

# **Feeding the World, Sustaining the Earth: The Critical Importance of Population Issues**

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**Nafis Sadik**

*2001 Sir John Crawford Memorial Lecture*  
October 31



**Consultative Group on International  
Agricultural Research (CGIAR)**

### **CGIAR's Mission**

**To contribute to food security and poverty eradication in developing countries through research, partnerships, capacity building, and policy support, promoting sustainable agricultural development based on the environmentally sound management of natural resources.**

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*2001 Sir John Crawford Memorial Lecture*  
**CGIAR Annual General Meeting**



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**Dr. Sadik's address is part of the Sir John Crawford Memorial Lecture series sponsored by the Australian Government at the CGIAR annual meetings. Sir John Crawford, a distinguished civil servant, educator, and agriculturalist, was one of the founders of the CGIAR and the first Chairman of the CGIAR's Technical Advisory Committee.**

It is a great honor to deliver the Sir John Crawford Memorial Lecture for 2001. Sir John was a pioneer, and a man who saw farther than most into the future. But even a man with as much foresight as him could not have foreseen the events of September 11 and the upheaval that has followed.

I think he might have been encouraged by one thread that has emerged. The headlines today are about terrorism, retribution, and war. But behind the headlines we can hear different voices. Let me quote Britain's Prime Minister, Tony Blair:

*"...amidst all the talk of war and action, there is another dimension appearing. There is a coming together. The power of community is asserting itself. We are realizing how fragile are our frontiers in the face of the world's new challenges."*

We have come to realize in the last few weeks that globalization means much more than a global marketplace. It is – it has to be – about building a global community. Tony Blair and others have called for a massive, all-out effort to promote the global community by promoting development, by paying attention to the fundamental values that underlie our belief in democracy and freedom. Today, I would like to add my voice to theirs, and to indicate some of the practical steps we can take.

We should be clear: No one claims that development will prevent terrorism. No one can prevent a man or woman from committing suicide for a cause. No one can prevent a handful of depraved individuals from using wealth and intelligence for evil ends. But the few fanatics do not act alone. They need troops; they need support. Their support is nurtured by deprivation, or the perception of deprivation, and sharpened by a sense of injustice, oppression, and exclusion. At the same

time that we condemn the dreadful crimes of September 11, we must rise above our shock, anger, and grief. We must address that reality.

We live in a world where half the population lives on \$2 a day or less; where nearly a billion people live without the certainty of food on the table; where more than a billion lack clean water or sanitation; where infection with HIV/AIDS or a number of other infections is a daily risk; where one woman every minute dies as a consequence of pregnancy; and where women everywhere suffer some degree of discrimination, deprivation, and exclusion, simply on account of their gender. The condition of women in Afghanistan is appalling, but that condition is simply an extreme example of a global situation.

The Vatican, at the end of a bishops' conference, said in its concluding statement:

*“... the persistence of gross inequities between nations is a threat to world peace,” as is “the enduring drama of hunger and extreme poverty in an age where humanity, more than ever, has the capacity for a just sharing of resources.”*

The United Nations was founded on universal principles of human rights, which remain valid today. More than ever in these times, these principles demand our attention. We must reaffirm our commitment to these values, and we must insist on their expression, in the poorest countries as much as in the richest ones. These sentiments are at the forefront of the international agenda. In September 2000, at the Millennium Summit, 189 nations, including 147 Heads of State, reflected on the facts that the number of people living in poverty is rising and that inequalities between richer and poorer people and nations are growing wider rather than narrower. World leaders

were aware, as well, that too many human beings, especially women, cannot yet exercise their basic human rights. They agreed upon a declaration that mainstreams into the global development agenda, a number of mutually reinforcing goals to be reached by 2015 that aim to eradicate the many dimensions of poverty and achieve sustainable development. These millennium development goals provide a standard for measuring progress. It is very heartening to see that major development agencies of the United Nations system, the World Bank, the International Monetary Fund, and the Organization for Economic Co-operation and Development (OECD) have adopted them. In spelling out the importance of these goals, Secretary-General Kofi Annan said, "We are at the service of the world's peoples, and we must listen to them. They are telling us that our past achievements are not enough. They are telling us we must do more, and do it better." I was encouraged to hear that one of the reasons for the CGIAR's own reform program was to better align its research to achieve these development goals and enhance impact. I encourage you to persevere in this effort.

