



TECHNICAL CONSORTIUM

AREA OF SCIENCE, TECHNOLOGY AND NATURAL RESOURCES

**TOWARD A NEW APPROACH TO TECHNICAL
COOPERATION IN SCIENCE, TECHNOLOGY AND
NATURAL RESOURCES**

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TABLE OF CONTENTS

INTRODUCTION.....	1
I. AGRICULTURE, NATURAL RESOURCES AND TECHNOLOGY DEVELOPMENT.....	1
II. INSTITUCIONAL ASPECTS OF TECHNICAL CHANGE.....	5
III. OBJECTIVES, ACTIVITIES AND STRATEGIES.....	8
IV. TARGET POPULATION.....	10
V. NODES AND PRIORITY TOPICS FOR ACTION.....	10
VI. IICA'S FIELDS OF ACTION IN STRENGTHENING TECHNOLOGICAL INNOVATION.....	10
VII. IICA'S FIELDS OF ACTION IN DEVELOPMENT AND THE INTEGRATED MANAGEMENT OF NATURAL RESOURCES.....	15
SOME ELEMENTS OF THE OPERATING STRATEGY.....	18
ANNEX FIGURES.....	21

INTRODUCTION

Technical cooperation is the primary function of IICA. The Institute must periodically readjust and ratify the areas of work on which it focuses, based on its prospective vision and the needs of the countries. This is the purpose of the Medium Term Plan (MTP). The 1998-2002 MTP includes priority fields for action in the Strategic Area of Science, Technology and Natural Resources. The purpose of this document is to present general guidelines for the provision of technical cooperation related to these topics.

I. AGRICULTURE, NATURAL RESOURCES AND TECHNOLOGY DEVELOPMENT

Agricultural performance, competitiveness and technical change

During the second half of the 1990s, agricultural production in Latin America and the Caribbean has grown faster than the population (2.1-4.0% vs. 1.9% per year), with some differences among countries and regions. As this decade draws to a close, this level of performance could be affected by economic and social problems in some of the countries in which agriculture is a major driving force behind socioeconomic development. In terms of per capita production, generally speaking the situation in agriculture is much more encouraging than it was in the 1980s. For example, according to analyses conducted by IICA, per capita production of wheat, soybeans, sunflowers, corn, fruit trees, vegetables and other crops is on the rise. The last two crops mentioned constitute new sources of income and are growing in importance as exports in the region. In contrast, production levels for other crops are not generating surpluses big enough for them to make a more important contribution to domestic and international trade. According to IICA studies on the 15 products that have the greatest impact on the value of agricultural production, changes in production for the traditional cereals, soybeans and sunflowers are due to higher yields, while

for other products, such as tropical fruits, an increase in the *acreage planted* is the main reason for higher production. This differentiated *specialization* in LAC poses a major challenge for the agricultural research agenda, which currently is not providing an adequate response regarding either traditional or new crops.

Despite the upturn in agriculture in LAC, the sector has yet to achieve the desired levels of competitiveness, due in part to socioeconomic policies and circumstances, such as the declining productivity of agricultural and agroforestry systems, the use of technologies that have a negative environmental impact, the limited management capabilities of small-farm agriculture, and shortcomings in technological services in support of production. Furthermore, the countries often face difficulties in designing the socioeconomic, technological and ecological policies they need to develop competitive advantages, and in modernizing the existing institutional structure, which is still based on a less competitive development model.

Technical change, as a variable that impacts the growth of agriculture, is a determining factor. If the sustainable development of agriculture is to be achieved, scientific knowledge, transformed into environmentally friendly technological applications, must make its influence felt in the transformation of production. The scientific base and the way in which technology is generated are changing rapidly, especially in the developed countries. A private sector is also emerging for which technology innovation is a key factor in achieving competitiveness. The role of the State is also changing: direct intervention in markets is giving way to greater participation by the private sector.

Agricultural performance and natural resources

The sustainable development of the countries depends in part on agriculture. Agriculture is the economic activity most closely linked to natural resources. The sustainability of such resources is therefore largely dependent on changes in

production that will lead to the sustainable development of agriculture. The debate on sustainable development has traditionally been centered around the contrast between production systems which use low-input technology or are based on organic agriculture, and single crop systems that use agricultural chemicals and are capital intensive. These two extremes are not the only factors in the equation today, however. Precision agriculture, for example, calls for the rethinking of the role and management of technology. In addition to the above, the effect of the physical conditions (climate, topography and soils) can be evaluated in order to prevent erosion and unchecked surface run-off, determine whether special practices are needed, limit the use of the land to dense crops that do not require weeding, or to take the decision simply to leave the land untouched.

