



*Forum for the Americas on Agricultural  
Research and Technology Development*

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# SUMMARY

## R E P O R T

FIFTH INTERNATIONAL MEETING OF FORAGRO

Montevideo 2008

***Institutional innovations for agriculture with  
knowledge in the Americas in the 21<sup>st</sup> century***

July 28-30 2008  
MONTEVIDEO, URUGUAY



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# Acronyms

<b>APAARI</b>	Asia-Pacific Association of Agricultural Research Institutions
<b>AARINENA</b>	Association of Agricultural Research Institutions in the Near East and North Africa
<b>AGORA</b>	Access to Global Online Research in Agriculture
<b>ANII</b>	National Research and Innovation Agency (Uruguay)
<b>ASTI</b>	Agricultural Science and Technology Indicators
<b>CAADP</b>	Comprehensive Africa Agriculture Development Programme
<b>CARDI</b>	Caribbean Agricultural Research and Development Institute
<b>CATIE</b>	Tropical Agriculture Research and Higher Education Center
<b>CGIAR</b>	Consultative Group on International Agricultural Research
<b>CIAT</b>	International Center for Tropical Agriculture
<b>CIMMYT</b>	International Maize and Wheat Improvement Center
<b>CIP</b>	International Potato Center
<b>CIRAD</b>	Centre de coopération internationale en recherche agronomique pour le développement
<b>EIARD</b>	European Initiative for Agricultural Research for Development
<b>EMBRAPA</b>	Empresa Brasileira de Pesquisa Agropecuária - Brazil's NARI
<b>FAO</b>	United Nations Food and Agriculture Organization
<b>FARA</b>	Forum for Agricultural Research in Africa
<b>FONTAGRO</b>	Regional Fund for Agricultural Technology
<b>FORAGRO</b>	Forum for the Americas on Agricultural Research and Technology Development

<b>GCDT</b>	Global Crop Diversity Trust
<b>GDP</b>	Gross domestic product
<b>GFAR</b>	Global Forum for Agricultural Research
<b>IAASTD</b>	International Assessment of Agricultural Knowledge, Science and Technology for Development
<b>IABA</b>	Inter-American Board of Agriculture
<b>ICT</b>	Information and communication technology
<b>IDB</b>	Inter-American Development Bank
<b>IFAD</b>	International Fund for Agricultural Development
<b>IFPRI</b>	International Food Policy Research Institute
<b>IICA</b>	Inter-American Institute for Cooperation on Agriculture
<b>INFOTEC</b>	Scientific and Technological Information Sharing System for the Agricultural Sector in the Americas
<b>INIA</b>	National Agricultural Research Institute (Uruguay)
<b>LAC</b>	Latin America and the Caribbean
<b>NGO</b>	Non-governmental organization
<b>PARLATINO</b>	Latin American Parliament
<b>PROCI</b>	Cooperative Program for Agriculture Research / Technological Innovation
<b>PROCIANDINO</b>	Cooperative Agricultural Research and Technology Transfer Program for the Andean Subregion
<b>PROCICARIBE</b>	Caribbean Agricultural Science and Technology Networking System
<b>PROCINORTE</b>	Cooperative Program on Agricultural Research and Technology Transfer for the Northern Region
<b>PROCISUR</b>	Cooperative Program for Agrifood and Agroindustrial Technological Development in the Southern Cone

<b>PROCITROPICOS</b>	Cooperative Program on Research and Technology Transfer for the South American Tropics
<b>PROMECAFE</b>	Regional Cooperative Program for the Technological Development and Modernization of Coffee Cultivation in Central America, Panama, Dominican Republic and Jamaica
<b>R&amp;D</b>	Research and development
<b>R&amp;I</b>	Research and innovation
<b>REGENSUR</b>	Genetic Resources Network of the Southern Cone
<b>SEGIB</b>	Ibero-American General Secretariat
<b>SICTA</b>	Central American Agricultural Technology Integration System





# Executive Summary

As part of the efforts to consolidate the hemispheric dialogue and the development of a regional agenda for technological innovation in agriculture, the Forum for the Americas on Agricultural Research and Technology Development (FORAGRO) held its Fifth International Meeting “Montevideo 2008” from July 28 to 30, 2008.

The theme of the meeting was “Institutional innovations for agriculture with knowledge in the Americas in the 21st century.” Representatives of FORAGRO’s different stakeholders took part in the event - i.e., national and regional agriculture research institutes, farmers’ organizations, non-governmental organizations, universities, institutions that make up the international agriculture research system and the private sector. Altogether, over 200 participants from 40 countries in the Americas and other parts of the world took part in a dialogue aimed at strengthening a joint agenda for agricultural innovation and research in the region.

“This is an important and unique opportunity for the region,” said Mario Allegri, President of FORAGRO, “because it allows us to interact with the different actors involved in agricultural innovation and research and makes it possible for us to reach agreements and consensus at the regional level and strengthen our ties with the global research system.”

The meeting was organized jointly by the National Agricultural Research Institute (INIA) of Uruguay and IICA, through its Area of Technology and Innovation and Office in Uruguay. The activity was supported by the PROCIs, FONTAGRO, the CGIAR, the World Bank, the Ibero-American General Secretariat (SEGIB) and prestigious institutions related to agriculture in Uruguay.

## Hemispheric dialogue for a regional agenda

The process of dialogue led to the definition of key priorities and elements for an agenda to promote institutional innovation efforts designed to facilitate technological innovation in agriculture. The results were set out

in the Declaration of Montevideo 2008. The Declaration was approved by the FORAGRO participants during the closing ceremony of the event, held at the INIA's "Las Brujas" experimental station. It includes six overarching purposes towards which the participants' efforts will be oriented, seven specific objectives that will be achieved through the efforts to be carried out, and eight important topics for hemispheric cooperation.

Based on all the analyses presented, the discussions and dialogues that took place and the convergence of interests, the participants in the Fifth Meeting of FORAGRO agreed on the following purposes:

1. Promote dynamic management of the priorities identified during the FORAGRO meeting for the research and innovation (R&I) processes that make it possible to combat food insecurity, taking advantage of the opportunities and tackling the challenges posed by the current world and regional socioeconomic conditions.
2. Position the relevance of agricultural knowledge and technological innovation at the core of political decision-making in the countries and in the area of hemispheric integration.
3. Continue to develop sound arguments to justify the allocation of greater resources to research, extension and the development of technological innovations by governments in the region, the private sector and international cooperation agencies.
4. Highlight the need for greater public investment and promote a bigger contribution from the private sector, endeavoring to achieve an increase in the low investment in science and technology in the countries of Latin America and the Caribbean (LAC).
5. Support institutional innovations in extension and transfer, in order to disseminate knowledge and new technologies, while recognizing and incorporating indigenous practices, particularly for family and peasant agriculture.
6. Intensify the efforts for the development of research, technology transfer and technological innovation to improve production and quality in family and peasant agriculture.
7. Intensify cooperation efforts to reduce the gaps in capacities for development of R&I, consolidating the existing national and regional

institutional framework, as well as the connectivity of the region to international agricultural research systems and those on other continents.

The participants concluded that the **most important topics for hemispheric cooperation** are as follows (not listed in any order of priority):

- Policies and organizational changes to manage the protection or appropriation of public goods resulting from research and innovation processes
- Management of information, communication and collaborative learning among actors, in order to achieve technological innovation in agriculture
- Adaptation to climate change with emphasis on soil and water
- Institutional innovations for research and innovation in support of family agriculture regarding its contribution to food security
- Conservation and use of genetic resources
- Development and safe use of new agricultural biotechnologies
- Promotion of technological innovations for sustainable agriculture
- Development of agroenergy without affecting food security

In order to tackle these issues, Forum members said it was necessary to:

1. Strengthen and consolidate FORAGRO as the appropriate hemispheric mechanism for facilitating the dialogue and articulation among the different sectors - public and private sectors, universities, NGOs, farmers and international research organizations - on strategic agricultural issues from the technological perspective.
2. Promote and cooperate for the development of a hemispheric program on institutional innovations for research, extension and technological innovation, with a central strategy focused on coordination, the sharing of experiences and cooperation among countries.
3. Consolidate the agricultural research programs and networks and their articulation, recognizing the importance of the PROCIs as strategic mechanisms for strengthening regional cooperation on agricultural research and technological innovation, as well as that of the Regional Research Centers.
4. Foster actions aimed at ensuring that countries allocate appropriate levels of investment to research and technological innovation in the region, and strengthen FONTAGRO by urging countries that are not

yet members to consider joining the organization and consolidating it as a regional funding platform.

5. Intensify the region's links with the Global Forum on Agricultural Research (GFAR), with other regional forums and with initiatives such as the Ibero-American NARI System.
6. Promote a renewed agenda of the Consultative Group on International Agricultural Research (CGIAR) and, particularly, coordinate the development of elements for a strategy for repositioning LAC within the CGIAR and for new strategic partnerships with the international centers on priority topics for research and technological innovation that have an impact on agriculture and food security in LAC.
7. Promote the dissemination of the consensus reached and set forth in this Declaration of the Fifth International Meeting of FORAGRO, and request that it be submitted to the following bodies:
  - General Directorate of the Inter-American Institute for Cooperation on Agriculture (IICA), at the Fifth Ministerial Meeting and the Fifteenth Regular Meeting of the Inter-American Board of Agriculture (IABA).
  - Ibero-American General Secretariat at the upcoming Inter-American Meeting of Ministers of Agriculture, El Salvador, within the framework of the Summit of Heads of State and Government process
  - Office of the President and Commission on Agriculture, Livestock and Fisheries of the Latin-American Parliament (PARLATINO), at its next period of sessions
  - Executive Committee and members of FORAGRO at national, regional and international forums, and at discussion and decision-making platforms

These proposals and other recommendations made by the participants at the Forum's Fifth Meeting should lead the Executive Committee of FORAGRO to formulate a new Plan of Action that includes a hemispheric strategy for promoting the sustainable and competitive development of agriculture and food security from the perspective of technological innovation and with emphasis on the abovementioned priority topics.

