty bodies, and all relevant entities of the United Nations system, including the specialized agencies [and cooperation is needed also in order to strengthen and rationalize the structure and activities [in order to] [taking into account the need to] avoid unnecessary duplication.]

222. [[Gender] analysis applied to human rights law has shown that the formal requirement of equal treatment of men and women does not take into consideration the systematic nature of discrimination against women. Consequently, if the goal of universal realization of human rights for all is to be achieved,

[universally accepted] international human rights [law] instruments must be applied in a way that takes this fact into account.]

223. [The World Conference on Human Rights and the International Conference on Population and Development [which did not create any human rights] reaffirm [all aspects of the [universal] human rights of women, including] women's reproductive rights [as defined in the Programme of Action of the International Conference on Population and Development, taking into consideration the reservations to the Programme of Action] and the right to development.] Bearing in mind the definitions given in chapter II, chapter VII, paragraph 7.2, and chapter VIII of the Programme of Action 13/ [reproductive rights rest on the recognition of the basic right of all couples and individuals to decide freely and responsibly the number, spacing and timing of their children and to have the information and means to do so, and the right to attain the highest standard of sexual and reproductive health. It also includes their right to make decisions concerning reproduction free of discrimination, coercion and violence, as expressed in human rights documents. [Therefore, the unique reproductive and productive roles of women [and men] must be recognized and valued.] [Changes in both men's and women's consciousness, attitudes and behaviour are necessary conditions for achieving harmonious partnerships between women and men. It is essential to improve communication between women and men on issues of shared responsibility, including sexuality and reproductive health, so that women and men are equal partners in public and private life. Special efforts are needed to emphasize men's shared responsibility and promote their active involvement in responsible parenthood and sexual and reproductive behaviour.]

224. [Changes in both men's and women's knowledge, attitudes and behaviour are necessary conditions for achieving harmonious partnerships between women and men. It is essential to improve communication between women and men on issues of shared responsibility, including sexuality and reproductive health, so that women and men are equal partners in public and private life. Special efforts are needed to emphasize men's shared responsibility and promote their active involvement in responsible parenthood and sexual and reproductive behaviour.]

225. [Violence against women both violates and impairs or nullifies the enjoyment by women of human rights and fundamental freedoms. There has been a long-standing failure to protect and promote these rights and freedoms in relation to violence against women. Gender-based violence and all forms of sexual harassment, prostitution, pornography, sexual slavery and exploitation, including those violations resulting from cultural prejudice, racism and racial discrimination, xenophobia, ethnic cleansing, religious and anti-religious extremism and international trafficking in women and children, are incompatible with the dignity and worth of the human person and must be eliminated. Any harmful aspect of certain traditional, customary or modern practices that violates the rights of women should be prohibited and eliminated. Governments should take urgent action to combat and eliminate all forms of violence against women in private and public life, whether perpetrated or tolerated by the State or private persons especially in situations [or experienced as a result] of armed conflict, [foreign occupation] or terrorism. Special emphasis must be placed on the prevention of violence against women.]

(First alternative)

[Violence against women both violates and impairs or nullifies the enjoyment by women of human rights and fundamental freedoms. There has been a long-standing failure to protect and promote these rights and freedoms in relation to violence against women. All forms of gender-based violence, including those resulting from armed conflict, foreign occupation, racism, racial discrimination, xenophobia, ethnic cleansing, extremism, terrorism, cultural prejudice and international trafficking [in women and children] are incompatible with the dignity and worth of the human person and must be eliminated. [To this end] urgent action and effective measures by Governments and the international community must be taken to eliminate all forms of violence against women.]

(Second alternative)

[Violence against women both violates and impairs or nullifies the enjoyment by women of human rights and fundamental freedoms. There has been a long-standing failure to protect and promote these rights and freedoms in relation to violence against women. Special emphasis must be placed on the prevention of violence against women.]

226. [Women in particularly vulnerable circumstances, such as migrants, including migrant women workers, refugees or [internally] displaced women or those belonging to racial or ethnic minorities or indigenous groups, are often disadvantaged and marginalized by their lack of knowledge and recognition of their human rights and the absence of recourse mechanisms to redress violations of their rights. The factors that cause the flight of refugee and [internally] displaced women may be different from those affecting men. Refugee and [internally] displaced women continue to be vulnerable to abuses of their human rights while in flight and in countries of asylum and resettlement because of the varied effects of their displacement, including a lack of access to human rights recourse mechanisms and to information on their rights. Such effects of displacement may also be experienced by other migrant women.]

(Alternative)

[Many women face additional barriers in the enjoyment of their human rights because of such factors as their race, language, ethnicity, culture, religion, sexual orientation, disability or socio-economic class or because they are indigenous people, migrants, displaced people or refugees. They are also disadvantaged and marginalized by a lack of knowledge and recognition of their human rights as well as by the obstacles they meet in getting access to information and recourse mechanisms in cases of violation of their rights.]

227. While women are increasingly using the legal system to exercise their rights, in many countries lack of awareness of the existence of these rights is an obstacle to full enjoyment of their human rights and the attainment of equality. Experience in many countries has shown that women can be empowered and motivated to assert their rights, regardless of their level of education or socio-economic status. Legal literacy programmes and media strategies have been effective in helping women to understand the link between their rights and other

aspects of their lives and in demonstrating that cost-effective initiatives can be undertaken to help women obtain those rights. Provision of human rights education is essential for promoting an understanding of the human rights of women, including knowledge of recourse mechanisms to redress violations of their rights. It is necessary for all individuals, especially women in vulnerable circumstances, to have full knowledge of their rights and access to legal recourse against violations of their rights.

228. Women engaged in the defence of human rights must be protected. Governments have a duty to guarantee the full enjoyment of all rights set out in the Universal Declaration of Human Rights, the International Covenant on Civil and Political Rights and the International Covenant on Economic Social and Cultural Rights by women working peacefully in a personal or organizational capacity for the promotion and protection of human rights. Non-governmental organizations and women's organizations [and feminist groups] have played a catalytic role in the promotion of the human rights of women, through grass-roots activities, networking and advocacy, and need encouragement, support and access to information from Governments in order to carry out these activities.

229. In addressing the enjoyment of human rights, Governments and other actors should promote an active and visible policy of mainstreaming a gender perspective in all policies and programmes so that, before decisions are taken, an analysis is made of the effects on women and men respectively.

[Apply and enforce international norms and standards to promote and safeguard the full and equal enjoyment by women of all human rights]

Strategic objective I.1. Promote and protect [all] the human rights of women, through the full implementation of all [international] human rights instruments, especially through the Convention on the Elimination of All Forms of Discrimination against Women

Actions to be taken

230. By Governments:

- (a) [Consider] Ratify or accede to and implement international and regional human rights treaties;
- (b) [Consider] the ratification or accession to and [ensure] implementation of the Convention on the Elimination of All Forms of Discrimination against Women so that universal ratification of the Convention can be achieved by the year 2000;
- (c) [Consider withdrawing reservations to the Convention on the Elimination of All Forms of Discrimination against Women;]
- (d) [Limit the extent of any reservations to the Convention, formulate any reservations as precisely and as narrowly as possible, ensure that no

reservation is incompatible with the object and purpose of the Convention or otherwise contrary to international treaty law and review their reservations regularly, with the view to withdrawing them expeditiously;]

- (e) Consider drawing up national action plans identifying steps to improve the promotion and protection of human rights, including the human rights of women, as recommended by the World Conference on Human Rights;
- (f) Create or strengthen [independent] national institutions for the protection and promotion of these rights, including the human rights of women, as recommended by the World Conference on Human Rights;
- (g) Develop a comprehensive human rights education programme to raise awareness among women of their human rights and among others of the human rights of women;
- (h) [Undertake, if they are States parties, to implement the Convention by reviewing all laws, policies, practices and procedures to determine whether they meet the obligations set forth in the Convention, revising all non-conforming laws, policies, practices and procedures to meet the international obligations set forth in the Convention;]
- (i) Include gender aspects in reporting under all other human rights conventions and instruments, including ILO conventions, to ensure analysis and review of the human rights of women;
- (j) Report on schedule regarding the implementation of the Convention to the Committee on the Elimination of Discrimination against Women, following fully the guidelines established by the Committee and involving non-governmental organizations, where appropriate, or taking into account their contributions in the preparation of the report;
- (k) [Enable the Committee on the Elimination of Discrimination against Women fully to discharge its mandate, for instance [by revising the Convention to allow adequate meeting time and] by promoting efficient working methods;]
- (l) [Take steps to support] [Consider] the drafting of an optional protocol to the Convention to establish [a right of petition and inquiry] [a communication] procedure that can enter into force before the year 2000 [as soon as possible];
- (m) [Consider] Ratify or accede to and ensure [full] implementation of the Convention on the Rights of the Child to ensure equal rights for girls and boys and urge those who have not already done so to become a party in order to realize universal implementation of the Convention on the Rights of the Child by the year 2000;
- (n) Address the acute problems of children, including through supporting efforts in the context of the United Nations system aimed at adopting

efficient international measures for the prevention and eradication of female infanticide, harmful child labour, the sale of children [and their organs], child prostitution, child pornography and other forms of sexual abuse and consider [guidelines for a possible draft] [the drafting of an] optional protocol to the Convention on the Rights of the Child;

- (o) [Promote the approval and enforcement of an international convention against all open and covert forms of sexual exploitation that includes the provision of social services to the victims and the prosecution of those who run sex tourism industries and the traffickers;]
- (p) Taking into account the need to ensure full respect for the human rights of indigenous women, consider a declaration on the rights of indigenous people for adoption by the General Assembly within the International Decade of the World's Indigenous People, and encourage the participation of indigenous women in the working group elaborating the draft declaration, in accordance with the provisions for the participation of organizations of indigenous people.

