



# Technology and Innovation Area

## Directorate of Technical Leadership and Knowledge Management

*Promoting the introduction of technology and innovation for the modernization of agriculture and rural development*

The challenges facing agriculture in the 21st century are diverse and complex. Facing them involves interventions of an economic, social, environmental and technological nature. There is an increasing demand worldwide from a growing population for more food. On the other hand, promoting competitiveness in a globalized economic context makes it necessary for agriculture and agribusiness to adapt to changing market conditions. On the environmental front, climate change and its impact on production clearly suggest the need to address problems like variations in the availability of water (lack or excess thereof), the reduction in agricultural productivity and the need for low-impact technologies to reduce the emission of greenhouse gases. There is also pressure on agriculture to meet growing demands in a context of resource constraints (availability of arable land) and to promote alternative uses of agriculture, such as agro-energy.

Under these conditions, technological innovation plays a decisive role on the development of countries, since it is a proven fact that technological change accounts for an average 30% to 40% of changes in agricultural production changes. On the other hand, it can contribute to a more efficient and sustainable use of natural resources.

Generally speaking, the countries of the Americas have a wealth of ecological resources, compared to other regions of the world. Most of them have acquired capabilities in technology generation and transfer. However, these conditions will not yield full benefit unless appropriate policies, institutional frameworks, organizational and management models for the effective development of research and technological innovation and the introduction of new technologies are put in place. The Technology and Innovation Area of the Directorate of Technical Leadership and Knowledge Management (DTLKM) aims to support the efforts of the member countries to modernize agriculture and enhance its contribution to economic, social and environmental development. This is done by supporting and promoting the design of technological policies, processes for institutional innovation and the development and use of technological innovations that promote and facilitate the incorporation of new knowledge and technologies into agricultural production chains.

### HEMISPHERIC AGENDA IN T&I

The technical cooperation offered by the Area of Technology and Innovation focuses on the following areas of concentration:

#### A prospective vision of technology and innovation as they apply to agriculture

**Objective:** to promote the development of a global and regional vision of the state of technology and innovation with a view to assisting the countries in developing new products and markets, increasing productivity and improving the competitive development of agriculture and reducing rural poverty

Actions implemented regarding this concentration area are:

- Analysis and periodic dissemination of strategic information on advances in and the performance of agriculture and technology and innovation, in support of the design of policies
- Report on indicators of agricultural science and technology
- Assessment of the role of science and technology in reducing rural poverty in the region

**Products:** periodic reports on the performance of agriculture from the standpoint of technology; conceptual and methodological frameworks for indicators on technology and innovation in the region; analytical documents on the role of S&T in agriculture and development.

#### Support for institutional modernization and the design of technological policies for the development and incorporation of technological innovations

**Objective:** To support the design of policies and institutional transformation for research, extension services and technological innovation, from the perspective of the national innovation systems and their member organizations

To accomplish the objective three types of actions are implemented:

- Development of guidelines to support the review and strengthening of institutional innovations for research and technological innovation and of a project for an exchange of experiences among countries and regions
- Support for the design of policies on technological innovation, with an emphasis on those that will promote the diversification of small-scale agriculture and its integration into markets
- Development of guidelines for designing policies and managing intellectual property for innovation in agriculture, and for providing training in this area

**Products:** Conceptual frameworks, methodologies, and guidelines for institutional innovation, as well as for the design of policies, the prospective analysis of national technological innovation systems

#### Strengthening of the hemispheric system for cooperation among countries in agricultural technological innovation, and its linkage to the international research system

**Objective:** strengthen the hemispheric system for reciprocal cooperation in technological innovation among countries, and its linkage to the global research system, to contribute to agricultural production, productivity and competitiveness.

The actions linked to this objective are:

- Consolidation of FORAGRO as a mechanism for hemispheric dialogue on policies among public and private stakeholders, for analyzing and seeking solutions to problems, from the perspective of research and technological innovation.
- Technical support for the consolidation of FONTAGRO as a mechanism for financing regional research and technological innovation projects.
- Strengthening and articulation of regional programs for reciprocal cooperation among countries (PROCIS, PROMECAFE, SICTA and equivalent mechanisms) and promotion of their links to the international research system.

