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Mid-Term Meeting 1995

Nairobi, Kenya
May 22-26, 1995

Renewal of the CGIAR: From Decisions to Actions

Report of the Task Force on Ecoregional Approaches to Research

Attached is the Report of the CGIAR Task Force on Ecoregional Approaches to Research. The Task Force was established at ICW94 to advance the Group's understanding of the ecoregional concept and its application, within and outside the CGIAR System. This Task Force was twinned with a second, the CGIAR Task Force on Sustainable Agriculture which will also report to the Mid-Term Meeting 1995.

The Task Force Chair, Cyrus Ndiritu of Kenya, will introduce the report at MTM, when members will have an opportunity to comment on it and to decide whether to endorse its conclusions and recommendations.

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Consultative Group on International Agricultural Research – CGIAR

Mid-Term Meeting 1995
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REPORT OF THE CGIAR TASK FORCE ON

ECOREGIONAL APPROACHES TO RESEARCH

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10th April 1995

Dear Mr. Serageldin,

I have great pleasure in submitting to you the report of the CGIAR Task Force on Ecoregional Approaches to Research, which you set up following ICW 94. You had asked the Task Force to report to you and the CGIAR at the Mid-Term meeting in May 1995. This is particularly appropriate for me, as the meeting is being held here in Nairobi, and I welcome the opportunity to present the Task Force findings to the CGIAR on my home ground.

The Task Force members have enthusiastically addressed their terms of reference. We are in no doubt that in order to achieve the sustainable improvement of productivity the approach to research, and indeed to development, must change. The Task Force has unanimously concluded that the ecoregional approach to research under development in the CGIAR, addresses the major dimensions in which change is needed:

- To accept good natural resource management as a necessary complement to productivity improvement,

- To understand the consequences of human decisions at local, national and intermediate levels for the soil, water and biological resource base,

- That, due to the local specific nature of resource degradation, and the range of human decisions which can promote it, roles need to be played by an unusual variety of institutions.

- To define the role which can be played by international research and, within that context, by the CGIAR,

- To identify and implement mechanisms for operating institutional partnerships which bring coherence to the complementary functions of the variety of institutions involved.

I used the words 'under development' earlier advisedly. The Task Force see no one final solution. It does believe that investment in experimentation in ecoregional programs will produce sound operating principles for R & D to manage the complexity of the poverty, food security and environmental nexus. The Task Force urges donors to make these investments and sees no better

platform than the CGIAR Centers, in partnership with other institutions, for catalysing change in the way R & D is done.

It was the feeling of the Task Force that TAC and CGIAR documentation, in twinning both the natural resource management and the improved institutional partnership issues under the rubric of the Ecoregional Approach, had confused some stakeholders. The Task Force has no doubt that improved institutional partnerships are vital to the success of the Ecoregional Approach. At the same time the Task Force is clear that it is inappropriate to subsume the partnership issue under this rubric. Partnership is a wider issue for the CGIAR. It touches a wide range of activities at the Center and the System level. It is better treated in its own right and not as a facet of the Ecoregional Approach.

On a personal note I should like to thank you for the stimulating assignment and look forward to seeing you in Nairobi in May, I also look forward to bringing the conclusions of the Task Force to the CGIAR during the Mid Term Meeting.

Yours sincerely,

Cyrus G. Ndiritu (Dr)
DIRECTOR, K A R I

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Executive Summary

To feed an extra 2.5 billion people in the developing world and to maintain and enhance the productive capacity of the resource base, offers a huge challenge. Traditional research approaches will not suffice. In the view of the Task Force the ecoregional approach can meet this challenge; by focusing and integrating commodity and thematic research, and by linking technological opportunity to the formulation of land use strategies and policies.

The analysis and understanding of the role of the different users of natural resources can provide a clear specification of resource degradation problems, their causes and the paths to their solution. However, wide application of the ecoregional approach, will depend on significant investment in manpower training, particularly on systems methodologies in NARS and other research institutions. The CGIAR invests very limited public funds, its roles must be in catalysis, demonstration, promotion and training.

The approach encourages research on increasingly complex problems in partnerships, harnessing institutional complementarity. This requires the clear division of responsibilities amongst the IARCs, NARSs, advanced institutes, NGOs, the private sector and farmer organizations. Thus partnerships are crucial to the success of the ecoregional approach.

However, partnership is a wider issue for the CGIAR, not one properly subsumed under the ecoregional initiative. The Task Force believes that the apparent `twinning' of the ecoregional approach and the partnership issue in CGIAR documentation has been confusing to stakeholders. For the international centers and for the CGIAR at large, partnership means sharing governance, accepting decentralization and the delegation of authority and responsibilities.

The Task Force reinforces the need for transparent governing structures for ecoregional programs which must ensure that collaboration emerges from a shared realization of the need for complementarity. Planning within ecoregional programs needs to be properly participatory to bring the ownership of priorities, strategies and work plans to all the partner institutions. The Task Force proposes that program specific mechanisms are put in place for review and scientific guidance to ensure that responsibilities are recognized and obligations met.

The Task Force proposes a clear distinction between, the orientation phase leading to the establishment of an ecoregional program, and the implementation phase, in which the ecoregional program is operational. High transaction costs in orientation are justified and indeed necessary to ensure that ecoregional programs are developed in true partnership. The Task Force offers ways to reduce front end transaction costs.

For the orientation phase funds are needed to promote collaboration; the Task Force proposes a "matching fund" to attract contributions from NARS and other local partners. Core spending on implementation should grow to 39 % of CGIAR funds in the near future, the level recommended by TAC. Additional funding sources need to be mobilized for other partners in implementation. The Task Force endorses fifteen years as an initial horizon for IARC commitment to ecoregional programs as recommended by TAC, with the regular review of progress as the programs evolve.

1. Introduction: The Origins and Purpose of the Task Force

The CGIAR gained its original reputation and momentum from its output of improved germplasm, particularly in rice and wheat, under the rubric of the Green Revolution in the late 1960's and early 1970's. The CGIAR is now reorienting and reorganizing itself to address a more complex goal: To benefit poor people by improving agricultural productivity while rehabilitating the natural resources bases and reducing environmental pollution. Ongoing changes aim at a new coherence in CGIAR activities but the way forward remains obscure to some important CGIAR stakeholders.

Some members articulated these doubts on the process at International Centers Week 1994. The CGIAR Chairman emphasized the need to resolve the uncertainties but expressed concern that plenary discussions, with the numbers involved, were an inappropriate forum. He advocated small group meetings to pursue the issues raised. In his closing remarks at ICW 94 Mr. Serageldin returned to this question and announced;

> 'two additional ad hoc panels or committee's or task forces, one dealing with the issue of sustainability in agriculture.. .... the other dealing with ecoregionality'.
>
> (ICW 94: Summary of Proceedings and Decisions, p. 45)

Through the TAC Chairman a TAC member was invited to join the Task Force meetings and though unable to participate did review the draft report. Draft terms of reference were revised by the Task Force at its first meeting in January 1995 and highlighted three main areas for Task Force recommendations to the CGIAR Mid Term Meeting in Nairobi in May 1995:

- The ecoregional approach as a vehicle for researching sustainable agriculture and promoting inter-institutional collaboration,
- Promoting understanding of the ecoregional approach to research both inside and outside the CGIAR, and
- If existing CGIAR procedures are inadequate to deal with ecoregional programs, how these can best be supplemented.

The draft and the revised terms of reference for the Task Force are both included at Annex 1 of the report.

The Task Force sought reactions to its terms of reference from a number of key CGIAR stakeholders; The Oversight Committee, the Finance Committee, the Committee of Center Directors and their sub-committee on Sustainability and the Environment, and the Committee of Center Board Chairs. At its second meeting in Washington D.C. in the first half of March the Task Force weighed the responses from these committees in drafting its report.

2. The CGIAR's Ecoregional Approach to Research

2.1. Introduction

The ecoregional approach was born as a CGIAR response to the growing concern for the sustainability of the major agroecosystems in the developing world, from which greater future agricultural production would be needed to meet the growing demand for food. The future was perceived by stakeholders as dramatically different than the past: "with the exception of irrigated rice and wheat, the genetic potential of the major food crops is not, per se, a serious limiting factor, and even in irrigated lands will not, by itself, provide the answer to the challenges of sustainable production. Future production increases will require a more integrated approach to agricultural production, combining genetic enhancement with the improved management of the natural resource base." (The Ecoregional approach to Research in the CGIAR, Report of the TAC/Center Directors Working Group, 1993).