In broader terms, the debate in LAC has centered around the effects of agriculture in terms of deforestation and the loss of biodiversity, the erosion of genetic resources, soil degradation, the inappropriate use of pesticides, contamination from industrial waste and the incorrect management of soil and water resources, as well as other issues. For example, while some 11 countries are regarded as having natural "agricultural potential," they do not have enough arable land to feed their populations, at least not unless they abandon current land use practices and the technologies used in their production systems.

In this context, it is essential that the integrated management of natural resources be promoted. The goal should be not only to make optimum use of natural resources without degrading them, but also to ensure that their misuse does not have a negative impact on present and future generations. Of particular importance are the resources of biodiversity (which provide products and raw materials for agriculture, food and industry), soils in combination with water for sustainable agricultural production, and the quantity and quality of water available to meet the needs of agriculture and the communities.

Society's demand that the deterioration of the environment be halted poses great challenges for institutions in the agriculture and natural resources sector, especially those related to biodiversity and water resources, given the strategic wealth that these represent in the region. The policies, technological models and institutional frameworks currently in use are out of date. Therefore, if natural resources are to be conserved and agricultural production is to continue to grow, profound changes are necessary.

Rural poverty and technology development

While poverty levels in Latin America and the Caribbean are not as high as in other parts of the world, the number of poor has increased in relative terms over the last 15 years, especially in urban areas. The rural poor continue to number some 70 million people. It is often argued that research and research findings are not the best weapon for fighting poverty. This concept is being rethought under the new context and given the emergence of a new development model which, it would appear, should be based today on a new concept of the rural milieu, and not vice versa. Research has, in fact, helped reduce poverty indirectly by increasing the food supply and lowering prices for consumers. This is one of the underpinnings of food security. Research also has a direct impact on poverty. Under the current development paradigm, the research agenda increasingly has to do with rural poverty. Researchers must begin to seek solutions to the problems of poor farmers in rural areas, and can no longer claim that that such research is neutral. Technology has direct effects, inasmuch as it helps to reduce costs through the use of low-input systems. It also slows the deterioration of natural resources and actually restores them, thereby preventing an increase in "marginal" lands, where farmers become even poorer. Research can also improve the nutritional quality of the food people consume and reduce environmental contamination. Furthermore, technology can serve as a two-way mechanism for facilitating the transition from rural to urban, and vice versa, if "return" migration is the aim.

The above reveals the existence of a renewed challenge for the countries and the institutional structure that supports the rural milieu, in this case, a technological challenge: to define a renewed role for research in the efforts to combat poverty, several decades after a similar attempt was made in what was known as the Green Revolution. The challenge lies in forecasting the impact of new agrobiotechnologies, and even existing technologies, and in establishing the institutional structure needed to develop and channel these technologies, so as to make agriculture and natural resources sustainable, and to benefit the neediest sectors. The latter calls for the capacity to evaluate the processes of incorporating and placing new technologies on the market, and the extent to which they are appropriable and accessible in the struggle against rural poverty, which affects a large number of small farmers working marginal lands. It will also call for the adoption of a gender approach, inasmuch as in developing countries rural women are responsible for a large slice of agricultural production.

II. INSTITUTIONAL ASPECTS OF TECHNICAL CHANGE

Modification of the existing institutional structure

The changes described in the preceding paragraphs suggest that traditional research, technology transfer and extension models and structures are out of step with more recent developments. This, added to the overall reduction in public investment in research (-1.1% between 1971 and 1992), makes institutional reform necessary in many countries, if current and future challenges are to be met.

The institutional framework for technical change in agriculture in LAC has been based principally on the national agricultural research and technology transfer institutes (NARIs), which have made important contributions to agricultural development in the countries of the region. However, the NARIs must be

transformed if they are to tackle today's challenges and help make agriculture more competitive. When they were created, they operated as monopolies, focused on what they could supply rather than what their clients needed, were highly centralized, restricted private-sector participation and generated knowledge that was not necessarily market oriented. Today, they have fewer specialized human resources and face serious budgetary problems. As a result, they will not be able to satisfy the needs of their clients unless they undergo a major overhaul aimed at making them an essential part of the development policies of the countries.

Therefore, it is necessary for the countries to strengthen the processes of technical change, so that they contribute not only to improving production and productivity but also to incorporating the knowledge generated in the scientific-technological revolution, developing production processes that are more environmentally friendly, and making it possible to tap efficiently and competitively the rich natural resource base of the Americas. The agricultural sector of LAC needs a new institutional structure, one that is capable of striking a balance between the need to produce at competitive levels and the need to ensure the sustainability of natural resources and develop options for alleviating poverty. It is necessary to incorporate technology policies, research and transfer strategies, extension services or technical assistance, related not only to producing food for the neediest and lowering prices for consumers, but also to finding ways to produce with the "rural poor" and facilitate the modernization and diversification of their operations, with a view to making them more competitive, improving the management of rural areas and promoting the integration of rural families and women into new markets in which greater value added is essential.