231. By [the United Nations] [The United Nations High Commissioner for Human Rights] [all human rights bodies in the United Nations system as well as the United Nations High Commissioner for Human Rights and the United Nations High Commissioner for Refugees], while promoting greater efficiency and effectiveness through better coordination of the various bodies, mechanisms and procedures, taking into account the need to avoid unnecessary duplication and overlapping of their mandates and tasks:

- (a) Give full and equal and sustained attention to the human rights of women in the exercise of their respective mandates to promote universal respect for and protection of all human rights - civil, cultural, economic, political and social - including the right to development;
- (b) Ensure the implementation of the recommendations of the World Conference on Human Rights for the full integration and mainstreaming of the human rights of women;
- (c) Develop a comprehensive policy programme for the mainstreaming of the human rights of women throughout the United Nations system, including in activities with regard to advisory services, technical assistance, reporting methodology, gender impact assessments, coordination, public information and human rights education, and play an active role in the implementation of the programme;
- (d) Ensure the integration and full participation of women as both agents and beneficiaries in the development process, and reiterate the objectives established for global action for women towards sustainable and equitable development set forth in the Rio Declaration on Environment and Development;

- (e) Include information on gender-based human rights violations in their activities and integrate the findings into all of their programmes and activities;
- (f) Ensure that there is collaboration and coordination of the work of all human rights bodies and mechanisms to ensure that the human rights of women are respected;
- (g) Strengthen cooperation and coordination between the Commission on the Status of Women, the Commission on Human Rights, the Commission for Social Development, the Commission on Sustainable Development, the Commission on Crime Prevention and Criminal Justice, the United Nations human rights treaty monitoring bodies, including the Committee on the Elimination of Discrimination against Women, UNIFEM, INSTRAW, UNDP, UNICEF, and other organizations of the United Nations system, acting within their mandates, in the promotion of the human rights of women, and improve cooperation between the Division for the Advancement of Women and the Centre for Human Rights;
- (h) [Call upon the United Nations High Commissioner for Human Rights and the United Nations High Commissioner for Refugees to establish effective cooperation within their respective mandates, taking into account the fact that refugee, displaced and returnee women are subject to particular forms of human rights abuse;]

(Alternative)

- [Call upon the United Nations High Commissioner for Human Rights and the United Nations High Commissioner for Refugees to establish effective cooperation within their respective mandates, taking into account [the close link between human rights situations, military aggression, ethnic cleansing and genocide, refugee, displaced and returnee women, and the fact that these women are subject to particular forms of human rights abuse];]
- (i) Encourage incorporation of a gender perspective in national programmes of action and in human rights and national institutions, within the context of human rights advisory services programmes;
  - (j) Provide training in the human rights of women for all United Nations personnel and officials, especially those in human rights and humanitarian relief activities, and promote their understanding of the human rights of women so that they recognize and deal with violations of the human rights of women and can fully take into account the gender aspect of their work.



Strategic objective I.2. Ensure equality and non-discrimination under the law

Actions to be taken

232. By Governments:

- (a) Give priority to promoting and protecting the full and equal enjoyment by women and men of all human rights and fundamental freedoms without distinction of any kind as to race, colour, sex, language, religion, political or other opinions, national or social origins, property, birth or other status;
- (b) Provide constitutional guarantees and/or enact appropriate legislation to prohibit discrimination on the basis of sex for all women and girls of all ages and assure women of all ages equal rights and their full enjoyment;
- (c) Embody the principle of the equality of men and women in their legislation and ensure, through law and other appropriate means, the practical realization of this principle;
- (d) [Consider] reviewing national laws [including customary laws and legal practices in the areas of family, civil, penal, labour and commercial laws] in order to ensure the implementation of the principles and procedures of all relevant international human rights instruments by means of national legislation, and [consider] revoking any remaining laws that discriminate on the basis of sex and remove gender bias in the administration of justice;
- (e) Strengthen and encourage the development of programmes of protection of the human rights of women in the national institutions on human rights which carry out programmes, such as human rights commissions or ombudspersons, according them appropriate status, resources and access to the Government to assist individuals, in particular women, and ensure that these institutions pay adequate attention to problems involving the violation of the human rights of women;
- (f) [Take action to ensure that women's [sexual and] reproductive rights are fully recognized and respected;]
- (g) [Take urgent action to combat and eliminate violence against women, which is a human rights violation, resulting from harmful traditional or customary practices, cultural prejudices and [religious, anti-religious, or secular] extremism. [They are also urged] Prohibit female genital mutilation wherever it exists and give vigorous support to efforts among non-governmental and community organizations and religious institutions to eliminate such practices;]
- (h) [Consider what legal safeguards may be required to prevent discrimination on grounds of sexual orientation or lifestyle;]

- (i) Provide gender-sensitive human rights education and training to public officials, including, inter alia, police and military personnel, corrections officers, health and medical personnel, and social workers, including people who deal with migration and refugee issues, and teachers at all levels of the educational system, and make available such education and training also to the judiciary and members of parliament in order to enable them to better exercise their public responsibilities;
- (j) [Promote the equal right of women to be members of trade unions and other professional and social organizations;]
- (k) Establish effective mechanisms for investigating violations of the human rights of women perpetrated by any public official and take the necessary punitive legal measures in accordance with national laws;
- (l) Review and amend criminal laws and procedures, as necessary, to eliminate any discrimination against women in order to ensure that criminal law and procedures guarantee women effective protection against, and prosecution of, crimes directed at or disproportionately affecting women, regardless of the relationship between the perpetrator and the victim, and ensure that women defendants, victims and/or witnesses are not revictimized or discriminated against in the investigation and prosecution of crimes;
- (m) Ensure that women have the same right as men to be [judges], advocates or other officers of the court, as well as police officers and prison and detention officers, among other things;
- (n) Strengthen existing or establish readily available and free or affordable alternative administrative mechanisms and legal aid programmes to assist disadvantaged women seeking redress for violations of their rights;
- (o) [Guarantee the full enjoyment of all human rights by women activists and by members of non-governmental organizations in this field and their freedom in carrying out their activities;]

(Alternative)

[Ensure that all women and [members of] non-governmental organizations [and their members] genuinely involved in the field of protection and promotion of all human rights - civil, cultural, economic, political and social, including the right to development - enjoy the rights and freedoms recognized in the Universal Declaration of Human Rights, and the protection of national laws;]

- (p) Strengthen and encourage the implementation of the recommendations contained in the Standard Rules on the Equalization of Opportunities for Persons with Disabilities, paying special attention to ensure non-discrimination and equal enjoyment of all human rights and fundamental freedoms by women and girls with disabilities, including

their access to information and services in the field of violence against women, as well as their active participation and economic contribution in all aspects of society;

- (q) Encourage the development of gender-sensitive human rights programmes.

Strategic objective I.3. Achieve legal literacy

Actions to be taken

233. By Governments [with the support of] [and] non-governmental organizations, the United Nations and other international organizations, as appropriate:

- (a) Translate whenever possible, into local and indigenous languages and into alternative formats appropriate for persons with disabilities and persons at lower levels of literacy, publicize and disseminate laws and information relating to the equal status and human rights of all women, including the Universal Declaration of Human Rights, the International Covenant on Civil and Political Rights, the International Covenant on Economic, Social and Cultural Rights, the Convention on the Elimination of All Forms of Discrimination against Women, the International Convention on the Elimination of All Forms of Racial Discrimination, the Convention on the Rights of the Child, the Convention against Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment, the Declaration on the Right to Development and the Declaration on the Elimination of Violence against Women, as well as the outcomes of relevant United Nations conferences and summits and national reports to the Committee on the Elimination of Discrimination against Women;
- (b) Publicize and disseminate such information in easily understandable formats and alternative formats appropriate for persons with disabilities, and persons at low levels of literacy;
- (c) Disseminate information on national legislation and its impact on women, including easily accessible guidelines on how to use a justice system to exercise one's rights;
- (d) [Include information about international and regional instruments and standards in their public information and human rights education activities and in adult education and training programmes, particularly for groups such as the military, the police and other law enforcement personnel, the judiciary, and legal and health professionals to ensure that human rights are effectively protected;]
- (e) Make widely available and fully publicize information on the existence of national, regional and international mechanisms for seeking redress when the human rights of women are violated;
- (f) Encourage, coordinate and cooperate with local and regional women's groups, relevant non-governmental organizations, educators and the

media, to implement programmes in human rights education to make women aware of their human rights;

- (g) [Promote education on the human and legal rights of women in school curricula at all levels of education and undertake public campaigns, in the most widely used languages of the country, on the equality of women and men in public and private life, including their rights within the family and relevant human rights instruments under national and international law;]
- (h) Promote education in all countries in human rights and international humanitarian law for members of the national security and armed forces, including those assigned to United Nations peace-keeping operations, on a routine and continuing basis, reminding them and sensitizing them to the fact that they should respect the rights of women at all times, both on and off duty, giving special attention to the rules on the protection of women and children and to the protection of human rights in situations of armed conflict;
- (i) Take appropriate measures to ensure that refugee and displaced women, migrant women and women migrant workers are made aware of their human rights and of the recourse mechanisms available to them.

J. Inequality in women's access to and participation in all communications systems, especially the media, and their insufficient mobilization to promote women's contribution to society [Mobilize the media to portray women's contribution to society] [Responsibility of the media for the impact of their content on women] [Women and the media]

234. During the past decade, advances in information technology have facilitated a global communications network that transcends national boundaries and has an impact on public policy, private attitudes and behaviour, especially of children and young adults. Everywhere the potential exists for the media to make a far greater contribution to the advancement of women.

235. More women are involved in careers in the communications sector, but few have attained positions at the decision-making level or serve on governing boards and bodies that influence media policy. The lack of gender sensitivity in the media is evidenced by the failure to eliminate the gender-based stereotyping that can be found in public and private local, national and international media organizations.

236. The continued projection of negative and degrading images of women in media communications - electronic, print, visual and audio - must be changed. Print and electronic media in most countries do not provide a balanced picture of women's diverse lives and contributions to society in a changing world. In addition, violent and degrading or pornographic media products [are also negatively affecting] [can also negatively affect] women and their participation in society. Programming that reinforces women's traditional roles can be

equally limiting. The worldwide trend towards consumerism has created a climate in which advertisements and commercial messages often portray women primarily as consumers and target girls and women of all ages inappropriately.

237. Women should be empowered by enhancing their skills, knowledge and access to information technology. This will strengthen their ability to combat negative portrayals of women internationally and to challenge instances of abuse of the power of an increasingly important industry. Self-regulatory mechanisms for the media need to be created and strengthened and approaches developed to eliminate gender-biased programming (and excessive control or influence of transnational corporations.) Most women, especially in developing countries, are not able to access effectively the expanding electronic information highways and therefore cannot establish networks that will provide them with alternative sources of information. Women therefore need to be involved in decision-making regarding the development of the new technologies in order to participate fully in their growth and impact.

238. In addressing the issue of the mobilization of the media, Governments and other actors should promote an active and visible policy of mainstreaming a gender perspective in policies and programmes.

[Enhance the role of traditional and modern mass communications media to promote awareness of equality between women and men effectively]

Strategic objective J.1. Increase the participation and enhance the access of women to expression and decision-making in and through the media and new technologies of communication

Actions to be taken

239. By Governments:

- (a) Support women's education, training and employment to [ensure women's greater access] [promote women's equal] access to all areas and levels of the media;
- (b) Support research into all aspects of women and the media so as to define areas needing attention and action and review existing media policies with a view to integrating a gender perspective;
- (c) Promote women's [full and] equal participation in the media, including management, programming, education, training and research;
- (d) Aim at gender balance in the appointment of women and men to all advisory, management, regulatory or monitoring bodies, including those connected to the private and State or public media;

- (e) Encourage, to the extent consistent with freedom of expression, these bodies to increase the number of programmes for and by women to see to it that women's needs and concerns are properly addressed;
- (f) Encourage and recognize women's media networks, including electronic networks and other new technologies of communication, as a means for the dissemination of information and the exchange of views, including at the international level, and support women's groups active in all media work and systems of communications to that end;
- (g) Encourage and provide the means or incentives for the creative use of programmes in the national media for the dissemination of information on various cultural forms of indigenous people and the development of social and educational issues in this regard within the framework of national law;
- (h) Guarantee the freedom of the media and its subsequent protection within the framework of national law [and encourage the positive involvement of the media in development and social issues].

