

GCARD Regional Review for Latin America and Caribbean

Summary of Electronic Consultation
“Transforming agricultural knowledge into
development with social inclusion in LAC”



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Summary of Electronic Consultation “Transforming agricultural knowledge into development with social inclusion in LAC” carried out in the frame of preparatory process for the Global Conference on Agricultural Research for Development, GCARD 2010. ¹²

1. Background

The Global Forum on Agricultural Research (GFAR) organizes every two years, starting from 2010, a Global Conference on Agricultural Research for Development (GCARD). These GCARDs, have the objective of summoning all the stakeholders related to agricultural research for development to review the priorities of the agenda in the global system of agricultural research, to ensure that they shall be focused on the needs of the poor in developing countries. Each GCARD shall be preceded by a series of electronic consultations and face-to-face meetings to ensure that perspectives of all the stakeholders are considered in the agricultural research, education and development systems. These consultations and meetings are expected to provide an opportunity for stakeholders to exchange experiences, as well as learning from experiences of other sectors. To facilitate this process, each consultation is based on the starting point of a regional document containing a synthesis of existing studies and reports, at national and regional levels, on how current agricultural research priorities match with the needs and objectives of development with social inclusion. The document related to Latin America and the Caribbean which was used as basis to this e-consultation: “GCARD Regional Review for Latin America and the Caribbean. Key Issues”, was prepared by a group of specialists of the University of Campinas, Brazil, led by Dr. Sergio Salles Filho.³

2. Participants to consultations

In the e-consultation, 550 participants from 32 countries were registered. The composition of participants by sectors shows that 49% came from the public sector, 21% from the private sector, 18.5% from international entities and organizations and 11.5% not specified.

During the consultation, more than 250 respondents were registered from 152 participants, apart from the contributions made by the event coordination team. These inputs were concentrated in some twenty countries (Argentina, Barbados, Bolivia, Brazil, Chile, Colombia, Costa Rica, Ecuador, France, Mexico, Panama, Paraguay, Peru, Dominican Republic, Spain, Sweden, USA, Uruguay and Venezuela).

¹ October 06, 2009

² Prepared by Eduardo J. Trigo, Technical Coordinator of electronic consultation

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<http://www.iica.org.uy/online/consultaelectronica/Documentos/Final%20Regional%20Review%20%20E%20SPANOL.pdf>

3. Work program

The e-consultation was conducted during 14 to 30 September, 2009, which consisted in three stages. The first stage was from 14 to 20 September, consisting in the introduction of participants and presentation of some experiences to share, considered of interest for the consultation theme.

The second week of the consultation was developed based on a series of specific questions to facilitate and guide the discussion, in accordance with GCARD objectives. The questions that were provided are as follows:

- From your point of view, do the issues referred to in the “Key Issues” document adequately show the priorities to be paid attention to in agricultural research to generate a true development impact with regional inclusion? Are there other priorities that should be considered?
- Considering the above, what are, in your view, the knowledge areas that should be emphasized to meet the stated objectives?
- What kind of institutional transformations are needed to enhance the impacts of research on development with social inclusion?
- Among the indicated priorities, can you identify some research-transference-innovation priorities with potentiality to produce a significant agricultural impact on the poor farmers in your region?

During the first two stages of the consultation, the moderator transmitted on daily basis the summaries of participants to the forum, and the technical coordination prepared another general summary by the end of the first and second week, on the general discussions and consensus that started to appear.

These documents are available on the following consultation web site: <http://www.iica.org.uy/online/consultaelectronica/index.htm>

The final stage of the consultation was carried out from 28 and 30 September and it also consisted of two phases. The first phase was a period in which comments and final opinions from participants were received, on the topics that were discussed and summarized into weekly summaries by the technical coordination. The second phase, which was the closing of the consultation, was carried out in the form of a “web-conference”, and the technical coordinator summarized the two-week work with the main conclusions, and questions from participants were received and answered. At the “web conference”, 116 participants were registered with an average of 84 active participants. In the following paragraphs, a general summary of the discussion and topics of the consensus reached are presented.

4. Summary of discussion and consensus reached

The discussion of the topics that were provided was intense, and covered not only general issues related to knowledge generation systems and innovation for development, but also specific topics related to the elaboration of research programs.

The following paragraphs relate in the first place to the general or systemic issues, and in the second place a summary of the discussion related to specific topics.