# The Program

All the presentations are available, in their original languages, from the FORAGRO Web page ([www.iica.int/foragro](http://www.iica.int/foragro)) and the INFOTEC information-sharing system (<http://infoagro.net/shared/docs/a2/FORAGRO2008.html>).

## **Day 1 - Monday, July 28, 2008**

### ***Opening Session***

- 09:00      Opening of the Fifth International Meeting of FORAGRO  
              Dan Piastun, President of the INIA; James French, Director, IICA; Mario Allegri,  
              President of FORAGRO; Adel El-Beltagy, President of the GFAR; Ricardo Erlich,  
              Mayor of Montevideo
- 09:45      Opening Address: Agriculture Research and Development  
              Enrique Iglesias, Head of the Ibero-American General Secretariat (SEGIB)

### ***MODULE 1: Strategic role of agriculture for development***

*Moderator - Manuel Otero, IICA Representative in Uruguay*

- 10:30      ***Global Vision***  
              Derek Byerlee, World Bank
- 11:00      ***Regional Vision***  
              James French, Director of Technical Leadership and  
              Knowledge Management, IICA
- 11:30      ***Questions and Comments***
- 12:30      ***Regional Political Vision***  
              José Carlos Cardoso, parliamentarian, Chair of PARLATINO's  
              Commission on Agriculture
- 13:00      ***National vision and Uruguay's innovation system***  
              María Simón, Minister of Education and Culture and President  
              of the Innovation Cabinet
- 13:30      ***Closing remarks***  
              Andrés Berterreche, Acting Minister of Livestock, Agriculture and Fisheries

## **MODULE 2: Challenges for institutional innovations**

15:00     *Moderator - Enrique Alarcón, Director of Technology and Innovation, IICA, and FORAGRO Technical Secretariat*

*Keynote address: Institutional Innovations, Concepts, Challenges and Policies*  
*Sergio Salles, UNICAMP, Sao Paulo, Brazil*

### **Parallel Sessions:**

- ***Institutional innovations: Challenges of knowledge management***  
*Moderator - Luis Maezono, Rector, La Molina National Agrarian University, Peru*  
*Rapporteur: Mario Pareja, Technical Coordinator, Northern Region, IICA*
  - Management of rights for protectable goods under regional networks: the case of public goods. Dr. Carlos Delpiazso, Professor, Universidad Mayor and INIA Uruguay
  - Management of technical information for innovation. Dr. Franz Martín, FAO-RLC
  - Panel - José Silva, Manager of technological linkages, INIA; Adolfo Martínez, Director, Honduras Foundation for Agricultural Research (FHIA) and Ajit Maru, GFAR Secretariat
- ***Institutional innovations: Agro-biodiversity and safe use of agro-biotechnologies***  
*Moderator - Max Myrol González Salán, President of SICTA, General Manager of ICTA, Guatemala*  
*Rapporteur - Francisco Enciso, Technical Secretariat of SICTA, Costa Rica*
  - Hemispheric strategy for conservation of plant genetic resources - Dr. Campbell Davidson, Agriculture and Agri-Food, Canada
  - Development and safe use of agro-biotechnologies: Inter-American Biotechnology and Biosafety Program - Dr. Ramón Lastra, Specialist in Biotechnology and Biosafety, IICA
  - Panel – Dr. Dan Piestun, President of INIA, Uruguay, Dr. Marleni Ramírez, Director, Biodiversity International LAC, CIAT-CGIAR, Colombia, Ing. Ana Berretta, Regional Coordinator of REGENSUR, PROCISUR.
- ***Institutional innovations : Technological demands in emerging issues***  
*Moderator - Dr. Juan Risi, Director of INIA, Peru*  
*Rapporteur - Dr. Jamil Macedo, Executive Secretary of PROCITROPICOS, Brazil*
  - Climate change - Dr. Walter Baethgen, University of Columbia, USA
  - Agroenergy - Dr. Federico Machado Duraes, Chefe Geral, EMBRAPA Agroenergía, Brazil

- Panel - Dr. Elizabeth Orjuela, Adviser General, CORPOICA Directorate, Colombia, Dr. John Beer, Director of Research and Development of CATIE, Costa Rica, Dr. Marco Antonio Chaves, Executive Director of DIECA-LAICA, Costa Rica
- ***Institutional innovations: Development objectives***  
*Moderator - Mr. Fernando López, Vice-President of IFAP-LAC, Director of CNFR, Uruguay*  
*Rapporteur - Ing. Victor Hugo Cardozo, Executive Secretary of PROCIANDINO, Bolivia*
- Impact of agricultural science and technology on poverty reduction - Dr. Gustavo Sain, IAASTD Coordinator for LAC, Dr. Gustavo Ferreira, Director of INIA Tacuarembó, Dr. Carlos Paolino, Vice-President of LATU, Lic. Lucía Pittaluga, UNPD, Uruguay
- Small-scale (family and smallholder) agriculture and linkages to the market  
 - Dr. Miguel García, Director of the Inter-American Program for Trade, Agribusiness and Food Safety, IICA, USA
- Technological innovations for production systems in family agriculture - Dr. Jorge Echenique, AGRARIA, Chile
- Panel - Family Agriculture and Rural Development, Mr. Robert Frugoni, Director of Rural Development, MGAP, Uruguay; Dr. Mario Ahumada, Director of MAELA, Chile

## **Day 2 - Tuesday, July 29, 2008**

08:15 *Moderator - Dr. Leopoldo Sánchez, President of FONTAGRO*

- *Presentation of results from the Parallel Sessions*
- *Plenary dialogue on institutional innovations to respond to important topics*

### ***MODULE 3: Interregional and international cooperation, and actors and the institutional framework***

*Moderator - Dr. Euclides Kepler, Executive Director of EMBRAPA, Brazil*

10:45 *Role and renewed presence of the CGIAR in LAC*

- ***CGIAR's current process of change: Implications for LAC***  
*Dr. Ren Wang, Director General of the CGIAR*  
*Dr. Rodney Cooke, Director of IFAD*

- *The need for a renewed LAC-CGIAR strategic partnership*  
*Dr. Pamela Anderson, Director of CIP-CGIAR*
- *Elements for rethinking a regional focus for research in LAC*  
*Ruben Echeverría, Executive Director of the Science Council Secretariat, CGIAR*
- *The CGIAR in LAC: Vision from the perspective of FORAGRO, the NARIs and the private sector*  
*Dr. Mario Allegri, President of FORAGRO, Uruguay; Dr. Juan Risi, Director of INIA, Peru; Dr. Claudio Barriga, President of ANEGLA, Chile*

### ***Lunch***

14:50 R&D system at the global & regional levels - Advances and institutional challenges  
*Moderator - Dr. Pedro Brajcich, Director of INIFAP, Mexico*

- *The Global System*
  - Global Forum for Agricultural Research (GFAR)  
*Dr. Adel El-Beltagy, GFAR President, Dr. Mark Holderness, Executive Secretary of GFAR*
- *The Regional System*
  - FORAGRO - *Dr. Enrique Alarcón, Technical Secretary of FORAGRO*
  - FONTAGRO - *Dr. Nicolás Mateo, Executive Secretary of FONTAGRO*
  - PROCIs - *Dr. Julio Delgado, President of PROCANDINO, Dr. Yván Gil, President of PROCITROPICOS, Dr. Euclides Kepler, Vice-President of PROCISUR, Ing. Max Myrol Gonzalez, President of SICTA, Ing. Enrique Astengo López, President of PROCINORTE*
  - CATIE and CARDI Regional Centers - *Dr. John Beer and Dr. Francis Asiedu*
- *International technical and financial cooperation*
  - Ibero-American NARIs - *Dr. Javier Martinez Vasallo, Director General, INIA, Spain*
  - French Cooperation - *Dr. André de Courville, CIRAD, France*
  - EIARD European Union Initiative - *Dr. María Teresa Dobao, INIA, Spain*
- *Institutional innovations in regional forums*
  - APAARI - *Dr. R. D. Ghodake, President of APAARI, Asia-Pacific*
  - FARA - *Dr. Denis Kyetere, President of FARA, Africa*



**Day 3 - Wednesday, July 30, 2008**

***MODULE 4: Towards a regional agenda for the promotion of institutional innovations***

*Moderator - Dr. Martín Piñeiro, Director of CEO, Argentina*

*Rapporteur - Dr. Emilio Ruz, Executive Secretary of PROCISUR*

08:30      ***Opening Presentations***

*Innovation systems - important transformations*

*Dr. Willem Janssen, World Bank*

*Agricultural and science and technology indicators (ASTI) in LAC*

*Dr. Nienke Beintema and Dr. Gert-Jan Stads, ASTI Initiative, IFPRI*

*Agricultural extension in innovation systems*

*Ing. Julio Catullo, Coordinator of Extension and Technology Transfer, INTA, Argentina*

*The new institutional design of the national innovation system*

*Dr. Edgardo Rubianes, President of the National Research and Innovation Agency (ANII), Uruguay*

*Work in groups: Elements of a shared agenda*

- *National agricultural technology innovation systems*
- *Regional agricultural technology innovation system (time to formalize?)*

*Plenary*

*Moderator - Dr. Martin Piñeiro, Director, CEO, Argentina*

12:30      ***Group presentations, agreements for the Declaration***

13:15      ***Visit to Las Brujas INIA Experimental Station***

*Lunch - Las Brujas INIA Experimental Station*

*Moderator - Dr. Alfredo Picerno, Director, INIA, Uruguay*

*Institutional Innovations in tertiary and higher education and in agrarian research*

*Dr. Fernando García, Dean, Agronomy School, Uruguay*

*Dr. Roberto Kremer, Dean, Veterinary School, Uruguay*

*Institutional Innovations in the beef chain*

*Mr. Daniel Abraham, INAC, Ing. Fernando Gil, INAC*

### *Institutional Presentation*

- National Agricultural Research Institute, INIA, Uruguay
- Dr. Dan Piestun, President of the Board of Directors
- Las Brujas Experimental Station (INIA)