In short, it is very important to promote the design of sectoral policies, organizational structures, institutional mechanisms and methodologies that will contribute to the use of natural resources, and to develop strategies and

mechanisms for establishing a dialogue on the issue between governments and civil society.

“New” institutional paradigm for technical change

To tackle the challenges and take advantage of the opportunities described above, it is necessary to adopt a new paradigm for technical change in agriculture. This paradigm should reformulate the need for new capabilities, not only in the area of technology generation and transfer, but also related to negotiation, acquisition, adaptation, quality assurance, funding for technology, technological and prospective intelligence, and other issues.

The new paradigm constitutes a shift from a linear model under which import substitution and production technology were key variables, to a more comprehensive and systemic model which goes beyond the simple strategy of generating technologies and transferring them to producers. It is based on the recognition of the fact that there are different ways of accessing technology in a world in which major improvements in the production and distribution of goods and services are, more and more, the result of efforts by individual countries working in conjunction with a range of research and development, funding, regulatory, quality control, education, training and other types of organizations. Innovation, then, takes on a key role as an economic factor in ensuring the competitiveness and viability of the rural agricultural and agroindustrial sector in the medium and long term in a context of greater equity, and the efficient use of the wealth of natural resources in LAC.

This redefines the role of the institutions that generate and disseminate knowledge on agriculture and natural resources, how they are interrelated and, particularly, their articulation with production and the environment. In order to develop a new institutional structure based on innovation, it is necessary to “open up the institutional space,” incorporating properly articulated actors, each with a

clearly defined function, but interacting in pursuit of a common goal, which is to acquire know-how and apply it in rural areas and throughout the production chain, with a market orientation.

Another fundamental characteristic of the technology innovation approach is that it recognizes that farmers and businesses that depend on their natural resources are the primary focus of innovation. However, this will be viable when additional investments of capital are made, including increased investment in research and the development of favorable economic and environmental protection policies. It is also important to note that final products and technological processes are not in every case public goods; on the contrary, more and more of them are being patented. Therefore, it is also necessary to strengthen the process of technology management and transfer, as they relate to production, as well as those related to natural resource management and the protection of intellectual property, within national innovation systems.

In other words, the public institutional structure, within the context of innovation systems and with the participation of the private sector, must promote the creation of organizational schemes and operating mechanisms that will make it possible to effectively link science, technology, production and markets. These mechanisms will permit the active involvement of the production sector in the generation, dissemination and use of innovations.

III. OBJECTIVES, ACTIVITIES AND STRATEGIES

OBJECTIVE:

a. General:

At the external level: To contribute to the modernization of agriculture through technical change by supporting the efforts of the countries to transform their scientific and technological development institutions, with a view to making the

sector more competitive and ensuring the sustainable use of natural resources, within a framework of equity.

At the internal level: To improve the effectiveness of the technical cooperation offered by the Area, promoting the development of new topics and articulation among the hemispheric, regional and national levels, with a view to ensuring the quality and conceptual and methodological uniformity of such cooperation.

b. Specific

- To contribute to the development of a strategic vision of the global and regional changes vis-à-vis the sustainable and competitive development of agriculture and natural resources, from a technological perspective.
- To contribute to the design of policies on technology innovation, and to the creation and consolidation of national technology innovation systems that can help make agriculture more competitive, with emphasis on research and agricultural extension services.
- To help the countries design policies and undertake institution building activities aimed at the integrated and sustainable management of the natural resources associated with agriculture, especially genetic, soil and water resources.
- To foster and promote reciprocal cooperation and technological integration among the countries of the Americas, and the transfer of knowledge at the international level, in order to strengthen technology innovation in agriculture and the sustainable management of natural resources.

IV. TARGET POPULATION

Through this Strategic Area, IICA provides cooperation to institutions in the public and private sectors of the member countries, and to regional bodies that design policies on agriculture, technology and the natural resources used in agriculture, and which transfer and promote the incorporation of knowledge and technologies throughout the agrifood chain.

V. NODES AND PRIORITY TOPICS FOR ACTION

Actions in the Area of Science, Technology and Natural Resources are carried out within the framework of the following four nodes, all of which entail developing products for the technical cooperation provided to the countries: 1. Technical and thematic articulation; 2. Prospective analysis; 3. Thematic development; and 4. Implementation of technical cooperation. The products of the first three nodes are channeled, through the fourth node, to the national, regional and hemispheric levels. The priority topics of action for the four nodes will be mentioned later. The actions generate products that make it possible to meet, proactively or reactively, the needs of the member countries. In other words, cooperation is provided in response to requests for short-term assistance, and with a view to promoting institutional changes related to innovation and the integrated management of natural resources.

