

- 
- Agriculture and the new **challenges of development**
  - The Peru-US Trade Promotion Agreement. **Possible impact on Peruvian agriculture**
  - **Information management** for agricultural technology innovation
  - **Sustainable development and territorial approach:** identities and typologies
  - The shaping of **State Policy** for rural development in Paraguay



Foreword

4



The Peru-US Trade Promotion Agreement (TPA): Possible impact on Peruvian agriculture

5



Information management for agricultural technology innovation

17



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## Agriculture and the new challenges of development

27



Sustainable development and the territorial approach: identities and typologies

42



The shaping of State policy for rural development in Paraguay

49

IICA is pleased to present the second issue of its magazine *ComunIICA*, a publication that forms part of its knowledge management strategy. The Institute's aim is to continuously harness intellectual capital by sharing experiences and viewpoints, thereby supporting the dissemination of technical knowledge of interest to the different decision-makers involved in agriculture and rural life.

The Directorate of Technical Leadership and Management is responsible for spearheading these efforts and one of its goals is to position this journal as a permanent vehicle for sharing experiences and learning, and promoting the technical work of the Institute and its strategic partners. The publication is also intended to facilitate the decision-making processes of agricultural actors and encourage horizontal cooperation among the countries.

The editors' brief is to present important technical topics and innovative actions carried out by IICA and its Member States. This issue contains five articles by the Institute's teams of specialists on topics that institutions, in particular, should place on their planning agendas. Also intended for a wider audience, the articles deal with emerging, cutting-edge issues of crucial importance to the development of agriculture and rural life. The situation in the agricultural sector and rural territories needs to be reviewed and new instruments and

methodologies adopted; and new policies developed and executed as part of the ground-breaking, sustainable and dynamic solutions needed in the Americas.

Accordingly, this issue looks at the main challenges facing agriculture in the hemisphere in light of the new conditions of contemporary development. Some of the topics that have assumed major importance are international trade and its instruments, information management in agricultural technological innovation, the development of State policies and methodologies for implementing the territorial approach. The articles also highlight the need for the grassroots to play a bigger role and show greater commitment, and for the institutions responsible for development and wellbeing in rural areas to demonstrate clear leadership.

Due to its broad institutional audience in the Institute's 34 Member States, *ComunIICA* is a useful tool for transferring knowledge and presenting the work being carried out in aid of sustainable agriculture and rural prosperity. Accordingly, IICA's Directorate of Technical Leadership and Knowledge Management reiterates its invitation to all Institute professionals, as well as those of partner institutions, to contribute to future issues of *ComunIICA*.

In order to disseminate the journal as widely as possible, Web users can download a digital copy of *ComunIICA* at [www.iica.int](http://www.iica.int).



# The Peru-US Trade Promotion Agreement (TPA): Possible impact on Peruvian agriculture

Julio Paz Cafferata<sup>1</sup> and Joaquin Arias Segura<sup>2</sup>

## Summary

Trade negotiations between Peru and the United States started on May 18, 2004 and concluded on December 7, 2005 with the signing of a Trade Promotion Agreement (TPA). This article summarizes the most important aspects of the reciprocal opening of agricultural markets between both countries and examines the possible economic impact of the TPA from the global and sectoral perspectives, as well as from the point of view of products or agro-production chains.

The conclusion is that the elimination of tariffs on imports from the United States would have a limited impact on the competitive position of most agricultural products on the domestic market, basically due to the fact that most of the opening of trade in many agricultural subsectors involves relatively low tariffs, and high protection is circumscribed, involving three lines of products (rice, sugar and dairy products). This study describes the differences in the impact of the TPA in terms of sensitive products, native products or tropical products destined for the domestic market, or export products.

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**Key words:** *agricultural markets, trade promotion agreement, economic impact, tariffs trade opening.*

## Background

Since the early nineties, Peru has been the most persistent of all the Andean countries in pursuing a policy to open up foreign trade. The importance of Peru's foreign trade in relation to its Gross Domestic Product can be seen in the 64% growth rate over the last 15 years. Total exports, on the other hand, grew at an annual average rate of 9%. This dynamic has largely been the result of the Andean Trade Promotion and Drug Eradication Act (ATPDEA) which afforded the Andean countries special access for their products on the United States market. In 2004, more than 12% of Peruvian exports reached the US market under this preferential system. If we exclude the petroleum and petroleum byproducts trade, Peru is the Andean country that most profited from the ATPDEA.

In this context, the negotiation of a trade agreement with the US was intended primarily to consolidate and expand the tariff preferences granted under the ATPDEA and to promote greater stability and security for investment, exports and jobs generated in the domestic economy. That negotiation started on May 18, 2004 and concluded on December 7, 2005 with the signing of a Trade Promotion Agreement.

### Reciprocal opening of agricultural markets

The TPA consolidates tariff-free access to the US market for 90% of tariff items from the agricultural sector, including all products currently benefiting from the ATPDEA. This

means that commodities that are important for Peru, such as artichokes, onions, asparagus, mango, dried vegetables, paprika, plantain, grapes, and other fruits and vegetables, as well as ethanol, will continue to enjoy uninterrupted preferential access to the United States at zero duty, on the entry into effect of the agreement. In addition, with the TPA, this preferential access will be extended to other products such as olives, cotton fiber, other vegetable and fruit preserves where Peru is a highly competitive producer on the world market.

Other agricultural items that are not marketed on a large scale will be subject to tariff elimination over a five- to 17-year period, depending on the sensitivity of the products involved. This reduces the medium- and long-term uncertainty about access to the United States market and the expectation is that an increase in, as well as a diversification of, exports as well as investments in agriculture will be facilitated.

For its part, Peru agreed to eliminate immediately tariffs on 56% of imports originating in the United States, i.e., 89% of the total value imported from that country. For 125 tariff items in the sensitive products category, such as refined oils, rice, beef, chicken leg quarters, dairy products, hard yellow corn, the elimination of tariffs will have a ten- to 17-year phase-out period. For these products, however, Peru will partially open its market on the entry into force of the agreement by means of 0 duty tariff rate quotas, which will increase annually and which will be subject to the application of safeguard measures.

## Estimated impact of the TPA

Throughout the negotiation process, a number of government agencies, trade union associations and academic and research institutions have endeavored to assess the likely impact of the TPA on the Peruvian economy through studies that have varied in depth of scale and that have been based on different methodologies, statistical information and hypotheses. In general, these studies may be differentiated according to their overall or sectoral coverage or coverage by product. They may also be differentiated according to their method of analysis, since many of them are based on a qualitative analysis using selected statistical series from which logical conclusions may be drawn. Others are more quantitative in character and are based on the use of econometric or accounting models. This article reviews the leading studies on the effects of trade liberalization with the United States, especially in the agricultural area and includes the results of the model for assessing the impact on the agricultural sector used by IICA.

## Overall impact assessment

Noteworthy among the overall studies are those conducted by Pizarro (2004), at the Ministry of Foreign Trade and Tourism (Ministerio de Comercio Exterior y Turismo -MINCETUR) and by the Inter-American Development Bank (IDB); by Morón (2005) at the Research Center of the University of the Pacific; and by Escobal and Ponce (2006) from the Group for the Analysis of Development (GRADE).

The first two studies sought to estimate the economic impact of tariff concessions granted mutually by Peru and the United States and trade earnings arising from a more efficient allocation of resources and from increased prospects for consumption with the signing of the TPA. All of the studies agree that the Peruvian economy would stand to benefit from the signing of the TPA and estimate that Peruvian exports will be consolidated on the North American market. Employment would also be promoted in the production sectors, which would make the economy as a whole more dynamic and generate wellbeing in the entire population.

The study by MINCETUR estimated that, as a result of the entry into force of the TPA, Peruvian GDP would grow by 2,3%. This growth is explained by the 0 duty access to the North American market and the reduced prices for importing final and intermediate goods, which would benefit national producers and consumers. What is more, production would go up as a result of increases in certain manufactures and agricultural export products, such as vegetables, fruits and other crops.

One finding of the MINCETUR study that might come as a surprise to some is the relative increase in imports from the United States (44%), as compared with a 31% increase in Peruvian exports to that market, using 2002 figures as a baseline. This situation could be explained by the

*All of the studies agree that the Peruvian economy would stand to benefit from the signing of the TPA and estimate that Peruvian exports will be consolidated on the North American market. Employment would also be promoted in the production sectors, which would make the economy as a whole more dynamic and generate wellbeing in the entire population.*



fact that Peru already enjoys most of the tariff benefits under the ATPDEA, whereas the United States would gain new advantages it did not enjoy prior to the TPA.

This finding is similar to that described in the report of the United States International Trade Commission, which estimates a 25 per cent increase in US exports to the Peruvian market, whereas Peruvian imports to the US market would increase by 8% over recorded levels in 2005. One possible explanation for the difference between the two findings is the base year used for the projections.

The model of the University of the Pacific estimates the expected effects 20 years after the entry into force of the TPA, using 2002 as a base year. This study suggests that the positive effects expected from the signing of the TPA would depend on the possibility of expanding the productivity of all inputs which, in recent years, have not experienced growth. This study calculates an increase of 3,3% to 4,9% in GDP, depending on the scenario and premises used.

The third overall study presented by Escobal and Ponce (2006) uses a general equilibrium model and seeks to establish ranges with regard to the impact that the TPA tariff elimination would have on rural households in the three Peruvian regions (coastal, mountain and forest regions). In this study, the results of trade liberalization are positive, since they translate into increased wellbeing, in the amount of 215 to 417 million dollars (0,32% to 0,61% of GDP). However, the rural sector could be affected by the tariff reduction which would apply to maize and rice produced in the forest region, and dairy products and meats from the mountain region.

## Sectoral impact assessment

The main concern of agricultural unions in Peru has been the possible effect that duty-free imports from the United States could have on "sensitive" products. Several criteria have, however, been used to determine the degree of "sensitivity" of the various products facing US competition. An initial set of criteria takes into account the importance of the headings in production, employment and income in the agrifood sector.

In this sense, the potentially sensitive products, such as grains (wheat, yellow corn, barley), cotton and rice accounted for approximately 41 % of the harvested area, equivalent to 35% of the gross value of agricultural output from 2004-2005. Products that are not "sensitive" and that are capable of competing advantageously with imports from the US, as well as native or tropical products destined for domestic consumption, and export crops, account for the rest of the harvested area.

No direct negative impact can be expected for products such as amylaceous maize, quinoa, *Ullucus tuberosus*, broad bean, coffee, cacao, plantain and other tropical fruits on the domestic market since the United States does not produce these crops.

For some other products, the displacement of national production is highly unlikely, given the consumption patterns of Peruvians which relate to the flavor and freshness of the product, and eating habits (whole fresh potato vs. frozen sliced potato). In other cases, the reasons have to



do with economics, and relate to the price differential and/or the heavy impact of transport costs on the price of the imported product (beef, fructose syrup).

In accordance with the sectoral studies conducted by IICA, in conjunction with MINAG and MINCETUR, the possible

negative effect on output would be limited to four products: wheat, cotton, corn and rice. This would be in response to the net increase in imports with regard to these specific products. It bears noting that in many instances, trade liberalization would divert trade from other competitive countries to the United States. (Table 1).

	MINCETUR			IICA	
	Prod.	Export.	Import.	Prod.	Import.
Unhusked rice	0.6	0.0	11.0	0.4	13.4
Processed rice	-0,2	-0.1	2.4	0.4	1.1
Hard yellow corn	n.d.	n.d.	n.d.	-0.4	1.9
Wheat	-4.7	-0.1	8.0	-4.6	2.0
Other cereals	0.4	-2.8	4.1	n.d.	n.d.
Vegetables, fruits and nuts	2.8	8.7	6.2	n.d.	n.d.
Sugarcane and beets	1.7	0.0	6.7	0.5	n.d.
Sugar	1.6	0.6	6.9	0.5	-0.6
Cotton	-2.4	-3.9	8.6	0.6	n.d.
Other crops	2.9	9.8	11.4	n.d.	n.d.
Cattle	1.7	-3.9	6.9	n.d.	n.d.
Chicken meat	n.d.	n.d.	n.d.	0.2	4.9
Beef meat	n.d.	n.d.	n.d.	0.3	1.2
Pork meat	n.d.	n.d.	n.d.	0.2	0.6
Dairy products	1.7	7.7	6.3	n.d.	n.d.
Whole milk	1.7	-11.8	8.3	0.5	n.d.
Other products of animal origin	1.4	-1.9	8.7	n.d.	n.d.
Meat products	0.7	-4.2	27.1	n.d.	n.d.
Other meat products	1.1	-5.3	43.1	n.d.	n.d.
Other food products	0.8	-0.4	5.6	n.d.	n.d.