The ecoregional approach was proposed by TAC as a vehicle:

1. To achieve sustainable improvements in agricultural production by balancing (and integrating) commodity improvement research with increased research on natural resource management; and

2. To rationalize relationships between CGIAR centers and NARS. (TAC; Chapter 13, September 1993).

Agroecological zones regionally defined, or ecoregions, have brought a new perspective to the analysis of constraints and options to achieve sustainable agricultural development. It allows sustainability issues to be identified, and, with this understanding, international research priorities to be defined at a level of aggregation (i.e., the major ecoregions) closer to the agroecological and socioeconomic realities of countries than the global level. The perspective retains a transnational scope that justified international involvement. The ecoregion was conceived as a framework to integrate the technical and human dimensions of sustainability. It also brought a resource management perspective to the formulation of priorities in international agricultural research. Finally, it brought the principle of complementary, collaborative efforts by institutions to improve the efficiency of the CGIAR, and of the global research system as a whole.

The ecoregional approach to research is not a substitute for the commodity approach which has been historically very effective in both international and national agricultural research. It is a complement to it which brings resource management research to bear and elaborates the research goal to one of the sustainable improvement of productivity.

2.2. Conceptual Framework

The CGIAR has embraced sustainable agricultural development as the ultimate goal of its international research and related activities. Sustainability has made more explicit the "spatial" and the "temporal" dimensions of the agricultural development challenge. These are better dealt with in actual

agroecosystems where production takes place and where sustainability is at risk as a consequence of increasing social and market pressures on the resource base.

The CGIAR centers have in the past developed useful technologies that can contribute to the growing concern with sustainability. (e.g., disease and pest resistant lines, drought and acid tolerant lines, integrated pest management practices, soil and water management practices, soil erosion and nutrient management practices). However, such component technologies need to be integrated and evaluated in actual production settings in the context of farmers' decision making processes as well as at the watershed and regional levels. Ecoregions provide a first gross division of such settings where interactions of the biophysical and human dimensions of sustainability can be studied in a systemic and integrated way, solutions generated and validated, and action programs designed.

However, two qualifications are needed on the location-specificity and broad-adaptability of the policies and technologies that the approach might yield and deserve some discussion.

2.2.1. Ecoregions, National Settings and Policy Formulation

Ecoregions can not replace local and national settings as analytical units for policy formulation. An agroecology which is marginal to meeting future production needs in one country may be the best resource available to another. The assessment of benefits and costs of the alternative land use strategies open to a country should form the basis for choice and for the formulation of enabling policies to create incentives for implementing a chosen strategy. The country specific nature of policies still allows a sharing of implementation experience across countries with similar agroecosystems and the need to exploit them sustainably.

The issue bears on the choice between research investments in high and the low potential lands, which can only be properly made in a country specific context. As already noted the low potential land type of one country may be the high potential type of another. Again, one country may be able to offer alternative employment opportunities, another may be obliged to continue to employ most of its population in agriculture, having fewer alternatives.

Within the country context, differences in potential agricultural productivity of agroecological zones vary as a continuum. However productivity represents only one criterion, others to be taken into account in decisions on investment in research include:

- The proportion of the potential of each land type currently being realized e.g., the yield gap), and the rates of return to investments in research and development to help close the gap; usually the gap is larger in lower potential areas and this is often associated with lower land values.

- The cost and benefits of research to shift the production possibility frontier in each land type (e.g., increase yield potential), and the probability of success in achieving additional shifts beyond the level achieved so far;

- The infrastructure that serves the various areas, and the existence of non-tradeable outputs produced in marginal areas (e.g., manure, firewood, and animal traction);

- The likelihood of alternative sources of technology supply, like the private sector, investing in high versus low potential areas;
- The social costs and benefits of people in each land type migrating to urban areas, and last but by no means least;
- The social costs of environmental damage in each land type.

The CGIAR has over the years deliberately invested in both the high potential as well as in lower potential, poverty-stricken areas. The Task Force endorses the dual strategy; investing international public funds in research for those least-developed, food-deficit areas with a good probability of significant impact, as well as investing in research for the higher potential areas to feed the urban poor. The ecoregional approach is an effective vehicle for the sustainable improvement of productivity in both types of environments.

2.2.2. Heterogeneity within Ecoregions.

The heterogeneity of farming circumstances within broadly defined ecoregions creates interactions among production and other sub systems of the ecoregion which can overwhelm researchers with their complexity. Ecoregions may not be the appropriate unit of analysis beyond the identification of megatrends and common problems. Smaller physical units, such as watersheds or other landscape units, which often coincide with communities boundaries on the human side of the equation, are more appropriate for the analysis of interactions, for the identification of sustainable production alternatives, as well as for the development of land use strategies and policy options.

If sites are representative of the major biophysical and socioeconomic circumstances of the ecoregion, and if research focuses on the generation of strategic knowledge on the foundations of sustainable systems, outputs will have broader application than the specific locations where they were developed and tested. International, regional and national institutions can complement each other through an appropriate division of labor, achieve mandated objectives at each level and, at the same time, generate technologies of direct relevance for the local communities.

These two qualifications do not question the validity of the ecoregional approach but do have important implications for its implementation.

2.3. The Role of the Ecoregional Approach

In the view of the task force, the main role of the ecoregional approach is to contribute to the goal of increasing sustainability of agricultural production by providing: First; a process that identifies the right research content due to its holistic and forward looking perspective which contrasts with traditional disciplinary and commodity approaches to research. Second; a mechanism for partnership, among relevant actors with complementary functions, that contributes to achieving their common and individual institutional goals through applied and strategic research on the foundations of sustainable production systems. Third; a mechanism that develops, tests and supports effective research paradigms for the sustainable improvement of productivity.

2.3.1. Characteristics of the Ecoregional Research Process.

The Task Force views the ecoregional approach as a more effective research process for identifying and characterizing current and future problems of resource degradation and their human causes, and for linking relevant component, commodity and policy research for their solution.

The approach uses the watershed or landscape unit as its laboratory. Selection of these field laboratories needs to be preceded by national and regional (sub-national) analysis to understand the projected dynamics of the local economy and the future dynamics of population in that agroecology and at the prospective research location. Heavy research investment at a location is only justified if a significant population will continue to be dependent on the productivity of that agroecology over the long term. The macro level diagnosis should seek to:

- confirm there will be continuing dependence of a significant population on these resources.
- confirm the future importance of this agroecology to the economy of the country as a whole.
- identify trends which can help focus commodity research on future economic opportunities for the agroecology as represented by the proposed location.

Such macro analysis would give different results for different countries in the ecoregion which will depend on the future importance of the particular agroecology to the economy of each country. It should be conducted in collaboration with local policy makers and resource managers.

Further diagnosis at the local level will be the basis for local models, both physical and economic, of the watershed itself. The economic models will be based on the decision making processes, and changing priorities of local farm households and their communities. Models will also weigh interacting sector interests, particularly in agricultural processing and marketing, but also where alternative employment opportunities offer a way to reduce degradation. The models will simulate the evolution of the watershed as population densities change, and weigh the private and social costs and benefits of potential new technologies from research investments, as well as the policy action needed to create the incentives for private action where social benefits are high.

It is crucial to embrace the diversity which exists between the entities defined at each level of the ecological and economic hierarchies, between types of farms; for example between farmers and cattle owners in the community, and between communities; for example the upstream and downstream juxtaposition of villages in a watershed. The history of the farming systems in the chosen locations will help understand their present state, including their environmental health, and in projecting their future evolution.

By adopting a prospective, holistic and interdisciplinary approach at the ecoregional level to assess major trends in resource use and degradation, their underlying socioeconomic determinants and the biophysical outcomes, the relative magnitude and complexity of identified problems is better understood. Formulating hypotheses on potential solutions through the ex ante use of models can identify appropriate entry points for research and assess the contribution research output can make to problem solution.