**Products:** Platforms for hemispheric dialogue among public and private stakeholders in the Americas; methodologies for multidimensional impact evaluations of agricultural research; dissemination of the results of regional research and innovation projects; institutional platforms for regional cooperation among countries in research and for the development of capabilities in research and innovation through the following programs: PROCINORTE, PROMECAFE, PROCIANDINO, PROCITROPICOS, PROCISUR, SICTA and PROCICARIBE.

## Promotion of information management in support of technological innovation processes

**Objective:** to increase awareness of, provide training in, and develop options for sharing, circulating and using technological information as part of the management of knowledge of agricultural technology. The actions to accomplish this objective are:

- Characterization of the management of information on agricultural technologies in institutions involved in research and technological innovation, to support the design of policies and decision-making on this topic
- Training in support of the organization of technological information systems, through the development of conceptual frameworks and methodological options for gathering, mobilizing and disseminating knowledge
- Consolidation of the Scientific and Technological Information System for the Agricultural Sector in the Americas (INFOTEC) as a strategic reference for technological innovation.

**Products:** On-line system for sharing and accessing agricultural scientific and technological information, INFOTEC. Inclusion of management of technical information as a key topic within the framework of institutional innovation strategies.

## IMPLEMENTATION STRATEGY

The work of the Area is based on:

- Internalization of demands from the countries expressed through the governing bodies of the Institute and reflected in the Medium-term Plan and of those that are more specific and that emerge from a dynamic environment in the countries, such as regional ministerial councils, boards of regional programs and hemispheric fora for technological innovation.
- Knowledge management: the knowledge and experiences of the T&I specialists are a valuable resource for technical cooperation and are shared to improve the services and products that the Area provides, thereby creating a community of practice for technological innovation in agriculture in the Americas.

- Development of studies and analysis on agriculture, science and technology, and aspects regarding technological policies, through the collaborative action among professionals of the Institute, from the countries and recognized international experts in topics of the Area.
- Promotion of partnerships with national, regional and international institutions such as GFAR, CGIAR, technical cooperation and funding organizations in developed countries, IADB and the World Bank, among others.
- Establishment of regional platforms and hemispheric fora, including public and private stakeholders, for dialogue and analysis of strategic topics for agriculture and cooperation in technological innovation among countries.
- Interthematic work: the complexity of the topics and challenges related to agriculture from the perspective of technology calls for joint actions with other thematic areas such as agribusiness, agro-industry, biotechnology and information management, among others.
- Articulation with IICA's regional and national technical cooperation agendas: through constant interaction and contact with the regional specialists, as well as the monitoring of developments in institutional innovations in the hemisphere, the Area manages to link the regional technology and innovation agendas in order to meet the needs and challenges of countries and regions.

## WHAT DOES TECHNOLOGY AND INNOVATION AREA OFFER?

In short, IICA's technical cooperation in Technology and Innovation yields the following products and services:

- Strategic information on the performance of agriculture from the perspective of technology, and on progress in science and technology in support of the design of policies and decision-making processes.
- Conceptual frameworks and guidelines for the design of technological policies and institutional innovation processes
- Direct technical cooperation for institutional modernization processes for research and technological innovation in countries and regions
- Documentation and publication of topics relevant to research and technological innovation in agriculture.
- Platforms, technical cooperation and administrative support for the hemispheric system of technological innovation, for cooperation among countries and the execution of regional cooperative projects in technological innovation
- A scientific and technological information sharing system and elements for the design of strategies for technical information management in support of technological innovation.

Innovation and Technology Area  
Directorate of Technical Leadership and Knowledge Management  
PO Box 55-2200 San Jose, Vazquez de Coronado, San Isidro 11101— Costa Rica  
Telephone: (506) 216-0222—Fax (506) 216-0233  
Email: [enrique.alarcon@iica.int](mailto:enrique.alarcon@iica.int)  
Web site: <http://www.iica.int>