VI. IICA'S FIELDS OF ACTION IN STRENGTHENING TECHNOLOGICAL INNOVATION

1. Technical-thematic articulation node

Objectives

To foster technical analyses and participate in efforts to find solutions to problems shared by the countries, in order to support the consolidation of the

inter-American technology innovation system, monitor international agendas and provide orientation in defining the Institute's position in the areas of science, technology and innovation. Also, to enhance the technical capabilities of the Institute by linking Area II professionals working in the countries and regions, and the cooperative mechanisms among countries supported by IICA.

Activities

A. Support for technological integration through the consolidation of the inter-American technology innovation system (Figure 1, Annex)

- i) Analysis of international agendas, formulation and development of a regional vision of, and institutional position on, the topics in which the Area specializes.
- ii) Institutionalization of FORAGRO, the Regional Forum on Research and Technology Development (creation of the Technical Secretariat) and support for the regional funding of research, such as in the case of the Regional Agricultural Technology Fund (FONTAGRO).
- iii) Support for articulation among technological institutions in the Americas, as the basis for consolidating an inter-American technology innovation system.
- iv) Establishment of strategic alliances, and short-term support to the Regional Centers and TCAs in attracting international technical cooperation and external resources.

B. Support for reciprocal cooperation among countries, for technology innovation

- i) Strengthening of the PROCI, and support in linking them with the international technology system and technical and financial cooperation agencies.
- ii) Design of new collaborative mechanisms among countries, within the framework of the Regional Centers.
- iii) Promotion of and support for articulation among cooperative mechanisms in the subregions, with a view to implementing actions under the aegis of FORAGRO and FONTAGRO.

C. Strengthening of technical-thematic articulation within IICA and the incorporation of external know-how

- i) Network of IICA specialists in technology innovation and natural resources (expanded to include external professionals associated to or linked with the Institute).

2. Prospective Analysis Node

Objective

To establish data bases, conduct analyses of the current situation and identify trends and future scenarios for agriculture, the competitiveness of the sector and the sustainability of natural resources at the country and regional levels, from a technological perspective.

Activities

- A. Analysis of the situation in and outlook for agriculture vis-à-vis technological change at the regional level (in conjunction with the Regional Centers and cooperative programs)
- B. Formulation of strategic elements for the development of an agricultural research agenda for LAC
- C. Design and implementation of information systems on technology innovation.

3. Thematic Development Node

Objective

To develop advanced knowledge related to the institutional models currently in place in the countries, and new ones, related to technology innovation, with emphasis on research, extension services and conceptual and methodological elements for the design of policies on technology, and the management of innovation.

Activities

A. Conceptualization, methodologies and training for the development and management of technology innovation

- i) Development and application to agriculture of the concept of innovation and technology innovation systems, through policy formulation and the development of innovation management.

- ii) Identification of national capabilities for implementing models for extension and the transfer of experiences, supporting the creation and development of an agricultural extension network in the Americas.
- iii) Evaluation of the socioeconomic impact of investments in research and extension, including the development and application of computer models and software.

4. Implementation of technical cooperation node

Objective

To meet the short-term needs of the public and private institutions involved in technical change in agriculture by carrying out technical cooperation projects at the national, regional and hemispheric levels, mobilizing both IICA's own resources and external funds.

Activities

- i) Hemispheric activities: for example, FORAGRO.
- ii) Regional activities: for example, the development of cooperative research programs such as the PROCIs and networks for specific products or natural resources; and the design of PROCINORTE.
- iii) Short-term technical cooperation actions carried out by the TCAs to support the competitiveness of agriculture through technology innovation, consisting of projects aimed at enhancing the competitiveness of agriculture or strengthening research or technology transfer institutions (example: El Salvador, Costa Rica, Nicaragua, Bolivia, etc.).

Figure 2 in the Annex shows the technical cooperation projects under way as of December 1998, for each one of the Regional Centers, according to information obtained from the lists of projects maintained by DIPRE/CONPLAC.

VII. IICA'S FIELDS OF ACTION IN DEVELOPMENT AND THE INTEGRATED MANAGEMENT OF NATURAL RESOURCES

1. Technical-thematic articulation node

Objective

To foster technical analysis and participate in efforts to find solutions to problems shared by the countries, by supporting the consolidation of regional actions, monitoring the international agendas and providing orientation for the Institute's position on the integrated management of natural resources, especially soil and water. Also, to enhance the technical capabilities of the Institute, linking Area II professionals working in the countries and regions on topics related to natural resources and technology innovation. This objective will be achieved working in close coordination with CODES.

Activities

- i) To strengthen reciprocal cooperation among national institutions at the subregional level on the conservation and use of plant genetic resources, including the topics of access and intellectual property rights.
- ii) To strengthen information systems and the dissemination of experiences, and support regional efforts such as forums, meetings

and training in the integrated management of *natural* resources, with emphasis on soil and water conservation.