**Table 1. Impact of the TPA on sensitive agricultural products (% variation)**

Source: Prepared on the basis of the findings included in the studies by Moron (2005) and MINAG (2006)



These studies conclude that Peruvian imports from the United States would increase in relation to levels recorded in 2002. This is a logical outcome, given the preferential opening under the TPA and the resulting estimations for this heading are quite moderate, all the more so if we consider the low figures for imports from the United States recorded in the base year, 2002.

imports from the United States. During the period 2004-2005, Peruvian yellow corn competed with imported corn originating in Argentina, the delivery price of which was estimated to be 10% lower than the delivery price of US corn. The elimination of tariffs in favor of the United States might not make up for that differential given the current trend towards an increase in the price of yellow corn on that market.

Moreover, compensation in favor of corn producers, to which the Peruvian government has committed itself during the negotiation of the TPA, should contribute towards an increase in production levels, inter alia, from the increased use of certified seed.

## Impact assessments according to product

Several studies conducted by the Ministry of Agriculture are aimed at assessing the degree of competitiveness of products considered sensitive that are intended for the Peruvian domestic market, in the face of potential imports from the United States (MINAG 2006). Here, the CIF prices for importing US products in the period 2000-2005 were taken into account (cost of insurance and freight) and were compared with the prices of locally produced similar products at the same sales point.<sup>3</sup>

No significant impact is expected for the national production of wheat either. On the one hand, notwithstanding the reduced national output of wheat, there will be no competition with wheat imported from the United States which is of a different quality and has different uses and destination markets. On the other hand, those producers who sell their product to industrial mills will benefit from a compensation program to which the government committed itself during the negotiation.

## Cereals

The hard yellow corn-poultry-pork chain would maintain their competitive position on the domestic market vis-à-vis potential

With regard to wheat-based final products, it has been estimated that without the tariff, in the best case scenario, the nationalized price of wheat would drive down the price of wheat flour by approximately 4%. Three per cent of that reduction would be passed on to the price of noodles and two per cent

<sup>3</sup> For most of the products considered sensitive for Peru, US prices continued to increase in 2006 and show an upward trend for the next ten years (this is the case with rice, corn, wheat, cotton, sugar, pork, milk and sugar) See projections through 2016 from the Food and Agricultural Policy Research (FAPRI) and the ERS.

would be passed on to the price of bread. For this reason, the hope is that the effects of the substitution in consumption, in favor of wheat derivatives and to the detriment of local products like potato, will be limited.

With respect to rice, two scenarios with different relative prices for US imports and locally-produced rice have been estimated (average prices for the last year and average prices for the last five years). In both cases, the reduction in tariffs for North American rice could generate an increase in those imports, which would, in principle, displace Uruguayan rice imports (trade diversion) in the high-quality rice market segment. National output could also be displaced and assistance would therefore be required for adjustment purposes.

This crop is not considered among the direct compensation measures, but rather in investment programs for land drainage and reclamation programs. This is because rice cultivation contributes to the problem of soil salination, especially on the coast, because of high water consumption. It is estimated that an area covering 146,000 hectares is severely affected by this problem. In this regard, support measures anticipated by the government during the negotiation are established in the following programs:

- a. Investment for drainage and reclamation of salinized lands;
- b. Redirection towards other crops;
- c. Reduction in the transaction costs related to rice from the forest regions to improve competitiveness.



## Meats

**Trade in chicken meat.** Comparative price studies allay fears about a possible massive increase in imports. It is estimated that these imports would be moderate due to the following:

- a. Consumption patterns in Peru show a preference for fresh meat.
- b. Insufficient refrigeration infrastructure for the commercial management of frozen poultry.
- c. The limited price differential that could result from the total elimination of tariffs and duties.
- d. The relative downturn in the price of hard yellow corn and other inputs for production vis-à-vis competitors in the United States.

The competitiveness of the poultry sector is expected to improve as a result of support for the corn-poultry chain producers to which the government has committed itself.

**Beef.** Standard beef, such as prime and choice grades from North America that



► *The results of the simulation of the nationalized prices of reconstituted milk prepared with skimmed milk powder (SMP) and anhydrous milk fat (AMF) imported from the United States show that despite the elimination of taxes, they are still higher than national price levels. In the case of whole milk powder (WMP), price levels after the elimination of taxes are ten per cent higher than national prices.*

would enter the domestic market through the quota and therefore, without the payment of tariffs would be twice the price of similar meats produced locally. However, the quota-based entry of edible leftovers (entrails) from the United States could bring down the consumer prices of these byproducts as well as the income of stock farmers in this heading, which currently accounts for 6% of income per head of cattle.

**Pork.** There should be no significant increase in imports, due to the limited difference in prices. However, a displacement in imports from Chile, which enjoys free entry to the Peruvian market, is to be expected. It is important to emphasize, however, that these effects are subject to any support programs established for this sector.

## **Dairy products**

In the case of dairy products, bilateral trade will be regulated by tariff rate quotas and the long-term phasing out of taxes and customs duties. The results of the simulation of the nationalized prices of reconstituted milk prepared with skimmed milk powder (SMP) and anhydrous milk fat (AMF) imported from the United States show that despite the elimination of taxes, they are still higher than national price levels. In the case of whole milk powder (WMP), price levels after the elimination of taxes are ten per cent higher than national prices.

USDA projections show a 12% rise in the prices of dairy products over the next ten years, due primarily to the increased cost of cattle feed. However, by the first half of 2007, the international prices of whole milk powder were 64% higher than the average in 2004-2005. National milk is therefore more competitive than imported milk from the United States, all the more so when the price trend over the past two years is taken into account. Another positive factor in

terms of the competitiveness of the sector has been the improvement in domestic cattle farming for milk production.

## Cotton

With regard to cotton, the tariff reduction (12%) would bring about a 10% drop in the nationalized price. This would apparently lead to an increase in imports. However, one factor to be taken into account is the fact that the national textile industry depends more on the domestic supply of tanguis cotton which has better properties than imported cotton.<sup>4</sup>

Despite the fact that the prices of American cotton (upland variety) are higher than those from the other suppliers, the lower cost of imports could also result in a displacement in imports from Brazil, Bolivia and Argentina. This crop is included in the tariff reduction compensatory program proposed by the Peruvian government during negotiation of the TPA, which would make it possible to maintain a competitive position vis-à-vis the United States.

## Sugar

The TPA poses a challenge for the Peruvian sugar industry because of the possible entry of tariff-free high-fructose corn syrup. On the other hand, that agreement ensures for Peru access for the future Peruvian



production of ethanol to the North American energy market. The balance is clearly positive for the sugar sector as regards costs and benefits in the medium and long term, especially following the clear-cut decision by the US to increase the use of ethanol as an oil substitute.

The likely increase in Peruvian imports of US fructose will depend on trends in the domestic and international prices of sugar as compared with fructose, which will ultimately be affected by high oil prices. In this regard, the tariff reduction for fructose imports under the TPA is hardly significant when compared with the momentous changes that have taken place in the international sugar sector over the last two years.

Good times are therefore ahead for the Peruvian sugar industry as a result of continuing high international prices, even if fructose imports increase as a result

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<sup>4</sup> Tanguis cotton offers better conditions than American imported cotton for the process of opening, carding, combing and spinning. Losses in Tanguis cotton are 14% versus 21% in the upland cotton. American cotton also has more neps (knots that form in the fibers), which must be eliminated with the combing. What is more, the process of dyeing tanguis cotton makes it possible to save on chemical products and dyes in the dyeing process (approximately 30%) because it has less dye affinity and less impurities.

of relatively lower prices in relation to the price of sugar on the world market.

## Conclusions

The favorable prospects that might be expected for Peruvian agriculture under the TPA are clearly related to the initial economic situation with regard to the opening up of trade in that country. Many agricultural subsectors enjoyed fairly low tariffs and high protection was concentrated in three lines of products (rice, sugar and dairy products). This is why the elimination of tariffs on imports from the United States would generally have a limited impact on the competitive position of most agricultural products on the domestic market.

► *On the other hand, that agreement ensures for Peru access for the future Peruvian production of ethanol to the North American energy market. The balance is clearly positive for the sugar sector as regards costs and benefits in the medium and long term, especially following the clear-cut decision by the US to increase the use of ethanol as an oil substitute.*

The foregoing was borne out by the findings of the impact studies conducted at the overall, sectoral and by product levels, especially when price comparisons are taken into account. This conclusion would seem to be



reinforced by projections of international price increases over the next ten years by various international research institutes.

Despite the overall positive effect of the TPA on the agricultural sector, according to studies conducted, adjustments would need to be facilitated in certain subsectors and regions that could be affected by competition from imports. Accordingly, during the negotiations, consideration was given to applying a compensation system for a limited group of sensitive products and instituting a series of agricultural policy measures to reinforce the competitiveness and modernization

of the agricultural sector so as to inject vitality into the sector and ensure increased income growth and employment in the rural milieu.

In other words, measures would have to be adopted to develop agricultural exports and facilitate adjustments in production intended for the domestic market, given the new conditions for competition.

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# Résumé / Resumo / Resumen

## ► **L'accord de promotion du commerce entre le Pérou et les États-Unis. Ses répercussions éventuelles sur l'agriculture péruvienne**

Les négociations commerciales entre le Pérou et les États-Unis ont commencé le 18 mai 2004 et se sont terminées le 7 décembre 2005, par la signature d'un Accord de promotion du commerce (APC). Cet article résume les aspects les plus importants de l'ouverture réciproque des marchés agricoles entre les deux pays et analyse l'éventuel impact économique de l'APC dans une perspective globale, sectorielle et par produits ou filières agroproductives.

Il conclut que l'élimination des droits de douane sur les importations en provenance des États-Unis n'aurait, que peu d'impact sur la position concurrentielle sur le marché national de la plupart des produits agricoles, essentiellement parce que la plus grande ouverture commerciale de bon nombre de sous-secteurs agricoles s'effectue sur la base de tarifs douaniers relativement faibles et que la forte protection se concentre sur trois lignes de produits (le riz, le sucre et les produits lactés). Cette étude montre les différences d'impact de l'ACP selon qu'il s'agit de produits sensibles, de produits natifs ou de produits tropicaux destinés au marché national ou de produits d'exportation.

## ► **O acordo de promoção comercial Peru-Estados Unidos: possíveis impactos na agricultura peruana**

As negociações comerciais entre o Peru e os Estados Unidos iniciaram-se em 18 de maio de 2004 e concluíram em 7 de dezembro de 2005 com a assinatura do Acordo de Promoção Comercial (APC). Este artigo resume os aspectos mais importantes da abertura recíproca dos mercados agrícolas entre esses dois países e analisa o possível impacto econômico do APC sob a perspectiva global, setorial e por produtos ou cadeias agroprodutivas.

A conclusão é que a eliminação de tarifas nas importações dos Estados Unidos teria um impacto reduzido na posição competitiva da maioria dos produtos agrícolas no mercado interno. Isso se deve, basicamente, a que a maior abertura comercial de muitos subsectores da agricultura se dá a partir de tarifas relativamente baixas e ao fato de a alta proteção concentrar-se em três linhas de produtos (arroz, açúcar e derivados do leite). Este estudo mostra as diferenças no impacto do APC quando se trata de produtos sensíveis, nativos ou tropicais destinados ao mercado interno ou de produtos para exportação.

## ► **El acuerdo de promoción comercial Perú-EE.UU. Posibles impactos en la agricultura peruana**

Las negociaciones comerciales entre Perú y EE.UU. iniciaron el 18 de mayo de 2004 y concluyeron el 7 de diciembre de 2005, con la firma de un Acuerdo de Promoción Comercial (APC). En este artículo se resumen los aspectos más importantes de la apertura recíproca de los mercados agrícolas entre ambos países y se analiza el posible impacto económico del APC desde una perspectiva global, sectorial y por productos o cadenas agroproductivas.

Se concluye que la eliminación de aranceles para las importaciones desde los EE.UU. tendrían un impacto reducido en la posición competitiva de la mayoría de productos agrícolas en el mercado interno, debido fundamentalmente a que la mayor apertura comercial de muchos subsectores de la agricultura se da a partir de aranceles relativamente bajos y la alta protección se concentra en tres líneas de productos (arroz, azúcar y lácteos). Este estudio da cuenta de las diferencias en el impacto del APC cuando se trata de productos sensibles, productos nativos o productos tropicales destinados al mercado interno o productos de exportación.



# Information management for agricultural technology innovation<sup>1</sup>

Viviana Palmieri<sup>2</sup> and Lornel Rivas<sup>3</sup>

## Summary

Technical information is a key element of any innovation or research process undertaken in the agricultural sector. Institutions that promote such processes are currently facing a number of challenges in relation to information management (IM). Processes must be carried out in a changing environment characterized by an exponential increase in the amount of potentially important information available, the continuing development of information and communication technologies (ICT), as well as other factors. The challenges include the need to incorporate information explicitly into the planning and execution of all institutional processes and to make maximum use of the tools offered by ICT, which will generate support for knowledge management processes. IM entails a set of actions that include: a) defining objectives and priorities related to the field of information; and b) planning, facilitating and coordinating the activities needed to attain the objectives set.