The corollary for the CGIAR is that the ecoregional approach provides a more precise specification of problems and their causes in the ecoregion. Where the problems are of international relevance, and

research can make significant contributions to their solution, there is justification for international research investment beyond the problem identification phase.

2.3.2. Partnerships for Research

The second important role for the ecoregional approach is to provide a mechanism for developing shared visions on the increasingly complex challenges that agricultural research institutions face. Shared visions should lead to new research partnerships that enhance institutional effectiveness in achieving sustainable agricultural development.

The Task Force views the central role of the CGIAR system as that of enhancing the effectiveness of the global research and development system through strategic research, research methods and information, institutional strengthening and the development of effective collaborative mechanisms. Besides CGIAR centers there are many other international, regional and, of course, national actors conducting agricultural and environmental research. The ecoregional approach must involve the relevant actors in the joint identification of research challenges and opportunities leading to coordination of efforts and task specialization to enhance institutional effectiveness. It offers a framework for the integration of commodity research and resource management research that explicitly considers interactions within and between systems, and levels of systems, and that can capture the environmental and policy needs for the ecoregion.

The corollary is that the emerging research agenda and institutional arrangements for its implementation must increase research efficiency, avoid the duplications of efforts, capitalize on opportunities for institutional complementarity and task specialization, and enhance mutual accountability. All of which have implications for priority setting, funding and governance.

Priorities need to be set jointly by the relevant actors, with an eye to a research agenda which is not only feasible but also fundable. Participatory approaches (such as participatory program planning by objectives -PPPO) can help define meaningful, specific, programs outputs and the research projects required to achieve them. Institutions must be able to execute out their respective research projects and be able to co-fund them on a common time scale to retain the harmony of effort throughout program implementation. The key is tasks allocated according to real institutional comparative advantage.

At first the process will require strong leadership from international institutions in supporting the research agenda. Ultimately the process must provide for effective collaboration among developing countries as the major stakeholders. To achieve this the appropriate institutions in developing countries must play an important role in governance from the beginning.

2.3.3. Paradigms for Sustainable Agricultural Development

The green revolution paradigm -- input responsive varieties associated with improved management practices and supported by appropriate policies -- served the developing world well over the 1960's, 70's and well into the 1980's, particularly under controlled farming conditions and favored growing environments. It moved more slowly in marginal areas and small farm sectors that are unable to control their farming environments. Latterly the gaps in the green revolution paradigm have begun to show, even in the high potential irrigated areas. Yield stagnation and even decline are now evident in the rice/wheat bowl of the

Indo-Gangetic plain, probably caused by damaged soil and water processes. New research and development (R & D) paradigms are needed for sustainable agricultural development for the future.

That future will be characterized by increasing social and economic pressures on the resource base, heavier than in the past. Business as usual will not achieve sustainability goals. Without new R & D paradigms important developing regions will not meet future food demands, rural poverty and environmental damage will be aggravated.

Resources are managed by civil society: farmers, enterprises and communities. Their participation in research planning, and in the field testing of technological components is essential to complete the R & D cycle and enhance feedback to researchers. Their organized participation will stimulate political support and funding for research, and help formulate meaningful and therefore acceptable land use strategies at the local level. To be useful the new R & D paradigms need the flexibility to manage diverse local circumstances.

The ecoregional approach seems well suited to develop and test new paradigms that involve the relevant local actors from the beginning as planners rather than merely the recipients of research outputs. It also seems vital to involve policy analysts from the beginning to reconcile local priorities with land use and policy options at the national level.

2.4. Outputs from Ecoregional Research

The involvement of the CGIAR is firmly based on the international relevance of the research it undertakes. Yet because resource degradation articulates locally, natural resource management research is necessarily done in local situations. A careful enumeration of the expected outputs is important to justify CGIAR involvement in ecoregional programs.

The comparison of local experiences under varying natural resource conditions, levels of population pressure, types of social organization, levels of infrastructure and market development, and policy environments, will allow the development of internationally relevant principles for decision-making at farm, community and policy levels on the management of natural resources. Outputs are listed in seven categories :

1. The design of research approaches to bring sustainable improvements in productivity to agriculturally dependent rural communities;

2. The understanding of the effects of the degradation of the natural resource base on soil, water and biological processes, and of strategies to restore these processes in important agroecologies;

3. The development of methodologies and tools for applied research;

4. Mechanisms to link policy formulation and implementation with technological opportunities and social organization as instruments of change;

5. The understanding of farmer and community decision making, particularly in relation to trade-offs between short-term gains and the long-term sustainability of production;

6. The development of a human resource capacity to implement an effective research approach to natural resource management, especially in NARS; and

7. Sustainably improve the incomes of farmers in the communities occupying the ecoregional research sites.

The first six of these are international outputs; the seventh is a local output with local benefits, its international importance is the validation of the effectiveness of the research approach. Each site will offer a venue for training research managers and scientists in the approach and for networking across interested countries.

To sum up, the Task Force regards the ecoregional approach :

- As a valuable process to improve the characterization of natural resource management problems and the identification of research interventions that will make significant contributions to sustainable agricultural development,

- As a mechanism to stimulate institutional partnerships that will enhance the effectiveness of the global research system, and

- A means to develop and test research paradigms that broaden the base for agricultural development and contribute to sustainable increases in resource productivity.

At the same time the Task Force sees the need to make sure that the way the approach is implemented does indeed lead to these advantages. It acknowledges the need for the CGIAR to focus on the type of applied and strategic research that makes significant contributions internationally, across many countries. In this context partnership with institutions performing complementary functions, problem relevance, and site representativeness are particularly important.

3. The Role of the CGIAR in Ecoregional Programs

3.1. An Evolving CGIAR Role.

The CGIAR's ecoregional initiative is relatively recent. The CGIAR and the IARC's roles in ecoregional programs are evolving. The early CGIAR role is to provide a platform for initiatives in those geographic areas where sustainability is under critical threat. It is a catalytic role; one or more centers may act as convenors or co-conveners of institutions that have complementary function, are potentially interested in working together and are willing to commit resources. In some cases regional institutions may already have a capacity to act as conveners or co-conveners and here again the Centers role is catalytic. This possibility should be fully explored and encouraged from the outset and is discussed more fully in Section 3.6.

Once a partnership is formed into a consortium, members define the function of the participating institutions in convening, governance, funding, research coordination, accounting and reporting. They also agree on their complementarity, through the research sequence from diagnosis through problem identification, strategic and applied research and adaptive experimentation. CGIAR centers may play various roles guided by the general principles of international relevance, maximizing institutional complementarity, engaging only in those research and related activities that enhance synergy and impact. The research focus of the centers should be limited to strategic projects of international relevance in areas where they have a clear institutional advantage (e.g. on the foundations of sustainable production systems across the ecoregion). Location-specific, adaptive research with limited spillover value beyond the ecoregional locations should be the exclusive responsibility of national programs or local NGO's, with support for implementation from bilateral donor programs were necessary. In the implementation stage the CGIAR's role, through its review processes, would be to monitor consortia for the effectiveness of internal processes for assessing interalia the quality of research and the potential for impact.

3.2. Promoting the Ecoregional Approach to Research

Besides its "catalytic" " convening" and "research" roles, the CGIAR and the centers need to promote the understanding of the ecoregional approach and the ingredients for its success more widely. Promotion needs to be firmly centered on the primary goal for the approach; improving the research contribution to sustainable agricultural development. It should highlight the fact that bad agriculture jeopardizes the resource base and the environment, and that new and appropriate agricultural technologies can redeem these situations.

Many NARS institutional structures already accommodate commodity and natural resource management research but usually pursue each separately using a reductionist approach focused on new component technologies. What is needed is the integration of components using the systems methods at the heart of the ecoregional approach. The institutional challenge is reminiscent of the problems of integrating farming systems research into research establishments dominated by the classical reductionist school and can learn from that experience. Resistance to institutional change, partly due to management dominated by 'old school' professionals, partly due to declining budgets for public research, could present an equally formidable obstacle to the adoption of the ecoregional approach in many NARS.