- iii) Support for the development of forums, regional cooperative programs, networks and alliances involving national institutions and technical and financial cooperation agencies, related to the management of water resources.

2. Thematic development node

Objective

To develop knowledge based on the study of cases and the experiences of countries, as support for the incorporation of elements conducive to institutional strengthening for the conservation of natural resources, with emphasis on soils and water.

Activities

- i) Institutional strengthening and support in the design of policies for the integrated management of natural resources, with emphasis on the management and conservation of water and soils.
- ii) Support for multinational cooperation and in holding workshops on management of water and soil resources.

3. Prospective analysis node

- i) Analyses of the current situation and trends in the intersectoral management of water resources, and their impact on the sustainable development of agriculture.

- ii) Analysis of the situation regarding the integrated management of renewable natural resources in LAC, from the perspective of agriculture.
- iii) Studies aimed at evaluating the impact of water and soil use.

4. Implementation of technical cooperation node

Objective

To meet the short-term needs of the public and private institutions involved in technical change and natural resource management, carrying out national, regional and hemispheric technical cooperation projects, mobilizing IICA's own resources and external funds.

Activities

- i) Hemispheric activities: for example, hemispheric dialogues on water resources.
- ii) Regional activities: for example, the development of cooperative research programs and networks on specific products or natural resources. Examples: project on sustainable development on hillsides in Central America, networks of plant genetic resources, PROCITROPICOS.
- iii) Short-term technical cooperation actions carried out by the TCAs related to natural resource management, as part of projects designed to support the sustainable development of agriculture, or others related to the strengthening of research or technology

transfer institutions. Examples: irrigation project (Brazil) and water projects (Peru and Dominican Republic).

SOME ELEMENTS OF THE OPERATING STRATEGY

Areas of action for technical cooperation. Technical cooperation will be provided at the national, regional and hemispheric levels, depending on the nature of the need to be met or the proactive action of the Institute. This technical cooperation will be provided taking into consideration the decentralization that has taken place at IICA, and will facilitate the articulation of the different actors involved. Direct technical cooperation will be provided by the Regional Centers and their respective TCAs, with support being provided in specific cases by the Technical Consortium, through the Directorate of Area II. The Directorate of the Area is responsible for promoting at all levels of the Institute the implementation of activities in the priority fields for action defined in the MTP for the Area of Science, Technology and Natural Resources. Among other activities, the Area will foster technical articulation, conduct prospective analyses, promote the implementation of projects and activities agreed upon with the Regional Centers and TCAs, prepare documents on the situation in the countries, and support the hemispheric dialogue.

Internal articulation: Cooperation actions will be carried out within a framework of horizontal cooperation with the Directorates of the six units of the Technical Consortium and CODES, and vertically with the five Regional Centers and the projects supported by IICA, such as the PROCIs and other networks, and the TCAs. The purpose is to plan joint actions within the framework of the priorities established in the MTP and to provide integrated responses within the Institute to specific issues, as required (Figure 3, Annex). Specialized, articulated networks of professionals will be established to ensure the homogeneity of the technical content of the cooperation, without losing sight of the need for regional

differentiation. This articulation will be achieved via meetings and electronic bulletin boards.

External strategic alliances: In the field of technology innovation, emphasis is placed on complementary action with FAO, GTZ, CIRAD, CARDI, CATIE, AVRDC, University of Amsterdam, UNESP and UNICAMP of Brazil, DGIS of Holland, the international centers of the Consultative Group on International Agricultural Research, such as ISNAR, CIAT, CIMMYT, CIP and IPGRI, and others. Links among the mechanisms for reciprocal cooperation and between them and Headquarters will also be strengthened. Special ties exist with multilateral banks that support research, such as CABI and the IDB, which is supporting the development of the Regional Agricultural Technology Fund, the implementation of regional research projects and studies on strategic topics. Even though IICA has ties with the IBRD for short-term support at the national level, alliances will be established for research work, for example with ESDAR and on natural resources. Alliances will also be established with universities such as the UWI, in the Caribbean, and UNESP and UNICAMP, in Brazil, and technological institutions in the countries such as USDA, EMBRAPA, INTA, CORPOICA, INIFAP and FONAIAP, to name only a few.

Temporary functional groups: The work involved in promoting technological integration throughout the region, on the basis of the priorities established in the MTP, as inputs for the discussions of FORAGRO and other bodies, will involve the setting up of temporary functional groups made up of professionals from IICA's three operating levels. This will be done in concert with the Regional Centers. When deemed appropriate, strategic alliances will also be promoted with those agencies with which IICA has cooperation and other types of agreements.