<sup>1</sup> The authors would like to thank Franz Martin, Information Management Officer at the FAO Regional Office for Latin America and the Caribbean (RLC) for his revision of, and contributions to, this document.

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**Key words:** *information management, information strategy, knowledge management, agricultural information, technical information, technological innovation.*

## Introduction

▶ *Information management (IM) is the process of capturing, classifying, preserving, retrieving, sharing and disseminating the information that an organization generates, receives and/or acquires (Sánchez 2006).*

Information is one of the fields that has been most affected by major, rapid changes in recent years. This sphere of activity -which includes individuals, organizations, information and communication technologies (ICT), as well as information itself- is especially important for organizations involved in scientific and technological research and innovation processes in the agricultural sector. Information is the basic element of any technological innovation and a key component of all innovation and research processes. Any effort to improve its use will help achieve the objectives of such processes.

**Information management (IM)** is the process of capturing, classifying, preserving, retrieving, sharing and disseminating the information that an organization generates, receives and/or acquires (Sánchez 2006). The context is especially important for the concept of IM. O'Brien, for example, defines information as data that has been converted in a context that is significant and useful for specific end users (O'Brien 1999). **Information per se is passive; it becomes active as knowledge, when value is added through the generation of services and products** (Sánchez 2006).

In recent years, there has been an exponential increase in the amount of information available that is potentially important for agricultural production. Furthermore, changes in ICT have impacted the way in which organizations devoted to agricultural research and innovation work and have opened up a wide variety of new opportunities, while at the same time posing new and complex challenges. In exploring the potential value added of participatory research and development, Gonsalves et al. (2006) affirm that one of the key challenges is the development of the capacities of professionals and their organizations, through information services and the creation of networks.

To provide input on how to incorporate IM explicitly into the promotion of technological innovation, in this document we look briefly at the following points:

- a. First, information as the basic element of agricultural technology innovation;
- b. IM in the agricultural sector, including its characteristics and key activities; and, finally,
- c. The challenges facing IM.

## Technical information as the basic element of agricultural technology innovation

All agricultural technology innovation processes involve the participation of a series of actors who design, adjust, test and/or implement the change of process or product resulting from the innovation. Each actor possesses knowledge, acquired through study and experience, that needs to be shared for the system to work properly. This process entails converting each actor's knowledge and know-how into explicit knowledge that can be communicated to others. The more effectively the knowledge is shared, the greater the likelihood of converting it into a practical innovation.

After studying cases in several countries, Farrington *et al.* (2002) underscored the importance of analyzing and supporting a larger group of actors in and around the agricultural sector that need information, inter-linkages and training.

These actors - be they researchers, producers, information intermediaries, trainers or a combination thereof - do not make up an isolated system (see Figure 1). They may receive information from different sources that will enrich the innovation process and even make it possible. Such external information may be scientific, on technologies applicable to similar situations, on the productive process and its actors, or on the socioeconomic, political, biological or agro-ecological environment in which the process takes place. The "external" information supplements the

internal information shared by the actors and makes it possible to enrich or adjust the design of the innovations.

The end product of the process, which almost always will include the design and testing of alternatives, is information for innovation in the productive process. The knowledge generated has to be communicated to producers, information intermediaries (infomediaries), developers and researchers. This may seem obvious, but in many instances it is the step that is omitted in carrying out a successful process of innovation. Managing this dissemination of information, taking into account the different types of end users, is a process of the utmost importance if the effort is to be successful.

Particularly when the group of actors involved in the process make up an entity that specializes in promoting innovations (e.g., a research organization), the dissemination is not limited to making the knowledge generated available to the producers or intermediaries. Information about what is being done and accomplished also needs to be disseminated among the general public, policy-making entities, partners and the press. Such communication is essential to sensitize people to innovation activities and ensure that such activities are sustainable.

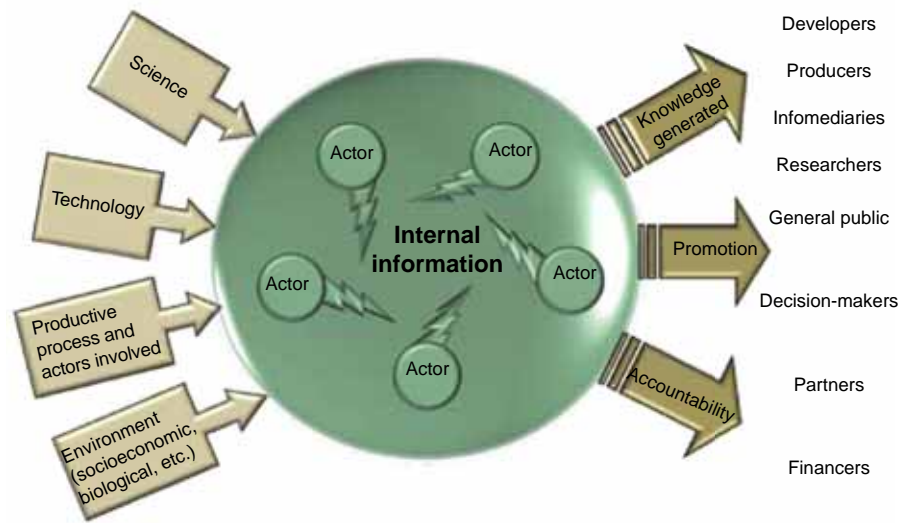
*This process entails converting each actor's knowledge and know-how into explicit knowledge that can be communicated to others. The more effectively the knowledge is shared, the greater the likelihood of converting it into a practical innovation.*



Finally, there is another category of information that the process must produce - information for the purpose of accountability, normally intended for the entities that

financed the process and their partners. This category also includes information for the decision-makers in charge of managing the process.

### Information in innovation processes



**Fig. 1. Main information flows in an agricultural technology innovation process**

Source: Elaborated by the authors.

Note: The term “actor” refers to all parties directly involved in the innovation process: researchers, producers, extension workers, suppliers and information intermediaries, and their organizations at the local level

In a recent study, the IICD (2006) suggested that increasing the efficiency and productivity of small-scale farms is one area where ICT can make a significant contribution to the attainment of the first Millennium Development Goal, i.e., the eradication of hunger and extreme poverty. The study states that farming is an uncertain business, with farmers facing threats from changing ecological and economic conditions. National

extension systems that used to provide information and advice to farmers have been drastically reduced (IICD 2006).

In this context, ICT can provide tools to facilitate the flow of information about production techniques to farmers and also open up new opportunities for farmers to document and share experiences with each other. Traditionally, the information flow has been



one-way. Thanks to ICT, systems and approaches have been put into place that allow input by local communities and dialogue between peers to be transmitted via two-way communication systems (IICD 2006).

### Components and activities involved in managing technological information in the agricultural sector

La GI incluye varios grupos de actividades:

- a. **Design** of the information strategy
- b. **Capture** of content (from external and internal sources)
- c. **Production** of new content
- d. **Storage and retrieval** of content captured and/or produced
- e. **Dissemination** of appropriate content among users
- f. **Evaluation** of the process

To carry out these activities, organizations also require five key resources:

- Enabling **policies**
- **Organization** with efficient structures and procedures
- Constructive and supportive **partnerships**
- Motivated and skilled **people**
- Appropriate **technology**

The activities regarded as IM are very broad in nature and place particular emphasis on the development of capacities that allow institutions to create, prepare and implement top-quality information products and services that are highly creative and consistent with the dynamic of social change (Valdes 1999).

At a recent workshop (RAIN 2007) held by the Association for Strengthening Agricultural Research in Eastern and Central Africa (ASARECA) to develop a postgraduate program in agricultural information and communication management, tasks were identified that the specialists of the future will be required to carry out, ranging

from managing indigenous knowledge to facilitating knowledge markets. All the tasks call for skills that will have to be developed (RAIN 2007).

The following are the major groups of activities that make up IM.<sup>4</sup>

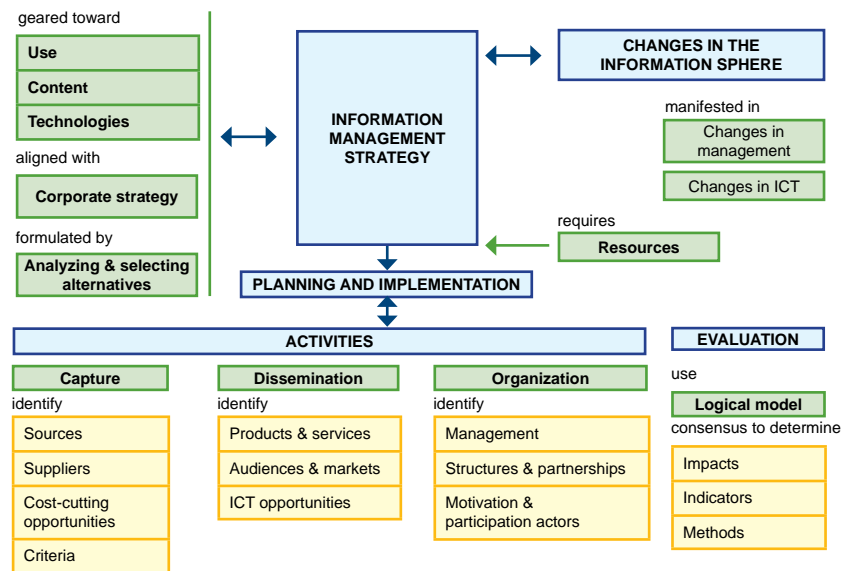
determining the processes it will spearhead (Fig. 2). In formulating an information strategy, mechanisms need to be put in place to involve the stakeholders in the strategic thinking process and monitor the stages of analysis, identification of alternatives and selection of options.

**1. An information strategy: a shared, guiding vision for management**

**2. Accessing or capturing information**

All information strategies must be based on a set of objectives and a description of how those objectives are to be achieved. The strategy should also be aligned with the institution's strategy in a logical, coordinated way. The strategy is the road map of the information manager,

Traditionally, capturing information has been thought of as accessing bibliographic sources. However, there are other types of information that are very important for making decisions about aspects of agricultural technology whose management should not be overlooked, such as:



**Fig. 2. Information strategy and management**

Source: Adapted from IMARK 2006.

<sup>4</sup> For further information about each type of activity, see the module “Investing in Agricultural Information” (IMARK 2006).

- The productive process and its actors
- The socioeconomic and agro-ecological environment
- Prices and markets
- The use of traditional knowledge
- The harnessing of internal information

In the case of bibliographic information, an increasing number of organizations are incorporating new ways of accessing information, with open source publications growing in importance. This type of resource can be used not only to capture external information, but also as an option for publishing one's own findings in scientific circles.

### 3. Organization

The activities include both those related to the organization and flow of information, and those that have to do with the management of the process and its actors. An example of the latter is the establishment of measures to motivate the different actors to take part in information projects.

### 4. Dissemination of information

Most agricultural organizations prepare and distribute information in different ways. An agricultural research institute may publish a document (containing information about

results), launch a new product (that applies those results) or offer a service (to promote a given technological innovation). In every case, information is the raw material. The delivery of pertinent information tailored to different target audiences is essential if organizations that promote agricultural technological innovation are to achieve their core objectives and ensure their own sustainability.

### 5. Evaluation

The evaluation of an information project provides its implementers with important feedback for making adjustments to improve the quality of the processes, products and services generated. The evaluation calls for good planning and management, and needs to be based on the logical model used for the design of the process in order to determine objectively what it is important to measure, and to encourage the active participation of all the stakeholders.

## Conclusions: Challenges facing IM

In Latin America and the Caribbean, members of innovation systems have made progress in developing some of the activities involved in information management and the use of ICT tools. Most organizations, however, have not developed an explicit information strategy as part of a consistent investment policy. Instead, they carry out a series of independent initiatives as part of isolated, often unconnected, activities



that have not been integrated into the institutions' programming processes. In only a few cases have mechanisms been established that facilitate and promote effective communication and the participation all the actors in IM needed for each innovation effort.

Accordingly, the priority challenges are as follows:

*Most organizations, however, have not developed an explicit information strategy as part of a consistent investment policy. Instead, they carry out a series of independent initiatives as part of isolated, often unconnected, activities that have not been integrated into the institutions' programming processes.*

- To ensure that the information strategy is explicit, is developed in a participatory and inclusive way, and forms an integral part of the organizational strategy.
- To achieve integrating visions and forms of communication, to ensure the necessary support and position information clearly as a primary and strategic good.

- To undertake effective capacity development at all levels and design the incentives needed for effective participation in strategic planning and the execution of IM activities.
- To make informal types of information part of IM: the recording and systematizing of experiences, individual or collective knowledge that has not been recorded or written down anywhere and, in general, information produced in the course of the day-to-day work of an organization's own programs. Furthermore, to integrate information related to the knowledge of rural communities and their information and communication networks.