World leaders at the Millennium Summit were conscious that almost all of the projected increase in global population, from 6.1 billion in 2000 to 7.2 billion in 2015 and 9.3 billion in 2050, will be in developing countries. Global population not only will grow significantly larger and become more concentrated in lower-income countries, but also will become more urban and substantially older. This pattern of change will profoundly affect social and economic conditions, political representation, and international relations and human security, as well as interactions among groups within and between countries. It will also affect the business of agriculture as we know it.

Urbanization, the movement of people to cities, is growing. For the first time in human history, we face the reality that within a generation, a majority of the developing world's population will live in urban areas, and the number of urban residents in developing countries will double, increasing by more than two billion inhabitants. Rural-to-urban migrations are already thinning the population of rural areas. As cities grow in size and urban poverty rises, rural areas will face increasing pressures to provide food and fuel to rapidly growing urban populations. The challenges posed by urbanization are daunting – to give one example, 10 of the world's 15 mega cities are in Asia. Providing food, fuel, and fiber to these teeming cities will stretch natural resources to the limits. In terms of equity, it should be noted that the urban poor spend a disproportionately large portion of their income purchasing food, so bountiful harvests and the resulting lower food prices are a direct way of reducing poverty in urban areas. These challenges will occur in the context of increasing globalization, which translates into an increasingly interconnected and interdependent world and greater decentralization, a process whereby local authorities obtain greater authority—if insufficient capacity—to take charge of local issues that affect local residents.

And by the middle of this century, 88 percent of the world's population will live in less-developed countries, compared with 80 percent at present. Given that the bulk of population growth will occur in regions of the world least able to absorb large increments of people, population issues must engage our highest attention.



## **Population and Poverty**

The world's poorest countries tend to have the highest population growth rates. Rapid population growth in the poorest countries undermines efforts to reduce poverty. Of the nearly 75 million people being added to global population each year, most are born in the world's poorest countries in sub-Saharan Africa and South Asia. Among the developing countries as a whole, sub-Saharan Africa as a region is lagging behind in many aspects of demographic transition. With a current growth rate of 2.3 percent per year, the population of the region is expected to almost triple from 812 million today to two billion by 2050. The total fertility rate stands at around five children; the infant mortality rate, at 83 per 1,000 live births, and the contraception prevalence rate, at as low as 12–25 percent. Although the use of family planning among women of childbearing age has increased significantly during the past three decades, there remains a large unmet need: A significant proportion of poor people lack access to quality reproductive health services.

## **Poverty and Hunger**

A majority of the world's absolute poor are women: Poverty has a female face. And poverty is heavily concentrated in South Asia and sub-Saharan Africa. Income-poverty is highly correlated with hunger, ill health, low life expectancy, illiteracy, vulnerability, and powerlessness. When poverty engulfs a family, the youngest are most affected and most vulnerable – their rights to survival, growth, and development are at risk. A child born today in the developing world has a 4 in 10 chance of living in extreme poverty. This poverty defines every aspect of the child's existence, from malnutrition, lack of clean water, and inadequate sanitation to low life expectancy.

Poverty is the underlying cause of millions of preventable deaths and the reason that children are malnourished, miss out on school, or are abused and exploited. Indeed, poverty is at the core of the pervasive violation of children's rights. Among children, girls are disproportionately more affected by this violation.

In rural areas, poverty is a function, in part, of isolation from markets and centers of social services. The rural poor are voiceless, frequently having no say in the design of public policies that affect them. Most of the world's poor are women and girls whose poverty is reinforced by legal and cultural practices. The gaps between female access and male access to assets, education, and health services, as well as influence within decision-making processes, are obstacles to sustainable development.

Income-poverty and hunger are, of course, two sides of the same coin. According to Food and Agriculture Organization of the United Nations (FAO) figures, some 841 million people suffer from hunger and food insecurity. Hunger and malnutrition are essentially functions of poverty, agricultural productivity, and the cycles of disease and intra-household food habits. Hunger and malnutrition leave people vulnerable to disease and are contributing to the resurgence of preventable diseases. Sadly, hunger cannot be postponed for nearly one-fifth of the human family.

Although world food production is projected to meet consumption demands for the next two decades, long-term forecasts indicate persistent and possible worsening food insecurity in many countries, especially in sub-Saharan Africa. FAO estimates that to meet the needs of a projected world population of eight billion or more in 2020, food production

will have to double. Whether such an increase can be achieved with conventional agricultural technologies remains uncertain. In this context, CGIAR scientists have a major role to play, a bridging role, whereby they not only create new farming technologies, but also serve as conduits for bringing those technologies to poor farmers, many of whom are women.