While these are national responsibilities, CGIAR centers should join with the multilateral agencies and development banks, who sit as members in the CGIAR, to assist national and ecoregional consortia catalyze such coordination. The best way to promote adoption is through the development of successful demonstrations of the approach in selected benchmark sites, and achieving a multiplier effect through training at those sites and through networking.

3.3. Linkage to CGIAR System wide Initiatives

There are a set of CGIAR system-wide initiatives that focus on broad themes of global importance in natural resource management. Most are relevant to some of the ecoregions currently defined by the CGIAR. Table 1 below, is illustrative, it depicts a matrix of global themes or subject matter areas and their relevance in current and proposed ecoregional programs.

Except at this very general level top down prioritization risks initiating global programs and building institutional consortia which are irrelevant to more specific ecoregional needs and programs. Under a top down set of imposed global thematic priorities the effectiveness and efficiency of the global research system may decline rather than improve. In the view of the Task Force, international research priorities in natural resource management should increasingly be derived from emerging ecoregional priorities rather than from a preconceived global agenda.

Thematic, system-wide initiatives should as far as possible be integrated with the ecoregional programs from the problem definition phase to ensure the more focused themes are problem-based rather than supply-driven. This is even more critical than with global commodity programs. These have already built up an extensive stock of knowledge on crop-specific problems in the major growing environments and are likely to be able to contribute technological components for natural resource management off the shelf. It should be a key CGIAR strategy to make the ecoregional program locations the principal field laboratories for both global commodity and systemwide thematic initiatives.

3.4. The Scale of CGIAR Involvement

Adopted more than three years ago, coincident with the onset of severe reductions in funding to the CGIAR system, the ecoregional approach is being implemented by some centers and their partners with very modest resources. In the view of the Task Force, the resources being made available to the initiatives do not give the approach a fair chance of success. This may continue to be a problem of the short run and also raises the issue of the appropriate balance in funding between ecoregional and other CGIAR programs.

TAC has processes in place to assess the merits of individual ecoregional proposals as well as to assess the appropriate balance across ecoregions. Obviously it is dangerous to increase the number of initiatives while many if not most of the ongoing programs are funded at a level that threatens their quality and for some their viability. Beyond this, as emphasized earlier in the report, logic dictates the ecoregional programs as the field laboratories for researching globally important issues in natural resource management. Success in solving those issues directly depends on the efficacy of the laboratories.

The Task Force strongly believes that each ecoregional program approved by the donors of the CGIAR should be funded at a minimal critical level over a period that provides reasonable assurance that the IARCs and their partners have the resources for its effective implementation. The ecoregional approach is a

TABLE 1. A MATRIX OF SYSTEM-WIDE AND ECOREGIONAL PROPOSALS
(Some areas of interaction for illustrative proposes)

ECOREGIONS ..... SYSTEM-WIDE THEME	Global Mountain Agriculture	AFRICA			ASIA		LATIN AMERICA	
		Desert Margins	Sub Humid and Humid Tropics	Inland Valley	Rice-Wheat	Sub Humid and Humid Tropics and Sub Tropics	Lowland Tropics	Andean Hillsides
Genetic Resource	X	X	X	X			X	X
Livestock	X	X	X	X			X	
Water Management	X	X		X	X	X		X
Property Rights	X	?	X	X	X			X
Agriculture and Water Policy in Fertile Lands					X	X	X	
Data Base on NARS	X	X	X	X	X	X	X	X
Forest Ecosystems			X				X	
Global Slash and Burn			X				X	
Soils, Water and Management:								
- Nutrient Depletion	X	?	X	X	X	X	X	X
- Optimising Water Use	X	X		X	X	X	X	X
- Managing Acid Soils			X	X			X	
- Controlling Erosion	X	X	X	X		X		X
- Enhancing carbon sequestration			X	X			X	
- Defining Soil quality indicators	X	X	X	X	X	X	X	X
IPM	X		X	X	X	X	X	

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different way, a more effective and efficient way, of doing research. New ways of R & D are vital for the future and their successful development should not be compromised by poor organization and weak implementation. Such a fate opens the door for the concept to be sold short and dammed by half hearted execution, again, the experience with farming systems research offers many lessons.

The initial scale of CGIAR involvement in ecoregional programs should thus be one that allows them to have a viable start. That is, a scale that allows potentially contributing institutions to have a platform for meaningful interactions amongst them, and that allows international centers to integrate commodity and resource management research at a few selected sites. Such a scale would allow the consortia (and all participating institutions) to fully explore the possibility of securing other national, regional, and international sources of funding to support the agreed research agendas.

The Task Force urges the CGIAR to increase its contribution to ecoregional programs substantially in the coming years. The US$ 10 million envelope set aside for system-wide and ecoregional initiatives should be used exclusively for the orientation phase of ecoregional initiatives. For this orientation phase, described in more detail in Section 4, incentive funds are needed to promote collaboration.

It is important to note that the CGIAR manages in total only 3-4% of the funds allocated for agricultural research in developing countries. Bearing in mind that resource degradation articulates locally, the overall scale of CGIAR involvement in natural resource management research will cover only a small proportion of the local situations which may require it. This gives emphasis to the catalytic role for the CGIAR and the IARCs in the promotion and demonstration of the approach. The research contributions of IARCs to ecoregional programs should be in the core budgets of the respective institutes, and should grow to the level recommended by TAC (39% of total CGIAR funds) in the near future. Much can be achieved by reorganizing some of the existing activities in natural resource management and conservation and in production systems research within an ecoregional approach. Such activities already absorb some 37% of CGIAR funding.

3.5. Strategic Objectives for the CGIAR's Involvement in Ecoregional Programs

On the basis of the roles described and the limited scale of CGIAR research investments, the Task Force recommends five strategic objectives to guide the involvement of the CGIAR in ecoregional programs:

1. The development and demonstration of an effective approach to research for the sustainable improvement of agricultural productivity.

2. Implementation of programs at selected benchmark sites where sustainability is at risk and which are representative of an ecoregion of long term agricultural importance to the country hosting the site.

3. Promotion of the use of an integrated ecoregional approach to research among NARS.

4. To contribute to the understanding of globally important themes in natural resource management through strategic research on the foundations of sustainable production systems conducted on the selected benchmark sites.

5. For the IARCs to maintain a working presence in farmers fields in major agroecologies and cultures and assure feedback to their strategic research programs.

3.6. Alternative Platforms for Ecoregional Initiatives.

As they evolve regional organizations could be the most effective platforms for ecoregional initiatives. Examples with potential include the PROCIs in South America (PROCISUR, PROCITROPICOS and PROCIANDINO), CATIE in Central America, APPAARI in Asia and the Pacific, AARINENA in the Near East and North Africa, CORAF in West Africa, ASARECA in East and Central Africa, SACCAR in Southern Africa, and other emerging initiatives being sponsored by SPAAR in Africa.

Given the variability in the maturity of these regional research organizations, in their political authority, and in the human and financial resources they have at their disposal, it is impossible to generalize on the role they could play at present. It is particularly important that even fledgling regional organizations be present in partnership negotiations from the beginning. They may eventually play leading roles in ecoregional research. Some may deliberately position themselves to provide platforms for leading and expanding ecoregional initiatives within their regions, and for networking within and across ecoregions. The CGIAR and the IARCs should be proactive in facilitating the involvement of regional organizations.

If the main role of the CGIAR system is that of enhancing the effectiveness of the global research and development system - through strategic research, dissemination of new research methods and information, training for institutional strengthening, and the development of effective collaboration mechanisms - it follows that the CGIAR initiated ecoregional programs should fully explore the interest of regional organizations in participating and in providing a local institutional umbrella for the programs. IARCs should persevere in the joint development of the convening and priority setting mechanisms conducive to the long-term sustainability of the ecoregional programs with NARS and regional organizations.

Such an open participatory approach meets the recommendations in the declaration made by the NARS in December 1994 at IFAD in Rome, which included among its resolutions:

> "To overcome the constraints to the effective working of our own NARS, and expect to become more active in priority setting and work programs of the CGIAR centers, through collaborative mechanisms and as equal partners..."

The IFAD meeting of NARS also declared:

> "In order to translate this new NARS vision of international agricultural research into action, mechanisms to ensure the follow-through of the recommendations made at this convention are essential and must be clearly identified."