*Ing. Aelita Moreira, Regional Director*

### *Tour of Laboratories and Experimental Fields*

### *Plenary*

*Moderator - Dr. Mario Allegri, President of FORAGRO*

*Presentation of proposed Declaration and agreements*

**Closing address:** *Dr. Dan Piestun, President, INIA; Dr. Manuel Otero, IICA Representative in Uruguay; Dr. Mario Allegri, President of FORAGRO; Dr. Marcos Carámbula, President of the National Congress of Mayors, Mayor of Canelones*

# Opening Session



*From left to right: Dan Piestun, President of INIA Uruguay; Adel El-Beltagy, President of GFAR; Ricardo Erlich, Mayor of Montevideo; Enrique Iglesias, Ibero-American General Secretariat (SEGIB); Mario Allegri, President of FORAGRO; James French, IICA Director of Technical Leadership and Knowledge Management; and Enrique Alarcón, IICA Director of Technology and Innovation and Technical Secretary of FORAGRO.*



*Mario Allegri, President of FORAGRO; Dan Piestun, President of INIA Uruguay; Adel El-Beltagy, President of GFAR; Ricardo Erlich, Mayor of Montevideo; Enrique Iglesias, General Ibero-American Secretary, SEGIB*



*View of the meeting during the opening session.*



## Summary

The opening ceremony of the Fifth International Meeting of FORAGRO featured speeches from Dan Piestun, President of INIA Uruguay; James French, on behalf of the Director General of IICA; Mario Allegri, President of FORAGRO; Adel El-Beltagy, President of GFAR; and Ricardo Erlich, Mayor of Montevideo.

The opening ceremony was enhanced with a keynote speech by Enrique Iglesias, Head of the Ibero-American General Secretariat.

IICA's Representative in Uruguay, Manuel Otero, highlighted the importance of having more than 200 experts of the highest level to orient the dialogue on the role of agricultural innovation systems in the countries of the Americas, and thereby promote sustainable and internationally competitive agriculture, as well as agriculture to satisfy the needs of domestic markets.



# Module 1

## Strategic role of agriculture for development



*José Carlos Cardozo, President of the Commission on Agriculture of PARLATINO; María Simón, Minister of Education and Culture of Uruguay and President of the Innovation Cabinet; Manuel Otero, IICA Representative in Uruguay; Andrés Berterreche, Interim Minister of Livestock, Agriculture and Fisheries, Uruguay.*



*Derek Byerlee, World Bank; Manuel Otero, IICA Representative in Uruguay; James French, Director of Technical Leadership and Knowledge Management, IICA*



*View of the participants during a presentation in Module 1.*





## Summary

The first module, on the “Strategic role of agriculture for development and food security from the perspective of technology,” included presentations by Derek Byerlee, co-author of the World Bank World Development Report “Agriculture for Development,” on the global outlook for and situation of agriculture; and by James French, IICA Director of Technical Leadership and Knowledge Management, on the situation of agriculture in Latin America and the Caribbean and the role of innovation and technology for development.

This module was completed with presentations by María Simón, Minister of Education and Culture of Uruguay, who is also chair of the country’s Innovation Cabinet; José Carlos Cardoso, Chair of the PARLATINO Commission on Agriculture; and Andrés Berterreche, Acting Minister of Livestock, Agriculture and Fisheries of Uruguay.



## Module 2

# Challenges for institutional innovations



*Sergio Salles, Department of Scientific and Technological Policy, Campinas State University (UNICAMP), Brazil; Enrique Alarcon, Director of Technology and Innovation at IICA and FORAGRO Technical Secretariat.*



*Parallel meeting / workshop on family agriculture.*



*Jamil Macedo, Executive Secretary of PROCITROPICOS; Mario Pareja, Technical Coordinator Northern Region, IICA; Francisco Enciso, Regional Specialist of Technology and Innovation, Central Region, IICA; Leopoldo Sánchez, President of FONTAGRO and National Director of INIA Chile; Victor Hugo Cardoso, Regional Specialist of Technology, Innovation, Biotechnology and Biosafety, Andean Region, IICA; Cecilia Gianoni, Technical Coordinator of PROCISUR Executive Secretariat, IICA.*



## Summary

The second module consisted of a dialogue on challenges for institutional innovation. It got under way with a keynote address by Sergio Salles-Filho, researcher with the Department of Science and Technology Policy of Campinas State University (UNICAMP), Brazil, on concepts, challenges and policies related to technological innovation.

The second module continued with several parallel sessions to address different topics and their relationship with institutional innovation. The topics discussed were challenges of knowledge management; agro-biodiversity and safe use of agro-biotechnologies; technology demands in emerging issues; and development objectives. Each of the parallel sessions included presentations and time for a discussion, the main results of which were presented in a plenary session.

## Reports from parallel sessions on institutional innovations to address important issues

### 1. Institutional Innovations - Challenges of Knowledge Management

*Moderator: Luis Maezono*  
*Rapporteur: Mario Pareja*

#### Main challenges and gaps

- Overcome the false dichotomy of appropriable or non-appropriable public goods (PG), with protectable or non-

protectable PG, and consider whether the protectable goods are appropriable or not

- Lack of multidisciplinary and specialized institutional units for PG management that integrate the biological, legal and economic (markets) dimensions
- Importance of preventing and developing ex-ante agreements among the parties on the management of the possible protectable PG to be generated by joint R&D projects
- Carry out ex-ante agreements, differentiating those related to R&D from those related to trade issues
- The management of technical information, through (a) institutional repositories and (b) open access to information
- Lack of multidisciplinary and trained units specializing in technical IM
- Lack of human resources specializing in management of PG and technical information
- Institutions unstructured to promote innovation, and to share information and experiences on management of PG and technical information

#### Policy options and institutional transformations

- There is a need for comprehensive policies that promote innovation through (a) horizontal dialogue on equal terms among the different actors (researchers-producers); (b) the adequate management of PG and technological information
- Endeavor to achieve coordination, integration and complementarity

between S&T and agricultural policies at the country level

- Develop policies and legal frameworks that encourage joint public-private activities
- Promote institutional innovation through the creation of units dedicated to management of PG and technical information
- Promote education and training of human resources in the management of PG and technical information
- Promote cooperation among countries in order to strengthen the management of PG and technical information

### **FORAGRO's role in promoting these changes**

- FORAGRO is the forum in which to share knowledge, information and lessons learned, and to propose key issues in the management of PG and technical information
- Serve as an internal hemispheric link for this exchange, as well as providing a global link through GFAR

## **2. Institutional innovations - Agro-biodiversity and safe use of agro-biotechnologies**

*Moderator: Max Myrol González,  
President of SICTA*

*Rapporteur: Francisco Enciso Durán, IICA  
Regional Specialist for Central America*

### **Main challenges and gaps**

- Regional institutional framework has cooperation networks in plant genetic

resources with experience, but they are weak

- Loss of plant genetic resources in gene banks and in situ, due to lack of continuity of institutional support
- Limited inter-institutional coordination among the units dedicated to plant genetic resources, among agro-biotechnologies initiatives, and between the two
- Lack of professional updating and education and training programs on genetic resources and biotechnology

### **Policy options and institutional transformations**

- Promote ratification of the International Treaty on Plant Genetic Resources and the Cartagena Protocol
- Strengthen the management units for genetic resources, gene banks and biotechnology laboratories
- Make the management of genetic resources and biotechnology in national research institutions a higher priority, through linkages with plant breeding programs
- Promote the complementation of capacities and services in terms of genetic resources and biotechnology

### **FORAGRO's role in promoting these changes**

- Promote the articulation of networks through the promotion of a hemispheric mechanism on genetic resources
- Coordinate with national entities the definition of strategies to link national systems with regional genetic resource networks

- Promote hemispheric plans and programs involving genetic resources and biotechnology and biosafety
- Contribute to the formulation of investment projects to promote strategies for plant genetic resources and for biotechnology and biosafety
- Propose to regional funding sources (FONTAGRO) the establishment of lines of funding to finance genetic resource and biotechnology initiatives
- Promote systems for intellectual property management and protection

#### **Additional observations relevant to policies and the institutional framework**

- Systematize and promote success stories involving the use of genetic resources and biotechnology and biosafety
- Promote the development of technological companies to develop biotechnological products
- Establish joint initiatives for articulation between genetic resource and biotechnology projects
- Promote communication projects to promote the value of genetic resources and inform people about biotechnology
- Encourage training and education of young people in genetic resources and biotechnology and biosafety
- Incorporate within the evaluation of research projects the effects on the erosion of genetic resources

### **3. Institutional innovations - Technological demands in emerging issues**

*Moderator: Juan Risi, Director, INIA, Peru*  
*Rapporteur: Jamil Macedo, Executive Secretary, PROCITROPICOS, IICA*

#### **Main challenges and gaps**

- There are big differences among LAC countries with regard to their capacity to respond to emerging issues such as climate change and agro-energy
- The information is polarized in the public or private sectors
- The political sector is not sufficiently sensitized to provide support for the demands from the agricultural sector with regard to the issues of climate change and agro-energy
- It is important to consider the agronomic and industrial problems and demands, in addition to the cross processes involved in the production of agro-energy
- Technology for emerging issues, such as climate change and agro-energy, is not usually demanded by producers, only by researchers with a vision of future scenarios

#### **Policy options and institutional transformations**

- It is necessary to construct an integrated legal framework in the Americas to permit better cooperation among institutions in different countries
- Institutional transformations are needed so the NARS can adjust their agendas to the important issues, to respond to the

research demands related to climate change and agro-energy

- Policies must take into account climate change and agro-energy in accordance with the levels of action (local, regional or hemispheric)

