

World Bank International Consultation on a Proposed Evaluation of the Role of Science and Technology in Reducing Rural Hunger and Poverty

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Introduction

Welcome speech by Dr. Chelston Brathwaite.

Ladies and gentlemen:

1. It is an honor for IICA to support and host this World Bank consultation on a subject of strategic importance to Latin America and the Caribbean: the impact of science and technology on the reduction of urban and rural poverty.
2. We are extremely pleased to note the distinguished presence of producers and agroindustrialists, academicians, rural leaders, representatives of nongovernmental organizations and research centers, who work to bring about integral agricultural development, improving the efficiency of production and the competitiveness of the agricultural sector, developing appropriate technologies for the management and conservation of our natural resources, and working to develop successful alternatives for improving the living conditions of rural inhabitants.
3. This meeting is important for the region as it will enable us to express a qualified opinion arrived at by consensus on the consultation the Bank is conducting worldwide. It will also afford us an opportunity to discuss and analyze our region's needs, with emphasis on the specificities of agriculture and the rural milieu in Latin America and the Caribbean, which require that we use differentiated strategies so that the actions of science and technology can result in true rural prosperity.
4. Our Institute widely shares these concerns of the Bank and fully supports the consultation, especially because, to a great extent, our priorities target similar strategic objectives. Our aim is to contribute to the general objective of competitive agricultural development by providing technical cooperation in the areas of food security, sustainable rural development and rural prosperity.
5. We are concerned about rural poverty in Latin America and the Caribbean (LAC), and we are convinced that science and technology, from a perspective that is broader than agricultural production alone, represent a strategic variable in the search for suitable solutions. We emphasize, however, that now most of the solutions to rural poverty must be sought in the rural milieu itself and not through the traditional route of migration to large cities, given the difficult economic and social situation of many countries of the region. As Dr. Martínez Graff, an important Mexican scholar, has said, today it is more important to enable a rural family to succeed in making an adequate living on its small two- or three-hectare plot of land, than to facilitate the family's migration to the city, to swell the ranks of the unemployed or to become another of the underemployed that defends two

or three square meters of sidewalk space to sell cigarettes and day-old newspapers.

6. A second concern is that many of our rural poor live on hillsides, with seriously degraded soils and subject to the negative effects of climatic change. The Latin America and Caribbean countries have nearly 250 million hectares of degraded agricultural lands, almost one third of the total available, and every year we add nearly eight million hectares more to this somber accounting. For many families living on these lands, the solution to their situation of poverty does not lie in agriculture, but in the search for opportunities for alternative development in their rural environments.
7. Fortunately, today we have successful examples of efforts to transform, diversify and modernize production and develop alternative sources of employment in rural areas. Some of these stem from the relationship between tourism and natural resources, and others have to do with the development of small rural agribusinesses that seek to add value to thousands of traditional businesses with competitive economic potential, the true value of which is still not reflected in national accounts.
8. A third concern reminds us that the migration, in past decades, of millions of small farmers to cities resulted in an important loss of biodiversity, in terms of both plant and animal species that were selected over perhaps a period of hundreds or thousands of years, and that no longer be included among the options available for future agricultural development. We must strengthen the strategies and the institutional framework devoted to this noble task to conserve biodiversity, not only the biodiversity kept in the hands of our rural producers, but also that harbored in the forests and jungles of our Americas.
9. For those of us who work to promote competitive agriculture and sustainable rural development, the aforementioned situations, and others that are not less important but that we cannot address now for lack of time, give rise to a new vision of the role of science and technology in poverty reduction programs, for which we need to readjust our policy frameworks and strengthen our research capabilities.
10. In finishing, allow me to wish you the greatest success in their deliberations, and to put our institutional facilities at your disposal as a contribution to the successful development of this consultation. Thank you very much.

Chelston Brathwaite, Director General of IICA.

Introductory Module (Plenary Session): Objectives of the Evaluation

The input for the plenary discussions consisted of presentations by Claudia Martinez, former Deputy Minister of the Environment in Colombia (on the reasons why the consultation was being carried out and the objective and mechanics of the process) and Jorge Ardila, IICA Director of Technology and Innovation (on the state of agriculture in the region and the technological needs of LAC). The participants focused basically on three points: first, the relevance of the evaluation (i.e., whether it was a worthwhile undertaking and how they viewed the process); second, the conditions required for S&T to be relevant in achieving the objectives set for the future evaluation; and, third, the value added expected from the evaluation.

Relevance of the evaluation and the elements and objectives of the process

The participants endorsed the idea of conducting the evaluation, regarding it as a very important initiative in light of the problems facing Mesoamerica. They also made certain suggestions concerning the elements, scope and process of the evaluation, including the following:

- The real impact of S&T is a key issue. One of the main reasons for the limited support for S&T could be the failure to demonstrate its impact properly, or at all.
- The evaluation should take impact measurement into account. This depends on clear priorities, the participation of the users involved and S&T results that add value to agriculture (for example, good-quality products, the minimizing of environmental impact and the delivery of results with proper support).
- The process should consider S&T from the perspective of their impact on agriculture and rural life, in a holistic way and not focusing on agriculture alone.
- It is not easy, at first sight, to link research to the problems of hunger and poverty. Herein lies the challenge as far as the context and scope of the evaluation is concerned. There are many examples of the positive effects of S&T in tackling such problems, but this information must be placed in the hands of decision makers.
- In Spanish, the term “agriculture” covers crops, livestock and fisheries. Expand the scope of the evaluation to include forestry. All these sectors have a direct effect on the improvement of rural life.
- Consider the agrifood chains approach and, in this connection, all the producers and players involved and their role beyond agricultural production, thinking more in terms of agribusiness as one of the approaches.