At the Ministerial-level meeting in February 1995 at Lucerne the CGIAR accepted the responsibility to systematize the collaborative process. Moving along the lines suggested above should help considerably.

3.7. Some Important Clarifications.

Due to the variety of fora discussing the issues three aspects have perhaps caused confusion and merit clarification. They refer to: (1) the role of the ecoregional approach in rationalizing relationships between CGIAR centers and NARS; (2) the need to retain flexibility in the implementation of the approach to adapt to local circumstances; (3) the time frame for CGIAR involvement in ecoregional initiatives.

3.7.1. Relationships between IARCs and NARS.

As indicated in Chapter 2, the ecoregional approach was proposed by TAC as a vehicle: (i) to achieve sustainable improvements in agricultural production by balancing (and integrating) commodity improvement research with increased research on natural resource management; and (ii) to rationalize relationships between CGIAR centers and NARS. This second purpose arose from concerns about overlapping mandates and regional activities of various centers, particularly in the general areas of on farm research and training, and from the confusion for NARS of being approached by a number of centers on apparently the same topic.

In the view of the task force, the ecoregional approach could indeed help rationalize relationships among centers and NARS by helping integrate component research from global commodity or subject matter programs with resource management research within a systemic and coordinated framework at the chosen pilot sites. The approach could also help rationalizing training programs in diagnosis and in systems research methodologies at various levels within the ecoregions. In fact, the approach may prove to be the vehicle par excellence for a more effective partnership with NARS and other national and international partners, and can provide a meaningful perspective to establish priorities for global CGIAR research programs.

However, the approach cannot rationalize the relationship with NARS outside the ecoregional research areas. As the ecoregional program consolidate and expand their geographic coverage the need for direct IARC backstopping of commodity networks in on farm research will be reduced considerably. But the need for global and regional commodity centers to maintain direct relationships with NARS on germplasm and related subjects to serve those important production areas not covered by the ecoregional initiatives will still exist. Ecoregional programs will play an important role in helping rationalize relationships among centers and NARS, but should not be seen as the exclusive vehicle for centers interactions with NARS. The partnership question is wider than the ecoregional initiative and cannot be fully subsumed under it.

3.7.2. Decentralization and Flexibility.

The recent expansion of the CGIAR and its agenda, that took place during times of important funding reductions, led to the present restructuring process which could be characterized as participatory but inward looking and centralized to some extent. Adopted by the CGIAR during this period, the ecoregional approach and its operational mechanisms (e.g., consortia, programs and projects) are in early stages of development. It would be premature to impose rigid concepts to the initiatives that are underway because: (a) the approach calls for flexible and decentralized processes that adapts to the problems and institutional settings of the various ecoregions; (b) to succeed the processes and the emerging implementation mechanism must be owned by the participating institutions; and (c) ultimately, funding for the research projects would

need to come from several new sources, including national and international ones, as well as from the participating institutions themselves.

The framework for ecoregional research is given in general terms. In each ecoregion the situation is different: the local problems may call for a different set of partners in the program; the arrangements concerning collaboration may have to take into account differences in national laws; the strengths and weaknesses amongst partners may call for a different division of tasks and responsibilities per program; the interaction between human and biophysical elements in an ecosystem may differ sharply and call for divergent mixes between the human and biological components of the programs. Institutional and socioeconomic circumstances call for diversity in the implementation of the approach in different ecoregions. The Task Force very much cautions against the imposition of rigid concepts on the initiatives that are underway, because flexibility, ownership, and participatory agenda-setting might be lost and the possibilities for additional funding reduced.

3.7.3. The Time Frame for Ecoregional Programs

In its elaboration of a medium/long (2010+) and long-term (2025+) vision for the evolution of the CGIAR, TAC envisaged that:

> "during the transition between these two time horizons, and as national systems become stronger, CGIAR ecoregional activities will be progressively replaced by
> work in national programs and emerging transnational mechanisms. As regional entities take on a greater share of responsibility, the winding down of its ecoregional initiatives will leave the CGIAR as a set of global activities, justified by the wide spillover of results throughout the developing world. The nature and pace of such change will depend on a strengthened political commitment to research in developing countries and cooperation between countries of a region." (TAC, Chapter 13, September 1993).

A different position arises from the reading of the vision for international agricultural research offered by an external panel appointed by the Oversight Committee of the CGIAR. (Sustainable Agriculture for a Food Secure World, SAREC-CGIAR, July 1994). In this paper two types of programs are envisaged:

- Global programs; center and multi center based, of continuous or long-term nature, and in collaborative strategic research of a finite duration e.g. 5-10 years.

- Regional action programs of finite duration - e.g. 5 years.

The nomenclature is close to but different from that of TAC. The differences in terminology and definitions were considered by the Task Force to be confusing and raised the question of a consistent policy formulation process for the CGIAR.

The Task Force shares the TAC vision but wishes to emphasize that it sees the time horizon for ecoregional programs, including the involvement of the IARCs, as long term. A five year term is clearly too short to understand the physical and biological processes of degradation and turn these to rehabilitation. As TAC states the capacity of the national and transnational institutions involved will be the main determinant of the length of the CGIAR's involvement. Fostering of national capacity will be an important objective for the

CGIAR. The Task Force recommends fifteen years as an initial horizon, and the regular review of progress as the programs evolve.

4. Implementation of Ecoregional Programs

4.1. Two Program Phases

There are two phases of program implementation that need to be distinguished quite sharply: first, the process which leads up to the consortium and can be looked upon as a program in its own right, and second, the implementation of the ecoregional program itself, once the consortium has been established. The process of establishing a consortium we propose to call the *orientation phase* of the ecoregional program to be established. Once the consortium is in place, ecoregional studies have been performed, a common and integrated research agenda agreed upon, sites have been selected and the research itself starts, the *implementation phase* of the program is under way.

4.2. Multiple Program Dimensions

Both in the orientation phase as well as in the implementation phase, three program dimensions must be managed:

- involving multiple partners: NARS, universities, NGOs and the private sector;
- engaging the full range of national agencies from which policy and institutional priorities influence the pattern of human activities at the research site; and
- promoting multidisciplinarity: mixing skills and disciplines to address the complexity of the ecosystems.

Collaboration with multiple partners in the CGIAR has often taken the form of networks. In the consortium approach institutions with complementary skills will each perform a role the partners will depend on for overall success. The ecoregional approach relies on early local impact to sustain government and donor interest, while the understanding of underlying strategic soil, water, and human processes accumulates over the longer term. Achieving early impact is dependent on effective adaptive research. Therefore, adaptive research capacity must be an important factor in selecting partners and sites. If adaptive research capacity is lacking in the partners setting up the consortium, either experienced NGOs should be drawn in, or strengthening this capacity at either NARSs or IARCs should be an important goal right from the start.

To achieve sustainable agricultural development, commodity and resource management technologies, land use strategies and economic policies must reinforce each other. This implies the collaboration of a wide range of national institutions; well beyond the government funded national agricultural research institutions, the traditional partners of the IARCs. Often cooperation will be required from several line ministries; agriculture, the environment, science and education and development are examples. It may require discipline imposed by a 'super' ministry; finance or the prime ministers office, to

gain cooperation in assessing land use and policy alternatives, in defining research priorities and in coordinating action programs across line ministries to close the gaps in the complex R & D cycle required. This challenge is deepened when NARSs anticipate a loss of influence on IARCs because ecoregional programs demand a widening of the in-country institutional base. This has created some resistance to initiatives.

The multidisciplinary approach needed can be distorted if scientists and institutions working on the crops grown in the agroecology see the sites as a means of mobilizing their own results. "Technology push" creates wrong criteria for the selection of sites and a top down sequencing of the research process. Once the representative sites have been selected, new partners that can contribute from their stock of knowledge and skills can be identified. Such institutions will naturally build on their previous results to define acceptable technologies which promote sustainable improvements in productivity on farms at the site.

Seeking institutional collaboration and coherence in all three of these dimensions *de novo* and together is clearly a formidable task. Each dimension has heavy transaction costs, and, where transaction costs get out of hand, frustration and friction between potential partners threaten success. These additional dimensions (to traditional tasks) create a new profile for IARC research managers. They may be stretched in directions which require skills they may not have.