4.1. General comments

The opinions of participants have been coincident stating that **the priorities identified in the “Key Issues” document, show adequately what the orientation of agricultural research in the LAC region should be**, if the aim is to advance towards the development with social inclusion (for reference to the reader, a summary / list of “key issues” is attached as Annex 1 to this report). With different emphasis and perhaps, terminology – which reflect the diversity of this region – all the topics that were discussed are placed in the frame provided as the starting point of the debate. It was expressly stated that “there is no sense in continuing to expand the matrix”, surely because while the discussion is getting closer to local issues, more precision and new topics appear, but it should be taken into consideration the regional nature of the discussion and accordingly, the need of keeping certain level of aggregation in the debate and recommendations. It was noted, however, on one hand, **the importance of the quality of the work, which means, that research must be of good quality**, and on the other hand, **the need of placing technology within context, and above all, to take into account that “innovation, even assuming that we have the capacity of carrying it out effective and efficiently, it does not substitute for a good development policy”**.

It was widely discussed from the beginning of the consultation that the differences among knowledge, science, research and innovation, and the need of recognizing that the availability of the first one, do not necessarily mean that the second one shall be ensured, which ultimately give shape to the efforts made by the people in generating new knowledge. The participants to the forum, agreed repeatedly from their different perspectives – scales, sectors, countries – on the “complexity of transformation process regarding knowledge development”, that is, **the complexity of innovation as a social process and its close relationship with the policies and institutions that give shape to such processes, highlighting issues such as education and access to resources (land, water, energy, funds) and markets, which are critical factors to make innovation possible**. The underlying idea during most part of the discussion was that the aim of development with social inclusion, shall be reached only with an institutional frame that promotes the generation of knowledge and technologies incorporating and synthesizing effectively the wide range of needs and interests from the different stakeholders. And on the other hand, such institutional frame must be able to articulate the policy formulation processes in such a way that such knowledge is transformed into innovations, production improvements, inclusion and development. In this sense, it was noted that **research, apart from the technological dimension, plays a key role in generating strategic information for the formulation of policies and promotion of institutional innovation**.

Directly connected to the considerations stated above, the topic of **investment in R+D and the importance of public and private sectors links** was raised in several opportunities, with a view to reach innovation systems that are relevant and effective.

In relation to investment, emphasis was made on the fact that not only this region makes insufficient investment in agricultural R+D – a topic that was clearly emphasized in Sergio Salles’ document – but also on the fact of poor participation from the private sector in these actions, and the need of looking for institutional arrangements in order to gather resources from productive sectors, such as producers, industries or suppliers of inputs. Many of the contributions appealed to this issue, emphasizing that there are many experiences that may be capitalized. It was highlighted that there are a great variety of experiences in the use of mechanisms for the mobilization of resources for research funding – like CENIs in Colombia, Fundaciones Produce in Mexico, the Latin American Fund for Irrigated Rice (FLAR), etc. – to finance the research and transference of technology, that should be taken into consideration and used as models to follow.

In relation to the topic of investment, the current situation of small countries was also discussed, where specific difficulties in reaching large scale and critical mass are being faced to meet the national needs. This issue was emphasized to be of particular importance in some cases in the countries of Central America and the Caribbean, as well as the effects that may result in the future, in scenarios where resources are increasingly required to effectively introduce and operate the advances of knowledge, in the fields such as biotechnology, ICTs and nanotechnology.

Finally, the consultation also dealt the topic of **human resources**, highlighting the need of addressing not only the development of **capacities for the implementation of research works with the required orientation and quality**, but also the importance of **producers to acquire knowledge and skills to take advantage in an effective manner the new technologies and opportunities**, as they are made available.

From the field of research, biotechnology applications and ICTs that are hot issues today, and surely shall become even more complex, as well as the probable incorporation of nanotechnology in the near future, are causing the need to renew the capacities of several infrastructures of knowledge institutions in the region.

As for the farmers, it is not only their need of enhancing the capacities to manage the new technologies. Most of the opportunities discussed today – products differentiation, use of good practices, certification, traceability, better information on markets – also require abilities and capacities to process the information and decision making, which are not widely available, at least to the degree they should be.

4.2. Considerations on specific topics related to the elaboration of research agenda

In the frame of these general topics, the forum also considered a series of specific topics among the Key Issues that were proposed, and are developed in the following paragraphs:

4.2.1. Family farming

The issue of family farming in the region and its centrality for any approach towards the application of knowledge with the objective of development with social inclusion, has been a topic of generalized consensus. In this sense, from different perspectives the following concepts were provided as guides for the elaboration of an agenda of research for this sector:

- (i) The need of recognizing the **wide diversity that encompasses this category**, and the need of designing the strategies that shall deal with it ;
- (ii) To focus the development policies, and consequently the research priorities, from the consideration that “**small farmers should stop being part of the problem and should change to be part of the solution**”; and
- (iii) The idea that should **significant solutions that are conducive to a substantial change for the small and poor farmers to be sought, they would hardly come from small adjustments to what is being done at present** – such as improvement in market operation, access to other markets, acquiring environmental certification, or any other. There is a need of new approaches to allow substantial changes in the production systems to reach such a real change. **The integration of traditional approaches with modern biotechnology and the new information and communication technologies** is recognized that open a wide range of opportunities that up to present, was not used efficiently.