### **HIV/AIDS and Diseases of Poverty**

Poor countries are most vulnerable to epidemic diseases, including HIV/AIDS, malaria, and tuberculosis. The facts on HIV/AIDS induce fear. Approximately 3 million people died of AIDS in 2000 alone, and some 36 million people are currently living with HIV/AIDS. By the end of 2000, the global HIV/AIDS catastrophe had claimed nearly 22 million lives – the majority in Africa, but numbers are rising in other regions as well. Young women especially run greater risks of infection.

HIV/AIDS has raised mortality, created imbalances in the age and sex composition of populations, devastated families, and left millions of orphans in its wake. Because AIDS takes its greatest toll among young adults, it cuts deeply into the fabric of societies and has a devastating impact on human resources and economic productivity. The continuing spread of HIV/AIDS represents a major obstacle to future economic growth and sustainable development. The disease is undermining achievements of many of the international development goals, especially in sub-Saharan Africa, and is increasing poverty levels. Poor women are facing an added burden as caretakers for the sick and AIDS orphans. HIV/AIDS is now the leading cause of adult morbidity and mortality in Africa, where 4.0 million of the 5.4 million newly infected people are located. The number of women infected with HIV is rapidly reaching and surpassing that of men

infected with HIV. In Africa, HIV-positive women now outnumber infected men by two million.

The newly formed International Partnership Against AIDS in Africa is working to build on existing global, regional, and national structures to address the devastating effects of AIDS in Africa and to mobilize resources.

Some African countries have shown us the way to address the problem of HIV/AIDS. Uganda, for example, has taken a direct and comprehensive approach to tackle the problem of sexually transmitted diseases (STDs) and HIV/AIDS, in particular among young people. HIV prevalence rates among youth are now stabilizing; life expectancy is increasing. In Swaziland, the Swaziland Schools' HIV/AIDS and Population Education Programme (SHAPE) was launched in 1990 to prevent the spread of HIV/AIDS and to reduce pregnancy in school pupils aged 14 to 19. Other encouraging developments are the expanded reach (from local to regional and national coverage) of HIV/AIDS programs in Côte d'Ivoire and Guinea.

Developing countries face additional health issues. Drug resistance is increasing in many countries because of poor treatment practices. Eight million people develop active tuberculosis and nearly two million die annually. Twenty-two countries carry almost 80 percent of the global tuberculosis burden. Not surprisingly, more than 90 percent of tuberculosis cases and deaths are in developing countries. Tuberculosis is also the leading cause of death in people with HIV/AIDS.

Malaria is another major concern. Each year, one million people die from malaria, and another million or so die from diseases in which malaria is a contributing factor. Worse still, the number has been increasing over the past two decades.

Eighty percent of malaria cases occur in Africa, where malaria accounts for 11 percent of the disease burden and is estimated to cost many countries more than 1 percent of their GDP.

The international community can do much to alleviate the suffering by providing resources and funding research to spur the development of malaria vaccines – one of the most cost-effective interventions in health. Agricultural scientists have an important role to play as well, by developing better land- and water-management practices that tackle malaria at the source.

### **Gender Inequalities**

Women constitute one-half of the world's population; in addition to their role as wives, mothers, and daughters, they do more than their share of work in the fields, in the markets, in factories, and in offices. Eliminating discrimination against women and securing their empowerment are also preconditions for poverty eradication. It is generally the poorest and most vulnerable whose rights are ignored and who lack access to education, economic power, social services, and reproductive health care. Women and girl children in poverty circumstances are often victims of exploitation. Adolescent girls are particularly at greater risk from early pregnancy, HIV/AIDS and STDs, and sexual exploitation (including rape and incest).

As a result of globalization processes, governments have frequently decreased spending in social sectors, reducing subsidies and imposing user charges. Cuts in such spending affect women more than men. When fees are introduced in public hospitals and schools, women and girls tend to make less use of them. When inflation strikes economies adjusting to

export orientations and currency devaluation, the resulting poverty and food scarcity hit women the hardest.

Segregated labor markets work against gender equality and equity. In most economies, labor markets are segregated by sex for traditional and cultural reasons. According to the International Labour Organization (ILO), women make up more than 66 percent of the global workforce in garment production, but only 3 percent of women are in professional or technical jobs, and only 2 percent are in administrative and managerial jobs. Millions of women are employed in the textile and apparel sector; these women often have very little bargaining power to change their precarious and sometimes unhealthy and unsafe working conditions, including conditions that adversely affect their reproductive health. Women are the workers who absorb the costs of market volatility in the global economy.