Regional differentiation: The Regional Centers are made up of countries that share common characteristics and problems, and which present differences from

region to region. The 1998-2002 MTP includes a *description of the regional priorities*; those which fall under Area II are shown in Figure 4 of the Annex. Therefore, the strategy of the Area will involve actions differentiated by regions and groups of countries within them. The idea will be promoted that the Regional Centers should gradually adopt strategies for actions in science, technology and natural resources, in the context of greater challenges such as the competitiveness of agriculture, rural poverty alleviation and the sustainable development of agriculture, among others.

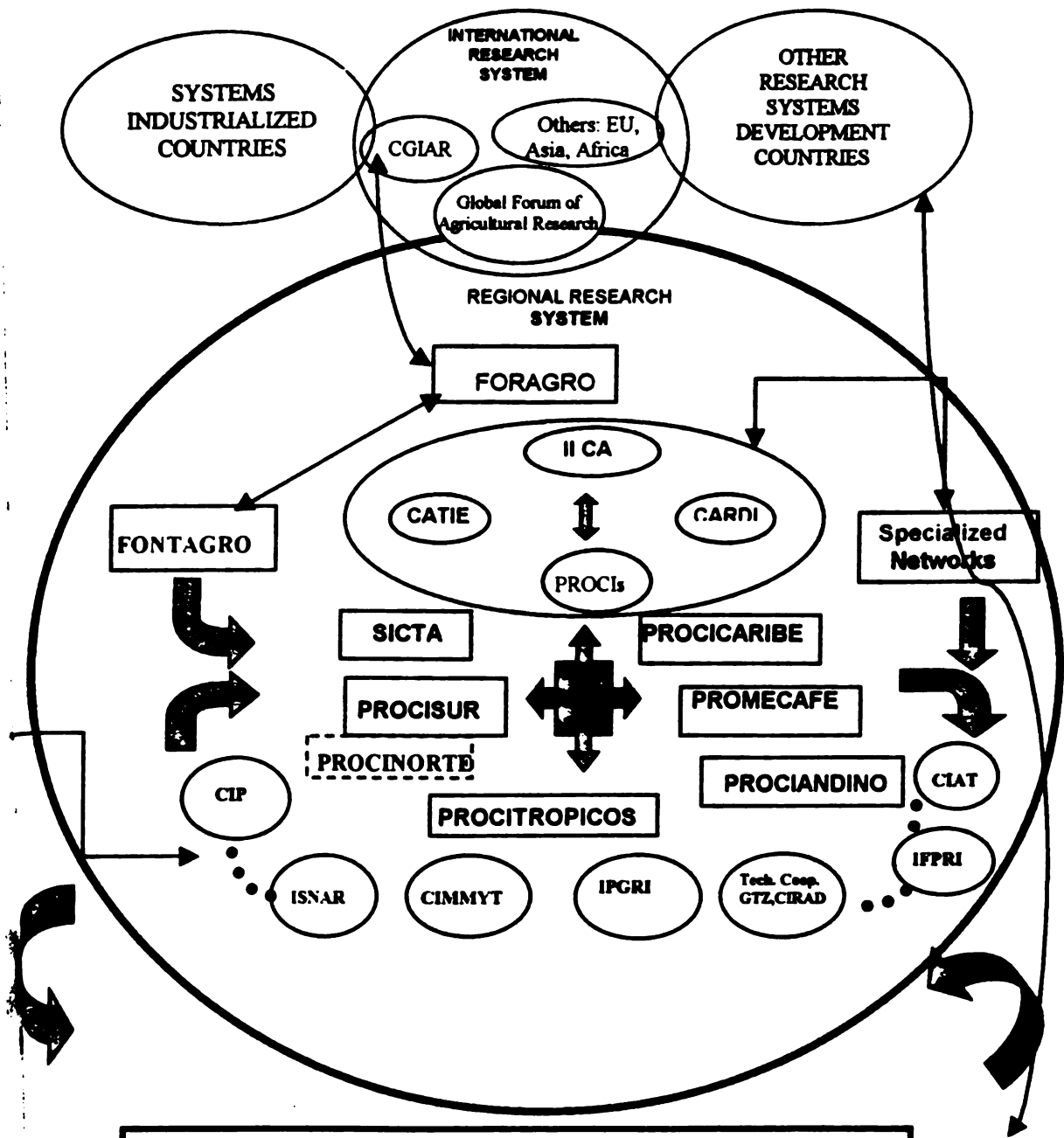
Activities in the countries: In addition to technical cooperation at the national level, studies on new concepts and new institutional models for technology innovation and natural resource management programs will be conducted in selected countries, incorporating some TCAs into the process of validating such models. In this regard, the PROCIs have been making important progress through regional projects based on national needs, aimed at promoting technology integration at the subregional level.