Finally, given the role of ICT in support of IM, many institutions are also faced with the challenge of updating their equipment, increasing the quality and amount of the access they have to information systems and databases, and improving their communication mechanisms in general.

Within the framework of its strategic priority of direct technical cooperation to promote the incorporation of technology and innovation for the modernization of agriculture and rural development, IICA has an Area of Concentration for the promotion of information management in support of technological innovation processes. In this area, it has collaborated



in capacity development; administers a system for sharing technological information on line (<http://infotec.ws>) under the aegis of the Forum for the Americas on Agricultural Research and Technology Development FORAGRO ([www.iica.int/foragro](http://www.iica.int/foragro)); and is collaborating with the Global Forum for Agricultural Research GFAR ([www.egfar.org](http://www.egfar.org)) to develop a strategy for sensitizing people to the importance of investing in IM. With everyone's active participation in these efforts, it will be possible to meet the challenges posed.

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# Résumé / Resumo / Resumen

## ► La gestion de l'information pour l'innovation technologique agricole

L'information technique est un élément fondamental de tout processus d'innovation ou de recherche dans le secteur agricole. Dans les institutions qui encouragent ces processus, les défis actuels en matière de gestion de l'information (GI) sont divers. Ils s'inscrivent dans un environnement en pleine évolution, caractérisé, entre autres facteurs, par l'accroissement exponentiel de la quantité d'information potentiellement importante et par les progrès de plus en plus rapides des technologies de l'information et de la communication (TIC). Ces défis sont, notamment, la nécessité d'incorporer explicitement l'information dans la planification et l'exécution de tout processus institutionnel et de tirer profit au maximum des possibilités qu'offrent les TIC disponibles, ce qui se traduira par un soutien aux processus de gestion des connaissances. La GI comporte une série d'actions qui comprennent : a) la définition des objectifs et des priorités en matière d'information ; et b) la planification, la facilitation et la coordination des activités nécessaires à la réalisation de ces objectifs.

## ► Gestão da informação para a inovação tecnológica agropecuária

A informação técnica é um elemento chave em todo processo de inovação ou pesquisa do setor agropecuário. Nas instituições que promovem esses processos, são vários os desafios atuais para a gestão da informação (GI). Eles ocorrem numa conjuntura de mudanças marcada por um aumento exponencial na quantidade de informação potencialmente importante e pelos constantes avanços nas tecnologias da informação e comunicação (TIC), entre outros fatores. Um desses desafios é a necessidade de incorporar a informação explicitamente no planejamento e execução de qualquer processo institucional e aproveitar ao máximo as possibilidades que proporcionam as TIC disponíveis, o que redundará em apoio aos processos de gestão do conhecimento. A GI demanda um conjunto de ações que envolvem o seguinte: (a) a definição dos objetivos e prioridades relacionados com o âmbito da informação; e (b) o planejamento, viabilização e coordenação das atividades necessárias para alcançar os objetivos.

## ► Gestión de información para la innovación tecnológica agropecuaria

La información técnica es un elemento clave en todo proceso de innovación o de investigación que tenga lugar en el sector agropecuario. En las instituciones que promueven estos procesos, son diversos los retos actuales para la gestión de información (GI). Estos se plantean en un entorno de cambios, marcado por un aumento exponencial en la cantidad de información potencialmente importante, y por crecientes avances en las tecnologías de información y comunicación (TIC), entre otros factores. Los desafíos incluyen la necesidad de incorporar la información de forma explícita dentro de la planificación y ejecución de cualquier proceso institucional y aprovechar al máximo las posibilidades que ofrecen las TIC disponibles, lo que generará un apoyo a los procesos de gestión de conocimiento. La GI tiene lugar mediante un conjunto de acciones que involucran: a) definir objetivos y prioridades relacionadas con el ámbito de la información; y b) planificar, facilitar y coordinar las actividades necesarias para alcanzar los objetivos.



# Agriculture and the new challenges of development<sup>1</sup>

Rafael Ángel Trejos<sup>2</sup>

## Summary

The information presented in this article was taken from the report “The State of and Outlook for Agriculture and Rural Life in the Americas, 2007: Agriculture and the new challenges of development.” That document assesses the progress made in the hemisphere in achieving the four strategic objectives that the Ministers of Agriculture set in the AGRO 2003-2015 Plan, related to competitiveness, equity, sustainability and democratic governance. It also describes the main challenges facing agriculture in the hemisphere in light of the new conditions with which development efforts now have to contend.

The report concludes that, in economic and social terms, the hemisphere’s agricultural sector is performing better than it has for the last 25 years, with major growth in agricultural production and trade, progress in reducing poverty, improvements in income distribution in some countries and falling unemployment rates. The outlook is positive, especially given the upturn in the international prices of core commodities, the alternative uses being made of agricultural production and promising market niches. However, there are still concerns regarding social conditions, the environmental situation and governance in rural territories.

<sup>1</sup> This document is based on the Report on the State of and Outlook for Agriculture and Rural Life in the Americas, 2007.

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**Key words:** *agriculture, economic development, rural development, Latin America and the Caribbean, North America*

## Overarching global and regional trends: challenges coupled with opportunities

Agriculture has played an important role in recent years, not only because it is a way of life for millions of people in the Americas but also because it is a strategic sector that contributes to the economic, social, environmental and political development of the countries.

**Globalization and change.** Like every other productive sector, agriculture finds itself having to operate within an increasingly globalized and changing environment. This context is determining the performance of agriculture and rural life, increasing access to knowledge and shortening the distances between markets. Furthermore, it is promoting the consolidation of a multilateral institutional system and creating opportunities and posing challenges for the economic agents involved.



*Agriculture has played an important role in recent years, not only because it is a way of life for millions of people in the Americas but also because it is a strategic sector that contributes to the economic, social, environmental and political development of the countries.*

**Trade liberalization.** As a development strategy, over the last two decades this has helped expand the markets of some productive sectors and given consumers access to a more diverse basket of goods. The outcome of the multilateral negotiations

within the framework of the Doha Round of the World Trade Organization (WTO) remains uncertain and the countries have turned to bilateral agreements instead. However, when negotiating bilateral agreements countries have to address the economic and social differences that exist between them as well as the social and environmental challenges posed by globalization.

**From commodities to processed products.** The food market is increasingly promoting the consumption of processed products instead of commodities, quality and specialized segments such as healthy, wholesome foods (low in fats and calories), denominations of origin and prepared or convenience foods. A case in point is the global organic products market, whose sales top US\$30 billion, with some 1500 articles available and nine percent annual growth. This trend is a great opportunity. On the other hand, the biggest challenges are posed by the small number of actors - mainly large supermarket chains that are imposing new and greater demands in terms of volumes, deadlines, deferred payment, price setting, labeling and packaging - and the need to integrate small and medium-scale producers effectively into value chains so they can take advantage of market niches.

**Technological change is providing new opportunities.** The intense use of know-how is the chief characteristic of the current paradigm. The most striking development is the growing use of genetically modified

organisms (GMOs) and their impact on certain crops such as grains and oilseeds. Another major development is the emerging use of agriculture as an alternative source of energy, with sugar and grains being used to produce ethanol and biodiesel. In both cases, production could be increased and more income generated in rural areas, but a number of important factors must also be taken into consideration:

- a. Health and the ecological balance,
- b. The effects on the prices of inputs and food,
- c. Food security and crop substitution, and
- d. The inclusion of the production of family agriculture.

**The danger of countries becoming ungovernable.** The growth of international drug trafficking and its adverse effects on economic, social and political life are fueling corruption and undermining governability. The continued existence of rural poverty in most of the less developed countries, the poor quality of the jobs available and the difficulty of improving the distribution of wealth increase the risk of countries becoming ungovernable. Migration is on the rise as people seek to escape from poverty and a hand-to-mouth existence in the rural milieu. On the other hand, migrants are sending growing amounts of funds back to their places of origin. This income is helping to improve the situation of many rural households but efforts are

needed to promote the use of this capital for productive investments, mitigating the problems of family disintegration and generating dignified jobs that discourage people from migrating.

**Environmental degradation is increasing.** There is evidence of a serious deterioration in natural resources. Climate change is having a big impact on agriculture, biodiversity and human health. Greenhouse gas emissions have not been controlled and the pollution of drinking water is on the increase. The manifestations of climate change (variations in temperature, precipitation, water levels and the increasing number of extreme events such as hurricanes, droughts and floods) will have a serious effect on agricultural competitiveness. The danger of forest fires is increasing, soil erosion is intensifying and supplies of freshwater are at risk (increasing the likelihood of more desertification). Achieving sustainable development calls not only for greater awareness of the need to manage natural resources and the environment correctly but also the adoption of good productive practices in expanded agriculture.

## The recent performance of agriculture and rural life measured in terms of the conceptual framework of the AGRO Plan

The conceptual framework of the AGRO Plan and the approach it adopts for the region provide the frame of reference for analyzing the recent performance of agriculture in the Americas and the impact of global trends.

The Third Summit, held in Québec (2001), was a defining moment for agriculture and rural life in the Americas. In the Declaration adopted at the Summit, the Heads of State and Government acknowledged that agriculture was a way of life for millions of rural dwellers and a strategic sector of the socioeconomic system that generates wellbeing.

In preparing the 2007 report, the production-trade, ecological-environmental, socio-cultural-human and political-institutional dimensions were adopted as categories of analysis in assessing the degree of progress made in achieving the strategic objectives of agriculture and rural life (Table 1).

In response to the mandates issued by the Heads of State and Government in the summit process, the ministers of agriculture adopted the AGRO 2003-2015 Plan, thereby placing agriculture and rural life on the inter-American agenda and providing a guiding framework for determining national and regional strategies and analyzing the sustainable development of agriculture and the rural milieu.

### Production-trade dimension

*Production is growing, driven by the Southern Region.* Agricultural production has continued to rise at the hemispheric level, although the rate of growth was slower in 2004-2005 than in 2003, which was a particularly good year for agriculture

Systemic Concept	Rural Territories	Agricultural Production-Trade Chains	National and International Context	STRATEGIC OBJECTIVES
Sustainable development approach				
Production – Trade	I. Promoting competitive rural enterprises	II. Integrating chains and strengthening their competitiveness	III. Promoting an environment conducive to competitive agriculture	→ Competitiveness
Ecological – Environmental	IV. Being environmentally responsible in the rural areas	V. From farm to table: promoting integrated environmental management	VI. Participating in building an institutional environmental framework	→ Sustainability
Sociocultural – human	VII. Quality of life in rural communities: creating know-how and opportunity	VIII. Advancing learning and expertise in the chain	IX. Promoting policies to create capabilities and opportunities for the rural communities	→ Equity
Political – institutional	X. Strengthening public and private sector participation and coordinated action between them in the territories	XI. Strengthening dialogue and commitments among actors in the chain	XII. Promoting national policies and regional and hemispheric cooperation for agriculture and rural life	→ Governance
STRATEGIC OBJECTIVES	Rural Prosperity – Food Security – International Positioning			OVERARCHING GOAL: SUSTAINABLE DEVELOPMENT OF AGRICULTURE AND RURAL MILIEU

**Table 1. Conceptual framework of the AGRO 2003-2015 Plan for agriculture and rural life**

Source: Hemispheric Ministerial Agreements (2005).

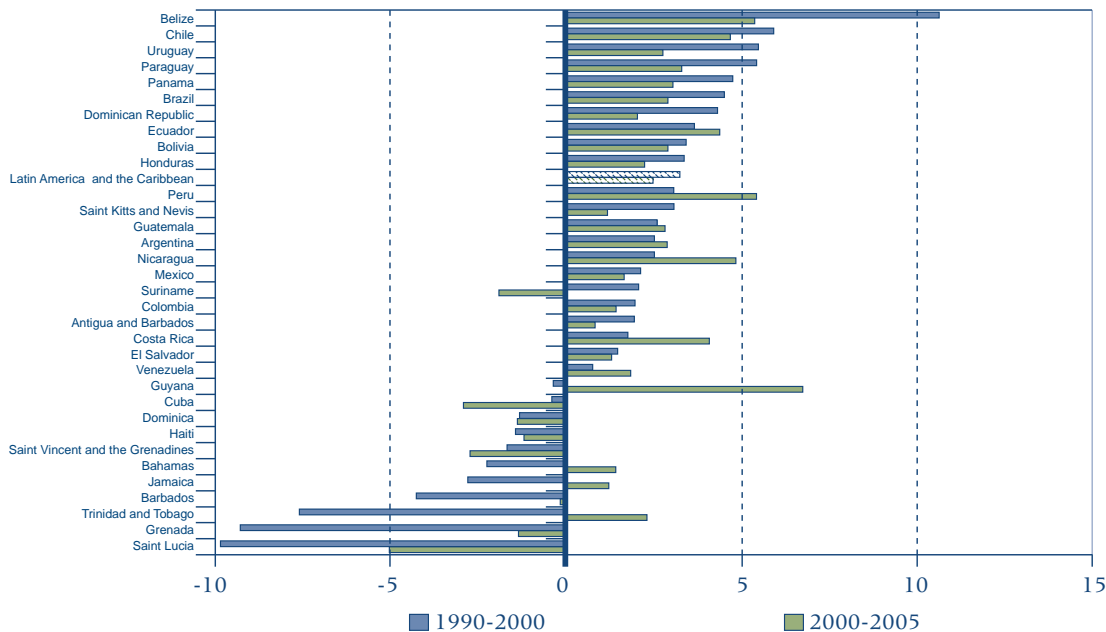
in every region except the Caribbean (Cuba, Haiti and nine of the 13 countries of the Caribbean community - CARICOM).