In the agricultural sector, after land is cleared for subsistence, women do most of the work; but they seldom own the land, and loans and extension services go to landholders. Agricultural outreach programs directed to women could significantly improve outputs, income, and family welfare. One study concluded that giving women farmers in Kenya the same support as that given to men could increase farm yields by more than 20 percent.

Women's reproductive health is a critical factor in overcoming social and cultural barriers to women's economic and political empowerment and in progressing toward population stabilization. Promoting women's reproductive health is crucially linked to eradicating poverty. Better reproductive health halts the cycle of poverty that is intimately linked to early childbearing, early marriage, too many children, and high

maternal mortality. Many poor women cannot even make basic choices about whether and when to become pregnant.

In particular, adolescent boys and girls, but especially girls, lack access to good-quality, affordable, reproductive health services, including family planning services.

Approximately 600,000 women die each year during pregnancy and childbirth. The bulk of these deaths occur in sub-Saharan Africa—where the maternal mortality ratio is 1,000 per 100,000 live births—and South Asia. Most of these deaths could be avoided if preventive measures were taken and adequate care was available. For every woman who dies, many more suffer from serious conditions that can affect them for the rest of their lives. The vast majority of these complications could be reduced by better nutrition, including provision of vitamin A anemia treatment, and by eliminating pregnancy at young ages. Maternal mortality is an indicator of the disparity and inequity between men and women and its extent is a sign of women's place in society and women's access to social, health, and nutrition services and to economic opportunities. The reproductive rights and health of women and girls continue to be a pressing need.

- One woman dies every minute as a result of pregnancy, and about 15 more suffer infection or injury.
- Of the nearly 130 million births each year, more than 60 million are not assisted by a trained attendant.
- More than 350 million women have no choice of safe and effective contraceptive methods.
- Millions of women suffer the impact of rape, incest, and domestic violence; more than one-half of all women will suffer from some form of gender-based violence at some time in their lives.

- Two million girls and young women are at risk of female genital mutilation (FGM) each year, and an estimated 10 million are already affected.

Many young women suffer fistulae as a result of obstructed labor because they are physically not ready for childbirth. Their husbands may reject them because they are unclean, and their fathers may refuse to take them back, though they have been dutiful daughters and wives. Though they have behaved exactly as tradition and custom prescribed, they may find themselves with no one to whom to turn. No greater irony can be imagined – yet it is in evidence every day.

Most important of all, women and girls are held back by invisible restraints. We may call these restraints “tradition” or “culture” but what they often mean is fear of the future, fear of change. Globalization offers many challenges, but the challenges to culture are the strongest. We have to find a way to make globalization work for all of us, whatever our cultural values may be. But we cannot concede our core values. Denying women education and health care, making them chattels, and subjecting them to violence simply because they are female – I do not recognize these as cultural values.

Most countries have laws and constitutions that declare the rights of individuals without discrimination of gender. Boys and girls are supposed to have an equal right to health and education. The law often protects the rights of women in marriage, property, and inheritance. But in practice, quite often, these rights are not protected. The challenge is to insist that the law means what it says. Tradition is hard to break because it often receives the support of influential members of society, including religious or economic conservatives, whose power depends on maintaining the status quo. Women,



themselves, sometimes support the system because, bad as it is, they fear that change may make their situation worse. So while we work to promote change, we recognize that we must take cultural realities seriously, and that we must be sensitive to the way that different people and communities do things. We should not seek to impose alien values – what we should do is to seek the common ground, the cultural values that reflect universal norms and standards. They exist in all cultures, and we should nurture them. We must shed any notions of cultural superiority. We must learn to listen to what is said, and how it is said, and what the underlying meanings are. We must try to understand.

Despite the many continuing challenges that I've outlined above, I feel that we have succeeded beyond our dreams. We have moved in one generation from complete incomprehension of women's needs to a global agenda based on them. And in the process, we have moved a long way toward solving one of the great policy questions of our time, rapid population growth. We know that women would want fewer children than they have if they were free to act. We have 30 years of experience with population programs. In that time, family size in developing countries has halved (from six children to three). Family planning use has risen from 10 percent to 60 percent, and life expectancy has increased from 58 years to 60 years. We have made a good beginning. Now we need to complete the job. It would be tragic if all the progress we have made toward gender equity and equality, toward realizing the right to reproductive health, toward a vision of sustainable development that involves all women and men were to be thrown away for lack of a few dollars. Coming so close to our goal and yet failing to reach it is frustrating.