International agendas and external relations: As regards the international agendas, priority will be given to monitoring and interacting with those related to the international research system, such as the CGIAR, to the implicit regional "system" of research called for in the plans of FONTAGRO and FORAGRO, to trade integration processes, and to the agreements of the WTO, such as the TRIPS, which have profound implications not only for trade but also for the development and incorporation of technological innovations.

Internal advisory services: The strategy for work will include support and advice to the General Directorate, to the Management Unit of the Technical Consortium, and CONPLAC, CONSEC, and CONARE, not only on technology innovation and natural resources, but also on other topics germane to the thematic integration and transformation of IICA and to its technical operations.

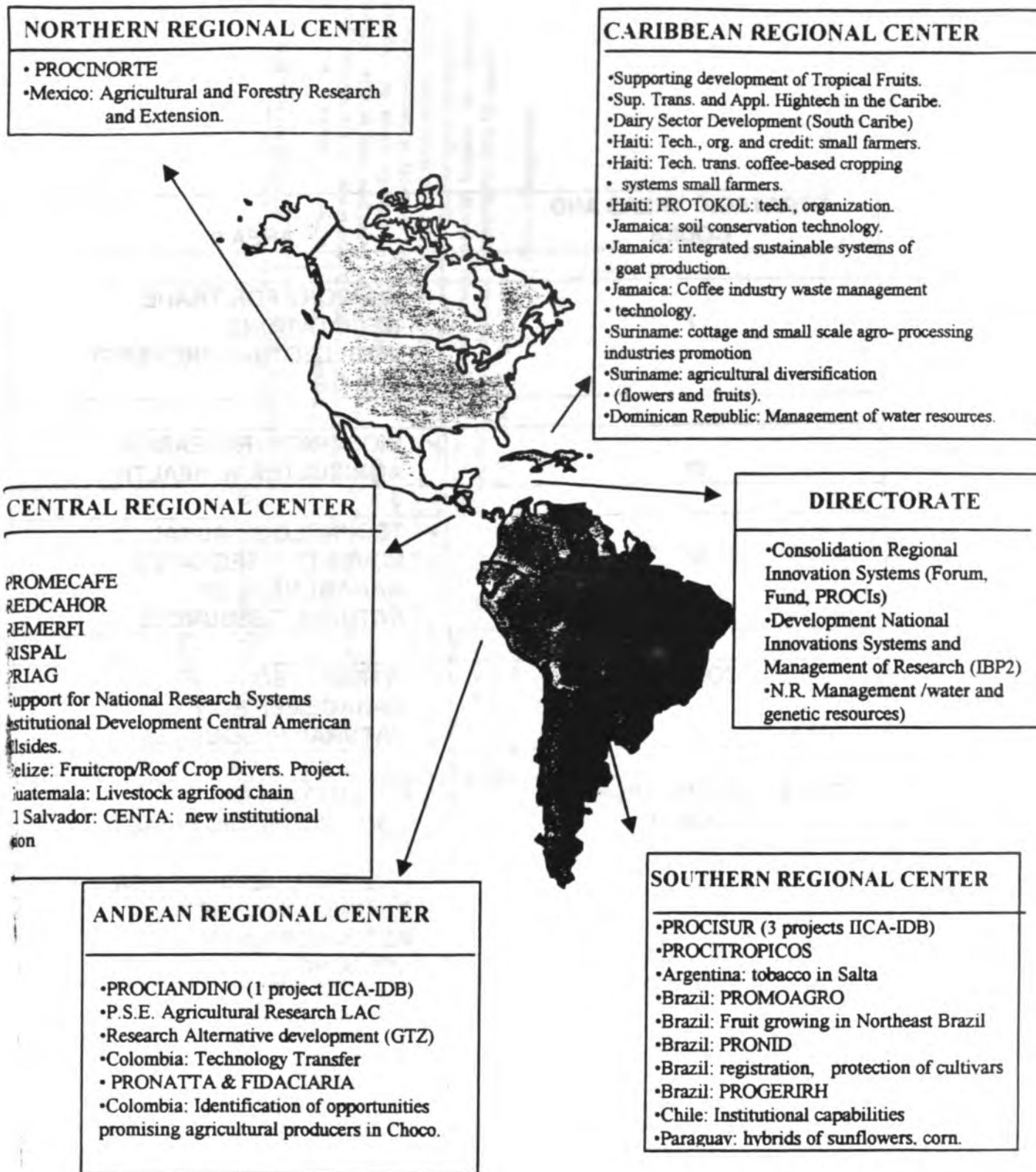
ANNEX FIGURES

Regional Agricultural Research System In LAC Interaction with the Global System



National Research and Technology Development Systems
NARIs, NGOs, Universities, Technological, Institutes, Interfaces with engineering and consulting services, Private S., agroindustry. Some 10,000 researchers and 43,000 extension agents, US\$2 billion in annual budget, more than 400 experimental stations.