240. By national and international media systems:

Develop, consistent with freedom of expression, regulatory mechanisms, including voluntary ones, that promote balanced and diverse portrayals of women by the media and international communication systems and that promote increased participation by women and men in production and decision-making.

241. By Governments, as appropriate, or national machinery for the advancement of women:

- (a) Encourage the development of educational and training programmes for women, to produce information for the mass media, including funding of experimental efforts, and the use of the new technologies of communication, cybernetics space and satellite, whether public or private;
- (b) Encourage the use of communication systems, including new technologies, as a means of strengthening women's participation in democratic processes;
- (c) Facilitate the compilation of a directory of women media experts;
- (d) Encourage the participation of women in the development of [professional guidelines and codes of conduct] [appropriate regulatory mechanisms] to promote balanced and [non-stereotyped] portrayals of women by the media.

242. By non-governmental organizations and media professional associations:

- (a) Encourage the establishment of media watch groups that can monitor the media and consult with the media to ensure that women's needs and concerns are properly reflected;
- (b) [Consider training] Train women to make greater use of information technology for communication and the media, including at the international level;
- (c) Create networks among and develop information programmes for non-governmental organizations, women's organizations and professional media organizations in order to recognize the specific needs of women in the media, and facilitate the increased participation of women in communication, in particular at the international level, in support of South-South and North-South dialogue among and between these organizations, inter alia, to promote the human rights of women and equality between women and men;
- (d) Encourage the media industry and education and media training institutions to develop, in appropriate languages, traditional, indigenous and other ethnic group forms of media, such as story-telling, drama, poetry and song [reflecting their cultures] [reflecting their own cultural values] [reflecting their moral, ethical and religious values], and utilize these forms of communication to disseminate information on development and social issues.

Strategic objective J.2. Promote a [positive] [balanced and non-stereotyped] portrayal of women in the media

Actions to be taken

243. By Governments and international organizations, to the extent consistent with freedom of expression:

- (a) Promote research and implementation of a strategy of information, education and communication aimed at promoting a balanced portrayal of women and girls and their multiple roles;
- (b) Encourage the media and advertising agencies to develop specific programmes to raise awareness of the Platform for Action;
- (c) Encourage gender-sensitive training for media professionals, including media owners and managers, to encourage the creation and use of [positive] [non-stereotyped] images of women in the media;
- (d) Encourage the media to refrain from presenting women as inferior beings and exploiting them as sexual objects and commodities, rather than presenting them as creative human beings, key actors and contributors to and beneficiaries of the process of development;

- (e) Promote the concept that the sexist stereotypes displayed in the media are gender discriminatory, degrading in nature and offensive;
- (f) Take effective measures or institute such measures, including appropriate legislation against pornography and the projection of violence against women and children in the media.

244. By the mass media and advertising organizations:

- (a) Develop [appropriate regulatory mechanisms] [professional guidelines and codes of conduct] and other forms of self-regulation to promote the presentation of non-stereotyped images of women;
- (b) [Establish professional guidelines and codes of conduct that address violent, degrading or pornographic materials concerning women in the media, including advertising;]
- (c) Develop a gender perspective on all issues of concern to communities, consumers and civil society;
- (d) Increase women's participation in decision-making at all levels of the media.

245. By the media, non-governmental organizations and the private sector, in collaboration, as appropriate, with national machinery for the advancement of women:

- (a) Promote the equal sharing of family responsibilities through media campaigns [that emphasize gender equality and non-stereotyped gender roles of women and men within the family] and that disseminate information aimed at eliminating spousal and child abuse and all forms of violence against women, including domestic violence;
- (b) Produce and/or disseminate media materials on women leaders, inter alia, as [caring mothers and nurturers of happy families] managers and entrepreneurs, to provide role models, particularly to young women;
- (c) Promote extensive campaigns making use of public and private educational programmes to disseminate information about [the human rights of women,] [the rights of women as provided for in international human rights instruments,] with a view to increasing their awareness about their human rights;
- (d) [Support the development of new] [Develop and finance] alternative media and the use of all means of communications to disseminate information to and about women and their concerns;
- (e) Develop approaches and train experts to apply gender analysis with regard to media programmes.



K. [Lack of adequate recognition and support for] [Promote]  
[women's contribution to managing natural resources and  
safeguarding the environment] [Women and the environment]

246. [Human beings are at the centre of concern for sustainable development. They are entitled to a healthy and productive life in harmony with nature.]\* Women have an essential role to play in the development of sustainable and ecologically sound consumption and production patterns and approaches to natural resource management, as was recognized at the United Nations Conference on Environment and Development and the International Conference on Population and Development and reflected throughout Agenda 21. Awareness of resource depletion, the degradation of natural systems and the dangers of polluting substances increased markedly in the past decade. These worsening conditions are destroying fragile ecosystems and displacing communities, especially women, from productive activities and are an increasing threat to a safe and healthy environment. [The major cause of the continued deterioration of the global environment is the unsustainable pattern of consumption and production, particularly in industrialized countries. Rising sealevels as a result of global warming cause a grave and immediate threat to people living in island countries and coastal areas. The use of ozone-depleting substances, such as products with chlorofluorocarbon, halos, foams and plastics, are severely affecting the atmosphere by allowing harmful ultraviolet rays to reach the Earth's surface, with severe effects on the health of people.]

247. All States and all people shall cooperate in the essential task of eradicating poverty as an indispensable requirement for sustainable development, in order to decrease the disparities in standards of living and better meet the needs of the majority of the people of the world. [Poverty and environmental degradation are closely related.] [In addition, war, armed conflicts, foreign occupation and displacements are also closely related to environmental degradation.] The deterioration of natural resources displaces communities, especially women, from income-generating activities while greatly adding to unremunerated work. In both urban and rural areas, environmental degradation results in negative effects on the health, well-being and quality of life of the population at large, especially girls and women of all ages. Particular attention and recognition should be given to the role and the special situation of women living in rural areas and those working in the agricultural sector, where access to training, land, natural and productive resources, credit, development programmes and cooperative structures can help them increase their participation in sustainable development. Environmental risks in the home and workplace may have a disproportionate impact on women's health because of women's different susceptibilities to the toxic effects of various chemicals. These risks to women's health are particularly high [in urban areas as well as in low-income areas], where there is a high concentration of polluting industrial facilities.

248. [Through their management and use of natural resources, women provide sustenance to their families and communities. As consumers, caretakers of their

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\* The first two sentences are not in question but their inclusion in this section is not yet agreed.

families and educators, women play an important role in promoting sustainable development and in their concern for the quality and sustainability of life for present and future generations. Women have expressed their commitment to create a new development paradigm that integrates environmental sustainability with gender equality and justice within and between generations as maintained in chapter 24 of Agenda 21. 17/3

249. Women remain largely absent at all levels of policy formulation and decision-making in natural resource and environmental management, conservation, protection and rehabilitation, and their experience and skills in advocacy for and monitoring of proper natural resource management too often remain marginalized in policy-making and decision-making bodies, as well as in educational institutions and environment-related agencies at the managerial level. Women are rarely trained as professional natural resource managers with policy-making capacities such as land-use planners, agriculturalists, foresters, marine scientists and environmental lawyers. Even in cases where women are trained as professional natural resource managers, they are often underrepresented in formal institutions with policy-making capacities at the national, regional and international levels. Often women are not equal participants in the management of financial and corporate institutions whose decision-making most significantly affects environmental quality. Furthermore, there are institutional weaknesses in coordination between women's non-governmental organizations and national institutions dealing with environmental issues, despite the recent rapid growth and visibility of women's non-governmental organizations working on these issues at all levels.

250. Women have often played leadership roles or taken the lead in promoting an environmental ethic, reducing resource use, and reusing and recycling resources to minimize waste and excessive consumption. Women can have a particularly powerful role in influencing sustainable consumption decisions. In addition, women's contributions to environmental management, including through grass-roots and youth campaigns to protect the environment, have often taken place at the local level, where decentralized action on environmental issues is most needed and decisive. Women, especially indigenous women, have particular knowledge of ecological linkages and fragile ecosystem management. Women in many communities provide the main labour force for subsistence production, including production of seafood; hence, their role is crucial to the provision of food and nutrition, the enhancement of the subsistence and informal sectors and the preservation of the environment. In certain regions, women are generally the most stable members of the community, as men often pursue work in distant locations, leaving women to safeguard the natural environment and ensure adequate and sustainable resource allocation within the household and the community.

251. The strategic actions needed for sound environmental management require a holistic, multidisciplinary and intersectoral approach. Women's participation and leadership are essential to every aspect of that approach. The recent United Nations global conferences on development, as well as regional preparatory conferences for the Fourth World Conference on Women, have all acknowledged that sustainable development policies that do not involve women and men alike will not succeed in the long run. They have called for the effective participation of women in the generation of knowledge and environmental education in decision-making and management at all levels. Women's experiences

and contributions to an ecologically sound environment must therefore be central to the agenda for the twenty-first century. Sustainable development will be an elusive goal unless women's contribution to environmental management is recognized and supported.

252. In addressing the lack of adequate recognition and support for women's contribution to conservation and management of natural resources and safeguarding the environment, Governments and other actors should promote an active and visible policy of mainstreaming a gender perspective in all policies and programmes, [so that before decisions are taken, an analysis is made of the effects on women and men respectively].

Strategic objective K.1. Involve women actively in environmental decision-making at all levels

Actions to be taken

253. By Governments, at all levels, including municipal authorities, as appropriate:

- (a) [Ensure] opportunities for women, including indigenous women, to participate in environmental decision-making at all levels, including as managers, designers and planners, and as implementers and evaluators of environmental projects;
- (b) Facilitate and increase women's access to information and education, including in the areas of science, technology and economics, thus enhancing their knowledge, skills and opportunities for participation in environmental decisions;
- (c) [Encourage, through national legislation and subject to it, indigenous women's traditional knowledge, innovations, practices and skills, including those concerning traditional medicines, biodiversity and indigenous technologies, ensure that they are protected and improved and are respected, preserved and maintained, as envisaged in the Convention on Biological Diversity, 28/ safeguard their intellectual property rights and encourage the equitable sharing of the benefits arising from the utilization of such knowledge;]
- (d) Take appropriate measures to reduce risks to women from identified environmental hazards at home, at work and in other environments, including appropriate application of clean technologies, taking into account the precautionary approach agreed to in the Rio Declaration on Environment and Development;
- (e) Take measures to integrate [women's concerns and] a gender perspective in the design and implementation of, among other things, environmentally sound and sustainable [energy and] resource management mechanisms, production techniques and infrastructure development in rural and urban areas;

- (f) [Take measures to empower women as consumers to take effective environmental actions in their homes, communities and workplaces;]
- (g) Promote the participation of local communities, particularly women, in identification of public service needs, spatial planning and the provision and design of urban infrastructure.