In 2005, the agricultural gross domestic product (GDP) of Latin America and the Caribbean rose by 2.2%. Although growth was weaker than in previous years (it topped 4.1% in 2003 and 3.7% in 2004), it was less volatile and the positive medium-term trend was maintained. The sustained upward trend in agricultural production in LAC is due mainly to the rapid economic growth of the Southern Cone countries. Given the size of their agricultural sectors, those countries now account for an increasingly large share of Latin America's agricultural GDP (Figure 1).

***Agrifood exports are growing but now account for a smaller share of the global market.***

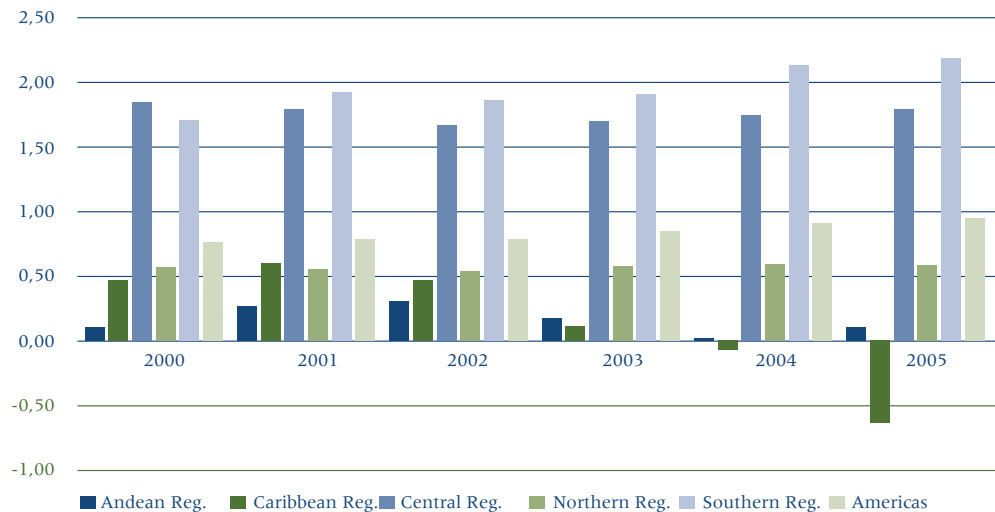
The Americas continue to be the world's leading net exporter of agricultural products, followed by Oceania. It is interesting to note that Africa, historically a net importer of agricultural products, has had a surplus since 2004. The other regions of the world continue to have a negative agricultural trade balance.

The hemisphere's share of global agricultural trade has been declining since 2000. This is because its agricultural exports have grown more slowly than those of the rest of the world. While global agricultural exports grew at an annual rate of 10.5% between 2000 and 2005, this hemisphere's agricultural exports rose by only 7.1% per year.



**Figure 1. LAC countries: Average growth of agricultural GDP (average annual rate expressed as a percentage)**

Source: FAO 2007.



**Figure 2. The Americas: Revealed comparative advantage of agricultural trade (2000-2005)**

Source: Information compiled from the United Nations Commodity Trade Statistics database.

While the share of agricultural commodities in world trade has fallen, down from 13% in 1995 to 7.2% in 2005, the share of processed products has risen 10.8% per year since 2002. The Americas mainly exports commodities, with soybean leading the way (8.5% of all agricultural exports). On the other hand, the region mainly imports processed agricultural products, a trend that has become more marked in recent years.

**Agriculture in the Caribbean is becoming less competitive.** Measured in terms of its revealed comparative advantage (RCA), the competitiveness of the hemisphere's agricultural trade was positive and improved during the period 2000-2005. This was mainly due to the sustained increase in the

agricultural RCA of the Southern Region, since it remained unchanged in three of the other regions (Northern, Andean and Central) and fell in the Caribbean, where it actually dipped into negative territory in 2004 (Figure 2).

**Spike in international prices.** During the same period, international prices of agricultural products rose sharply, by an average of 6.5% per year, reversing the trend of low prices seen in previous years. With the exception of cocoa beans, the international prices of all the main commodities rose (coffee and sugar prices alone increased by over 13%). (See Table 2). Since the prices of tropical products increased the most, the outlook for further growth in the demand for food is positive.



	Periods		
	1992-1997	1997-2002	2002-2007
<b>Agricultural products (Foods and Beverages)</b>	3.6%	-4.8%	6.5%
<b>Cereals</b>	5.4%	-3.4%	7.7%
<b>Meats</b>	0.3%	0.9%	4.3%
<b>Oils</b>	6.0%	-7.3%	4.2%
<b>Other products:</b>			
• Sugar	3.8%	-6.5%	13.6%
• Coffee	18.3%	-23.5%	13.7%
• Bananas	2.0%	2.0%	7.6%
• Oranges	0.9%	5.0%	6.5%
• Cocoa (Beans)	7.9%	-3.0%	-2.6%
• Soybean	5.7%	-7.9%	2.4%
• Wood	2.1%	-2.5%	5.7%

**Table 2. International prices of agricultural commodities (average annual growth rate for selected periods)**

Source: Information compiled from data published by the International Monetary Fund.

**Food health and safety are key elements of competitiveness.** As already mentioned, quality products are now required to meet tougher standards. In 2005, nearly US\$190 billion in agricultural exports and US\$130 billion in imports had to meet a sanitary or phytosanitary standard of some kind.

The competitiveness of specific agricultural products could be affected by the impact of problems such as foot-and-mouth and mad cow disease, resulting in the loss of markets and jobs, falling consumption,

lower prices for producers, etc. Therefore, it is important for countries in the Americas to focus on sanitary issues (Table 3).

**Although LAC invests over US\$10 billion per year in science and technology,** it is not enough, because the technological gap between LAC and the rest of the world is widening. For example, yields per hectare in LAC remain lower than those of the industrialized countries and emerging regions such as East and Southeast Asia. Furthermore, Brazil, Mexico, Argentina,

Diseas	Status	Países
Foot-and-mouth	Countries free of foot-and-mouth disease without vaccination	Canada, Chile, Costa Rica, El Salvador, USA, Guatemala, Guyana, Honduras, Mexico, Nicaragua, Panama
	Countries free of foot-and-mouth disease with vaccination	Paraguay, Uruguay
	Countries with an area free of foot-and-mouth disease without vaccination	Argentina, Colombia, Peru.
	Countries with an area free of foot-and-mouth disease with vaccination	Bolivia, Brazil, Colombia
Bovine spongiform encephalopathy (BSE)	Member countries recognized as free of BSE	Argentina, Uruguay
	Member countries recognized as temporarily free of BSE	Chile, Paraguay
Rinderpest	Countries free of rinderpest infection	Argentina, Barbados, Bolivia, Brasil, Canada, Chile, Colombia, Costa Rica, Ecuador, El Salvador, USA, Guatemala, Guyana, Honduras, Jamaica, Mexico, Panama, Paraguay, Peru, Trinidad & Tobago, Uruguay, Venezuela

**Table 3. Sanitary status of three diseases**

Source: Based on resolutions adopted by the International Committee of the World Organisation for Animal Health (OIE).

Chile, Venezuela and Cuba account for 96% of the region's investment in science and technology and LAC's limited efforts to develop and incorporate new technologies are geared toward traditional products.

► *Agroenergy production, agrobiotechnology and agrotourism are enhancing agriculture's role as a driving force for growth in rural territories and as an agent of economic change.*

Production of non-traditional items is increasing due to the incorporation of new farmland, a trend that cannot be sustained over the medium and long terms.

Although LAC is trying to incorporate alternative production methods (such as direct planting and precision and organic agriculture), it remains a long way behind other regions of the world. Other opportunities such as agroenergy production, agrobiotechnology and agrotourism are enhancing agriculture's role as a driving force for growth in rural territories and as an agent of economic change. For example, the growing use of genetically modified varieties in this hemisphere and other parts of the world has

shown that it is possible to increase yields and lower costs. It is up to the countries to ensure that producers and consumers enjoy the benefits of biotechnology, not only the developers of the technology. The pertinent regulatory frameworks must also be created and precautions taken to prevent possible risks.

With fossil fuel prices expected to continue to rise, driven by the growing demand for energy worldwide, the countries are promoting the production of fuels from agricultural products. Although many countries are endorsing these initiatives (with the United States and Brazil most committed), the impact on agricultural prices, crop substitution, food security, feed for animals and other issues remains unclear.

Furthermore, the increased demand for raw materials used in the production of biofuels is expected to alter the terms of trade for many agricultural commodities.

## Sociocultural-human dimension

**Poverty and extreme poverty in rural areas decreased during the first half of this decade.** In 2005, for the first time in 25 years the rates for both dipped below 1980 levels.

Although LAC continues to be the most inequitable region in the world in terms of income distribution, between the end of the last decade and the middle of this, the situation in rural areas improved in 11 of the 13 countries for which information is available. The gaps between poverty and

extreme poverty in rural and urban areas narrowed.

Paraguay, El Salvador, Mexico and Brazil made the biggest strides in reducing poverty during that period. Uruguay, Brazil, Mexico and Panama were also on track to achieve the poverty reduction target set as part of the Millennium Goals, which only Chile has met so far.

Not only are poverty rates higher in rural areas than in urban areas, the incidence of rural poverty is also higher among self-employed agricultural workers. This suggests that, as an economic activity, agriculture needs to focus on poverty alleviation strategies, because it has the greatest potential for raising the incomes and improving the quality of life of the poor.

In 2005, the remittances that migrant workers sent back to LAC had a significant effect in reducing poverty, as they totaled US\$48.3 billion. Mexico receives the largest slice of these resources (US\$21.8 billion per year), followed in the region by Colombia and Brazil. Remittances play a particularly important role in other Central American and Caribbean countries.

## Ecological-environmental dimension

**Environmental degradation is continuing and vulnerability is increasing.** LAC has 915 million hectares of forests (23.2% of the world total) but 4.3 million hectares are lost every year. The United States, Chile, Uruguay, Costa Rica and Cuba are the only countries whose forest cover has increased.

*The impact on agricultural prices, crop substitution, food security, feed for animals and other issues remains unclear.*



Enormous biodiversity and genetic riches exist but habitat destruction is leading to the extinction of a growing number animal and plant species. Marine resources are being overexploited and desertification and the degradation and loss of soils are on the rise, due to inappropriate practices, deforestation and climate change.

The Americas contain 45% of the world's entire supply of freshwater (43,750 Km<sup>3</sup>/year). Despite its relative abundance, however, water is a very threatened resource (agriculture uses nearly 69% of the total).

In recent years, the region has become increasingly vulnerable to natural disasters, with the poorest segments of the population and rural areas hardest hit. The Andean Region accounts for over 50% of the deaths caused by natural disasters in the Americas, with floods posing the biggest threat to human life. The Central and Caribbean regions are next in importance.

The pressure to meet the dietary needs of a population that has doubled in the last 50 years has led to nearly 37% of all land being used to grow crops, with most production systems geared to the non-sustainable use of natural ecosystems. The environmental costs have been huge in terms of the degradation of water resources, the non-sustainable use of aquifers, the loss of forest cover, desertification and the release of large quantities of greenhouse gases into the atmosphere. In general, economic development is being achieved at a burgeoning environmental cost.

***Climate change is impacting the region's agriculture.*** The effect of climate change on agricultural production will vary from

one area to another, since some developed countries at mid and high latitudes, especially in the Northern Hemisphere, could actually experience net gains, while many developing tropical countries could face even bigger problems related to climate change and the increasing unpredictability of rainfall levels.

## Political-institutional dimension

***Governance in the LAC countries has been strengthened.*** This has occurred thanks not only to increased citizen involvement in the formulation and execution of development policies, but also because the markets are helping to achieve social objectives such as the reduction of poverty and inequity. However, the social divide threatens governance in many rural territories in LAC.

***The countries are opting to negotiate bilaterally.*** With the Doha Round stalled and the negotiations for the Free Trade Area of the Americas (FTAA) suspended indefinitely, the LAC countries have opted to strengthen their respective regional trading blocs and/or negotiate bilateral or regional free trade agreements with the United States and other major economic powers (mainly the Asian economies).