Regional Centers, TCAs, Area Directorate (1998)



SOURCE: DIPRE, Information System on Technical Cooperation Instruments

STRATEGIC AREAS AND CODES	AREA II
I	✓ SUPPORT FOR TRADE NEGOTIATIONS – INTELLECTUAL PROPERTY RIGHTS
III	✓ BIOSAFETY- RESEARCH AGRICULTURAL HEALTH
IV	✓ TECHNOLOGY-RURAL POVERTY-INTEGRATED MANAGEMENT OF NATURAL RESOURCES
CODES	✓ INTEGRATED MANAGEMENT OF NATURAL RESOURCES
EDUCATION AND TRAINING (CECADI)	✓ EVALUATION OF SOCIOECONOMIC IMPACT ✓ REGIONAL CENTERS FOR TRAINING IN GENETIC RESOURCES-NATURAL RESOURCES.

FIGURE 4

REGIONAL PRIORITIES ACCORDING TO MTP

ANDEAN REGION	CARIBBEAN REGION	CENTRAL REGION	NORTHERN REGION	SOUTHERN REGION
<p>National research and technology transfer systems will be strengthened. To this end, priority will be given to the development and consolidation of reciprocal cooperation mechanisms (e.g., PROCIANDINO) that place special emphasis on: i) strategic planning and the integration of the areas of planning, monitoring and the evaluation; ii) training for human resources in strategic areas of technology innovation; iii) formulating projects that, preferably, are co-financed and fostering the creation of consortia to gain access to new sources of funding for agricultural research; and iv) sharing and disseminating successful experiences.</p>	<p>Efforts will be made to spur the development of national technology innovation systems; prepare and execute programs and projects to improve agricultural competitiveness; and conserve and multiply plant genetic resources.</p>	<p>Drawing on the experience gained with SICTA, the Institute will promote the creation of the Regional Innovation System. Special emphasis will also be placed on expanding the IICAH-HILLSIDES Programs, with the aim of encouraging the countries to adopt policies, and prepare and implement projects fostering sustainable hillside agriculture. It will also foster the adoption of methodologies developed by the Program by the corresponding extension services.</p>	<p>The focus of this area will be on the exchange of research findings and technical information on agriculture, livestock, agriculture and forestry. IICA will promote the establishment of networks and programs for exchanging data and information that facilitate technology transfer in these fields.</p>	<p>Further changes will be encouraged in the technological paradigms used to date. Efforts will also be made to introduce the concepts of competitiveness, equity and sustainability into the new technologies developed for products targeted for domestic consumption and for export.</p> <p>Water management</p>

GLOSARIO DE SIGLAS

SIGLA	SIGNIFICADO DE LA SIGLA
ACT	Agencia de Cooperación Técnica (del IICA)
ADPIC	
ALC	América Latina y el Caribe
AVRDC	Asian Vegetable and Research Development Centre
BCIE	Banco Centroamericano de Integración Económica
BID	Banco Interamericano de Desarrollo
BIRF	Banco Internacional de Reconstrucción y Fomento o Banco Mundial
CARDI	Caribbean Agricultural Research and Development Institute
CATIE	Centro Agronómico Tropical de Investigación y Enseñanza
CIAT	Centro Internacional de Agricultura Tropical
CIMMYT	Centro Internacional para el Mejoramiento del Maíz y del Trigo
CIP	Centro Internacional de la Papa
CIRAD	
CODES	
CONPLAC	
CORPOICA	
DG	Director o Dirección General (del IICA)
DGIS	
DIRE	
EMBRAPA	Empresa Brasileña de Pesquisa Agrícola
ESDAR	
FAO	Food Agriculture Organization
FONAIAP	Fondo Nacional de Investigaciones Agropecuarias
FONTAGRO	Fondo Regional de Tecnología Agropecuaria
FORAGRO	Foro Regional de Investigación y Desarrollo Tecnológico
GTZ	

INIFAP	Instituto Nacional de Investigaciones Forestales, Agrícolas y Pecuarias
INTA	Instituto Nacional de Tecnología Agrícola
IPGRI	International Plant Genetic Research Institute
ISNAR	International Service for National Agricultural Research
OMC	Organización Mundial del Comercio
PMP	Plan de Mediano Plazo (del IICA)
PROCI	Programas Cooperativos de Investigación Agrícola
PROGINORTE	Programa Cooperativo de Investigación Agrícola de la Subregión Norte
PROCITROPICOS	Programa Cooperativo de Investigación de los Trópicos Americanos
UNICAMP	Universidad de Campinas
UNESP	
USDA	United States Department of Agriculture
UWI	University of West Indies