254. By Governments and international organizations and private sector institutions, as appropriate:

- (a) Take gender impact into consideration in the work of the Commission on Sustainable Development and other appropriate United Nations bodies and in the activities of international financial institutions;
- (b) Promote the involvement of women and the incorporation of a gender perspective in the design, approval and execution of projects funded under the Global Environment Facility and other appropriate United Nations organizations;
- (c) Encourage the design of projects in the areas of concern to the Global Environment Facility that would benefit women and projects managed by women;
- (d) Establish strategies and mechanisms to increase the proportion of women, particularly at grass-roots levels, involved as decision makers, planners, managers, scientists and technical advisers and as beneficiaries in the design, development and implementation of policies and programmes for natural resource management and environmental protection and conservation;
- (e) Encourage social, economic, political and scientific institutions to address environmental degradation and the resulting impact on women.

255. By non-governmental organizations and the private sector:

- (a) Assume advocacy of environmental and natural resource management issues of concern to women and provide information to contribute to resource mobilization for environmental protection and conservation;
- (b) Facilitate the access of women agriculturists, fishers and pastoralists to knowledge, skills, marketing services and environmentally sound technologies to support and strengthen their crucial roles and their expertise in resource management and the conservation of biological diversity.

Strategic objective K.2. Ensure integration of gender concerns and perspectives in policies and programmes for sustainable development

Actions to be taken

256. By Governments:

- (a) [Integrate the perspectives and knowledge of all women, including indigenous women, on sustainable resource management in the development of policies and programmes for sustainable development, including in particular, those designed to address and prevent environmental degradation of the land;]
- (b) Evaluate policies and programmes in terms of environmental impact and women's equal access to and use of natural resources;
- (c) Ensure adequate research to assess how and to what extent women are particularly susceptible or exposed to environmental degradation and hazards, including, as necessary, research and data collection on specific groups of women, particularly women with low income, indigenous women and women belonging to minorities;
- (d) [Integrate rural women's traditional knowledge and practices of sustainable resource use and management in the development of environmental management and extension programmes;]
- (e) Integrate the results of gender-sensitive research into mainstream policies with a view to developing sustainable human settlements;
- (f) Promote the knowledge of and sponsor research on the role of women, particularly rural and indigenous women, in food gathering and production, soil conservation, irrigation, watershed management, sanitation, coastal zone and marine resource management, integrated pest management, land-use planning, forest conservation and community forestry, fisheries, natural disaster prevention, and new and renewable sources of energy, focusing particularly on indigenous women's knowledge and experience;
- (g) Develop a strategy for change to eliminate all obstacles to women's full and equal participation in sustainable development and equal access to [and control over] resources;
- (h) Promote the education of girls and women of all ages in science, technology and economics, and other disciplines relating to the natural environment, so that they can make informed choices and offer informed input in determining local economic, scientific and environmental priorities for the management and appropriate use of natural and local resources and ecosystems;
- (i) Develop programmes to involve female professionals and scientists, as well as technical, administrative and clerical workers, in

environmental management, develop training programmes for girls and women in these fields, expand opportunities for the hiring and promotion of women in these fields and implement special measures to advance women's expertise and participation in these activities;

- (j) Identify and promote environmentally sound technologies that have been designed, developed and improved in consultation with women and that are appropriate to both women and men;
- (k) Support the development of women's equal access to housing infrastructure, safe water, and sustainable and affordable energy technologies, such as wind, solar, biomass and other renewable sources, through participatory needs assessments, energy planning and policy formulation at the local and national levels;
- (l) Ensure that clean water is available and accessible to all by the year 2000 and that environmental protection and conservation plans are designed and implemented to restore polluted water systems and rebuild damaged watersheds.

257. By international organizations, non-governmental organizations and private sector institutions:

- (a) Involve women in the communication industries in raising awareness regarding environmental issues, especially on the environmental and health impacts of products, technologies and industry processes;
- (b) Encourage consumers to use their purchasing power to promote the production of environmentally safe products and encourage investment in environmentally sound and productive agricultural, fisheries, commercial and industrial activities and technologies;
- (c) Support women's consumer initiatives by promoting the marketing of organic food and recycling facilities, product information [and product labelling, including labelling of toxic chemicals and pesticide containers for those who are illiterate].

Strategic objective K.3. Establish or strengthen mechanisms at the national, regional and international levels to assess the impact of development and environmental policies on women

Actions to be taken

258. By Governments, regional and international organizations and non-governmental organizations, as appropriate:

- (a) Provide technical assistance to women, particularly in developing countries, in the sectors of agriculture, fisheries, small enterprises, trade and industry to ensure the continuing promotion of

human resource development and the development of environmentally sound technologies and of women's entrepreneurship;

- (b) Develop gender-sensitive databases, information [and monitoring] systems and participatory action-oriented research, methodologies and policy analyses with the collaboration of academic institutions and local women researchers on the following:
- (i) Knowledge and experience on the part of women concerning the management and conservation of natural resources for incorporation in the databases and information systems for sustainable development;
  - (ii) The impact on women of environmental and natural resource degradation, deriving from, inter alia, unsustainable production and consumption patterns, drought, poor quality water, global warming, desertification, sea-level rise, hazardous waste, natural disasters, toxic chemicals and pesticide residues, radioactive waste, armed conflicts [and refugee flows];
  - (iii) Analysis of the structural links between gender relations, environment and development, with special emphasis on particular sectors, such as agriculture, industry, fisheries, forestry, environmental health, biological diversity, climate, water resources and sanitation;
  - (iv) Measures to develop and include environmental, economic, [cultural], social and gender-sensitive analyses as an essential step in the development [and monitoring] of programmes and policies;
  - (v) Programmes to create rural and urban training, research and resource centres that will disseminate environmentally sound technologies to women;
- (c) [Prohibit the transboundary movement of hazardous toxic and radioactive material waste;]
- (d) Promote coordination within and among institutions to implement the Platform for Action and chapter 24 of Agenda 21 17/ [and, inter alia, request [the Commission on the Status of Women,] the Commission on Sustainable Development and the Economic and Social Council to [monitor and] evaluate periodically the implementation of Agenda 21 with regard to women and the environment].

L. [Persistent discrimination against and violation of the rights of] [Survival, protection and development of] the girl child

259. The Convention on the Rights of the Child recognizes that "States Parties shall respect and ensure the rights set forth in the present Convention to each child within their jurisdiction without discrimination of any kind, irrespective

of the child's or his or her parent's or legal guardian's race, colour, sex, language, religion, political or other opinion, national, ethnic or social origin, property, disability, birth or status" (article 2, para. 1). 10/ ["States Parties shall respect the responsibilities, rights and duties of parents or, where applicable, the members of the extended family or community as provided for by local custom, legal guardians or other persons legally responsible for the child, to provide, in a manner consistent with the evolving capacities of the child, appropriate direction and guidance in the exercise by the child of the rights recognized in the present Convention" (article 5). 10/] However, in many countries available indicators show that the girl child is discriminated against from [conception/infancy,] through her childhood and into adulthood. [In some areas of the world, men outnumber women by 5 in every 100. The reasons for the discrepancy, for the millions of missing women, include, among other things, harmful attitudes and practices, such as female genital mutilation, son preference - which results in female infanticide [and foeticide/ prenatal sex selection] - early marriage, violence against women, prostitution, sexual abuse, discrimination against girls in food allocation and other practices related to health and well-being. As a result, fewer girls than boys survive into adulthood].

260. Girls are often treated as inferior and are socialized to put themselves last, thus undermining their self-esteem. Discrimination and neglect in childhood can initiate a lifelong downward spiral of deprivation and exclusion from the social mainstream. Initiatives should be taken to prepare girls to participate actively, effectively and equally with boys in all levels of social, economic, political and cultural leadership.

261. Gender-biased educational processes, including curricula, educational materials and practices, teachers' attitudes and classroom interaction, reinforce existing gender inequalities.

262. Girls and adolescents may receive a variety of conflicting and confusing messages on their gender roles from their parents, teachers, peers and the media. Women and men need to work together with children and youth to break down persistent gender stereotypes [recognizing the rights, duties and responsibilities of parents and other persons legally responsible for children, and consistent with the Convention on the Rights of the Child.]

263. Although the number of educated children has grown in the past 20 years in some countries, boys have proportionately fared much better than girls. In 1990, 130 million children had no access to primary school; of these, 81 million were girls. [This can be attributed to such factors as customary attitudes, child labour, early marriages, lack of funds and lack of adequate schooling facilities, and teenage pregnancies.] [In some countries the shortage of women teachers can inhibit the enrolment of girls.] In many cases, girls start to undertake heavy domestic chores at a very early age and are expected to manage both educational and domestic responsibilities, often resulting in poor scholastic performance and an early drop-out from schooling.

264. The percentage of girls enrolled in secondary school remains significantly low in many countries. Girls are often not encouraged or given the opportunity



to pursue scientific and technological training and education, which limits the knowledge they require for their daily lives and their employment opportunities.

265. Girls are less encouraged than boys to participate in and learn about the social, economic and political functioning of society, with the result that they are not offered the same opportunities as boys to take part in the decision-making processes.

266. Existing discrimination against the girl child in her access to nutrition and physical and mental health services endangers her current and future health. An estimated 450 million adult women in developing countries are stunted as a result of childhood protein-energy malnutrition.

267. [The International Conference on Population and Development recognized, in paragraph 7.3 of the Programme of Action, 13/ that "full attention should be given to the promotion of mutually respectful and equitable gender relations and particularly to meeting the educational and service needs of adolescents to enable them to deal in a positive and responsible way with their sexuality".] [Recognizing the rights, duties and responsibilities of parents and other persons legally responsible for children, and consistent with the Convention on the Rights of the Child,] [responsible sexual behaviour, sensitivity and equality in gender relations, particularly when instilled during the formative years, enhance and promote respectful and harmonious partnerships between women and men. Support should be given to integrating sexual education for young people with parental support and guidance that stresses the responsibility of males for their own sexuality and fertility and that help them exercise their responsibilities.]

268. More than 15 million girls aged 15 to 19 give birth each year. Motherhood at a very young age entails complications during pregnancy and delivery and a risk of maternal death that is much greater than average. The children of young mothers have higher levels of morbidity and mortality. Early child-bearing continues to be an impediment to improvements in the educational, economic and social status of women in all parts of the world. Overall, early marriage and early motherhood can severely curtail educational and employment opportunities and are likely to have a long-term adverse impact on their and their children's quality of life.

269. Sexual violence and sexually transmitted diseases, including HIV/AIDS, have a devastating effect on children's health, and girls are more vulnerable than boys to the consequences of [unprotected sexual relations/premature and irresponsible sexual behaviour]. Girls often face pressures to engage in sexual activity. Due to factors such as their youth, social pressures, lack of protective laws, or failure to enforce laws, girls are more vulnerable to all kinds of violence, particularly sexual violence, including rape, sexual abuse, prostitution, trafficking [including trafficking in human organs and tissue], and forced labour.

270. [Besides living with all the problems peculiar to girls, the disabled girl child has to cope additionally with discrimination for being disabled.]