#### **FORAGRO's role in promoting these changes**

- FORAGRO could seek to involve politicians in emerging scientific issues such as climate change and agro-energy
- FORAGRO could help to establish quality parameters in order to carry out the necessary technological innovations and respond to the demands related to climate change and agro-energy
- FORAGRO could help to establish synergies among the global, hemispheric, regional and national agencies involved in the process of generating technological innovations
- FORAGRO could help to place on the agenda of the ministers and lawmakers the subject of climate change and agro-energy

#### **Additional observations relevant to policies and the institutional framework**

- It is necessary to establish national bioenergy plans that take into account the important actors in the production chains of the different platforms
- It is important to select relevant topics for regional cooperation (for example, ligno-cellulosic ethanol or biodiesel from jatropha) and to identify funding sources
- The topic of climate change should be included on political and development agendas as an issue for “today,” not “tomorrow”

- In learning to deal with the current climatic variability, societies learn to be less vulnerable and better prepared to face possible climate change scenarios
- It is necessary to develop capacities in the “users,” from farmers to policy decision-makers, in order to effectively incorporate the management of climatic risks
- FORAGRO could act as a sponsor and promoter of dialogue and technological innovation, in accordance with its areas and the lines of action of its political, institutional and thematic dimensions
- Small-scale production of bio-ethanol and biodiesel makes it possible to meet local and regional energy demands, in addition to generating higher income for producers, under more dynamic and participatory conditions
- “Adapting to climate change has to be treated as an important risk for the domestic economy and society, not as a long-term environmental problem.” Warren Evans, World Bank

#### **4. Institutional innovations - Development objectives**

*Moderator: Fernando López*

*Rapporteur: Victor Hugo Cardoso*

##### **Subjects:**

- Impact of agricultural science and technology on poverty reduction
- Small-scale agriculture and links to the market
- Technological innovations for production systems based on family agriculture
- Panel: family agriculture and rural development



### **Main challenges and gaps**

- The existing technology is not adequate for family agriculture (FA)
- FA should not be seen only from the technological viewpoint
- Lack of human resources with sufficient abilities to work with FA
- There are several types of FA; there is a great deal of heterogeneity
- The “structures” of FA rule out large-scale access to technologies
- There are communication problems between technology generators and providers and FA

### **Policy options and institutional transformations**

- The situation of FA can only be changed if there is political will, state policies and sufficient resources
- Policies should be constructed from the territories, taking into account the “values, beliefs, and culture” of FA
- Develop technologies and “services” that are adequate and meet the demands of FA
- Modify the structures of technology generation and transfer institutions, incorporating other areas, such as forms of “association,” since “leadership” is very fragile in FA

### **FORAGRO’s role in promoting these changes**

- FORAGRO should play the role of “facilitator,” “be a platform” for opportunities for the exchange of knowledge, not only between

professionals, but also between producers and other actors

- Support “restructuring” and “reorientation” (new agendas) of the NARS, and influence the policies of decision makers, since NARS Directors are members of FORAGRO (inherited institutional framework)
- Orient the work toward sociocultural and not only technological aspects
- FORAGRO should promote an evaluation of the actions implemented in FA over the last ten years. This evaluation should include methodological aspects, technological performance and the results achieved

### **Plenary: Institutional innovations to respond to important issues**

During the final discussion by the plenary, the following general observations were made for FORAGRO. They applied to all four parallel sessions:

- Lack of participation of the private sector in the discussion of issues, the analysis of experiences of public-private partnerships, the management of goods generated. It is necessary to clarify the relationship between the public and private sectors so there can be real cooperation between them on behalf of development and global objectives. There is an important gap in communication between the two sectors
- How can the benefits of supporting these areas be argued in political arenas, to

influence funding for the production of public goods

- Lack of political actors that can be instructed in decision-making

**Observations on Session 1: Challenges of knowledge management.** With respect to the participation of the private sector, the group discussed policies for public-private partnerships and institutional frameworks. The INIA-Uruguay model was presented, which is an example of mixed participation, in terms of both the composition of its governing body (50-50) and its funding sources. Emphasis was placed on the importance of the legal frameworks that promote mutually beneficial public-private associations (win-win outcomes), as well as the importance of these agreements for both for the R&D and business dimensions (separated in structure, identification and monitoring).

**Observations on Session 2: Agrobiodiversity and safe use of agricultural biotechnologies.** It is important to separate genetic resources and biotechnology, and their respective protocols. Tying them together hinders progress both in genetic resources and in biotechnology. Civil society lacks sufficient knowledge about biotechnology and its role, and this leads to confusions and areas that do not correspond (for example, GMO v. organic agriculture; GMO v. biodiversity). The NARS should cooperate to help the public understand the role of biotechnology in increasing productivity and its biosafety mechanisms. In this regard, CIAT mentioned the tool “Biotechnology in the classroom,” which is available on their Web and on CD and can be used to

support communication and dissemination initiatives.

With respect to policies, the participants emphasized the need to sensitize people who manage the resources for issues such as plant genetic resources and conservation of gene banks. Also stressed was the importance of planning institutional innovations over the long term (25 years) in order to address the interaction between plant genetic resources and biotechnology, biosafety and the sharing of experiences in this regard. An additional role for FORAGRO was mentioned: that of facilitating cooperation and information mechanisms between countries that are already implementing biosafety regulations and those that are not.

**Observations on Session 3: Emerging issues.** In the case of agroenergy, it is vital to incorporate the private sector; there are clear experiences in the countries of the region of alliances of this kind.

**Observations on Session 4: Development objectives.** Family agriculture has greater potential for territorial development than sectoral development, and the issue should be addressed not only with a technological approach but also in terms of other institutional innovations that are required, such as access to credit. It is important to take advantage of the opportunities for family agriculture in product differentiation, such as organic agriculture. The private sector is very interested in niche markets of this kind. It is necessary to consider once again the perspective of the comprehensive nature of investments (infrastructure, social aspects, institution building, etc.).

FORAGRO should also support studies to evaluate the results of investments in family agriculture (programs and policies) implemented over the last 10 years in the region.



## Interregional and International Cooperation: Actors and the Institutional Framework



*Ruben Echeverría, Executive Director, CGIAR Science Council; Pamela Anderson, Director of CIP; Ren Wang, Director of CGIAR; Kepler Euclides, Executive Director EMBRAPA; Mario Allegri, President of FORAGRO; Juan Risi, Vice-President of FORAGRO and Director of INIA Peru; Claudio Barriga, Agronegocios Latinoamericanos (ANEGLA); Emilio Ruz, Executive Secretary of PROCISUR, IICA.*



*Rodney Cooke, IFAD, Co-Chair of the Change Steering Team, CGIAR Change Management; Ruben Echeverría, Executive Director, CGIAR Science Council; Pamela Anderson, Director of CIP; Ren Wang, Director of CGIAR; Kepler Euclides, Executive Director EMBRAPA; Mario Allegri, President of FORAGRO; Juan Risi, Director of INIA Peru; Claudio Barriga, Agronegocios Latinoamericanos (ANEGLA); Emilio Ruz, Executive Secretary of PROCISUR, IICA.*



*Presentation of the CIARD Initiative: Mark Holderness, GFAR Executive Secretary; Enrique Alarcon, Director of Technology and Innovation IICA and FORAGRO Technical Secretariat; Adel El-Beltagy, President of GFAR; André de Courville, CIRAD; Mario Allegri, President of FORAGRO; James French, Director of Technical Leadership and Knowledge Management, IICA; Franz Martin, FAO LAC Regional Office; Denis J. Kyetere, FARA Chair; Ajit Maru, NARS Program Officer, GFAR; Pamela Anderson, Director of CIP.*



## 1. Summary:

The third module consisted of an exchange of ideas and a discussion on interregional and international cooperation and FORAGRO's agenda. "This module was of great importance because it raised important points regarding the role and presence of the Consultative Group for International Agricultural Research (CGIAR), with its revamped agenda and the situation of the research and innovation systems at the regional and global levels," explained Enrique Alarcón, Director of IICA's Area of Technology and Innovation and Technical Secretary of FORAGRO. The presentations for this module included current processes in the CGIAR, the advances made by the member organizations of the regional research and innovation system in the Americas, and the work carried out by other regional forums and by the cooperation agencies of developed countries.

## 2. Role and renewed presence of the CGIAR in LAC

There were six presentations during this session. The first three were related to the process of change currently under way at the CGIAR, emphasizing the need to improve the strategic partnerships with LAC and elements to strengthen regional research at the CGIAR centers.

The other three presentations looked at the CGIAR from different LAC perspectives: the hemispheric vision and the view from the national research institutes and from the private sector.

- a) The CGIAR's current process of change: Implications for LAC.

*Dr. Ren Wang, Director General of the CGIAR and Dr. Rodney Cooke, Director of IFAD*

In the current process of change, the goal is to improve the efficiency of the CGIAR system, recognizing that it has had a great impact on agricultural production and food in recent years, with a very good organization. However, in the current scenario, a transformation is required to improve its efficiency, and this does not necessarily mean a reduction.

The aspects that the CGIAR aims to improve and that have been pointed out as weaknesses in the current situation mostly concern the fact that it is an exceedingly complex organization, the overlap of activities between different centers, the significant budget reduction that has taken place in the last five years and lower productivity.

The speakers presented the current state of the process of change in four key areas: vision, governance, partnerships and funding mechanisms. There is an ongoing discussion about whether the centers are going to adopt a more centralized model or move toward autonomous international centers. The purposes of the funding system are being defined, and a timetable for implementing these transformations has been proposed.

The process of transformation aims to achieve for more input from partners, trying to incorporate them into the discussion process from the beginning, in such a way as to achieve joint, product-oriented research,

with a commitment to certain production increases within a given number of years.

- b) The need for a renewed LAC-CGIAR strategic partnership.

*Dr. Pamela Anderson,  
Director of CIP-CGIAR*

The speaker talked about the need to promote a renewed agenda to allow the coordination of a concrete, collective demand from LAC for the CGIAR; and pointed out the relative position of LAC with the centers, with respect to other regions of the world.