4.2.2. Climate change

The mitigation and adaptation to the effects of the climate change, was identified as a **mainstreaming challenge and one of the great causes for food unsafety, which is included in one way or another, in most of the identified Key Issues**, and at the same time, is affecting all and every farmer, crops and ecosystems. Regarding this issue, from the point of view of research priorities, it was discussed that although an **integral strategy to address mitigation and adaptation is advised**, the immediate attention should be focused on:

- (i) The **vulnerabilities resulting from year to year variations** in relation to climate conditions, which are the ones that affect most seriously the poor population, and
- (ii) Research leading to provide information **to enhance changes in policies and institutional innovation** that are required to face the problems of mitigation and adaptation in the long term.

The discussion of these topics also covered some aspects related to the role that may play the management of genetic resources in the development of adaptation strategies and other measures, such as the zonification of crops.

4.2.3. Role of genetic resources

The genetic resources were identified as one of the areas that deserved to pay most attention, partly because of the potential they represent, bearing in mind the huge biodiversity of this region, but also because of the fundamental role they play in the **production strategies by small farmers, as a source of crops and income diversification, and as the support of crops productivity potential in the long term.** When topics related to genetic resources were discussed, emphasis was made both on topics that are directly connected – conservation, characterization and valuation – as well as the ones related to the seeds systems – **its production, distribution and commercialization.** Both topics were identified as critical elements to allow research efforts to effectively open access to sectors of lower resources, recognizing that in the past they have not received sufficient attention.

4.2.4. Utilization of new technologies

The need to improve capacities for the use of new technologies, in particular, the biotechnology and ICTs, was identified as one of the priorities through consensus, recognizing:

(i) its essential character as **inputs for the technological development process** in relation to every aspect of agriculture, food and natural resources management, and (ii) its strategic nature to cause **substantial changes in productivity conditions for the small farmers.** It was also pointed out the need to adopt strategies leading to **close the gap between the types of knowledge used in family agriculture from the commercial one, and to take advantage from the integration of “modern” tools, such as biotechnology and precision agriculture with “traditional” agriculture, as participative improvement.** In this sense, it was pointed out the potentiality of this process to design new crops systems better adapted to the heterogeneous system used by small farmers, and thus acquiring direct benefits by the potential users, and not only in an indirect manner by the application of technologies which shall lead to lower costs of food, or the creation of new labor opportunities, resulting from the commercial agricultural activity.

4.2.5. Expansion of agriculture frontier and water management

The challenge involved in the increase of production preserving the resources, was discussed from different points of view and levels, from global and regional levels, and from countries and specific sectors. In all the cases, there was consensus that implementation of strategies to ensure long-term sustainability is needed. In this sense, among the different topics that appeared recurrently, it was discussed the **need of technological development to allow frontier expansion “within the limits of the already existing frontiers”, in such a way to use efficiently the area used for production and to mitigate the pressure exercised over the areas under**

protection, forestry and biodiversity. In addition, a better **water management for irrigation** was identified as a central issue to consider and work on it. Other alternatives that were presented include some works oriented to facilitate the recovery of degraded soils due to **overgrazing, salinization, expoliation of natural fertility, erosion and contamination.** The existing experiences in the region – Argentina, Brazil, Colombia, Central America – with the application of reduced tilling techniques, were presented as feasibility examples for this type of opportunities.

4.2.6. Integrated Pest Management (IPM) and Biological Control (BC)

The integrated pest management and the biological control were presented as opportunities where, although **there are a great number of scientific advances, their application have not been developed as expected.** It was confirmed that agricultural producers are always highly interested in such type of technologies. However, when they want to use some new methods, either they are not properly calibrated to local conditions, or the biological substances to apply on their farms are not available in the marketplace. The discussion thus identified that there is a need to work on the **adaptation of these aspects to a wider range of productive situations as well as to deal with other issues, such as the scale production of inputs for agricultural producers.** This is an opportunity for the development of new technological business that is highly innovative, and surely it shall need institutional arrangements at public and private levels, with the funding of some sort of capital risk. This is an essential step to move forward if the benefits of BC and IPM are to be used at large scale.