271. Some children are particularly vulnerable, especially the abandoned, homeless and displaced, street children and children in areas in conflict, and children who are discriminated against because they belong to an ethnic or racial minority group.

272. All barriers must therefore be eliminated to enable girls [in all their diversity] to develop their full potential and skills through equal access to education and training, nutrition, physical and mental health care and related information.

273. [In addressing issues concerning children and youth, Governments should promote an active and visible policy of mainstreaming a gender perspective into all policies and programmes [so that before decisions are taken, an analysis is made of the effects on girls and boys respectively].]

Strategic objective L.1. Eliminate all forms of discrimination against the girl child

Actions to be taken

274. By Governments:

- (a) [By States that have not signed or ratified the Convention on the Rights of the Child, consider signing and ratifying the Convention, and by States that have signed and ratified the Convention, ensure full implementation of it] [through enactment/amendments in laws, rules and other procedures and] by fostering an enabling environment that encourages full respect for the rights of children;
- (b) Consistent with article 7 of the Convention on the Rights of the Child, take measures to ensure that a child is registered immediately after birth and has the right from birth to a name, the right to acquire a nationality and [as far as possible] the right to know and be cared for by his or her parents; 10/
- (c) Take steps to ensure that children receive appropriate financial support from their parents, by, among other measures, enforcing child-support laws;
- (d) [Enact, as appropriate, and enforce legislation that would guarantee equal succession and inheritance rights of children, regardless of sex.] [As appropriate, enact legislation that would guarantee the succession and inheritance rights of the girl child];
- (e) Enact and strictly enforce laws to ensure [that marriage is not entered into without the free and full consent of the intending spouses]. In addition, enact and strictly enforce laws concerning the minimum legal age of consent and the minimum age for marriage and raise the minimum age for marriage where necessary;

- (f) Develop and implement comprehensive policies, plans of action and programmes for the survival; protection, development and advancement of the girl child to promote and protect the full enjoyment of her [universal human] rights and to ensure equal opportunities for girls; these plans should form an integral part of the total development process;
- (g) Ensure the disaggregation by sex and age of all data related to children in the health, education and other sectors, in order to include a gender perspective in planning, implementation and monitoring of such programmes.

275. By Governments and international and non-governmental organizations:

- (a) Disaggregate information and data on children by sex and age, undertake research on the situation of girls and integrate, as appropriate, the results in the formulation of policies, programmes and decision-making for the advancement of the girl child;
- \* (b) Generate social support for the enforcement of laws on the minimum legal age for marriage, in particular by providing educational opportunities for girls.

Strategic objective L.2. Eliminate negative cultural attitudes and practices against girls

Actions to be taken

276. By Governments:

- (a) Encourage and support, as appropriate, non-governmental organizations and community-based organizations in their efforts to promote changes in negative attitudes and practices towards girls;
- (b) Set up educational programmes and develop teaching materials and textbooks that will sensitize and inform adults about the harmful effects of certain traditional or customary practices on girl children;
- (c) Develop and adopt curricula, teaching materials and textbooks to improve the self-image, lives and work opportunities of girls, particularly in areas where women have traditionally been underrepresented, such as mathematics, science and technology;
- (d) [Take steps so that the traditional and religious attire [and practices] of girls is [are] not a basis for discrimination in educational institutions.]

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\* Location of subparagraph is to be decided; it will probably be placed under strategic objective L.2.

277. By Governments and international and non-governmental organizations [as appropriate]:

- (a) Promote an educational setting that eliminates all barriers that impede the schooling of married and/or pregnant girls and young mothers, including, as appropriate, affordable and physically accessible child-care facilities and parental education to encourage those who have responsibilities for the care of their children and siblings during their school years to return to, or continue with, and complete schooling;
- (b) Encourage educational institutions and the media to adopt and project balanced and non-stereotyped images of girls and boys, and work to eliminate child pornography and degrading and violent portrayals of the girl child;
- (c) [Eliminate all forms of discrimination against the girl child and the root causes of son preference, which result in harmful and unethical practices such as female infanticide and prenatal sex selection; this is often compounded by the increasing use of technologies to determine foetal sex, resulting in abortion of female fetuses;]
- (d) Develop policies and programmes, giving priority to formal and informal education programmes that support and enable girls to acquire knowledge, develop self-esteem and take responsibility for their own lives; place special focus on programmes to educate women and men, especially parents, on the importance of girl's physical and mental health and well-being, including the elimination of discrimination against girls in food allocation, early marriage, violence against girls, female genital mutilation, child prostitution, [sexual abuse, rape and incest].

Strategic objective L.3. Increase public awareness of the value, needs and rights of the girl child, [including the girl child with special needs and in difficult circumstances, and the need to strengthen her self-image, self-esteem and status]

Actions to be taken

278. By Governments and international and non-governmental organizations:

- (a) Generate awareness of the disadvantaged situation of girls among policy makers, planners, administrators and implementors at all levels, as well as within households and communities;
- (b) Make the girl child, particularly the girl child in difficult circumstances, aware of her own potential, educate her about the rights guaranteed to her [under international human rights instruments, particularly the Convention on the Rights of the Child],

legislation enacted for her and the various measures undertaken by both governmental and non-governmental organizations working to improve her status;

- (c) Educate women, men, girls and boys to promote girls' status and encourage them to work towards mutual respect and equal partnership between girls and boys;
- (d) Facilitate the equal provision of appropriate services and devices to girls with disabilities and provide, as appropriate, their families with related support services.

Strategic objective L.4. Eliminate discrimination against girls in education, skills development and training

Actions to be taken

279. By Governments:

- (a) Ensure universal and equal access to and completion of primary education by all children and eliminate the existing gap between girls and boys, as stipulated in article 28 of the Convention on the Rights of the Child; 10/ similarly, ensure equal access to secondary education by the year 2005 and equal access to higher education, including vocational and technical education for all girls and boys and including the disadvantaged and gifted;
- (b) Take steps to integrate functional literacy and numeracy programmes, particularly for out-of-school girls in development programmes;
- (c) Promote human rights education in educational programmes and include in human rights education the fact that the human rights of women and of the girl child are an inalienable integral and indivisible part of universal human rights;
- (d) Increase enrolment and improve retention rates of girls by allocating appropriate budgetary resources, by enlisting the support of the community and parents through campaigns and flexible school schedules, incentives, scholarships, access programmes for out-of-school girls and other measures;
- (e) Develop training programmes and materials for teachers and educators, raising awareness about their own role in the educational process, with the view to providing them with effective strategies for gender-sensitive teaching;
- (f) Take actions to ensure that female teachers and professors have the same possibilities and status as male teachers and professors.

280. By Governments and international and non-governmental organizations:

/...

- (a) Provide education and skills training to increase girls opportunities for employment and access to decision-making processes;
- (b) Provide education to increase girls' knowledge and skills related to the functioning of economic, financial and political systems;
- (c) Ensure access to appropriate education and skills-training to girl children with disabilities for their full participation in life;
- (d) Promote full and equal participation of girls in extracurricular activities, such as sports, drama and cultural activities.

Strategic objective L.5. Eliminate discrimination against girls in health and nutrition

Actions to be taken

281. By Governments and international and non-governmental organizations:

- (a) Provide public information on the removal of discriminatory practices against girls in food allocation, nutrition and access to health services;
- (b) Sensitize the girl child, parents, teachers and society concerning good general health and nutrition and raise awareness of the health dangers and other problems connected with early pregnancies [recognizing the rights, duties and responsibilities of parents and other persons legally responsible for children, and consistent with the Convention on the Rights of the Child];
- (c) Strengthen and reorient health education and health services, particularly primary health care programmes [including sexual and reproductive health] and design quality health programmes to meet the physical and mental needs of girls [recognizing the rights, duties and responsibilities of parents and other persons legally responsible for children, and consistent with the Convention on the Rights of the Child,] and to give attention to young, expectant and nursing mothers;
- (d) Establish peer education and outreach programmes with a view to strengthening individual and collective action to reduce the vulnerability of girls to HIV/AIDS and other sexually transmitted diseases, [as agreed in the Programme of Action of the International Conference on Population and Development,] [recognizing the rights, duties and responsibilities of parents and other persons legally responsible for children, and consistent with the Convention on the Rights of the Child];
- (e) Ensure education and dissemination of information to girls, especially among adolescents, regarding the physiology of reproduction, [reproductive and sexual health, as agreed in the Programme of Action of the International Conference on Population and Development] [and

/...

the knowledge of all safe methods of family planning, and control and prevention of HIV/AIDS and other sexually transmitted diseases,] [recognizing the rights, duties and responsibilities of parents and other persons legally responsible for children, and consistent with the Convention on the Rights of the Child];

- (f) Include health and nutritional training as an integral part of literacy programmes and school curricula starting at the primary level for the benefit of the girl child;
- (g) Emphasize the role and responsibility of adolescents in sexual and reproductive health and behaviour through the provision of appropriate services and counselling [as contained in the report of the International Conference on Population and Development] [as agreed in the Programme of Action of the International Conference on Population and Development,] [taking into account the reservations and declarations on that document and recognizing the rights, duties and responsibilities of parents and other persons legally responsible for children, and consistent with the Convention on the Rights of the Child];
- (h) Develop information and training programmes for health planners and implementors on the special health needs of the girl child;
- (i) [Take all the appropriate measures with a view to abolishing traditional practices prejudicial to the health of children, as stipulated in Article 24 of the Convention on the Rights of the Child. 10/]

Strategic objective L.6. [Eliminate the economic exploitation of child labour and protect young girls at work]

Actions to be taken

282. By Governments:

- (a) In conformity with article 32 of the Convention on the Rights of the Child, 10/ protect children from economic exploitation and from performing any work that is likely to be hazardous or to interfere with the child's education, or to be harmful to the child's health or physical, mental, spiritual, moral or social development;
- (b) Define a minimum age for child [employment], including girls under national legislation in all sectors of activity;
- (c) Protect young girls at work, inter alia, through:
  - (i) A minimum age or ages for admission to [employment];

- (ii) Strict monitoring of work conditions (respect for work time, prohibition of work by children not provided for by national legislation, and monitoring of hygiene and health conditions at work);
- (iii) Application of social security coverage;
- (iv) Establishment of continuous training and education;
- (d) Strengthen, where necessary, legislation governing the work of children and provide for appropriate penalties or other sanctions to ensure effective enforcement of the legislation;
- (e) Use existing international labour standards, including, as appropriate, ILO standards for the protection of working children, to guide the formulation of national labour legislation and policies.

Strategic objective L.7. Eradicate violence against  
[girls] [the girl child]

Actions to be taken

283. By Governments and international and non-governmental organizations:

- (a) [Take effective actions and measures to enact and enforce legislation] to protect the safety and security of girls from all forms of violence at work, including training programmes and support programmes, and take measures to eliminate incidents of sexual harassment towards girls in educational and other institutions;
- (b) Take appropriate legislative, administrative, social and educational measures to protect the girl child, in the household and in society, from all forms of physical or mental violence, injury or abuse, neglect or negligent treatment, maltreatment or exploitation, including sexual abuse;
- (c) [Undertake gender sensitization training] for those involved in healing and rehabilitation and other assistance programmes for girls who are victims of violence and promote programmes of information, support and training for such girls;
- (d) [Enact and enforce legislation] protecting girls from all forms of violence, including infanticide, [female foeticide/prenatal sex selection], genital mutilation, incest, sexual abuse, sexual exploitation, child prostitution and child pornography, and develop age-appropriate [safe and confidential] programmes and [medical and psychological] support services [recognizing the rights, duties and responsibilities of parents and other persons legally responsible for children, and consistent with the Convention on the Rights of the Child] to assist girls who are subject to violence.