4.3. Orientation Phase

In the orientation phase of the ecoregional programs these three dimensions need to be actively managed to avoid potential pitfalls. The process needs to be guided in such a manner that possible solutions to some if not all of the questions are found in the right mix of stakeholders, collaborating institutions, the research agenda and the selection of sites.

The first step is to look around for possible partners in an ecoregional program, and to invite these to a first workshop in which the concept of such a program, and the application of that concept to the specific ecoregion, is to be discussed. A crucial point is here that not all possible partners should be invited to this first meeting: only those that have expressed interest in the concept. This is a kind of natural selection of possible partners, that ensures that partners will engage in the process in a positive way. Its drawbacks may be that some crucial partners will hold back, and the ecoregional program is in danger of becoming lopsided towards some issues or countries. The group will need to take into consideration whether it is substantial enough to warrant an ecoregional program. This will have to be decided on the basis of local circumstances; no guidelines can be given. The most important objective at the first meeting would be to establish whether this first group of possible partners is willing to enter into the process of preparing an ecoregional program, and to establish: how that process is going to take place; timetable; funds involved; and who is going to play which role.

An important element is the early constitution of a Steering Group or Committee. This could be a relatively small but representative group of individuals who enjoy key decision making roles within the existing research and development organizations in the NARS. An appropriate CG Center in the region can play an effective coordinating role and can provide seed money required for initial exploration of the possibility of an ecoregional program. The main role of the Steering Committee will be one of providing patronage and in facilitating the implementation. The Committee should also seek to mobilize additional resources and facilitate efforts of collaborators. A starting point for the planning

process will be a first workshop, including group discussion, with wide participation of institutions (including CG Centers other than the coordinating one) from public, academic, NGO and commercial sectors covering agricultural and environmental interests.

The second step would be to set up a process of ecoregional studies, to engage in interviews with the partners involved up to that point, and to present "issues and options" for the ecoregional program to be established at a second workshop, which could primarily be devoted to a discussion of the research agenda and concurrent choice of site. Concurrently, or through a separate process, the structure of the consortium needs to be worked out and discussed: how will aspects such as governance, administration, scientific and policy guidance be taken care of . Ideally, all of these aspects should be laid down in a *program document* which is agreed upon by all partners which will serve as a guide to the implementation phase of the program. Furthermore, the orientation phase can and should be used for a consultation process with other stakeholders in the ecoregion, such as line ministries, NGOs, farmers organizations, and other organizations as grassroots level. Questions to be asked are: what is the opinion of other stakeholders on the identified issues and options, and what would the ecoregional program be able to offer them? Again a workshop may be a suitable instrument to consult others.

A third step in the orientation phase would be the definition of specific program outputs, and projects and sub-projects required to achieve results.

By treating the establishment of the consortium as a program in its own right, it becomes clear in advance how much time and effort are needed to grow through the consultation process. The money involved in this process pays itself back in the implementation phase of the program. These transaction costs are made to establish a research agenda and a truly collaborative and effective cooperative structure: *process for content* and *partnership for research.* Nevertheless, it has to be emphasized that transaction costs should be carefully weighed. Experience in ecoregional programs so far suggest that these costs can be lowered by:

- delaying transnational collaboration with the possibility of building a transnational perspective through gradually widening participation in program governance;
- focusing on one country with sites where problems manifest themselves dramatically, which has good relations in the region, and where chances of success are greatest;
- identifying individual research directors who understand the sustainability issue, identify with the ecoregional approach as a solution, have power in their own, and perhaps other ministries, and have - in-country - a strong adaptive research cadre.

Once the core site is established and operating, networking arrangements can be used to build awareness elsewhere. These strategies will reduce the complexity of launching an ecoregional program and will reduce the associated transaction costs. In doing so it will demand less of IARC managers, leaving them more time to play their traditional and continuing roles and reduce pressures for expanded management cadres, and thus higher overheads, in the IARCs. They will also reduce the danger of distorting the approach due to either technology-led site selection or the need to compromise between partnership obligations and the research process.

4.4. The Implementation Phase

The orientation phase will lead to an established consortium with a research agenda, a governing structure, selected sites, scientific guidance, research management, a division of labor between the partners, and monitoring and evaluation mechanisms. This will be described in the *program document* of the consortium. The consortium will either be a legal entity in its own right, or work through the convening IARC. In the following sub-sections, the issues which should be dealt with in the program document are considered in detail.

4.4.1. The Research Agenda

In the orientation phase, problems are identified for inclusion in the research agenda of the consortium. The process of establishing the research agenda should include as many stakeholders as possible. In this way, it is ensured that the research undertaken will address the most urgent problems, and that the research results will be taken up by policy makers, extension and development organizations. These stakeholders need to make their needs and demands known. On the other hand the research institutions involved need to make their capacities and capabilities known. On the demand side, policy makers and representatives of development organizations have to think whether the problems they want to be addressed indeed need more research before they can be solved. Research is sometimes used as an excuse not to act. On the research side, the institutions involved need to incorporate the "state of the art" in scientific research in their areas of competence into their presentations, in order to present their capacities in a broader framework. The ecoregional studies to be undertaken in the orientation phase can provide a more general overview, which may point to additional institutions to be included in the consortium, in order to address issues which cannot be covered by the institutions which have been included up till then. The Steering committee could decide upon enlarging the consortium.

4.4.2. Site Selections

The ecoregional approach is intended to enhance our understanding of interactions between the people and the natural resource base. The ecoregional studies undertaken in the orientation phase must provide a broad model to understand and describe the interaction in the system. Research will take place on local sites; yet a fuller understanding of the physical and human dimensions that extend beyond the site but influence the situation at the site will be crucial to success. Such an analysis will form a basis for site selection and for subsequent extrapolation of research results from identified sites. Although no rigid criteria are called for, yet some broad guidelines would appear helpful in decision making:

- sites selected should be representative, such that the research results have the promise to potentially benefit the largest number of clients;

- within the ecoregion, choice of a site needs to take into account the great diversity of farming and other local situations; major land use limits will need to be considered in defining field sites;

- chosen sites must feature the problems which the ecoregional approach is designed to address and must be based upon a consensus among collaborating partners;

- extremes of situations can have both advantages and disadvantages, but an overall appraisal of such situations can often help in better decision making towards setting up a research agenda.

4.4.3. Governing Structure

Every consortium should have a clearly defined governing structure. To some extent, governing structure may differ per consortium, according to the needs and possibilities of the collaborating partners, local circumstances, legal requirements and so on. In principle it would be preferred if every ecoregional consortium would have in its governing structure the following elements:

- A Steering Committee with terms of reference, detailing the powers that this Committee has in setting policy, decision-making on funding of subprojects, monitoring and evaluation of the progress of the program;

- An administrative function, either at the IARC or at an appropriate intermediary organization.

- A system of external peer reviews, or a scientific advisory council, to provide scientific quality control and guidance on methodology;

- A system of collaboration and consultation with other stakeholders in the region, or example through regular workshops, in which the research agenda, progress and so on are regularly discussed to ensure continued relevance of the program;

- A system of arrangements through which the collaborating partners enter into the consortium, ensuring that responsibilities are recognized and all partners will meet obligations.

4.4.4. Scientific Guidance

Most probably all partners in ecoregional consortia have their own instruments or systems to ensure scientific quality of the work they undertake. In some cases this will be an internal system of program evaluation, in others it involves regular advice or evaluation by "peers". In a truly collaborative program it would be highly inefficient if the scientific guidance mechanisms of all partners would judge the overall consortium efforts. This will have to be delegated to a mechanism that the consortium itself agrees upon. The primary judgment on that input will of course be made by the mechanism of the partner concerned; i.e. in the case of an IARC, TAC will itself form an opinion on whether the program delivers quality, but will have to do so partly on the basis of what the consortium mechanism has judged to be the relative value of the input for the consortium as a whole.

This mechanism can either be a system of external peer reviews of sub-projects, with additional external reviews every three years by peer teams on the output of the program as a whole,

or a standing scientific committee which regularly meets and deals both with sub-projects and overall progress.