***And reducing the amount of resources they allocate to the countryside.*** Finally, the amount of public funds allocated to the rural milieu has decreased substantially. Average per capita spending on rural areas in LAC fell by over 36% in real terms over the



last two decades, and total public spending in rural areas continues to be considerably less than the contribution that agriculture makes to economic development.

## Four challenges facing agriculture and rural life

### a. Making agriculture more competitive

In an environment of globalization and opening, the agricultural sectors of the LAC countries have to become more competitive. To do so, agriculture must produce more efficiently, increase the productivity of the factors of production, generate higher quality products, and have better institutions and human resources and more effective public policies geared to agrifood chains and rural territories.

To produce more efficiently, with higher yields and productivity of the factors of production, efforts are needed to reorient and speed up technological change and innovation in agriculture. More and better agricultural entrepreneurs are also

required, as well as a more skilled workforce and improved delivery of the services that agriculture needs to compete in more open and competitive markets. There is an urgent need to increase investment in agricultural research and development and speed up the incorporation of modern technologies into agriculture and agribusiness. The challenge facing agriculture in our countries is complicated, as we must produce more food and raw materials while at the same time conserving the forest cover and ecosystems.

To turn out quality products and compete successfully, the countries must make agricultural health and food safety (AHFS) a key element of their agrifood chains. This calls not only for improved national services but also for a new technological infrastructure and consensus with private sector organizations and actors on long-term agendas.

Formulating and implementing more effective policies in support of agriculture calls for the production of public goods and the creation of the conditions needed for them to operate properly (infrastructure, information systems, legal framework, financial system, logistical system, trade treaties, etc.). At the same time, efforts must be made to improve the integration of small producers and the family economy into agrifood chains and international markets.

### b. Achieving greater equity in agriculture and the rural milieu

This calls for corrective actions to improve the traditional performance of the actors in agriculture and the rural milieu (enhancing



capabilities, increasing investments and promoting institution building).

Such corrective actions should form part of policies designed to promote rural prosperity that focus on four areas: agrifood chains (creation of agribusinesses, greater inclusion and job creation); rural territories (systemic competitiveness, reduction of transaction costs and generation of social income); institutional innovation (participatory and inclusive policy management); and the development of strategic capabilities (effective implementation of policies).

Food security must also be made one of the key objectives of poverty alleviation strategies, technological innovation processes, international trade negotiations and the orientation of development aid.

### **c. Making the transition to a more sustainable paradigm**

To meet this challenge, LAC countries must review and change the ways that soils and forests have traditionally been used for agricultural activities, and then develop competitive business strategies that attach value to, and recognize the importance of, sound environmental management and promote equity for rural actors.

The use of agriculture as an alternative source of energy could stimulate the creation of agribusinesses, jobs and income in many rural territories. It could also reduce environmental pollution, striking a balance among the need to produce food, the expansion of agroenergy crops and the pressure on forests and protected environments.

The strong growth of organic production could also make an important contribution to the transition to a sustainable development paradigm.

The countries should also take advantage of the benefits of environmental functions and services such as integrated landscape management, promoting intersectoral and participatory approaches to territorial management, facilitating economic mechanisms whereby a fair price is paid for the functions of ecosystems and fostering comprehensive territorial management.

It is also imperative to tackle the challenges posed by global climate change by adopting the following practices:

- Actions and policies that promote the generation of accurate scientific information
- Analysis of the opportunities and risks for agriculture and the rural milieu
- Greater control of polluting emissions
- Analysis and assessment of the positive and negative impacts of producing biofuels

Although all nations will be affected, the tropical countries and their poor rural inhabitants are the most vulnerable in terms of potential victims and capital

losses. It is essential, therefore, that agricultural producers adapt and the national authorities prepare the rural population for the challenges posed by climate change.

#### **d. Promoting governance in rural territories**

To strengthen governance in rural territories, the countries need to bolster the market as a mechanism for growing the agricultural and non-agricultural rural economy. At the same time, they should enhance the capabilities of agroindustrial producers and family farmers so they can integrate better into international markets. Agriculture and the rural milieu will then be able to obtain greater benefits from trade and from the emergence of new market niches.

Furthermore, mechanisms need to be developed to improve the distribution of profits throughout agrifood chains and promote a fair return for each factor of production. The citizenry should play a bigger role in both the formulation and/or implementation of public policies designed to strengthen rural territories, and the search for solutions to local problems.

### **Final thoughts**

The role that agriculture has played in reducing poverty in recent years is a reaffirmation of the concept that IICA has been promoting since the turn of the century, namely that agriculture is important not only because it is a way of



life for millions of people in the Americas, but also because it is a strategic sector that contributes to national economic, social, environmental and political development, and in some countries is still the main driving force of the economy.

Agriculture's true contribution to economic development in the hemisphere is enhanced when the region's favorable agroecological conditions are underpinned by public policies that make its products more competitive, promote trade negotiations that guarantee improved market access and make it possible to take advantage of new market niches. Also needed are more effective public policies that guarantee product quality and safety, allocate more



*Agriculture is important not only because it is a way of life for millions of people in the Americas, but also because it is a strategic sector that contributes to national economic, social, environmental and political development, and in some countries is still the main driving force of the economy.*

resources to investment in science and technology and promote equity and sustainability. Actions of this kind are essential if agriculture is to be the catalyst for translating the current sustained economic growth in the developing countries into significant reductions in poverty and hunger.

The increased liberalization of agricultural trade and the expected growth in the global demand for food are a great opportunity for the region's agriculture to make an even bigger contribution to the development of the countries of LAC.

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# Résumé / Resumo / Resumen

## L'agriculture face aux nouveaux défis du développement

Cet article est un extrait du rapport intitulé « Situation et perspective de l'agriculture et de la vie rurale dans les Amériques en 2007 : l'agriculture face aux nouveaux défis du développement », qui permet d'évaluer les progrès réalisés dans le Continent américain vers la réalisation des quatre objectifs stratégiques retenus par les ministres de l'agriculture dans le Plan AGRO 2003-2015 : la compétitivité, l'équité, la durabilité et la gouvernance démocratique. Il décrit également les principaux défis qu'affronte l'agriculture du Continent américain du fait des nouvelles conditions du développement contemporain. Il conclut que l'agriculture américaine obtient les meilleurs résultats économiques et sociaux de ces 25 dernières années, avec une croissance importante de la production et du commerce agricoles, des progrès en matière de réduction de la pauvreté, une meilleure répartition des revenus dans certains pays et une baisse du chômage. Les perspectives sont donc favorables, spécialement compte tenu de la remontée des cours internationaux des principaux produits de base, des utilisations alternatives de la production agricole et de l'exploitation de créneaux de marché prometteurs. Cependant, des préoccupations persistent en ce qui concerne les aspects sociaux et environnementaux des territoires ruraux ainsi que leur gouvernance.

## A agricultura em face dos novos desafios do desenvolvimento

Este artigo constitui um extrato do relatório "Situación y perspectivas de la agricultura y vida rural en las Américas 2007: La agricultura frente a los nuevos retos del desarrollo", no qual é possível analisar o progresso alcançado no Hemisfério nos quatro objetivos estratégicos estabelecidos pelos ministros da agricultura no Plano AGRO 2003-2015, quais sejam, a competitividade, a equidade, a sustentabilidade e a governabilidade democrática. Também apresenta os principais desafios que a agricultura do Hemisfério enfrenta em função das novas condições do desenvolvimento contemporâneo.

A conclusão a que se chega é que a agricultura do Hemisfério experimenta o seu melhor desempenho econômico e social dos últimos 25 anos, com um crescimento importante na produção e no comércio agrícolas, avanços na redução da pobreza, melhoras na distribuição da renda em alguns países e redução do desemprego. As perspectivas mostram-se favoráveis, especialmente pela recuperação dos preços internacionais dos principais produtos básicos e pelo aproveitamento de usos alternativos na produção agrícola, bem como em face de nichos de mercado promissores. No entanto, ainda há preocupação quanto aos aspectos sociais, ambientais e de governabilidade nos territórios rurais.

## La agricultura frente a los nuevos retos del desarrollo

El presente artículo constituye un extracto del informe "Situación y Perspectivas de la Agricultura y la Vida Rural en las Américas 2007: La agricultura frente a los nuevos retos del desarrollo", el cual permite evaluar el avance alcanzado en el hemisferio en los cuatro objetivos estratégicos planteados por los Ministros de Agricultura en el Plan AGRO 2003-2015: la competitividad, la equidad, la sostenibilidad y la gobernabilidad democrática. A la vez se exponen los principales desafíos que enfrenta la agricultura del hemisferio producto de las nuevas condiciones del desarrollo contemporáneo.

Se concluye que la agricultura del hemisferio presenta su mejor desempeño económico y social de los últimos 25 años, con un crecimiento importante en la producción y el comercio agrícola, avances en la reducción de la pobreza, mejoras en la distribución del ingreso en algunos países y disminución del desempleo. Las perspectivas se presentan favorables, especialmente por la recuperación en los precios internacionales de los principales productos básicos, el aprovechamiento de usos alternativos para la producción agrícola y de nichos prometedores de mercado. Sin embargo, persisten preocupaciones en lo social, ambiental y gobernabilidad en los territorios rurales.



# Sustainable development and the territorial approach: identities and typologies

*Carlos Luiz de Miranda and Alberto Renault Adib<sup>1</sup>*

## Summary

This document deals with a proposed methodology for applying a territorial approach as a strategic dimension of the process of planning and implementing public policies.<sup>2</sup> The document describing the methodology itself is divided into three parts: a) the characterization of territorial units based on local sociocultural identities and the methodology and procedures involved; b) the design of a methodology for characterizing, identifying and determining territorial units that the actors and agents concerned should adopt as a tool for managing the policies of the Ministry of Agricultural Development (MDA); and, c) the establishment of typologies in the policy-making and policy management process.

<sup>1</sup> Rural Development Specialists at the IICA Office in Brazil, responsible for the study.

<sup>2</sup> Part of the cooperation agreement signed by the MDA (Government of Brazil and IICA).



**Key words:** *rural development, sustainability, territorial identities, public policies*

## Introduction

The aim of this article is to publicize the study **Sustainable development and the territorial approach: identities and typologies**. Hopefully, the methodology it describes will be applicable to other countries and territories in Latin America, and thereby serve as a contribution by IICA to the management of knowledge related to rural development in the hemisphere.

The territorial approach is a new concept in which rural development is viewed not only in terms of its physical and sectoral dimensions, but also as a locus where the interaction of a set of social relationships creates and gives expression to an identity and to society's capacity to lead and manage its own development.

In making the transition from a "sectoral" and "local" approach to a "territorial" approach, public institutions have to decide whether to use territories for their own purposes or accept that the territorial approach should be primarily endogenous in nature, taking into account the identity of the territory concerned. Therefore, territories should not be defined simply in terms of the State's need to execute public policies.

The concept of territorial identity can be regarded, then, as the collective recognition of an intricate meshing of characteristics and components specific to a given social fabric, unique to the inhabitants of a spatial unit and determined by its particular

resources and the environmental, political-institutional, economic and sociocultural dimensions.

As a strategy for public policies, typologies based on territorial identity make it possible, based on the convergence of interests of the social actors and public agents, to objectively orient sustainable rural development actions in a given space.

The work was coordinated by IICA and the Permanent Forum on Sustainable Rural Development (SRD Forum at the request of the National Sustainable Rural Development Council (CONDRAF), to support the implementation of the territorial approach in the sphere of activity of the Territorial Development Secretariat (SDT) of the Ministry of Agricultural Development (MDA).

The study was carried out in three stages between January 2006 and February 2007.

- 1. Stage One.** Established a conceptual framework and outlined the application of the approach by the country's governmental sector, and incorporated

*The concept of territorial identity can be regarded, then, as the collective recognition of an intricate meshing of characteristics and components specific to a given social fabric, unique to the inhabitants of a spatial unit and determined by its particular resources and the environmental, political-institutional, economic and sociocultural dimensions.*





information about the experience of certain Latin American countries.

2. **Stage Two.** Based on the analysis of information from the territories defined by the SDT/MDA and secondary sources, it established the methodological underpinnings.
3. **Stage Three.** Consisted of statistical analyses of secondary sources and the results of field research. After identifying the main differentiating characteristics of rural territories, the experts were able to construct the territorial characterization model.

The following is a description of the conceptual framework and methodological process adopted by IICA/Brazil for the work.

► *Public institutions have to decide whether to use territories for their own purposes or accept that the territorial approach should be primarily endogenous in nature, taking into account the identity of the territory concerned.*

## Conceptual framework

The territorial approach, as a social construct, entails a set of historical-cultural, economic,

geo-environmental and institutional relationships that create, and at the same time are a manifestation of, an identity and a purpose shared by social actors and multiple public and private agents.