Strategic objective L.8. Educate the girl child about social, economic and political issues and problems

Actions to be taken

284. By Governments and international and non-governmental organizations:

- (a) Provide access for girls to training, information and media on social, cultural, economic and political issues and enable them to articulate their views;
- (b) Support non-governmental organizations, in particular youth non-governmental organizations, in their efforts to promote the equality and participation of girls in society.

[Strategic objective L.9. Strengthen [the role of the family] [family responsibility] in advancing the status of the girl child]

Actions to be taken

285. By Governments, in cooperation with non-governmental organizations:

- (a) Formulate policies and programmes to help [the family] [families] in [its] [their] supporting, educating and nurturing roles, with particular emphasis on the elimination of intra family discrimination against the girl child;
- (b) Provide an environment conducive to the strengthening of [the family] [families], with a view to providing supportive and preventive measures [for the protection of the girl child] [which protect and respect the girl child];
- (c) [Promote education and campaign for] [Educate and encourage] parents and care givers to [enhance equal treatment for girls and boys] [treat girls and boys equally] and to ensure shared responsibilities between girls and boys in the family.]

Chapter V

INSTITUTIONAL ARRANGEMENTS

286. The Platform for Action establishes a set of actions that should lead to fundamental change. Immediate action and accountability are essential if the targets are to be met by the year 2000. Implementation is primarily the responsibility of Governments, but is also dependent on a wide range of institutions in the public, private and non-governmental sectors at the community, national, subregional/regional and international levels.

287. During the United Nations Decade for Women (1976-1985), many institutions specifically devoted to the advancement of women were established at the national, regional and international levels. At the international level, the International Research and Training Institute for the Advancement of Women (INSTRAW), the United Nations Development Fund for Women (UNIFEM), and the Committee to monitor the Convention on the Elimination of All Forms of Discrimination against Women were established. These entities, along with the Commission on the Status of Women and its secretariat, the Division for the Advancement of Women, became the main institutions in the United Nations specifically devoted to women's advancement globally. At the national level, a number of countries established or strengthened national mechanisms to plan, advocate for and monitor progress in the advancement of women.

288. Implementation of the Platform for Action by national, subregional/regional and international institutions, both public and private, would be facilitated by transparency, by increased linkages between networks and organizations and by a consistent flow of information among all concerned. Clear objectives and accountability mechanisms are also required. Links with other institutions at the national, subregional/regional and international levels and with networks and organizations devoted to the advancement of women are needed.

289. Non-governmental and grass-roots organizations have a specific role to play in creating a social, economic, political and intellectual climate based on equality between women and men. Women should be actively involved in the implementation and monitoring of the Platform for Action.

290. [Effective implementation of the Platform will also require changes in the internal dynamics of institutions and organizations, including values, behaviour, rules and procedures. Sexual harassment, including treatment of women as sex objects, should be eliminated.]

291. National, subregional/regional and international institutions should have strong and clear mandates and the authority, resources and accountability mechanisms needed for the tasks set out in the Platform for Action. Their methods of operation should ensure efficient and effective implementation of the Platform. There should be a clear commitment to international norms and standards of equality [and equity] between women and men as a basis for all actions [with respect to the cultural values of nations].

292. To ensure effective implementation of the Platform for Action and to enhance the work for the advancement of women at the national, subregional/regional and international levels, Governments, the United Nations system and all other relevant organizations should promote an active and visible policy of mainstreaming a gender perspective, inter alia, in the monitoring and evaluation of all policies and programmes.

#### A. National level

293. Governments have the primary responsibility for implementing the Platform for Action. Commitment at the highest political level is essential to its implementation, and Governments should take a leading role in coordinating,

monitoring and assessing progress in the advancement of women. [To this end, Governments have been invited to state their own specific national commitments for priority action within the context of the Platform for Action. These specific commitments will result in practical outcomes for women and girls and will ensure that the Fourth World Conference on Women is a conference of commitments. The specific commitments announced by individual Governments at the Conference appear in an annex to the report of the Conference.]

294. National mechanisms and institutions for the advancement of women should participate in public policy formulation and encourage the implementation of the Platform for Action through various bodies and institutions, including the private sector, and, where necessary, should act as a catalyst in developing new programmes by the year 2000 in areas that are not covered by existing institutions.

295. The active support and participation of a broad and diverse range of other institutional actors should be encouraged, including legislative bodies, academic and research institutions, professional associations, trade unions, cooperatives, local community groups, non-governmental organizations, including women's organizations [and feminist movements], the media, religious groups, youth organizations and cultural groups, as well as financial and non-profit organizations.

296. In order for the Platform for Action to be implemented, it will be necessary for Governments to establish or improve the effectiveness of national machineries for the advancement of women at the highest political level, appropriate intra- and inter-ministerial procedures and staffing, and other institutions with the mandate and capacity to broaden women's participation and integrate gender analysis into policies and programmes. The first step in this process for all institutions should be to review their objectives, programmes and operational procedures in terms of the actions called for in the Platform. A key activity should be to promote public awareness and support for the goals of the Platform for Action, inter alia, through the mass media and public education.

297. As soon as possible, preferably by the end of 1995, Governments, in consultation with relevant institutions and non-governmental organizations, should begin to develop implementation strategies for the Platform and, preferably by the end of 1996, should have developed their strategies or plans of action. This planning process should draw upon persons at the highest level of authority in Government and relevant actors in civil society. These implementation strategies should be comprehensive, have time-bound targets and benchmarks for monitoring, and include proposals for allocating or reallocating resources for implementation. Where necessary, the support of the international community could be enlisted, including resources.

298. Non-governmental organizations should be encouraged to contribute to the design and implementation of these strategies or national plans of action. They should also be encouraged to develop their own programmes to complement government efforts. Women's organizations [and feminist movements] in collaboration with other non-governmental organizations should be encouraged to

organize networks, as necessary, to advocate for and support the implementation of the Platform for Action by Governments and regional and international bodies.

299. Governments should [commit themselves to] [establish the goal of] gender balance, inter alia, through the creation of special mechanisms, in all [government committees,] boards and other relevant official bodies, as well as in all international bodies, institutions and organizations, notably by presenting and promoting more women candidates.

#### B. Subregional/regional level

300. The regional commissions of the United Nations and other subregional/regional structures should promote and assist the pertinent national institutions in monitoring and implementing the global Platform for Action within their mandates. This should be done in coordination with the implementation of the respective regional platforms or plans of action and in [close] collaboration with the Commission on the Status of Women, taking into account the need for a coordinated follow-up to United Nations conferences in the economic, social, [human rights] and related fields.

301. In order to facilitate the regional implementation, monitoring and evaluation process, the Economic and Social Council should consider reviewing the institutional capacity of the United Nations regional commissions within their mandates, including their women's units/focal points, to deal with gender issues in the light of the Platform for Action, as well as the regional platforms or plans for action. Consideration should be given, inter alia, and where appropriate, to strengthening capacity in this respect.

302. Within their existing mandates and activities, the regional commissions should mainstream women's issues and gender perspectives and should also consider the establishment of mechanisms and processes to ensure the implementation and monitoring of both the Platform for Action and the regional plans and platforms for action. The regional commissions should, within their mandates, collaborate on gender issues with other regional intergovernmental organizations, non-governmental organizations, financial and research institutions and the private sector.

303. Regional offices of the specialized agencies of the United Nations system should, as appropriate, develop and publicize a plan of action for implementing the Platform for Action, including the identification of time-frames and resources. Technical assistance and operational activities at the regional level should establish well-identified targets for the advancement of women. To this end, regular coordination should be undertaken among United Nations bodies and agencies.

304. Non-governmental organizations within the region should be supported in their efforts to develop networks to coordinate advocacy and dissemination of information about the global Platform for Action and the respective regional platforms or plans of action.

C. International level

1. United Nations

305. The Platform for Action needs to be implemented through the work of all of the bodies and organizations of the United Nations system during the period 1995-2000, specifically and as an integral part of wider programming. An enhanced framework for international cooperation for gender issues must be developed during the period 1995-2000 in order to ensure the integrated and comprehensive implementation, follow-up and assessment of the Platform for Action, taking into account the results of global United Nations summits and conferences. The fact that at all of these summits and conferences, Governments have committed themselves to the empowerment of women in different areas, makes coordination crucial to the follow-up strategies for this Platform for Action. [Note should also be taken in this context of the discussions on the Agenda for Development and the Agenda for Peace.]

306. The institutional capacity of the United Nations system to carry out and coordinate its responsibility for implementing the Platform for Action, as well as its expertise and working methods to promote the advancement of women, should be improved.

307. Responsibility for ensuring the implementation of the Platform for Action and the integration of a gender perspective into all policies and programmes of the United Nations system must rest at the highest levels.

308. To improve the system's efficiency and effectiveness in providing support for equality and women's empowerment at the national level and to enhance its capacity to achieve the objectives of the Platform for Action, there is a need to renew, reform and revitalize various parts of the United Nations system. [This would include reviewing the strategies and working methods of different United Nations mechanisms for the advancement of women with a view to strengthening their advisory, catalytic and monitoring functions in relation to mainstream bodies and agencies. Separate women/gender units are necessary for effective mainstreaming, but strategies must be further developed to prevent inadvertent marginalization as opposed to mainstreaming of the gender dimension throughout all operations].

309. [In undertaking this overall review and effort to renew, reform and revitalize various parts of the United Nations system, consideration should be given to establishing a high-level post in the office of the Secretary-General with the mandate of advising the Secretary-General in his oversight of system-wide integration of gender concerns. This person should advise the Secretary-General on the system-wide achievement of the gender integration goals adopted by the Fourth World Conference on Women and set out by previous world conferences and should address United Nations action in all fields.]

310. In following up the Fourth World Conference on Women, all entities of the United Nations system focusing on the advancement of women should have the necessary [resources and support] to carry out follow-up activities. The efforts of gender focal points within organizations should be well integrated into overall policy, planning, programming and budgeting.

311. Action must be taken by the United Nations and other international organizations to eliminate barriers to the advancement of women within their organizations in accordance with the Platform for Action.

312. [The United Nations should organize a mid-term world conference on women to assess the implementation of the Platform for Action.]