The LATINPAPA network promoted by CIP was cited as an example. The speaker highlighted its mechanisms for action, the definition of poverty maps by territory with their production systems and degrees of vulnerability, and emerging markets, which make it possible to generate appropriate policies at the territorial level. Also emphasized was the importance of this network as a model of partnership for learning in innovation.

- c) Elements for rethinking a regional focus for research in LAC.

*Ruben Echeverría, Executive Director,  
Science Council Secretariat, CGIAR*

In his presentation, the speaker stressed that any attempt to promote a regional research agenda had to recognize that the national research organizations are essential. An effort should be made to take advantage, in a more efficient way, of the regional mechanisms already in place, such as FORAGRO, FONTAGRO, the

PROCI, etc., in order to coordinate a regional research and development agenda. These agendas should incorporate new elements such as intellectual property, to facilitate the relationship between the different participants. Efforts should also be made to make the agendas more open and shared, and to improve their management systems. In order to advance toward partnerships of this kind, the first thing required was to invest time and effort in the preparation of the agendas and take into account the fact that the implementation of such agendas is a gradual process

- d) The CGIAR in LAC: Vision from the perspective of FORAGRO.

*Mario Allegri, President of FORAGRO*

FORAGRO is comprised of a set of national and regional institutions. Each organization possesses sufficient information and is constantly engaged in defining agendas and prioritizing research. As a result, there is no lack of agendas in LAC, and this point has to be taken into account in the relationship with the international centers. Most of those agendas have consistent priorities, are complementary and explicitly state the need for cooperation at all levels to address complex issues. It is on this that the strategic partnerships and linkage with the CGIAR should focus.

- e) The CGIAR in LAC: Vision from the perspective of the NARIs.

*Juan Risi, Director of INIA, Peru*

According to the vision of the national research institutes, the future role of the CGIAR



in LAC should be mainly to focus on the education of human resources, participation in the regional innovation agenda, public-private partnerships, win-win relationships, greater funding for research and development, and the development of markets for agricultural services such as extension.

- f) The CGIAR in LAC: Vision from the perspective of the private sector.

*Dr. Claudio Barriga,  
President of ANEGLA, Chile*

In this presentation, the main message was that the CGIAR should “think globally but act locally.” The private sector has been represented on the CG’s Executive Committee and in previous years has participated in the discussion of strategic priorities, but not shared in the results. The private sector needs to participate in the whole process and has significant contributions to make to the efforts to promote more private investment in science and technology, and in research. However, one of the priority aspects is to adapt the institutional framework in order to encourage private investment.

### **Key elements of the dialogue:**

#### **Arguments in positioning LAC:**

- Based on its wealth in biodiversity, experiences and technology
- Based on its possible food supply, to stabilize global prices at a lower level
- Based on its great and growing inequality and inequity

#### **Demands with respect to additional coverage of CGIAR in LAC:**

- Central America
- Caribbean
- Define more systemic challenges, which can be dealt with in each of the different subregions

#### **On the efforts to combat poverty:**

- Incorporate this objective more explicitly
- Define which type of poverty is to be targeted through research
- Promote the other essential elements need to combat rural poverty (credit, infrastructure, ...)

#### **With respect to public-private partnerships:**

- They are indispensable
- An enabling environment should be created to foster the participation of the private sector
- Deal with the subject of intellectual property, since the CG centers produce international public goods
- Overcome the difficulty of working together due to the international centers’ high operating costs

#### **Recurring topics:**

- Capacity development, from researchers to producers
- Appreciation of researchers
- Incorporate the perspective of innovation
- Incorporate extension

## **Final remarks**

The CGIAR is in full process of adaptation. Consequently, at this moment there is uncertainty concerning how the system of international centers is going to operate. LAC organizations are watching the CGIAR's process of adaptation with interest and are willing to collaborate and participate in the process of change. Furthermore, once the process has been defined they are willing to work on the details of shared agendas at both the national level, and the regional and hemispheric levels.

## Module 4

# Towards a regional agenda for the promotion of institutional innovations



*Julio Catullo, Coordinator of Extension and Technology Transfer of INTA Argentina; Willem Janssen, Principal Agriculture Specialist, World Bank; Martín Piñeiro, Director of CEO; Nienke Beintema, ASTI-IFPRI; Edgardo Rubianes, President of the National Agency for Research and Innovation (ANII), Uruguay.*



*Elizabeth Orjuela, Corpoica Adviser, Colombia; Adolfo Martínez, General Director of FHIA, Honduras; Mario Allegri, President of FORAGRO; Martín Piñeiro, Director of CEO; Emilio Ruz, Executive Secretary PROCISUR, IICA.*



*Willem Janssen, Principal Agriculture Specialist, World Bank.*



## Summary:

The fourth and last module offered elements for the creation of a regional agenda for the promotion of institutional innovations. In this module, Willem Jansen of the World Bank shared his experiences in agricultural innovation systems. Researchers from the ASTI initiative, from IFPRI, presented recent statistics on the state of investment in research in LAC; Argentina presented its experience in implementing agricultural extension in innovation systems; and Uruguay shared the new institutional design of the national innovation system.

## Report on Module 4:

### **Towards a regional agenda for the promotion of institutional innovations**

- In LAC, there is a long history of institutional development for innovation. For the past 40 years, research institutions have been evolving at every level and with different results. At the national level, the contribution of the NARIs continues to be very important, although they have a smaller relative impact because of the incorporation of other actors. The research structure and models need to be re-examined in greater depth. In LAC, there is investment in research but it is not sufficient, and there may be different degrees of efficiency associated with the current institutional framework itself.

- In recent years, innovation has appeared as the dominant vision. However, the research system does not necessarily have to change and become an innovation system; instead, it should integrate itself into the innovation systems.
- In the process of further evolution towards innovation, it is vital to articulate with existing knowledge networks at the international level. Especially in those areas of knowledge that are strictly beyond agriculture.
- It is important to analyze how extension will be incorporated into this new model of innovation. Strengthening small producer organizations is a key priority, so they can participate systematically in decision-making and can have access to information systems and to markets.
- In LAC, there is a very well developed institutional framework at every level, but it seems that the members themselves are not exploiting all its potential. The regional organizations (the PROCIs, for example) have an opportunity to position LAC better at the global level. This is the area in which greater articulation with the CGIAR is needed.

Related to the above, and based on LAC's enormous potential to produce food, an effective argument for LAC's participation with the CGIAR would be to place on the joint agenda a contribution to help solve the global food crisis.



# Closing Session

## Declaration and agreements



*Manuel Otero, IICA Representative in Uruguay; Marcos Carámbula, President of the National Congress of Mayors, Mayor of Canelones; Mario Allegri, President of FORAGRO; Dan Piestun, President of INIA Uruguay; Enrique Alarcon, Director of Technology and Innovation, IICA and FORAGRO Technical Secretariat.*



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## Fifth International Meeting of FORAGRO, Montevideo 2008

Institutional innovations for agriculture with knowledge  
in the Americas in the 21st century

### DECLARATION OF MONTEVIDEO 2008

We, the participants of the V FORAGRO Meeting, in our capacity as such, **consider** that in order to achieve food security, face the challenges of agriculture and rural development in the current context, reduce rural and urban poverty, increase food production and quality, improve the equity in the distribution of production profits, prevent negative impacts on the environment and preserve and make good use of the natural resources in the Americas, it is necessary to promote an agriculture with knowledge and to adopt the perspective of innovation, which requires undertaking innovations in the technological policies and in our organisations.

To this effect, **we consider it is essential** that the hemispheric innovation agenda should be compatible with these objectives and that the development thereof should be sustained by a **renewed partnership** at the level of political decision-making, the public and private stakeholders of the national and international agricultural research and innovation (R&I) systems and the civil society in general. This partnership should be oriented at the following **objectives**:

1. To project sustainable agriculture in order to achieve development and food security as the core of any economic and social strategy of the nations, and specifically with a key role regarding national and regional development.
2. To promote the growth of production, productivity and quality as a means of contributing to competitiveness, agricultural diversification, food security and sovereignty, equitable profit distribution, prosperity of rural inhabitants and the development of new production and value-added opportunities.
3. To harmonize agricultural and rural development with environmental sustainability, to strengthen the role of agriculture as generator of food, inputs for agro-industries and other raw materials, and as a source of bioenergy, without affecting food security.

4. To counteract the effects of climate change on agriculture through technological innovations that contribute to adapt the production of crops and animal species to this change, focusing on the most vulnerable regions and sectors and to assist in the sustainable preservation of natural resources, particularly biodiversity and water resources.
5. To foster institutional innovations at micro, meso and macro level in order to promote the development of research, extension and technological innovation in agriculture and forestry through inclusive and participatory models with the various public and private players.
6. To contribute to hunger reduction and income generation by creating production alternatives through the development, access and use of agricultural knowledge, science and technology that may be applicable to the various systems that make up the heterogeneity of agriculture.

Considering the above, the participants of the Fourth Meeting of FORAGRO, acting on our own behalf, **declare the following intentions:**

1. To promote a dynamic management of the priorities identified during the FORAGRO meeting for the R&I processes that may counteract food insecurity, taking advantage of the opportunities and facing the challenges of the current world and regional socio-economic conditions.
2. To position the relevance of agricultural knowledge and technological innovation at the core of political decision-making in the countries and in the field of hemispheric integration.
3. To continue developing solid arguments to justify the allocation of greater resources to research, extension and the development of technological innovations by the governments of the region, the private sector and the international cooperation.
4. To highlight the need for greater public investment and to promote greater contribution from the private sector, seeking to reverse the

low investment in science and technology in the Latin American and Caribbean (LAC) countries.