Multisectoral budgets for the rural milieu should focus on rural areas from a spatial rather than a sectoral perspective. There is strong evidence that (agricultural and non-agricultural) rural households engage in a variety of economic activities, even in the least developed regions. Therefore, the units of analysis should not be limited to agricultural or food systems, nor to specific social categories.

In other words, rural development should be seen from the spatial, multifunctional and multisectoral standpoint, and agriculture as a part of it. Basically, multifunctionality is the term used to describe how agriculture performs other functions besides the production of food and fibers. Those functions include rural employment, the occupation of space, the equilibrium of small cities, the preservation of the environment and the landscape, and respect for local culture.

The multidimensional nature of the territorial approach cannot be regarded simply as the sum of the components of a given territory. Development is neither relative nor heterogeneous; first and foremost, it is in cultural in nature. The economy is a manifestation of the culture, wellbeing is a manifestation of the culture and the social relationships are a manifestation of the culture. Therefore, the culture is the result of the territory's

multidimensional nature and of the interrelationships among the different dimensions, and is the key to defining the territory as a concept.

Defining typology models based on the territorial identity for use in public policies gives meaning and content to sustainable rural development actions in an objectively determined space, based on the convergence of interests of the social actors and government agents.



In this regard, it is essential to find ways of incorporating the identity, culture and territorial concept into development models; failure to do so undermines the capacity of public policies to respond to the special features inherent in the diversity of rural territories.

## Methodological process

1. Review of public, federal and state policies and actions targeted at territories or that have an effect on territories.
2. Theoretical-conceptual analysis and definition of the operating frameworks for constructing the model of territorial typologies.
3. Construction of the database, using statistical information with three levels of analysis: municipalities, micro-regions and territories. These underpinnings will provide the information for the analyses of regionalization and territorial characterization.
4. Analysis of the regional characteristics of the country's micro-regions.
5. Systematization of the process of constructing the "territories with specific identities," based on the political decisions taken by the set of actors and agents taking part in the process.

*In this regard, it is essential to find ways of incorporating the identity, culture and territorial concept into development models; failure to do so undermines the capacity of public policies to respond to the special features inherent in the diversity of rural territories.*

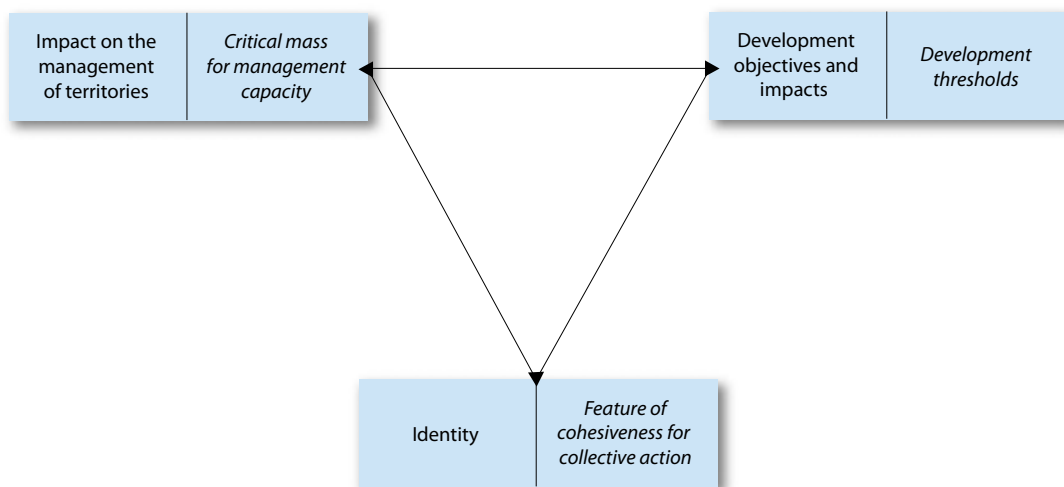
6. First outline of a general model of territorial typologies.
7. Analysis of the process of targeting and selecting territories carried out by the SDT/MDA and construction of the first typology applied to the process of constructing the “territories with specific identities.”
8. Analysis of the differences found between the selection made by the SDT/MDA and the “territories with specific identities” defined as part of the operating strategy of this effort.
9. Design of the model of territorial typologies and definition of its components and of the variables and indicators of which it is composed.

## Result of the work

The work produced a methodology for using the territorial approach in planning and implementing public rural development policies. In the case of Brazil, the use of the methodology led to the construction of a model of a typology for “territories with specific identities” classified according to the level of incidence (high, medium or low) of the following dimensions:

- a) Socio-environmental
- b) Socio-economic
- c) Socio-cultural
- d) Socio-political and institutional

In designing the model, the consultants also took into account the key factors that



**Figure 1. Processes and relationships for constructing the dimensions of territories with specific identities.**

Source: IICA-MDA 2006.

differentiated the territories. In doing so, they established three basic sources of criteria for the heterogeneity of the “territories with specific identities,” which had to do with the management capacity, development portals and the characteristics of cohesiveness for collective action, as shown in the Figure 1.

The most important lesson learned in the process of formulating the typology model is that it allows public managers to formulate policies and define local investments, adopting an endogenous development planning approach that takes advantage of the potential of territories while respecting their specific characteristics.

Furthermore, this model of territorial typologies, based on the identities of the territories concerned, provides the basis for formulating and operating territorially differentiated public policies, a key strategic element in Brazil (a country that is very heterogeneous at the regional and subregional levels) for the sustainability of its rural development policies.

Although this is a Brazilian initiative, it is hoped that the methodology can be adapted and reproduced in others countries of the region.

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# Résumé / Resumo / Resumen

## ► Développement durable et territorialité : identité et typologies

**L**e document présente une proposition méthodologique pour l'utilisation d'une approche territoriale, en tant que dimension stratégique, lors de la planification et de la mise en application des politiques publiques. Le contenu de la proposition originale est divisé en trois parties : a) la typification des unités territoriales à partir des identités sociales et culturelles locales, la méthodologie et les procédures ; b) la conception d'une méthodologie pour la caractérisation, l'identification et la délimitation des unités territoriales, lesquelles devront être acceptées par leurs acteurs et agents comme un instrument de gestion des politiques du ministère du développement agricole du Brésil; et c) l'établissement des typologies dans la formulation et la gestion des politiques.

## ► Desenvolvimento sustentável e territorialidade: identidades e tipologias

**E**ste documento trata de uma proposta metodológica para aplicação do enfoque territorial como dimensão estratégica no planejamento e implementação das políticas públicas. A proposta original divide-se em três partes: (a) tipificação das unidades territoriais com base nas identidades socioculturais locais, metodologia e procedimentos; (b) delineamento de uma metodologia para a caracterização, identificação e delimitação das unidades territoriais que deverão ser reconhecidas por seus atores e agentes como instrumentos de gestão das políticas do Ministério do Desenvolvimento Agrário (MDA) do Brasil; e (c) estabelecimento das tipologias na formulação e gestão da política.

## ► Desarrollo sostenible y territorialidad: identidades y tipologías

**E**l documento refiere a una propuesta metodológica para la aplicación de un abordaje territorial como dimensión estratégica en el planeamiento y la implementación de las políticas públicas<sup>2</sup>. El contenido de la propuesta original está dividido en tres partes: a) tipificación de las unidades territoriales con base en las identidades socioculturales locales, metodología y procedimientos; b) diseño de una metodología para la caracterización, identificación y delimitación de las unidades territoriales que deberán ser reconocidas por sus actores y agentes como instrumento de gestión de las políticas del Ministerio de Desarrollo Agrario (MDA) de Brasil; y c) establecimiento de las tipologías en la formulación y la gestión de la política.



# The shaping of State policy for rural development in Paraguay

Technical Team  
IICA Office in Paraguay<sup>1</sup>

## Summary

The circumstances in which Paraguay's rural agricultural sector finds itself make the development and implementation of innovative state policies that are different from those in existence an imperative. Such policies should be based on a high degree of consensus and commitment among stakeholders involved and a long-term vision that takes into account governments' terms in office. It should also propose sustainable and dynamic solutions for the territories throughout the country. At issue is the need to initiate a process of reflection, discussion, building and consensus regarding the rural development model we seek to institute, one that targets a new institutional framework to articulate and organize the interests, functions and actions of the various stakeholders in the public and private sectors. The success of a political pact of this scope hinges on the participation and commitment of the various segments of society and on the leadership of state institutions that have responsibility for rural development and wellbeing.

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## Characterization of the rural problem and of the forces that come into play



The rural milieu in Paraguay can be defined in terms of its magnitude and complexity. The rural population is, for the most part, made up of smallholders and small- and medium-scale producers.

The minority are large-scale producers and indigenous communities. Added to this are the regional and local governments, extension agents, professionals and technicians, third-sector representatives, educational communities, intermediaries, brokers and political representatives.

The complexity and importance of the forestry and agricultural sectors exert social and economic pressures that are undoubtedly a threat to good governance. The primary cause is the prevailing dichotomy in the area of production.

On the one hand, there are the family units involved in a multiplicity of activities. The family agriculture category is, therefore, closely linked to the social representation throughout rural

territories. This representation is also closely associated with social conditions and values: low level of education, poor housing conditions, knowledge and know-how based on tradition and praxis. There are also the small farms with cash and subsistence crops that rely on traditional production techniques, natural resources and family manpower almost exclusively.

On the other hand, there is entrepreneurial agricultural production characterized by the maximization of profit and involving the production of certain specific headings or products. This type of production involves the use of cutting-edge technology and national, regional and international integration.

Given these realities, new approaches are needed for policy-making and strategies to develop the forestry and agricultural sectors, specifically, and the rural sector, in general. These should lead to institutional arrangements, target sustainable solutions for the sector and revitalize the economies of the territories throughout the country.

Public and state policies that factor in two basic aspects therefore need to be developed:

- a. A high degree of consensus among all social actors involved and a firm commitment on their part (government, political parties, social and trade union organizations, production

organizations (entrepreneurial and campesino) and academic institutions;

- b. A long-term proposal that includes a strategy that can be applied, notwithstanding changes in government and stakeholders, as generally occurs in democratic processes.

Several countries in Latin America (Central and South America) have made strides along these lines and are now beginning to reap the rewards of long-term policies that have the consensus of society. Paraguay has taken its first steps in this direction, with technical support from IICA. However, much remains to be done.

To make further headway, when addressing rural problems, due consideration should, in our opinion, be given to at least the following basic aspects, in order to set about the task of making an institutional change:

- a. **Recognition of the heterogeneity and diversity of the rural world** with its implications regarding the changes that need to be made in the prevailing institutional organization models which, generally, have been based on criteria of homogeneity and schemes that oversimplify the reality, social needs and demands. This is why results have hardly been effective since standard solutions have been proposed for diverse situations. RURALITY needs to be approached as a topic for public debate and the need for consensus on a new rural development model, in general,

and a new model for agriculture and forestry issues, specifically, must be tabled as a priority for national policy.

- b. **The need to address problems in the rural world from a territorial perspective.** The territory is a methodological and analytical category that makes it possible to have a practical and systemic grasp of relations and interactions between human groups and natural resources. This is so because it integrates the dimensions of social, economic, environmental, cultural and political life. It also recognizes and explains inter-sectoral relations.
- c. **Agriculture conceived as the various forms of intervention in ecosystems** for the purpose of producing the agricultural goods and environmental services that society requires, through positive interaction between agricultural production and natural resource conservation.
- d. **A new concept of what is public that is not restricted to the State and that enhances the role and potential of civil society organizations** to generate meeting points between social demand and possible state supply, through inclusive coordination and articulation mechanisms to promote cooperation, shared responsibility and participation.
- e. **Development of a systems-based institutional framework** with a long-term, flexible perspective that

is attuned to national needs. In order for the institutional and regulatory framework to be legitimate and recognized, it must offer assurances, security and effective opportunities for participation by society for conflict resolution, the mediation of interests and aspirations and decision-making. It should also offer the necessary mechanisms for channeling initiatives.

- f. **The need for articulated, coordinated and coherent economic and social public policies** to generate synergic effects and positive interaction.
- g. **A policy for modernizing the rural institutional framework** that incorporates management modalities, ensures increased democratization in decision-making processes, a response to the demands and needs of the rural population as a whole, and efficiency in the use of resources.
- h. **Guidelines and consensus for orderly and coordinated inter-sectoral action** that articulates and better focuses investments and that allows for more appropriate coverage.
- i. **The internal improvement of institutions and their interaction** to pave the way for proceeding with the process of building, in the medium term, a legitimate institutional framework that is recognized by

society at the same time that short-term results manifest themselves. This new way of functioning should show the concrete benefits of this practice.

- j. **Confronting promptly the existing overlapping of competences, responsibilities, multiplicity of functions and geographical fragmentation of action and public resources**, which produces limited effects, especially in the rural areas. This is achieved through the creation of a body for coordination and national agreement with leadership and a clear, transparent and consensus-based structure.<sup>2</sup>

In addition to the above, there is also the need to conceptualize an approach to sustainable rural development that makes it possible to define the framework for orienting specific public policy, strategies and actions and a future vision of the country.