4.4.5. Management of the Consortium

To achieve the objectives of the ecoregional approach would require establishment of a collaborative research management mechanism. A common platform needs to be established for researchers from different institutions, backgrounds and disciplines with a wide range of expertise in the fields of production, natural resource conservation, farmers participation, policy research and so on. Furthermore, expertise needs to be involved from outside the normal stream of agricultural research. Operational flexibility is needed to enable the program to draw upon the required expertise.

A process must be established whereby the research consortium is fully owned by the partners by enabling them to play key roles in decision making and in managing the initiative. Besides a Secretariat to support the convening, monitoring and evaluation role under the guidance of the Steering Committee, the consortium would need to agree about the management of the research projects and sub-projects. The Task Force sees clear advantages in that a project (rather than a program) approach be adopted, that it be developed through participatory planning, and that project implementation be decentralized to the participating institutions (or sub-groups of institutions) on a project-by-project basis. Amongst other objectives, the ecoregional approach was intended to strengthen the cooperation between the CGIAR and national partners, and the enhancement of transnational collaboration. Broadly, one can define the national partners as the NARS, the pertinent private sector and the relevant NGOs.

On the CGIAR level, it has been stressed time and again that for a successful intervention at the field level there is a need to ensure that the national partners are fully engaged. This is in general the view both of TAC and the Donors, who have seen cooperation as a vital facet of success. Examples abound of IARC led networks. The ecoregional programs are a new effort from the CGIAR to establish a better linkage.

At the NARS level the partnership issue is debated often. No one has argued against the principle of ensuring that the NARS should be fully involved in the effort to improve sustainable productivity in their areas of operation. By the same token it is a well recognized fact that a partner must be strong in their own right in order to create an effective linkage. The NARS in its broader sense including extension and universities have focused on the issue of capacity building in order to link with IARCs and the private sector. To effectuate this, they have accelerated training of manpower and incorporated pertinent contacts with NGOs as much as possible; and recognized the value of transnational regional organizations.

On the level of the private sector it is clear that to take advantage of the agricultural innovation in the private sector domain more contacts have to be made. The proprietary and IPR issues have to be carefully addressed by the IARCs and the NARSs. The NGOs are increasingly important especially in the areas of rural contact. The modalities of contact process must be enhanced to avoid the current inefficiencies and duplication.

4.5. CGIAR Processes: Appropriateness for Ecoregional Programs

4.5.1. Initiatives to Enable the Orientation Phase of Ecoregional Programs

The Task Force sees the need for additional support to enable prospective partners to set up an ecoregional program, in recognition of the transaction costs involved, and the difficulty especially for NARS to find the financial means to enter into these sensitive and sometimes protracted negotiations. In a situation of diminishing budgets, ways must be found to encourage NARS to enter into this process. The Task Force therefore proposes to set up a fund at the CGIAR Secretariat or at ISNAR which would "match" any financial pledges of NARS to orientation phases of ecoregional initiatives. An example may be that after a first workshop, a process is foreseen of studies to be undertaken and workshops to be held, for which an ecoregional account is opened at the convening IARC. Any pledges of NARS to contribute to this orientation phase could be matched out of the fund. For the involvement of NARS, and other partners in implementation, additional sources of funds need to be mobilized, such as regional donor funds.

Secondly, at the Lucerne Ministerial Level Meeting the Netherlands announced that it would set up a special trust fund for requests of ecoregional programs for methodological support, both on research issues as well as on governance issues. This trust fund will provide backstopping from advanced institutes.

4.5.2. Priorities for Ecoregional Programs

In its review of CGIAR priorities and strategies, TAC made careful and considered recommendations on optimal allocations of funds per center from 1992 to 1998. For obvious reasons - because both the concept and first initiatives had not yet been fully established - TAC was unable to take the ecoregional programs into account in its first proposals on core allocations. Secondly, at that time it was not certain how the ecoregional programs would fit into or interact with the regular core programs of the IARCs. Thirdly, the concept of sustainability research was not yet operationalized. The Task Force on sustainability will present the CGIAR with recommendations on sustainability research. In view of this Task Force, the discussion on priorities for ecoregional programs could be re-opened in the light of:

- the importance of maintaining biodiversity, as an objective of an ecoregional program (through in-situ conservation);
- the effects of environmental degradation in an ecoregion on neighboring ecoregions (for example: the environmental degradation on mountain plateaus would have strong repercussions on neighboring, down-stream lowlands which have a different climate and belong to another ecoregion); and
- food security does not always equate with food self-sufficiency, and will have to be related to the future outlook of the economies of the region, and qualified accordingly.

Mentioning three specific issues may detract from the main issue. They need to be presented in perspective. For example, by adding a phrase:

4.5.3. TAC Criteria for Eligibility

TAC's criteria for characterizing ecoregional research are[1]:

(a) applied and strategic research on the foundations of sustainable production systems in the ecoregion;

(b) the improvement of productivity in the ecoregion by drawing in appropriate global research activities; and

(c) strengthening of the cooperation with national partners and the development of transnational mechanisms of collaboration.

Furthermore, a CGIAR research activity may be characterized as ecoregional if it meets the following general criteria:

(a) is research on the technical and human dimensions of problems in the sustainable improvement of productivity;

(b) addresses landscape units in the agroecosystem of a priority agroecoregional zone;

(c) has effective and clearly identified partnership linkages with national research programs and other research agencies of the region, and shows the complementarity of function across the partners;

(d) has close linkages with global strategic commodity/subject matter research activities.

In its review of proposals for systemwide and ecoregional initiatives, TAC applied these criteria in the context of the geographical priorities it had earlier set for ecoregional programs. If the Task Force's view on the need to re-weigh priorities (section 4.6.2) is accepted, it has implications for widening the set of criteria for the valuation of systemwide and ecoregional proposals.

The Task Force has proposed that a clear distinction be made between the orientation phase leading up to an ecoregional program, and the implementation phase. It is further proposed that a different set of criteria are applied to the orientation phase. This is not so much characterized by the items above, as by steps through which to successfully establish the ecoregional consortium. The Task Force proposes the following criteria for the orientation phase, i.e. that proposals for ecoregional initiatives should contain:

(a) a plan for identification of research issues that are ecoregional in scope (ecoregional studies); and

(b) consultation steps with other stakeholders and prospective partners, through workshops on:

- the research agenda;

[1] Review of Proposals for Systemwide and Ecoregional Initiatives - September 8, 1994 - AGR/TAC:IAR/94/11 - Annex 1 - p. 3.

- site selection;
- governing structure;
- collaboration arrangements;
- monitoring and evaluation of the consortium to be established.

The proposal should include a timetable, budget, and a consideration concerning the transaction costs, showing that these will be justified in the light of the envisaged consortium.

5. Conclusions and Recommendations

Feeding an extra 2.5 billion people in the developing world, and the need for sustainability (maintaining or enhancing the productive capacity of the resource base) offer a huge challenge. Traditional research approaches, even if enhanced with a sustainability perspective or focus, will neither suffice to achieve the increases in production required in most developing countries, nor be efficient in accomplishing global, regional and national poverty alleviation, sustainability and resource conservation objectives.

What is needed is an holistic, systemic approach to R & D that promotes the integration of research, policy and action programs to meet these objectives simultaneously and in an appropriate mix for particular agro-socioeconomic settings.

In the view of the Task Force the ecoregional approach fulfills this role and can help to focus, prioritize and integrate commodity and thematic research, as well as facilitate coordination with land use strategies and policies.

1. The Task Force concludes that the ecoregional approach is viable, and is addressing the urgent need to refocus and integrate research efforts. Ecoregional initiatives provide a lens through which to identify and address crucial sustainability problems in a given agroecology.

2. The CGIAR invests limited public funds, its role must be catalytic and it is proper that the CGIAR promotes and fully supports ecoregional initiatives, which, by their nature, do not lend themselves to private funding.

3. Process for Content: the process of establishing an ecoregional program is not an end in itself; its purpose is to establish the content of the ecoregional research to be undertaken; to identify and characterize those crucial problems where a relatively small investment of public money can make a difference. The ecoregional research approach integrates disciplinary inputs in systems analyses of interactions within and between various levels in a hierarchy of systems (e.g. crop, plot, farm, watershed, country, ecoregion and global), embracing biophysical, socio- economic and policy dimensions in inter-disciplinary research.