5. To support institutional innovations in extension and transfer in order to socialize knowledge and new technologies, while recognizing and incorporating indigenous practices, particularly for family and peasant agriculture.
6. To intensify the efforts for the development of research, technology transfer and technological innovation to improve production and quality in family and peasant agriculture.
7. To intensify the cooperation efforts to bridge the gaps in capacities for development of R&I, consolidating the existing national and regional institutional framework, as well as the connectivity of the region to international agricultural research systems and those of other continents.

The following are the **topics considered to be the most relevant for hemispheric cooperation**, the order of which does not imply a greater or lesser priority:

- Policies and organizational changes to manage the protection or appropriation of public goods resulting from the research and innovation processes
- Management of information, communication and collaborative learning among actors, in order to achieve technological innovation in agriculture
- Adaptation to climate change with a focus on soil and water
- Institutional innovations for research and innovation to support family agriculture regarding its contribution to food security
- Conservation and use of genetic resources
- Development and safe use of new agricultural biotechnologies
- Promotion of technological innovations for sustainable agriculture
- Development of agroenergy without affecting food security

In order to approach these issues, **the following proposals** should be implemented:

1. The strengthening and consolidation of FORAGRO as the appropriate hemispheric mechanism to facilitate the dialogue and coordination between the different sectors – public, private, university, NGOs, farmers and international research organizations – on strategic agricultural issues from the technological perspective.
2. The promotion and cooperation for developing a hemispheric programme on institutional innovations for research, extension and technological innovation, with a central strategy focused on the coordination, exchange of experiences and cooperation between countries.
3. The consolidation of the programmes and networks on agricultural research and their articulation, recognizing the relevance of the PROCIs, as strategic mechanisms to strengthen regional cooperation on agricultural research and technological innovation, as well as that of the Regional Research Centres.
4. To foster actions aimed at having countries allocate appropriate investment levels to technological R&I in the region and to strengthen FONTAGRO by urging countries that are not yet members to consider joining the organisation and consolidating it as a regional funding platform.
5. To intensify the links of the Region with the Global Forum on Agricultural Research (GFAR), with other Regional Forums and initiatives such as the Ibero-American INIA System.
6. To promote a renewed agenda of the Consultative Group on International Agricultural Research (CGIAR) and to specifically coordinate the development of elements for the strategic repositioning of LAC in the CGIAR and new strategic partnerships with the International Centres on priority topics for research and technological innovation that have an impact on agriculture and food security in LAC.
7. To promote the dissemination of the consensus reached and set forth in this Declaration of the Fifth International Meeting of FORAGRO, and request it be submitted to the following instances:

- General Directorate of the Inter-American Institute for Cooperation on Agriculture (IICA) at the Ministerial Meeting and the XV Inter-American Board on Agriculture (IABA).
- Ibero-American General Secretariat at the upcoming Inter-American Meeting of Ministers of Agriculture, El Salvador, in the framework of the Summit of Heads of State and Government
- Chair and other members of the Commission on Agriculture, Livestock and Fishery of the Latin-American Parliament (PARLATINO), at the next sessions of the commission
- Executive Committee and members of FORAGRO at national, regional and international Fora and discussion and decision-making platforms

These proposals and other recommendations made by the participants of the Fifth Meeting of the Forum should lead the Executive Committee of FORAGRO to formulate a new Action Plan that includes a hemispheric strategy for promoting the sustainable and competitive development of agriculture and food security from the perspective of technological innovation and with a focus on the above mentioned priority issues.

*Montevideo, July 30, 2008*



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## Annex 1:

# Towards a renewed presence of CGIAR in Latin America and the Caribbean<sup>1</sup>

## 1. Background

Agriculture in Latin America and the Caribbean (LAC) in the twenty-first century is characterized by great opportunities, but also faces new challenges. These include climate change, limited availability of soil and water for production, and increased input and transport costs arising from higher fuel prices. Other challenges include the use of biofuels derived from agricultural products as an alternate energy source, as well as growing demand for food, both in LAC and other regions of the world.

These challenges may be addressed in a variety of ways. One of the most important possible solutions is to increase agricultural productivity using environmentally sound, inclusive, and equitable technologies. The transformation of agricultural production through technological research and innovation has become more important than ever as a strategic variable for growth and development. The trends mentioned above, coupled with the magnitude and complexity of the problems facing agriculture, often exceed the technological capabilities of individual countries. Ensuring hemispheric technological cooperation and integration and increasing scientific connectivity in the

Americas through the Consultative Group on International Agricultural Research (CGIAR) will provide significant value added for the countries of LAC and the region as a whole.

Notwithstanding its budget, which is lower than 4% of global spending on agriculture, the CGIAR International System has been a significant and influential component of the global agricultural research system since the second half of the twentieth century. Its contribution to food security, through increased production and productivity in the areas within its mandate – the so-called “Green Revolution” is one example – has been highly significant, as has its contribution to science and technology. The CGIAR can be said to have originated in the region; one of the first international centers it funded was the International Maize and Wheat Improvement Center (CIMMYT), based in Mexico, in 1966. Nevertheless, the beginnings of the organization can be traced to the Office of Special Studies (a bilateral agreement between Mexico and the Rockefeller Foundation), in the 1940s. This program was responsible for creating the semi-dwarf wheat varieties that would later be adopted by other developing countries, during what is known in world agricultural history as the Green Revolution. The International Center for Tropical Agriculture (CIAT)

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<sup>1</sup> Prepared by FORAGRO as an input for the dialogue with CGIAR at the Fifth International Meeting of FORAGRO “Institutional innovations for an agriculture with knowledge in the Americas in the 21st century”, in Montevideo, Uruguay, July 2008

was created in early 1967, followed by the International Potato Center (CIP), in 1971. These organizations are headquartered in Colombia and Peru, respectively. Another eight CGIAR centers have also operated regional offices, with different levels and ranges of activity, at different times.

The presence and strength of CGIAR has changed over the last few years. While it continues to conduct important research, its presence in LAC has diminished. In 2007, during the meeting of the Executive Committee of GFAR and the Annual General Meeting of CGIAR, in Beijing, China, FORAGRO stressed the importance of CGIAR for scientific development. It also expressed concerns regarding the present and future of the system, and noted that the time had come for renewed dialogue with LAC within the framework of the V International FORAGRO Meeting, held in Montevideo, in July 2008.

## **2. Emerging threats to agriculture and institutional innovation**

One of the threats facing agriculture in the twenty-first century is the need to ensure food security in a world characterized by increasing demand for food on the part of a growing population, particularly in China and India. Grain production has also fallen, due to a global decline in available farmland and the loss of harvests as a result of climate change. This has led to a drop

in global food stocks – particularly wheat. Moreover, given the high price of fossil fuels, the use of agricultural products as a fuel source is on the rise. Various studies suggest that prices will remain high for the next ten years or so. ECLAC studies have shown that higher food prices are directly related to poverty and indigence in LAC.

Competitiveness in a globalized world has also forced agriculture and agribusiness to adapt to changing market conditions. Climate change causes the need to approach variations in the availability of water (both shortfalls and surpluses), reduced agricultural productivity, and the need for technologies with low impact on the emission of greenhouse gases.

In such an environment, technological innovation must play a key role in the development of countries. Technological change has been shown to account for an average of 30% to 40% of changes in agricultural production. Innovation can also encourage more efficient and sustainable use of natural resources.

The countries of the Americas are endowed with a greater wealth of natural resources than other regions of the world, and most of them have acquired the capability to generate and transfer technologies. These advantages will not be enough, however, unless policies, institutions, and organizational and managerial models are developed to conduct research, encourage technological innovation and adopt new technologies. Accordingly, FORAGRO selected institutional innovation as the main topic of its V Meeting.



### 3. A look at FORAGRO and international cooperation

FORAGRO is supported by resolutions of the Inter-American Board of Agriculture, comprised of the region's ministers of agriculture, and is consistent with the objectives of Agro Plan 2006-2015, approved by the ministers during the first five-year period. It is also supported – per ministerial mandate – by IICA, which serves as its Technical Secretariat. The Forum has been represented by its leaders at biannual ministerial meetings held in Bahía, Panama, Quito, and Guatemala, where it has submitted declarations on behalf of its constituents. The Forum has now established itself as an institutional mechanism with access to political authorities, which uses its position to propose strategies in the field of agricultural research.

It should be noted that one of the reasons FORAGRO was created was to promote cooperation, strategic partnerships between research centers and other agents of technological change, and national and transnational research and technological innovation networks. The region possesses the maturity necessary to achieve these objectives, in spite of the problems and gaps created by the process of institutional strengthening and diversification currently under way in several countries, as well as the role of stakeholders such as the private sector, universities, rural producers' associations, and non-governmental organizations (NGOs). This environment represents an excellent opportunity for cooperation between LAC and other regions in the world; the global reach of GFAR and CGIAR are a valuable

asset whereby other regions may strengthen links with LAC, and vice-versa.

Collaborative efforts between the countries of the region and other continents are appearing at a faster rate than before, but remain insufficient. The Global Challenge Programs (GCPs) sponsored by CGIAR and the Global Partnership Programs (GPPs) promoted by the Global Forum are examples of such efforts.

FORAGRO recognizes the importance of the changes which are to take place in CGIAR. These changes are intended to increase the organization's impact, given the new needs of LAC and the region's potential contribution to the alleviation of poverty and the strengthening of food security, both internally and in other regions of the world. Regional cooperation, integration and funding mechanisms such as FORAGRO, FONTAGRO, PROCi, SICTA, PROMECAFE and similar networks, CATIE and CARDI have a key role to play, given their constituencies and national support, as well as support from key organizations of the Inter-American System such as IICA, IDB, the Ibero-American NARIs System and, of course, international cooperation from CGIAR.

### 4. LAC concerns regarding CGIAR

**LAC as a priority for the CG.** The role of the CG has been significant – particularly during the 1970s and 1980s, when approximately 25% of its budget was devoted to LAC, and the dedication of its staff (which stood out for its training skills,

as well as the creation and management of thematic and disciplinary networks funded by the organization), as well as its scientific quality (development of advanced international nurseries, with evaluation, final selection and release by countries) led to important contributions to the region.