#### General Assembly

313. The General Assembly, as the highest intergovernmental body in the United Nations, is the principal policy-making and appraisal organ on matters relating to the follow-up to the Conference, and as such, should integrate gender issues throughout its work. It should appraise progress in the effective implementation of the Platform for Action, recognizing that these issues cut across social, political and economic policy. At its fiftieth session, in 1995, the General Assembly will have before it the report of the Fourth World Conference on Women. In accordance with its resolution 49/161, it will also examine a report of the Secretary-General on the follow-up to the Conference, taking into account the recommendations of the Conference. The General Assembly should include the follow-up to the Conference as part of its continuing work on the advancement of women. In 1996, 1998 and 2000, it should review the implementation of the Platform for Action.

#### Economic and Social Council

314. The Economic and Social Council, in the context of its role under the Charter of the United Nations and in accordance with General Assembly resolutions 45/264, 46/235 and 48/162, would oversee system-wide coordination in the implementation of the Platform for Action and make recommendations in this regard. The Council should be invited to review the implementation of the Platform for Action, giving due consideration to the reports of the Commission on the Status of Women. As coordinating body, the Council should be invited to review the mandate of the Commission on the Status of Women, taking into account the need for effective coordination with other related commissions and Conference follow-up. The Council should incorporate gender issues into its discussion of all policy questions, giving due consideration to recommendations prepared by the Commission. It should consider dedicating at least one high-level segment before the year 2000 to the advancement of women and implementation of the Platform for Action with the active involvement and participation, inter alia, of the specialized agencies, including the World Bank and IMF.

315. The Council should consider dedicating at least one coordination segment before the year 2000 to coordination of the advancement of women, based on the revised system-wide medium-term plan for the advancement of women.

316. The Council should consider dedicating at least one operational activities segment before the year 2000 to the coordination of development activities related to gender, based on the revised system-wide medium-term plan for the advancement of women, with a view to instituting guidelines and procedures for implementation of the Platform for Action by the funds and programmes of the United Nations system.

317. The Administrative Committee on Coordination (ACC) should consider how its participating entities might best coordinate their activities, inter alia, through existing procedures at the inter-agency level for ensuring system-wide coordination to implement and help follow up the objectives of the Platform for Action.

[Commission on the Status of Women

318. The General Assembly and the Economic and Social Council are invited to review the mandate of the Commission on the Status of Women, taking into account the Platform for Action as well as the need for synergy with other related commissions and Conference follow-up.

319. As a functional commission assisting the Economic and Social Council, the Commission on the Status of Women should have a central role in monitoring the implementation of the Platform for Action and advising the Council thereon. It should have a clear mandate along with the necessary financial support to permit it to undertake regular monitoring and to enable it to coordinate the reporting on implementation of the Platform for Action with relevant organizations of the United Nations system, particularly those concerned with the advancement of women, and various regional and national machineries and focal points.

320. To help the Commission formulate and monitor a system-wide approach to implementation, it should receive monitoring reports, including reports from organizations and agencies of the United Nations system. The effect of this would be to make the Commission the gender analysis arm of the Economic and Social Council. This would help strengthen the Council's policy coordination function.

321. The Commission, in developing its work programme for the period 1996-2000, should review the critical areas of concern in the Platform for Action and prepare its agenda so as to integrate an item on follow-up to the World Conference on Women, including gender analysis of critical issues before the United Nations, the content of which would be determined by the issues being taken up by the Economic and Social Council and the General Assembly.]

Other functional commissions

322. Within their mandates, other functional commissions of the Economic and Social Council should also take due account of the Platform for Action and ensure the integration of gender aspects in their respective work.

Committee on the Elimination of Discrimination against Women and other treaty bodies

323. The Committee on the Elimination of Discrimination against Women, in implementing its responsibilities under the Convention on the Elimination of All Forms of Discrimination against Women, should, within its mandate, take into account the Platform for Action when considering the reports submitted by States parties.

324. States Parties to the Convention on the Elimination of All Forms of Discrimination against Women are invited, when reporting under article 18 of the Convention, to include information on measures taken to implement the Platform for Action in order to facilitate the Committee on the Elimination of Discrimination against Women in monitoring effectively women's ability to enjoy the rights guaranteed by the Convention.

325. The ability of the Committee on the Elimination of Discrimination against Women to monitor implementation of the Convention should be strengthened [through the provision of human and financial resources within the regular budget of the United Nations, including expert legal assistance and, in accordance with General Assembly resolution 49/164, sufficient meeting time for the Committee.] The Committee should increase its coordination with other human rights treaty bodies, taking into account the recommendations in the Vienna Declaration and Programme of Action.

326. Within their mandate, other treaty bodies should also take due account of the implementation of the Platform for Action and ensure the integration of the equal status and [universal] human rights of women in their work.

#### United Nations Secretariat

##### Office of the Secretary-General

327. The Secretary-General is requested to assume responsibility for coordination of policy within the United Nations for the implementation of the Platform for Action and for the mainstreaming of a system-wide gender perspective in all activities of the United Nations, taking into account the mandates of the bodies concerned. The Secretary-General should consider specific measures for ensuring effective coordination in the implementation of these objectives.

##### Division for the Advancement of Women

328. The primary function of the Division for the Advancement of Women of the Department for Policy Coordination and Sustainable Development is to provide substantive servicing to the Commission on the Status of Women and other intergovernmental bodies when they are concerned with the advancement of women, as well as to the Committee on the Elimination of Discrimination against Women. It has been designated a focal point for the implementation of the Nairobi Forward-looking Strategies for the Advancement of Women. In the light of the review of the mandate of the Commission on the Status of Women, as set out in paragraph 314, the functions of the Division for the Advancement of Women will also need to be assessed. [The Secretary-General is requested to ensure more effective functioning of the Division by, inter alia, providing sufficient financial and human resources within the regular budget of the United Nations.]

329. The Division should examine the obstacles to the advancement of women through the application of gender impact analysis in policy studies for the Commission on the Status of Women and through support to other subsidiary bodies. After the Fourth World Conference on Women it should play a coordinating role in preparing the revision of the system-wide medium-term plan



for the advancement of women for the period 1996-2001 and should continue serving as the secretariat for inter-agency coordination for the advancement of women. It should continue to maintain a flow of information with national commissions, national institutions for the advancement of women and non-governmental organizations with regard to implementation of the Platform for Action.

Other units of the United Nations Secretariat

330. The various units of the United Nations Secretariat should examine their programmes to determine how they can best contribute to the coordinated implementation of the Platform for Action. Proposals for implementation of the Platform need to be reflected in the revision of the system-wide medium-term plan for the advancement of women for the period 1996-2001, as well as in the proposed United Nations medium-term plan for the period 1998-2002. The content of the actions will depend on the mandates of the bodies concerned.

331. Existing and new linkages should be developed throughout the Secretariat in order to ensure that the gender perspective is introduced as a central dimension in all activities of the Secretariat.

332. The Office of Human Resources Management should, in collaboration with programme managers worldwide, and in accordance with the strategic plan of action for the improvement of the status of women in the Secretariat (1995-2000), continue to accord priority to the recruitment and promotion of women in posts subject to geographical distribution, particularly in senior policy-level and decision-making posts, in order to achieve the goals set out in General Assembly resolutions 45/125 and 45/239 C and reaffirmed in General Assembly resolutions 46/100, 47/93, 48/106 and 49/167. The training service should design and conduct regular gender-sensitivity training or include gender-sensitivity training in all of its activities.

333. The Department of Public Information should seek to integrate a gender perspective in its general information activities, and, within existing resources, strengthen and improve its programmes on women and the girl child. To this end, the Department should formulate a multimedia communications strategy to support the implementation of the Platform for Action, taking new technology fully into account. Regular outputs of the Department should promote the goals of the Platform, particularly in developing countries.

334. The Statistical Division of the Department for Economic and Social Information and Policy Analysis should have an important coordinating role in international work in statistics, as described above in section IV, strategic objective H.3.

International Research and Training Institute for the Advancement of Women

335. [In conformity with its mandates in research, training and the dissemination of information for the advancement of women, the International Research and Training Institute for the Advancement of Women (INSTRAW) should review its work programme in the light of the Platform for Action, which, together with Agenda 21, the Vienna Declaration and Programme of Action, the

Programme of Action of the International Conference on Population and Development and the Programme of Action of the World Summit for Social Development, will provide guidelines for the development of a programme for implementing those aspects of the Platform for Action that fall within its mandate. It should identify those types of research and research methodologies to be given priority, strengthen national capacities to carry out women's studies and gender research, including research on the status of the girl child, and develop networks of research institutions that can be mobilized for that purpose. The proposed gender research should reflect the periodic changes in the socio-economic status of women and the girl child in various regions. It should identify those types of education and training that can effectively be supported and promoted by the Institute, which will also serve as a focal point for gender training in the United Nations system as a whole within its field of competence.]

(Alternative)

[In conformity with its mandates in research, training and the dissemination of information for the advancement of women, the International Research and Training Institute for the Advancement of Women (INSTRAW), as the only United Nations organization whose aim is to promote research and training on women's situation and development, should review its work programme in the light of the Platform for Action, together with Agenda 21, the Vienna Declaration and Programme of Action, the Programme of Action of the International Conference on Population and Development and the Programme of Action of the World Summit for Social Development, and develop a programme for implementing those aspects of the Platform for Action that fall within its mandate. It should identify those types of research and research methodologies to be given priority, strengthen national capacities to carry out women's studies and gender research including research on the status of the girl child, and develop networks of research institutions that can be mobilized for that purpose. The proposed gender research should reflect the periodic changes in the socio-economic status of women and the girl child in various regions. It should identify those types of education and training that can effectively be supported and promoted by the Institute, which will also serve as a focal point for gender training in the United Nations system as a whole as appropriate.]

United Nations Development Fund for Women

336. [As an autonomous fund in association with UNDP, the United Nations Development Fund for Women (UNIFEM) increases options and opportunities for women's economic and social development in developing countries by providing technical and financial assistance to incorporate the women's dimension into development at all levels. UNIFEM should review and strengthen its work programme for implementing the Platform for Action. UNIFEM should be given adequate resources to enable it to undertake concrete actions and activities for the implementation of the Platform for Action. Its advocacy role should be increased by fostering international awareness of women's empowerment. Adequate resources for carrying out its functions should be made available.]

(Alternative to paragraph 336)

[The United Nations Development Fund for Women (UNIFEM) is the only entity in the United Nations system with the mandate of increasing options and opportunities for women's economic and social development in developing countries by providing technical and financial assistance to incorporate the women's dimension into development at all levels. Therefore, UNIFEM should review and strengthen its work programme in the light of the Platform for Action and the recommendations resulting from recent summits and conferences, all of which emphasize empowering women in the social and economic spheres. To that end, UNIFEM should be strengthened in order to enable it to undertake concrete actions and activities for the implementation of the Platform for Action. Its advocacy role should be increased by fostering international awareness and multilateral policy dialogue on women's empowerment, and adequate resources for carrying out its functions should be made available.]

(Alternative to paragraphs 335 and 336)

[The future roles and functioning of the International Research and Training Institute for the Advancement of Women (INSTRAW) and the United Nations Development Fund for Women (UNIFEM) should be considered in the light of the decision to be taken by the General Assembly at its fiftieth session on the proposal to merge the two organizations.]