4.2.7. Agroenergy and bioeconomy

The topic of agroenergy was emphasized taking into account its potential benefits – for its contribution in the mitigation of green house effect, opening opportunities for a new source of income, etc. – as well as its potential risks related to the competition with food production, and the need of looking for a fair or equal condition so that the benefits of such advances are not exclusively absorbed by great-scale producers. In this respect, and continuing a discussion that started during the first week of the consultation regarding the concept of knowledge-based bio-economy (KBBE), it was stated that there is evidence that small agricultural producers / processors may also benefit from this kind of approach. This is taken as being input producers for the new value-chain based on “bio-products”, either producing bioenergy to improve productivity in their own farms, or increasing competitiveness in the local value chain (incorporating new systems of product processing, cold chains at local level, etc.). **The challenges that were identified consist in how to make effective such bio-economy potential for the small-scale stakeholders, and ensure such contribution to the local and rural development, which requires both research for development and adaptation of technologies so as to promote institutional policies and innovations that allow the establishment of new production systems.** The potential represented by these approaches for a greater and better use of local biodiversity and through this, to generate new sources of income and employment in rural areas, were also identified as one of the aspects that require a deeper exploration.

4.2.8. Working styles

Finally, it was noted that in the processes of generating knowledge and innovation at all levels – technologies, management, organizations, policies, institutions – that require development with social inclusion, there is also a need for changes in labor styles. **A greater participation of all the stakeholders and civil society involved in innovation, as well as multi and interdisciplinary approaches, mainstreaming the technological dimensions with the socio-economic ones**, were aspects that were stated to be essential, to carry out the required knowledge mobilization. In these fields, there was consensus that the mechanisms that are available at present are deficient – such as in the ways of participation and manner to facilitate multidisciplinary work – therefore, any future strategy must consider the promotion of innovations on these fields as priority.

Within the same topic related to the working styles, it was discussed the need of establishing collaborative strategies with a view (i) to reach a **more effective effort complementation and team-work within the existing research schemes at national, regional and international levels**, taking into account that most of the "problems" identified at national level are also present at regional and international levels, and working together in a group, joining efforts would enhance efficiency in the use of the existing resources that are always limited; and (ii) to promote **association among different strata of producers to seek efforts coordination within the agribusiness system** to reach scale economies that would enable the access to the main markets, through joint action, not only with farmers of different size, but also among themselves and the agro-industries, as the case may be.

Annex 1: List of Key Issues considered in the document “GCARD Regional Review for Latin America and the Caribbean –Key Issues Document”⁴

1. Increase of production and productivity.

- Development of crops and animal species that need more attention. (Identify and develop products involving value-added in systemic terms and at scale).
- Frontier expansion “within the agricultural frontier” (aim at more productivity of resources that are used inefficiently).

2. Diversification and differentiation of agricultural products and services

- Innovations for “niches of commodities”.
- New products to the market (new species and varieties, important for small-scale producers).
- Development of seals of quality for small-scale agriculture (social sustainability).

3. Increase of food safety and quality

- Incorporation of standards of quality, traceability and after harvesting technologies to increase value added to products.
- Food safety and innocuity (application of biosecurity protocols and technologies).

4. Challenges of the climate change.

- Carry out studies for a better understanding of climate change impacts in agriculture and rural areas.
- Development of technologies for the adaptation to climate change (programs of specific genetic improvement).
- Development of technologies for the mitigation of climate change (training of professionals in such fields).

5. Conservation and sustainable management of natural resources.

- Promote production with agro-ecologic perspective.
- Optimize the use of natural resources: water and soil (development of technologies and good practices).
- Promote the sustainable use and biodiversity conservation (protection of native genetic resources of each country).

6. Development of the agro-energy issue.

- Development of new sources of energy.
- Development of technologies for the use of ligno-cellulosic materials.
- Conduction of impact research on food production.

⁴ http://www.iica.org.uy/online/consultaelectronica/Documentos/Factores_clave_LAC.pdf

7. Promotion of institutional innovations.

- Inclusion of family farming or small scale agriculture in the innovation systems (participation of the family farmer in the process of generation and use of technological innovations to be incorporated in the innovative production chains).
- Building capacities on new fields of knowledge and technologies (promoting training and alliances).
- Development of national and international networks (promoting collective R&D agreements directed to innovation).
- Promotion of innovation (more than generation and dissemination).
- Strengthening of the local, national and regional systems of technological innovation (influence with the renewed presence of CGIAR, promoting alliances with the existing national and regional institutions).
- Integration of policies related to: STI, agriculture, socioeconomic development and others.