IICA proposes rural development based on a territorial approach, because we believe that it allows for a dynamic and comprehensive analysis of the economic, socio-cultural, environmental and political-institutional dimensions. The purpose of this proposal is, furthermore, to promote the wellbeing of rural society in an effort to boost its strategic contribution to the overall development of society. Here, territoriality (places the human element on the territorial space) is conceived as a network of historical relations that are cultural, political, economic and social in character, and as the institutions,

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<sup>2</sup> Solarte Lindo, G. 2005. Institutional networks, norms, organizations, structures and strategies relating to rural development policy. In: Synopsis, IICA. N° 8.

organizations, entities and norms that intervene socially and politically in ensuring good governance<sup>3</sup>.

This approach is consolidated through social and territorial cohesion where territories are visualized as units that are intertwined with a broader social and cultural mosaic, rather than as isolated spatial units. These units are set on a natural resource base, and translate into forms of production, consumption and trade, which are, in turn, harmonized by institutions and existing forms of organization.

The territorial approach, therefore, involves sweeping changes in the political and institutional context, due to the following reasons:

- a. It makes the territory an object of public policy.
- b. It poses the need to apply differentiated policies, depending on the context and diversity of social actors.
- c. It establishes local cooperation as a basic component of management.
- d. It redefines the role of the state and of the entire rural institutional framework.
- e. It highlights the fact that the territorial approach transcends a change in the scale of action (from local to a defined physical space).
- f. It implies, furthermore, an understanding of, and ensures,



the participation of social actors in the planning, execution and administration of rural development programs and projects.

## The remaining challenge in Paraguay

To achieve the above, we must start with a process of reflection and discussion on the development model by opening up opportunities for exploring and reaching agreement on a new institutional framework that promotes cooperation among the state, private sector and civil society. This will in turn make it possible to incorporate the functions of stakeholders in the sector and recognize creative methods of policy management. If we move in this direction, we must of course come to an agreement, taking into account cultural mores in the country, in order to commence policy implementation, ensure transparency and the exercise of democracy as well as cohesion among the citizenry.

It would therefore be appropriate to establish an institutional body to monitor the process, which should be governed by a basic agreement before starting the project.

<sup>3</sup> Solarte Lindo, G. 2005. Redes institucionales, normas, organizaciones, estructuras y estrategias de política de desarrollo rural. In: Sinopsis, IICA. N° 8.

This body should have responsibility for reviewing the organizational models and the action of public institutions affected and amending not only the concepts on which they were built but also their modus operandi and linkages among them and with representative civil society and private-sector organizations.

It should also consider aspects bearing on the development of mechanisms for joint, complementary and articulated action between agriculture and the environment (agro-environmental). The purpose here is to achieve the goals and objectives of the sector and ensure appropriate natural resource use and conservation, a top priority topic for the country.

This body, which would set the process in motion, should give coherence to public action and spark a new modus operandi based on programming, joint and complementary execution of investment and activities within a framework of common and shared objectives targeting specific and previously selected territories.

National public institutions that are directly involved in the rural development process are the Ministry of Agriculture and Livestock (MAG), the Paraguayan National Institute for Rural Land Development, and the Department of the Environment (Secretaría del Ambiente –SEAM). The Social Action Secretariat (Secretaría de Acción Social –SAS), though no less important, is less directly involved.

In the initial phase of the process, it would be important to define the boundaries of institutional coordination, which should be limited to the MAG and INDERT. In the second stage, coordination would be among the MAG, INDERT and the SEAM;

and in the third stage, among the MAG, INDERT, the SEAM and the SAS.

The coordination mechanism we propose will be able to lead the process of formulating policy, designing strategy, and instituting it in the framework of joint actions (MAG-INDERT-SEAM-SAS), as set forth in specific plans relating to specific territorial locations that have been jointly selected for intervention.

To facilitate management activities from the beginning, thought should be given to creating and instituting a “Technical Management” level, answerable to the highest political level. This technical management would be the executing agency for the process and would rely on specialists of recognized standing, hired full time. It would be given basic resources and responsibility for institutional development which should eventually translate into shared visions, and focused plans and programs.

This “Technical Management” would be transitory. Once the new institutional framework is installed, it would take over the function of leading, replicating and extending the experience until it takes root in the institutional culture and makes it the modus operandi of agricultural and rural public-sector institutions.

## **Leadership and the process of creating a State policy for sustainable rural development**

Success in the social formulation of a state policy, i.e., a social pact for sustainable rural development, one that considers territories and their intrinsic features, requires effort at



various levels that vary in scope. This effort cannot be deployed without initial action to lead the process.

The role fulfilled by institutions that play an active part in the socioeconomic development of the country and rural milieu are a factor in the commitment of the citizenry, representatives of micro-, medium- and large-scale enterprises and those associated with them. In the proposed case, it will initially be up to the MAG, INDERT and the SEAM. This is because institutional action becomes an initiative for moving forward with the process of integrating and coordinating the efforts of the various stakeholders that make up the Paraguayan rural world.

## Conclusion

Given the unique features, characteristics and dynamics of the rural world, it is important to reconsider the process of shaping public

policy from a participatory and in-depth perspective, both in terms of time and space. The idea here is that these public policies would be embraced by the public and private sectors as a firm commitment for execution.

Hence, the need to commence a social process that is binding and institutionally viable, based on territorial management as the point of departure. Such a process should integrate various political decision-making levels and take into account the unique features of the rural environment.

The political decision to initiate the process is key in achieving the commitment of the parties and obtaining a sustainable agreement over time, with shared responsibility. For this, the institutional leaders must convey the need to expand the current vision of development that is limited to economic considerations so that it espouses multi-sectoral and integrative facets. This is the guarantee for the sustainability of strategies and policies to be defined.

# Résumé / Resumo / Resumen

## ► L'élaboration de politiques d'État pour le développement rural au Paraguay

La réalité du secteur rural agricole du Paraguay exige l'élaboration et la mise en application de politiques d'État, innovatrices et différentes de celles qui existent actuellement, fondées sur un fort consensus et un solide engagement des différents intervenants et sur une vision à long terme qui aille au-delà des mandats présidentiels et procure des solutions durables et dynamiques aux territoires du pays. Le document expose la nécessité d'engager un processus de réflexion, de discussion, de construction et de consensus à propos du modèle de développement rural que l'on voudrait avoir et de disposer d'une nouvelle institutionnalité, capable de coordonner et d'organiser les intérêts, les attributions et les actions des différents intervenants des secteurs public et privé. Le succès d'un pacte politique de cette envergure dépend de la participation et de l'engagement des bases sociales et du leadership des institutions de l'État responsables du développement et du bien-être du monde rural.

## ► A formulação de políticas de Estado para o desenvolvimento rural no Paraguai

A realidade do setor rural agrícola no Paraguai demanda a formulação e implementação de políticas de Estado inovadoras e diferentes das existentes, baseadas num alto consenso e no compromisso entre os atores envolvidos, bem como numa visão de longo prazo que transcenda os períodos de governo e encontre soluções sustentáveis e dinâmicas para os territórios do país. É patente a necessidade de ser iniciado um processo de reflexão, discussão, construção e consenso sobre o modelo de desenvolvimento rural desejado, que deverá estar voltado para uma nova institucionalidade, capaz de articular e organizar os interesses, funções e ações dos diferentes atores dos setores público e privado. O sucesso de um pacto político dessa envergadura depende da participação e do compromisso das bases sociais, bem como dos dirigentes das instituições do Estado responsáveis pelo desenvolvimento e bem-estar no mundo rural.

## ► La construcción de políticas de Estado para el desarrollo rural en Paraguay

La realidad del sector rural agrícola en Paraguay demanda la construcción y ejecución de políticas de Estado, diferentes e innovadoras a las existentes, basadas en un alto consenso y compromiso entre los actores involucrados y una visión de largo plazo que extrapole los períodos de gobierno, y alcance soluciones sostenibles y dinámicas para los territorios del país. Se plantea la necesidad de iniciar un proceso de reflexión, discusión, construcción y consenso sobre el modelo de desarrollo rural buscado, que se dirija a una nueva institucionalidad que articule y organice los intereses, funciones y acciones de los diferentes actores de los sectores público y privado. El éxito de un pacto político de esta envergadura depende de la participación y compromiso de las bases sociales, así como del liderazgo de las instituciones estatales responsables del desarrollo y del bienestar en el mundo rural.



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### Agriculture and Rural Life

*La agricultura frente a los nuevos retos del desarrollo: informe situación y perspectivas de la agricultura y la vida rural en las Américas (2007): resumen = Agriculture and the new challenges of development: 2007 Report on the state of and outlook for agriculture and rural life in the Americas: Summary*

This document summarizes the full 2007 Report on the State of and Outlook for Agriculture and Rural Life in the Americas. In it, the authors examine the reasons why agriculture traditionally has not been given the attention it deserves in development models, and point to what needs to be done if the rural milieu is to participate more effectively in and benefit from the processes of economic opening and globalization.

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### Agroenergy and Biofuels

*Atlas de la agroenergía y los biocombustibles en las Américas = Agroenergy and biofuels atlas of the Americas*

This is the first in a series of publications on the latest advances in the production and use of agroenergy and biofuels in Latin America and the Caribbean.

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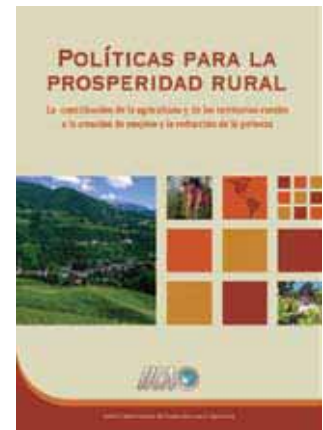
## Rural Development

*Políticas para la prosperidad rural: la contribución de la agricultura y de los territorios rurales a la creación de empleo y la reducción de la pobreza*

The document focuses on the strategic importance of agriculture to both the societies and economies of the Americas, adopting an approach that views agriculture and the rural milieu as a whole and is based on the concepts of agricultural production-trade chains and rural territories.

Furthermore, it is argued that agriculture is an essential component of a country's economic and social system and a key to the well-being of its society, especially its most vulnerable members.

<http://webiica.iica.ac.cr/bibliotecas/repiica/B0501e/B0501e.pdf>



## Agrifood Chains

*Maqueo de las cadenas agroalimentarias de maíz blanco y frijol*

This new publication from the RED-SICTA Project is a compilation of existing analyses of the corn and bean chains in Central America. These analyses are complemented with information obtained via surveys of producers, marketers, specialists and public-sector officials in each of the countries.

<http://webiica.iica.ac.cr/bibliotecas/repiica/B0508e/B0508e.pdf>



## Technology and Innovation

*Conceptos, elementos de políticas y estrategias regionales para el desarrollo de innovaciones institucionales* (IICA, FORAGRO, GFAR 2007)

This document presents the results of study on the trends in and the challenges facing agricultural research in Latin America and the Caribbean (LAC), in terms of its organization and institutional framework. It summarizes the conceptual framework of a proposal on the institutional innovations required to strengthen the national and regional agricultural science, technology and innovation systems in LAC.

<http://webiica.iica.ac.cr/bibliotecas/repiica/B0475e/B0475e.html>



## Biotechnology and Biosafety

*El Estado del arte de los biocombustibles en el Paraguay (2007)*

The report focuses on the state of and advances in agrobiotechnology and biosafety in Paraguay. The information and opinions provided by key players in the agricultural, livestock, public, private and academic sectors, and technical and management personnel in relevant institutions, attest to the wide variety of actions under way in Paraguay in both fields. It also explains why a national policy has yet to be implemented.

<http://webiica.iica.ac.cr/bibliotecas/repiica/B0389e/B0389e.pdf>



## Biotechnology and Biosafety

*Programa hemisférico de biotecnología y bioseguridad =Hemisferic biotechnology and biosafety program (2006)*

The document focuses on the importance of ensuring that new technologies such as agrobiotechnologies are addressed in national policies, and that their application contributes to increasing the competitiveness of the agricultural sector in IICA's Member States.

<http://webiica.iica.ac.cr/bibliotecas/repiica/B0478e/B0478e.pdf>

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## Rural Development

*Proyecto: incorporación del cambio climático a las estrategias de desarrollo rural: síntesis de los resultados en América Latina*

This document summarizes a study conducted between 2004 and 2006 to gauge the impact of climate change on rural producers in Latin America. It also attempts to forecast some of the adjustments and decisions farmers will have to make in response to changes in climate, and compares the results obtained on farms in temperate and tropical climate zones in order to measure the consequences of such changes.

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## Agrifood Chains

### *Plan de acción para el sector lácteo de Panamá*

The document puts forth a number of proposals for improving the dairy sector in Panama, and is offered as an input for the deliberations of the National Dairy Advisory Commission.

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