The goals agreed on at the Millennium Summit are universally acceptable to all cultures. They are necessary to save lives, to promote human rights and personal well-being, to fight poverty, to eliminate gender and other disparities, and to promote sustainable development. They are essential to bring population growth in the high-fertility countries into balance with those countries' resources and plans for economic growth. No country in the world has sustained a high fertility rate and secured long-term economic growth. Today's economically successful countries are those that invested early in education, health care, and family planning and promoted gender equity. The global agenda will help high-fertility countries reach their development goals. It will help build the global community. Population stabilization is highly practical and imminently attainable – if we have the commitment.

### **Mobilizing Resources**

Resources are key. Yet both foreign aid and public investment in much needed areas such as health, nutrition, and agricultural research are on the decline. The amounts required to achieve the millennium development goals represent tiny fractions of global GNP or global military expenditures. Global development goals will only be attainable through a concerted effort to mobilize resources – both national allocations and international assistance. Current levels of foreign aid provided by industrialized countries—at 0.24 percent of annual GDP—are falling short of the 0.7 percent target that was promised. The difference between these two figures is not insignificant. It amounts to \$100 billion a year – money that could make the difference between life and death for multitudes, some in the poorest parts of the world. A successful outcome of next year's 2002 International Conference on Financing for Development will be increasing financial flows for achieving sustainable

development. Additional actions are required to direct ODA flows to those areas with the highest incidence of poverty and to focus investments on those sectors that have consistently demonstrated high rates of return (e.g. investments in health, nutrition, and promoting gender equality and agricultural research). Additional actions are also needed to secure debt relief. Such relief, combined with traditional debt rescheduling and additional bilateral debt forgiveness, will significantly reduce external debt service payments in the next few years. Speedier debt relief must be ensured to make substantial resources available for the achievement of development goals. But most important is the need for those resources freed from debt relief to be channeled for education and health services, including reproductive health services, especially family planning, safe motherhood, and HIV/AIDS education and prevention.

### **Conclusion**

The evidence is incontrovertible that improving the status of girls and women can help protect the environment, slow population growth, and promote sustainable development. In many countries, women work closely with the land as farmers, gather wood for fuel, and collect water to drink. They are nurturers of family and custodians of the environment. Their work becomes even harder when the environment is degraded. What can bring about change? Better education, more opportunities to earn income, and access to reproductive health information and services. Agricultural development strategies that consider the needs of women, whether in the design of new technologies, credit schemes, and so on, can also bring about change. When basic needs are met, women who are enabled to exercise their choice often have smaller families.

Slowing the world's population growth would reduce pressure on fresh water, air, and forests. Countries would be able to conserve resources, reduce pollution, and find better ways to use technology in environmentally friendly ways.

Long-term commitments to the achievement of population stabilization, food security, and sustainable development can only be maintained through concerted efforts by, and stronger alliances among all partners – that is, governments, international agencies and donors, civil society, the private sector, and (perhaps most importantly) the poor themselves. This consideration brings me to the important issue of forging partnerships that are broad-based and that build on partners' strengths, capture synergies, and promote equity. Given the varied nature of the challenges confronting us, developing effective responses requires the mobilization of the talents, resources, and abilities of all stakeholders – public and private sector, local, national and international agencies, and civil society. Only by acting in partnership can we hope to empower the poor as agents of change and help them play a key role in the development process.

As the world's largest agricultural research consortium, the CGIAR has an impressive track record of successes. It has boosted agricultural yields, developed agricultural technologies that reduce poverty, made more food available to the urban and rural poor, and helped protect our patrimony of natural resources. The CGIAR's efforts must continue. As creators and disseminators of new agricultural knowledge, its research efforts at the global level must always aim to build and support, not supplant, national capacities. My own long experience has taught me that global research, with all its attendant benefits, should not be at the expense of national capacities. In a world of finite financial resources, the CGIAR's

niche—mobilizing high science for the solution of development issues identified by national programmatic needs—is unique.

Agricultural research is only one of many demands placed on ever-shrinking public budgets. Given the daunting nature of the development challenge, we can make a difference only by ensuring development relevance, adding special value, and focusing on supporting national capacities. The poor are strategic partners rather than target groups, and women must become empowered partners. They must be engaged in the design, implementation, and evaluation of policies and programs that aim to improve their lives. Only in this way can we begin to lay the foundation of a sustainable future.