The situation has changed dramatically in terms of spending (less than 14% of the organization's overall budget), commitment (the CG is viewed as a competitor), and scientific approach (broad coverage is based on global priorities, not necessarily regional ones). CGIAR has recently focused its efforts on Africa and Asia, despite the existence of significant nodes of poverty and low human development indices in LAC – in Haiti, for example (HDI 0.529), Guatemala (HDI 0.689), Bolivia (HDI 0.695), Honduras (HDI 0.700), and Nicaragua (HDI 0.710).

Another factor to consider is the region's reduced use of the knowledge produced by CG Centers on other continents. The CG and the countries of the region must give this careful thought, since Centers outside the region generate knowledge that could be of use to LAC.

**Presence of IARCs in LAC.** Generally speaking, the presence of International Agriculture Research Centers (IARCs) in the subregions of LAC has declined substantially, and some offices have been closed. Cooperation models based on collaborative research and training have also been reduced. This is not to say that Centers in Latin America did not score significant achievements in maize, beans, and potato in past decades. The creation

of global programs such as Generation, HarvestPlus, and Water and Food should also be noted.

The case of CIAT also deserves attention, given its importance for tropical agriculture. CIAT has a history of significant results and achievements in tropical agriculture, as well as in the management of natural resources and participatory research models involving producers. Internal management factors, as well as external factors such as the revaluation of the Colombian peso and the reduction of the organization's basic budget, have weakened the institution. This may have negative consequences, as a reformulated CIAT may be less focused on LAC and its priorities. All regions – particularly LAC – would be affected as a result.

The situation described above may (if timely action is taken) create significant opportunities in terms of the future relationship between the region and CGIAR International Centers.

CIAT cannot operate in a vacuum, and, given its regional focus, it could be given a different structure and functions, whereby existing capacities in several of the regions countries and institutions (EMBRAPA, CORPOICA, INTA Argentina, INIFAP Mexico, for example) could be utilized.

Thus, CIAT (among other models) could become a technological platform that works with stand-out national programs, while still maintaining a distinct vocation for regional issues such as genetic resources, shared watersheds, transboundary diseases and pests, plant breeding for specific geographic regions, adjustment

of production systems to climate change, management of natural resources in areas where production takes place, cutting-edge technology (biotechnology, nanotechnology, information and communication technologies, precision agriculture). Such a role and mission would complement (again, if timely action is taken) the strengths of other centers (CATIE and CARDI), as well as the actions of PROCIs and FONTAGRO.

**Research priorities.** The region's research priorities are concentrated in the fields of food security, competitive development of agriculture, the search for equity, poverty reduction and the sustainable use of natural resources. This requires a rethinking of research priorities and the development of an agenda focusing on small-scale or family agriculture. One of the challenges facing CGIAR is to motivate donors to fund not only the research phases of a project, but other activities that go beyond the generation of knowledge (use and application of knowledge).

The agricultural research priorities of LAC are summarized in Section 6 of this document.

**Diversity within LAC and research priorities.** The specific needs of regions and ecosystems should be emphasized. LAC is not a uniform continent, and the use of general indicators or averages obscures the highly diverse nature of the region's ecological/cultural realities, needs, and opportunities. The overall priorities of CGIAR – which were redirected in 2005 – and its Centers are generally in line with those of LAC. Nevertheless, gaps exist

in the thematic coverage and actions of the region's International Centers. These shortfalls should be addressed by improving the focus, use of information, and priorities of FORAGRO, FONTAGRO, the PROCIs, and regional centers such as CATIE and CARDI.

**Promotion of neglected crops and animal species and value added.** The region must continue producing staple foods, but it must do so using approaches that allow for technological innovations in the production of both staple crops and crops which, though less well-known, are key to small-scale and campesino agriculture, from both an economic and a nutritional perspective. CGIAR can introduce changes to strengthen support for staple crops, going beyond the four to six traditional crops which have received the most attention, in order to offset high costs and rising food imports – particularly in tropical countries, which have the highest poverty levels, and have virtually become net food importers. The priorities of CGIAR should also be geared toward cooperation with the countries of LAC to promote crops with greater potential for value added and integration with agro-industrial complexes. Examples include tropical fruits, nutraceutical products, vegetables, some animal products, and products derived from native genetic resources, such as medicinal and aromatic plants.

**Development of scientific capabilities.** Countries require increased knowledge of genetic engineering, biotechnological diagnosis protocols, gene flow analysis, food safety, ICTs, biofuels, bio-fertilizer development, bio-pesticides, and even “soft” technologies such as management and appreciation of technology. These

needs warrant a collective effort, as well as the support of International Centers, as in the past. Not all countries have achieved a critical mass of specialization; matters are made more difficult by the retirement of experienced professionals. Training, including partnerships with universities, is indispensable in the current environment.

**Competing versus sharing.** The development of true knowledge societies and networks is still in its infancy in the region. While there have been instances of successful cooperation between NARS (National Agriculture Research Systems) and IARCs, the development of research consortiums that are collaborative and complementary rather than competitive remains a challenge. The achievements of FORAGRO and the meetings of FONTAGRO, which included financial contributions from CGIAR, are a good example of such efforts. Some national research organizations are still more aid recipients than partners. Competition between NARIs and IARCs for donor funding is an even greater cause for concern.

**“Social control and governance”.** Country participation in the governing bodies of CGIAR has increased, but is still not enough to significantly influence priorities and strategies in the region. Brazil, Colombia, Mexico, and Peru are members of CGIAR, with seats on its Executive Committee (ExCo). They are also represented at the organization’s Business Meetings. The presence of regional fora such as FORAGRO at ExCo and GFAR is a significant achievement. Reciprocally, the International Centers of CGIAR in the Americas have always had a seat and a voice in the Executive Committee of FORAGRO.

### **From generation and transfer of technology to technological innovation.**

The countries of LAC and regional cooperation mechanisms encourage the development of genuine National Research Systems through the gradual adoption of a new paradigm based on technological innovation. This entails the ability not only to generate knowledge and new technologies, but also to develop new skills and carry out institutional innovations, in order to develop, access, commercialize, negotiate, and generally deliver knowledge. In this regard, it is important to analyze the manner in which CGIAR and the IARCs are internalizing these processes, as well as their potential role in support of countries – particularly the role of Centers whose functions include supporting policy development and research management, such as the former ISNAR, or IFPRI. The partnership between Centers and experienced institutions such as IICA, FAO, and some national agencies dedicated to the support and transfer of soft (social and institutional) technologies must therefore be improved.

## **5. Opportunities for a renewed CGIAR presence in LAC**

- A CG that strengthens its global role while also maintaining a relevant presence in LAC, where existing research capacity is strong (albeit characterized by insufficient investments in several countries).
- Dollars invested by CGIAR have a stronger multiplier effect in LAC than

in other regions. LAC can contribute a significant amount of knowledge and lessons learned to other regions (spillover effect).

- The existence of a strong regional institutional framework comprised of organizations such as FORAGRO, FONTAGRO, PROCIs, SICTA, CATIE, CARDI, and Ibero-American NARIs, among other mechanisms, networks, and regional centers.
- The existence of political/technical and financial platforms such as IICA, FAO, and IDB, as well as countries with huge installed S&T capacity, such as Brazil.
- The relationship between FORAGRO and GFAR, which helps strengthen the GFAR-CGIAR agenda with high participation of regional fora.

## 6. A summary of the vision of FORAGRO for CGIAR in LAC

### From the perspective of CGIAR

- Greater investment by the CGIAR system in LAC; increase the current 14%.
- Better adjustment and compatibility between CGIAR priorities and those of agriculture in the region in the execution of joint activities and projects.
- Improved understanding and implementation of the concept of “differential regions” in the prioritization and execution of CGIAR projects – or,

at least, a “regionalization of CGIAR priorities” in LAC.

- Increased presence and attention to urgent food security needs and requirements in the region on the part of International Centers. Strengthening CIAT and increasing its emphasis on tropical agriculture in LAC is a highly desirable and necessary objective.
- A renewed strategy and partnership mechanisms characterized by: (i) trust; (ii) the concept of “true partners”; (iii) complementarities; and (iv) the elimination of competition for funding from the region and other sources.
- The system whereby resources are allocated to strategic global and regional projects should take into account mechanisms, in order to:
  - In the short term, increase the participation of representatives from countries and regional mechanisms in the organization’s current transition process.
  - In the short and medium term, promote a new funding system for global and regional projects – one which allows not only for research, but also for the transfer of knowledge to production systems, territories, and agrifood chains.

In this regard, CGIAR cannot and should not replace national research and extension systems. In some cases, however, funding for international research projects that focus on development should go beyond knowledge generation to innovation – in other words, it should ensure and encourage the use of the

knowledge generated. Donors should therefore consider funding global or regional projects that involve other regional and national actors. The co-financing of FONTAGRO calls for proposals is one interesting example which could be replicated.

### **From the perspective of the regional LAC research system**

- Contribute to the strengthening of the institutions and mechanisms of national and regional systems, on the basis of joint agendas and priorities.
- Actively participate in the organization's transition process and follow up on the implementation of changes. NARIs, FORAGRO, FONTAGRO and PROCIs must be key participants.
- Strengthen the regional research and innovation system of LAC, taking advantage of existing capacity, promoting investment, and encouraging further technological innovation.
- Include the decision to develop a closer relationship with CGIAR in the FORAGRO Declaration of the V International Meeting, as well as its 2009-2010 Plan of Action, and convey the importance of this system to national and regional decision-makers.

## **7. Regional development and research priorities**

In order to create a shared vision for agriculture, the constituents of FORAGRO

have identified six major challenges which must be addressed in order to ensure that agriculture is competitive, sustainable, and conducive to rural prosperity.