Specialized agencies and other organizations of the United Nations system

337. To strengthen their support for actions at the national level and to enhance their contributions to coordinated follow-up by the United Nations, each organization should set out the specific actions they will undertake, including goals and targets to realign priorities and redirect resources to meet the global priorities identified in the Platform for Action. There should be a clear delineation of responsibility and accountability. These proposals should in turn be reflected in the system-wide medium-term plan for the advancement of women for the period 1996-2001.

338. Each organization should commit itself at the highest level and, in pursuing its targets, should take steps to enhance and support the roles and responsibilities of its focal points on women's issues.

339. In addition, specialized agencies with mandates to provide technical assistance in developing countries, particularly in Africa and the least developed countries, should cooperate more to ensure the continuing promotion of the advancement of women.

340. The United Nations system should consider and provide appropriate technical assistance and other forms of assistance to the countries with economies in transition in order to facilitate solution of their specific problems regarding the advancement of women.

341. Each organization should accord greater priority to the recruitment and promotion of women at the Professional level to achieve gender balance, particularly at decision-making levels. The paramount consideration in the

employment of the staff and in the determination of the conditions of service should be the necessity of securing the highest standards of efficiency, competence and integrity. Due regard should be paid to the importance of recruiting the staff on as wide a geographical basis as possible. Organizations should report regularly to their governing bodies on progress towards this goal.

342. Coordination of United Nations operational activities for development at the country level should be improved through the resident coordinator system in accordance with relevant resolutions of the General Assembly, in particular General Assembly resolution 47/199, to take full account of the Platform for Action.

## 2. Other international institutions and organizations

343. [In implementing the Platform for Action, international financial institutions should be encouraged to review and revise policies, procedures and staffing [with a view to providing new and additional resources] to ensure that investments and programmes benefit women and thus contribute to sustainable development. They should [consider] increase[ing] the number of women in high-level positions, increase staff training in gender analysis and institute policies and guidelines to ensure full consideration of the differential impact of lending programmes and other activities on women and men. The Bretton Woods institutions and other development agencies should be encouraged to have closer cooperation on gender issues in order to strengthen the effectiveness of the international response in this field.]

344. [The General Assembly should give consideration to inviting the World Trade Organization to consider how it might contribute to the implementation of the Platform for Action, including activities in cooperation with the United Nations system.]

345. International non-governmental organizations have an important role to play in implementing [and monitoring the implementation of] the Platform for Action. [Consideration should be given to establishing a mechanism for collaborating with non-governmental organizations to monitor implementation of the Platform at various levels.]

## Chapter VI

### FINANCIAL ARRANGEMENTS

346. Financial and human resources have generally been insufficient for the advancement of women. This has contributed to the slow progress to date in implementing the Nairobi Forward-looking Strategies for the Advancement of Women. Full and effective implementation of the Platform for Action, including the relevant commitments made at previous United Nations summits and conferences, will require a political commitment to make available human and financial resources for the empowerment of women. This will require the integration of a gender perspective in budgetary decisions on policies and programmes, as well as the adequate financing of specific programmes for

securing equality between women and men. To implement the Platform for Action, funding will need to be identified and mobilized from all sources and across all sectors. The reformulation of policies and reallocation of resources may be needed within and among programmes, but some policy changes may not necessarily have financial implications. [Mobilization of additional resources, both public and private, including resources from innovative sources of funding, may also be necessary.]

#### A. National level

347. The primary responsibility for implementing the strategic objectives of the Platform for Action rests with Governments. To achieve these objectives, Governments should make efforts to systematically review how women benefit from public sector expenditures; adjust budgets to ensure equality of access to public sector expenditures, both for enhancing productive capacity and for meeting social needs; and achieve the gender-related commitments made in other United Nations summits and conferences. To develop successful national implementation strategies for the Platform for Action, Governments should allocate sufficient resources, including resources for undertaking gender-impact analysis. Governments should also encourage non-governmental organizations and private-sector and other institutions to mobilize additional resources.

348. Sufficient resources should be allocated to national machineries for the advancement of women as well as to all institutions, as appropriate, that can contribute to the implementation and monitoring of the Platform for Action.

349. Where national machineries for the advancement of women do not yet exist or where they have not yet been established on a permanent basis, Governments should strive to make available sufficient and continuing resources for such machineries.

350. To facilitate the implementation of the Platform for Action, Governments should reduce, as appropriate, excessive military expenditures and investments for arms production and acquisition, consistent with national security requirements.

351. Non-governmental organizations, the private sector and other actors of civil society should be encouraged to consider allocating the resources necessary for the implementation of the Platform for Action. Governments should create a supportive environment for the mobilization of resources by non-governmental organizations, particularly women's organizations and networks, [feminist associations,] the private sector and other actors of civil society, to enable them to contribute towards this end. The capacity of non-governmental organizations in this regard should be strengthened and enhanced.

#### B. Regional level

352. Regional development banks, regional business associations and other regional institutions should be invited to contribute to and help mobilize resources in their lending and other activities for the implementation of the

Platform for Action. They should also be encouraged to take account of the Platform for Action in their policies and funding modalities.

353. [The subregional/regional commissions should, where appropriate, assist in the mobilization of funds for the implementation of the Platform for Action.]

### C. International level

354. Adequate financial resources should be committed at the international level for the implementation of the Platform for Action in the developing countries, particularly in Africa and the least developed countries. Strengthening national capacities in developing countries to implement the Platform for Action will require striving for the fulfilment of the agreed target of 0.7 per cent of the gross national product of developed countries for overall official development assistance as soon as possible, as well as increasing the share of funding for activities designed to implement the Platform for Action. Furthermore, countries involved in development cooperation should conduct a critical analysis of their assistance programmes so as to improve the quality and effectiveness of aid through the integration of a gender approach.

355. International financial institutions, including the World Bank, the International Monetary Fund, the International Fund for Agricultural Development and the regional development banks, should be invited to examine their grants and lending and to allocate loans and grants to programmes for implementing the Platform for Action in developing countries, especially in Africa and the least developed countries.

356. The United Nations system should provide technical cooperation and other forms of assistance to the developing countries, in particular in Africa and the least developed countries, in implementing the Platform for Action.

357. Implementation of the Platform for Action in the countries with economies in transition will require continued international cooperation and assistance. The organizations and bodies of the United Nations system, including the technical and sectoral agencies, should facilitate the efforts of those countries in designing and implementing policies and programmes for the advancement of women. To this end, the International Monetary Fund and the World Bank should be invited to assist those efforts.

358. The outcome of [previous summits and conferences, including] the World Summit for Social Development regarding debt management and reduction should be implemented in order to facilitate the realization of the objectives of the Platform for Action.

359. To facilitate implementation of the Platform for Action, interested developed and developing country partners, agreeing on a mutual commitment to allocate, on average, 20 per cent of official development assistance and 20 per cent of the national budget to basic social programmes should take into account a gender perspective.

360. Development funds and programmes of the United Nations system should [be invited to] undertake an immediate analysis of the extent to which their programmes and projects are directed to implementing the Platform for Action and, for the next programming cycle, should [at least double the] [consider the adequacy of] resources targeted towards eliminating disparities between women and men in their technical assistance and funding activities.

361. [Recognizing the special roles of the United Nations Development Fund for Women (UNIFEM) and the International Research and Training Institute for the Advancement of Women (INSTRAW) in the empowerment of women, the resources provided by Governments should be substantially increased by the year 2000.]

(First alternative)

[UNIFEM and INSTRAW have special roles to play in the promotion of the status and advancement of women's human rights. The international community should accept primary responsibility for strengthening UNIFEM and for providing the Fund with substantially increased resources that would enable it to meet its responsibilities in implementing the Platform for Action effectively. INSTRAW must be substantially strengthened to implement the Platform for Action within its mandate.]

(Second alternative)

[Recognizing the special roles of UNIFEM and INSTRAW in the promotion of the empowerment of women, and therefore in the implementation of the Platform for Action within their respective mandates, the resources provided by the international community should be substantially increased by the year 2000.]

362. To improve the efficiency and effectiveness of the United Nations system in its efforts to promote the advancement of women and to enhance its capacity to further the objectives of the Platform for Action, there is a need to renew, reform and revitalize various parts of the United Nations system, especially the Division for the Advancement of Women of the United Nations Secretariat, as well as other units and subsidiary bodies that have a specific mandate to promote the advancement of women. In this regard, relevant governing bodies within the United Nations system are encouraged to give special consideration to the effective implementation of the Platform for Action and to review their policies, programmes, budgets and activities in order to achieve the most effective and efficient use of funds to this end. [Mobilization of additional resources from within the United Nations regular budget in order to implement the Platform for Action may also be necessary.]

Notes

1/ Report of the World Conference to Review and Appraise the Achievements of the United Nations Decade for Women: Equality, Development and Peace, Nairobi, 15-26 July 1985 (United Nations publication, Sales No. E.85.IV.10), chap. I, sect. A.



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- 2/ Report of the World Conference on Human Rights, Vienna, 14-25 June 1993 (A/CONF.157/24 (Part I)), chap. III.
- 3/ General Assembly resolution 34/180, annex.
- 4/ General Assembly resolution 45/164.
- 5/ General Assembly resolution 44/82.
- 6/ General Assembly resolution 48/126.
- 7/ A/47/308-E/1992/97, annex.
- 8/ General Assembly resolution 48/104.
- 9/ See The Results of the Uruguay Round of Multilateral Trade Negotiations: The Legal Texts (Geneva, GATT secretariat, 1994).
- 10/ General Assembly resolution 44/25, annex.
- 11/ Final Report of the World Conference on Education for All: Meeting Basic Learning Needs, Jomtien, Thailand, 5-9 March 1990, Inter-Agency Commission (UNDP, UNESCO, UNICEF, World Bank) for the World Conference on Education for All, New York, 1990, appendix 1.
- 12/ General Assembly resolution 2200 A (XXI), annex.
- 13/ Report of the International Conference on Population and Development, Cairo, 5-13 September 1994 (A/CONF.171/13 and Add.1), chap. I, resolution 1, annex.
- 14/ Report of the World Summit for Social Development, Copenhagen, 6-12 March 1995 (A/CONF.166/9), chap. I, resolution 1, annexes I and II.
- 15/ Unsafe abortion is defined as a procedure for terminating an unwanted pregnancy either by persons lacking the necessary skills or in an environment lacking the minimal medical standards or both (based on World Health Organization, The Prevention and Management of Unsafe Abortion, Report of a Technical Working Group, Geneva, April 1992 (WHO/MSM/92.5)).
- 16/ Final Report of the International Conference on Nutrition, Rome, 5-11 December 1992 (Rome, Food and Agriculture Organization of the United Nations, 1993), Part II.
- 17/ Report of the United Nations Conference on Environment and Development, Rio de Janeiro, 3-14 June 1992, vol. I, Resolutions Adopted by the Conference (United Nations publication, Sales No. E.93.I.8 and corrigenda), resolution 1, annex I.
- 18/ General Assembly resolution 317 (IV), annex.
- 19/ General Assembly resolution 217 A (III).