It is my hope that the many voices raised to promote this fair and equitable global community will send a clear message to the leaders of the world—North and South, private and public—and all the global and regional institutions that we must all work together to build our shared future.

Thank you very much.

## **Dr. Nafis Sadik**

A national of Pakistan, Dr. Nafis Sadik was born in Jaunpur, India. She was educated at Loreto College in Calcutta and received her doctor of medicine degree from Dow Medical College in Karachi. She served her internship in gynecology and obstetrics at City Hospital in Baltimore. Dr. Sadik completed further studies at the Johns Hopkins University in Baltimore and held the post of research fellow at Queens University in Kingston, Ontario. She was elected to the 1988 Fellowship *ad eundem* of the Royal College of Obstetricians and Gynecologists in the United Kingdom.

Dr. Sadik joined the United Nations Population Fund (UNFPA) in October 1971, becoming Chief of its Programme Division in 1973, and Assistant Executive Director in 1982. In 1987 she was appointed the Fund's Executive Director—with the rank of Undersecretary General—the first woman to head a major, voluntarily-funded UN programme. She held that office until her retirement in December of 2000. As chief executive of UNFPA, the world's largest source of multilateral assistance to population programmes with annual funding of over US\$300 million, Dr. Sadik directed a worldwide staff of some 800, providing assistance to over 140 countries and territories throughout the world. Under her tenure, cumulative pledges totaled over \$4 billion from 171 donors.

In June 1990, the Secretary-General of the United Nations appointed Dr. Sadik as Secretary-General of the International Conference on Population and Development, 1994. Dr. Sadik was the President of the Society for International Development for the period 1994-1997.

Since January 2001, Dr. Sadik serves as Special Adviser to the United Nations Secretary-General. She also serves on the Boards of leading organizations dealing with health issues,

including the Coordinating Committee for the Transition to Sustainability in the US National Academy of Sciences, and the Advisory Committee on Global Public Policies and Programs in the Operations Evaluations Department of the World Bank.

Dr. Sadik is the recipient of 13 honorary degrees and has published widely.

### **Recent Crawford Lecturers**

J. Craig Venter, 2000

Michael Lipton, 1999

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Omar Kabbaj, 1997

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**The CGIAR Family.** Created in 1971, the Consultative Group on International Agricultural Research (CGIAR) is an association of public and private members that support a system of 16 international agricultural research centers known as the Future Harvest Centers. The CGIAR works in more than 100 countries to mobilize cutting-edge science to reduce hunger and poverty, improve human nutrition and health, and protect the environment. The CGIAR's budget in 2001 was US\$340 million. All new technologies resulting from the Centers' research are freely available to everyone.

### **CGIAR-Supported Future Harvest Centers**

- Centro Internacional de Agricultura Tropical (CIAT), [www.ciat.cgiar.org](http://www.ciat.cgiar.org)
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- International Center for Agricultural Research in the Dry Areas (ICARDA), [www.icarda.org](http://www.icarda.org)
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- International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), [www.icrisat.org](http://www.icrisat.org)
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- International Plant Genetic Resources Institute (IPGRI), [www.ipgri.org](http://www.ipgri.org)
- International Rice Research Institute (IRRI), [www.irri.org](http://www.irri.org)
- International Service for National Agricultural Research (ISNAR), [www.isnar.cgiar.org](http://www.isnar.cgiar.org)
- International Water Management Institute (IWMI), [www.cgiar.org/iwmi](http://www.cgiar.org/iwmi)
- West Africa Rice Development Association (WARDA), [www.warda.org](http://www.warda.org)

**CGIAR members.** The CGIAR partnership includes 22 developing and 21 industrialized countries, 3 private foundations, and 12 regional and international organizations. The Food and Agriculture Organization of the United Nations (FAO), International Fund for Agricultural Development (IFAD), United Nations Development Programme (UNDP), and World Bank serve as Co-sponsors.

CGIAR Secretariat  
*The World Bank*  
**1818 H Street, NW, MSN G6-601**  
**Washington, DC 20433, USA**  
*Tel: (1-202) 473-8951 Fax: (1-202) 473-8110*  
*E-mail: [cgiar@cgiar.org](mailto:cgiar@cgiar.org) or [cgiar@worldbank.org](mailto:cgiar@worldbank.org)*  
**[www.cgiar.org](http://www.cgiar.org)**