- **Fighting aggregate poverty:** this challenge is broadly related to food security, production, and productivity.
- **Fighting rural poverty:** this priority is closely linked to productive, sustainable, and competitive family or campesino production.
- **Market competitiveness and supply:** involves quality, safety, and efficiency issues, within a framework of competitive strategies, such as market niches.
- **Conservation of natural resources:** involves promoting environmentally sound agriculture that contributes to the intelligent management of natural resources.
- **Natural disasters and climate change:** preventive management, impacts, adaptation to and mitigation of events arising from natural disasters and climate change.
- **New options for agriculture:** analysis and utilization of new alternatives, such as agro-energy and agro-tourism.
- **Insertion into the new scientific/technical revolution:** utilization of new fields, such as biotechnology, ICTs, nanotechnology, and bioinformatics, among others.



In order to address these challenges, the constituents of the Forum concluded that a new technological approach to agriculture was required. In other words, agriculture must be knowledge-based. To that end, in the early 2000s the Forum began working to identify research and innovation priorities.

This process began with the development of a conceptual and operational framework, followed by subregional consultations on agricultural research and innovation. The results of these consultations were used by the FORAGRO Secretariat to develop an analytical summary, which was submitted at the Brasilia meeting in 2002. Eleven priority issues were identified by consensus. These priorities were included in the FORAGRO Declaration, and served as a guide for the plans of action developed by the Forum for the 2003-2005 and 2006-2008 periods.

The identification of priorities has served as an input for the development of hemispheric and international partnerships and agendas. The following issues have been identified:

- Water resources
- Genetic resources
- Sustainable management of natural resources
- Promotion and development of agribusiness

- Technologies based on agroecological principles
- Insertion of small-scale agriculture into agrifood chains (market links)
- Clean production
- Development and utilization of new agricultural technologies
- Integrated pest, crop, and livestock management
- Information systems and human-resource development in ICTs
- Climate change
- Agro-energy

Within the framework of FONTAGRO, priorities were also brought up to date – a fact which is reflected in the 2005-2010 Medium-Term Plan. The Fund identified 11 mega-domains – essentially areas where the potential for spillover effects exists. It also identified six critical families of technologies, defined as groups of technological solutions to serious problems, or opportunities in the agricultural sector that may be described as public goods of strategic regional importance. The Fund has also been prioritizing specific items or issues at its annual meetings – fruits and vegetables in 2007, for example, or adaptation to climate change in 2008. The mega-domains and technology families identified are listed below:

Technology family	Brief description
<i>Value chain productivity / sustainability</i>	Emphasizes technological innovation linked with markets and the social and economic environment, in a manner which influences sustainable competitiveness (with a sense of social responsibility and positive management of the environment)
<i>Product and food health and safety</i>	Emphasizes technological innovation guided by optimal practices, as well as the development of standards which have a positive impact on domestic consumption and exports. May be used to complement and coordinate existing priority initiatives, including monitoring, prevention, and control research.
<i>Viable small-scale agriculture</i>	Emphasizes technological innovations that improve rural income, employment, nutrition, and quality of life. It is particularly focused on clean, sustainable production, as well as the insertion of producers into value chains.
<i>Water and soil management</i>	Optimization of water and soil resources, with a view to maintaining and improving the foundation upon which priority value chains operate.
<i>Characterization, improvement, and optimization of genetic resources</i>	Emphasizes the development of new products (with proven potential demand) through the use of genetic resources.
<i>Policies, sectoral activities, and institutional strengthening</i>	Socioeconomic and policy research aimed at developing and strengthening competitiveness, fighting poverty, and developing natural-resource strategies in the rural milieu.

Source: FONTAGRO 2005-2010 Medium-Term Plan

These priorities were discussed at the 2008 Ibero-American NARIs meeting, after agreement was reached on issues involving food security, family agriculture, adaptation to and mitigation of climate change, agroforestry systems, natural resources, conservation and use of agro-biodiversity, and genetic resources.

**Specific cooperation and research issues among countries involved in international partnerships, which seek to strengthen food**

**security and exploit new opportunities for agriculture**

#### *Hard technologies*

- Efficient use of water resources
- Agro-biotechnologies and utilization of (native) plant genetic resources
- Innovations to link small-scale agriculture with markets
- Raw materials for agro-energy (biofuels) and biodiversity



- Post-harvest technologies that increase added value (consumers)
- Adaptation to climate change, with emphasis on abiotic stress
- Safety and biosafety; implementation of international agreements (risk assessment)
- Seed production technology (support for food security plans)
- Tropical livestock research
- Production of neglected food crops

### *Soft technologies*

- Protectability of public and mixed regional goods
- ICT policy and management, extension, NARIs in the context of innovation
- Technological innovation and management of territories
- Multi-dimensional evaluation of the impact of R&I (research and innovation)
- Management of R&I networks and collaborative programs
- Production systems and agro-ecotourism

These issues constitute major priorities that are not specific to one region. Given the significant eco-regional and geopolitical differences that characterize the Americas, it is important to identify certain issues as subregional research priorities. To ensure greater precision, these priorities should be discussed with stakeholders from each subregion. The Cooperative Research Programs (PROCI) carried out jointly by IICA, the countries of the region, and their institutions are valuable tools for identifying and agreeing on priorities.

Following is a brief overview of possible priorities, which should be discussed with stakeholders in each subregion:

**Southern Region:** Wheat germplasm network to increase yields in areas under biotic and abiotic stress.

**Central Region:** Productivity and sustainability of staple grains (maize, beans), paying special attention to family agriculture and its links to markets.

**Andean and Tropical Amazon regions:** Agro-energy – potential genetic material that may be used to produce biofuels without competing with food production.

**Lower Tropical regions of LAC:** Support for the development and competitiveness of tropical fruit and vegetable chains.

**Andean Region:** Development of production systems to support food security and sovereignty, placing special emphasis on small-scale agriculture and its links to markets.

### *Possibilities for cooperation*

An excellent opportunity now lies before us to reposition and strengthen the relationship between CGIAR and LAC – especially since that organization's International Centers, which play a significant role in the region's innovation system, are reassessing their institutional commitments, organizational structure, and partnership and funding strategies.

This process of institutional change at CGIAR is taking place at a time when the role of agriculture in the economy and the development of the region are being reevaluated.

The development of a joint agenda based on issues of common interest to the International Centers of CGIAR and the NARIs of LAC – one which leads to research projects with established objectives, development results, and innovation, and seeks to improve environmentally sustainable competitiveness and social inclusion – is essential. Such a common agenda will require a clear, coordinated agreement on needs between CGIAR and LAC.

It is also essential to promote win-win relationships and synergies, in order to undertake joint initiatives that rely on complementary, mutually beneficial capacities.

This will entail recognizing the capacities developed in LAC and creating strategic partnerships and consortiums based on building social capital and trust, in which partners are on an equal footing. The great challenges of the moment are increasingly complex and global, and require renewed integrated and systemic efforts. In some cases, the perception of competition between International Centers and NARIs has been observed to be a risk. National research is central, and it is potentiated by complementary regional and global efforts.

The capacities of LAC are grounded in thematic and product-oriented institutions and networks that exploit economies of scale and scope, as well as accumulated investments in science, technology, and innovation,

highly qualified human resources, physical infrastructure, data bases, information, knowledge and technologies, genetic biodiversity, and natural resources.

According to an updated survey by ASTI-IFPRI (preliminary data, 2008), average public spending on agricultural research and development in LAC was approximately 1.1% of agricultural GDP in 2006, although there were great differences between countries. Overall public spending by LAC countries on agricultural research and development grew at an annual rate of 1.1% between 1981 and 2006. In 2006, agricultural research and development employed approximately 19,000 full-time researchers.

The genetic diversity of LAC should also be noted; the region is home to many valuable species which are key to managing agrobiodiversity.

LAC possesses an advantage in FORAGRO, recognized as a pioneering forum by the 2007 GFAR evaluation, with an appropriate organizational structure and stakeholder constituency, as well as initiatives in the field of family agriculture, institutional innovation, and integrated information management. PROCIs and similar networks, together with public and private regional and national organizations, also help to strengthen CGIAR. As mentioned above, the usefulness of the FONTAGRO-CGIAR partnership for the funding of regional research projects is also well known.

The training of new researchers, who will develop capabilities at the highest graduate level at centers of excellence, is essential in order to replenish the ranks of current researchers.

LAC could also take better advantage of CGIAR International Centers in other regions.

The lessons learned in the LAC region should be taken into account. Permanent, institutionalized processes for consultations and interactions should also be maintained, in order to ensure effective participation of NARIs in the region, jointly planning, monitoring, and evaluating development-oriented research projects. Continuous, active, and organic interaction should be encouraged, through ongoing dialogue, the progressive development of priorities, and a consensus-based regional agenda.

The experience of LAC can contribute to the development of south-south cooperation (spillover), which is on the rise.

### ***Regional Strategy Meeting***

As explained above, a cooperation agenda must include issues of common interest to both CGIAR centers and LAC, in which NARIs direct agricultural research toward improving competitiveness, environmental sustainability, social equity, and quality of life. Issues of common interest must be identified in order to prepare and implement research, development, and innovation projects. The key is to jointly identify important research

topics that will help improve comparative advantages, add value to primary products, and facilitate the dissemination of knowledge and technologies.

It is proposed that CGIAR support a regional strategy meeting to identify priorities within the framework of partnerships between national innovation systems and CGIAR International Centers, as well as to formulate projects, identify investment resources, and reach agreements on the execution of these projects.

Such a meeting would also serve to determine how CGIAR International Centers in the region can be strengthened, as well as to improve the utilization of centers in other regions. It would also provide an opportunity to discuss the implementation of institutional change at CGIAR, as well as its renewed presence in LAC.

The meeting could be arranged by FORAGRO and technically supported by IICA, in collaboration with CGIAR and its International Centers in the region; it could be scheduled for the first half of 2009. Also, GFAR should consider the financial and technical support to this initiative in this region under the framework of the work program aimed at increasing its relations with CGIAR and supporting the regional fora.

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