4. Partnership for Research: the ecoregional approach enables the partners involved to do research on crucial problems together. It identifies relevant entry points for research for all partners, while ensuring congruence in finding solutions to increasingly complex problems in an efficient manner through institutional complementarity. The CGIAR should endeavor to ensure that the pertinent partnerships necessary to implement the ecoregional approach are strengthened. This will require clear definitions of responsibilities amongst the IARCs, NARSs, advanced institutes, NGOs as well as the private sector and farmer organizations.

5. The ecoregional research approach is essential to identify what the problems are or could be in the future. For this purpose it is necessary to build up an overall diagnosis of appropriate divisions of the ecoregion taking into account the historical setting and political boundaries. The analysis and understanding of the role of the different users of natural resources leads to a precise definition of the sustainability problems and their origins. Regional models allow an evaluation of the dependency over time of the national economy on agricultural productivity in the ecoregion, and the social costs and benefits of research investments can be assessed.

6. International research priorities should increasingly be influenced by emerging ecoregional priorities, rather than only from perceived global agendas.

7. It is imperative that the approach addresses land use strategies and policy issues, through involving resource managers and policy makers in priority setting, planning and implementation of the research undertaken.

8. Success and the wide application of the ecoregional approach will depend to a large extent on significant investments in manpower training, particularly on systems methodologies. Furthermore, relevant scientific competence on for example ecology, GIS, modeling, soils and social sciences might not be available with the IARCs, and more particularly with the NARSs, and may need drawing in through other partners and/or further training.

9. Priority setting within ecoregional programs should be done in a participatory fashion. Participatory Program Planning by Objectives (PPPO), is a methodology which can be used to achieve this, and bring about a high degree of ownership of priorities, strategies and work plans by participating institutions.

10. The Task Force reinforces the need for a transparent governing structure for ecoregional programs, as proposed in earlier CGIAR-documentation. In addition to functions like a Steering Committee, administration and a system of collaborative arrangements, it proposes that a system of external reviews and scientific guidance is introduced. This governing structure will ensure that responsibilities are recognized and obligations will be met. For international centers and the CGIAR, this means the sharing of governance, and accepting decentralization and delegation of authority and responsibilities. The governance of the ecoregional program must further ensure that collaboration emerges from a shared realization of the need for complementarity, identification of the role of different partners, and the need to address both short and longer term research agendas.

11. Institutional and socioeconomic circumstances may call for variance in the implementation of the approach in different ecoregional programs. Flexibility to adapt to local circumstances is required. Centralization should be avoided. The Task Force cautions against temptations to impose rigid concepts and procedures on the initiatives underway, because flexibility, ownership, and bottom-up agenda-setting might be lost and the possibilities for additional outside funding reduced.

12. The Task Force proposes a clear distinction between:

a) the orientation phase leading to the establishment of an ecoregional program, and

b) the implementation phase, in which the ecoregional program is operational.

13. The Task Force recognizes that the orientation phase of ecoregional initiatives involves high transaction costs. It feels these are justified and indeed necessary to ensure that ecoregional programs are developed in true partnership.

14. TAC's criteria for eligibility are relevant to the implementation phase of ecoregional programs. The Task Force proposes a set of critera for the orientation phase. This phase should be judged on process criteria rather than those which deal with the content of the research. Furthermore, once the implementation phase of an ecoregional consortium has started, the CGIAR (along with the other partners involved in the consortium) needs to make a careful and considered judgment on the appropriateness of the scientific guidance and review systems of the consortium for the monitoring of the quality and relevance of the research undertaken.

15. The Task Force urges the CGIAR to increase its contribution to ecoregional programs substantially in the coming years. The US $ 10 million envelope set aside for system-wide and ecoregional initiatives should be used exclusively for the orientation phase of ecoregional initiatives. For this orientation phase incentive funds are needed to promote collaboration; the Task Force recommends a "matching fund" to attract NARSs and other local partners.

16. The contribution of IARCS to ecoregional programs in the implementation phase will come out of the appropriate core funds of the respective institutes, and should grow to the level recommended by TAC (39% of total CGIAR funds) in the near future. Much can be achieved by reorganizing some existing activities in natural resource management and conservation and in production systems research within an ecoregional framework. For the involvement of NARSs and other partners in implementation, additional sources have to be mobilized, such as regional donor funds.

16. The Task Force sees the time horizon of the ecoregional approach, including the involvement of IARCs, as a long-term one. Pre-set limits to the duration of ecoregional programs would not be appropriate. The Task Force recommends fifteen years as an initial horizon, and the regular review of progress as the programs evolve.

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ICW 94: Summary of Proceedings and Decisions, p. 45.

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Annex I

REVISED TERMS OF REFERENCE

CGIAR TASK FORCE ON ECOREGIONAL APPROACHES TO RESEARCH

Following ICW 94 the Chairman of the CGIAR set up two Task Forces with complementary Terms of Reference, one on Sustainable Agriculture, and one on the Ecoregional Approach to Research.

The goal of this Task Force on the Ecoregional Approach to Research is to recommend to the plenary session of the CGIAR on:

- the ecoregional approach as a vehicle for researching sustainable agriculture and promoting inter-institutional collaboration,
- how to promote understanding of the ecoregional approach to research both inside and outside the CGIAR,
- if existing CGIAR procedures are inadequate to deal with ecoregional programs, how these can best be supplemented.

Specifically the Task Force will:

1. evaluate the ecoregional approach as a vehicle for:
   - focusing research on local problems of sustainable agriculture with international relevance,
   - building a close partnership among institutions with complementary skills,
   - promoting wider transnational collaboration in research among developing countries.
   - providing a link between global research (done in developed countries and in the CGIAR) and regional, national and local research in the developing countries,
   - developing research paradigms for wide use in achieving sustainable agriculture;
2. clarify the goals of the ecoregional approach and - if necessary - further evolve the concept of ecoregional programs;
3. identify examples of other approaches to research and research organization and evaluate the CGIAR ecoregional approach from these perspectives;

4. evaluate the guidelines and criteria drawn up by TAC for ecoregional programs on their appropriateness in the light of (2) above, and - where necessary - make recommendations on these guidelines and criteria; and

5. review and, where deemed necessary, make recommendations on crucial issues which have arisen in the planning and implementation of ecoregional programs.

It will be imperative for the two Task Forces to interact sufficiently to ensure consistency in the areas of overlap in their Terms of Reference.

DRAFT TERMS OF REFERENCE

CGIAR TASK FORCE ON ECOREGIONAL APPROACHES TO RESEARCH

At the International Centers Week 1994 (ICW94), the CGIAR agreed to establish a Task Force on Ecoregional Approaches to Research.

Context

The discussion of systemwide and ecoregional initiatives leading up to ICW 94 has demonstrated the need to clarify these goals and concepts, translate them concepts into concrete proposals, define mechanisms to implement such proposals, and spell out the role of the CGIAR in relation to other institutional actors in this field.

The Ecoregional Approach was designed by TAC with two main goals in mind;

- to facilitate effective research on the improvement of productivity while conserving or restoring natural resources.
- to promote closer partnerships between CGIAR Centers, between Centers and other institutions with complementary skills, and with national institutions of different countries.

Terms of Reference

The goal of the Task Force is to advance the understanding of the ecoregional concept within and outside the CGIAR research system, ensure that its own research endeavors in this area are fully informed of and coordinated with research initiatives of others, and to identify gaps in the global research agenda.

Specifically, the Task Force will

1. evaluate the ecoregional approach to research evolved by the CGIAR as a <u>means</u> of reconciling productivity improvement with the conservation of natural resources.

2. clarify the goals of the approach and further evolve the concept.

3. evaluate the ecoregional approach as a vehicle for

   - building a closer partnerships among institutions with complementary skills;
   - promoting wider transnational collaboration in research among developing countries; and
   - developing a research paradigm appropriate for wide use by national institutions in achieving sustainable agriculture.

Annex II

CGIAR TASK FORCE ON ECOREGIONAL APPROACHES TO RESEARCH

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