- If all the above is included, the process affords a valuable opportunity for the different users of S&T to take part (in the rural sector, civil society, governments and international cooperation).
- The process should help provide inputs (not a prescription) for the design of national and regional policies and those of the international banking system aimed at reestablishing agriculture's importance and reversing the trend of lower budgets for the sector, as key elements in sustainable development and social stability.
- The process should help make more knowledge available, with a view to redirecting resources and channeling more investments to agriculture and, therefore, to S&T. In this regard, it is hoped that the evaluation will highlight small-scale agriculture and indigenous communities, and also include a gender approach.
- The process should take into account the fact that there are several other factors besides S&T, such as access to land, prices, markets, access to and the appropriation of technologies, that determine development and should be taken into consideration in establishing the framework for the evaluation.
- The evaluation should generate new information but also be based on previous studies and ongoing projects on aspects of rural development, agricultural production, natural resources and other, related topics. Although they are not evaluations as such, they do offer very useful information derived from experience in the field.
- The evaluation should include the different players, users and beneficiaries of S&T. Above all, it should ensure that producers, small-farmer communities and civil society and its organizations are really involved.
- The evaluation should be as complete as possible but not take too long, so as not to miss out on the opportunities available at this time. It should be limited to the most important issues, because of the urgent need to combat hunger and poverty.

Conditions needed for S&T to have an impact and, therefore, of relevance to the focus of the evaluation

- Place agriculture in the context that governments, the Bank and the leadership of the countries in general need and ought to place it, to make it more effective. That context should be the attainment of sustainable development.
- Consideration should be given to how conditions are being facilitated for other measures and instruments for reducing hunger and poverty, besides producing S&T.

- Agriculture and rural development should not be viewed outside the context of related problems in the environment, such as economic opening and other situations that have to do with the improvement of rural financing, access to land, education, agricultural and non-agricultural social services, pricing policies and trade.
- There are other services that help, such as technology transfer, social capital formation and, of course, better financing for the rural sector. The context in which these services are provided is not as simple as in the past. Because it is highly complex, they need to be modernized and made part of integrated programs, and supported with financing.
- It would be a mistake to focus only on the most disadvantaged players in attempting to find solutions to hunger and poverty. More developed sectors and players should also be taken into account, since they have created wealth, provide opportunities and can contribute to the social objectives involved and to a greater impact for S&T.
- The conditions for channeling resources and investments to small farmers should be improved. This means redirecting the resources of the State and the multilateral banking system. These needs cannot be met with the small budget allocated to the institutional framework serving this sector.
- Include the problems of agriculture in Mesoamerica vis-à-vis access to land, subsidies, markets and the indebtedness of farmers.
- Reverse the trend of reducing to a minimum the institutional framework that supports agriculture and rural development, including public agricultural research, which in some cases has become too “compressed” institutionally speaking.
- The rethinking and strengthening of institutions should be geared primarily to small-scale agriculture and acknowledge the fact that poverty and hunger can also be reduced with S&T, e.g., via its contribution to food security.
- The conditions for conducting research must be improved and its priority focus redirected, not only to include production but also higher incomes for rural producers. This would not only reduce poverty; the research would help create wealth.
- The horizontal cooperation that exists in the region in S&T and other fields is useful both for improving development levels and conducting the evaluation. This also permits integrated inputs and enables the region to act and exert influence as a block.

Value added expected from the evaluation

- Users/beneficiaries and, above all, governments, the World Bank and international cooperation agencies have a shared vision of the important issues for repositioning agriculture and rural life from the standpoint of S&T.
- Users/beneficiaries are in closer contact with the governments, civil society and international institutions in regard to efforts to reposition S&T and enhance the impact of these activities.
- Political use can be made of the results to influence the refocusing of priorities and programs and more investment in agriculture and rural development in the countries and in dealings with the Banks and international cooperation agencies in general.
- Seek a solution to the complex conditions for S&T development in the region in general and, above all, for agriculture and rural life, enhancing their impact.
- Provide new criteria for decision makers at different levels and in different sectors who influence hunger and poverty alleviation policies and programs.
- Identify opportunities for the development and the role of S&T, so that they help improve the social infrastructure, the creation of rural companies and entrepreneurs, and financing.
- Promote the development and appropriation of knowledge and access to technologies, especially for those who most in need of them.
- Be able to demonstrate that although S&T are not the only weapon available for reducing hunger and poverty, they do have a direct and indirect impact and are key instruments for development, when accompanied by other, comprehensive measures.

Results from the Work Groups Discussions: Summary of Recommendations

Module 1: Working groups on the key questions and scope of the evaluation

Key questions regarding the environment:

Agricultural S&T: image, policies and resources:

1. How can we improve the undervalued image of agriculture and rural life in poverty alleviation strategies? How can society be sensitized to the importance of S&T? How is its importance recognized as a determining factor in economic development and social stability? Are measures being implemented in this regard?
2. How can we increase the low investment in S&T by the public and private sectors in the region, compared with other regions of the world that are its competitors, and at the same time reduce technological dependence?
3. How does business organization contribute to technology development and to the strengthening of agricultural enterprises?
4. Since S&T bring a long-term return, who should finance them?
5. Is enough being invested in the education of the human resources needed to spearhead S&T in the medium and long term?
6. How can we allocate more investment (financial resources) to the development of human resources for S&T?
7. How can we increase minimum critical masses for S&T development? How can we develop human resources with the profile required to develop and disseminate S&T in response to challenges of various kinds, such as the competitiveness of agriculture, rural poverty alleviation and the sustainable development of natural resources?
8. How should S&T policies and development policies be linked? Would S&T have more impact if it is included in national and regional poverty alleviation strategies?
9. How can the continuity and stability of S&T strategies and actions be assured in the long term, so they impact development and sustainability?
10. How can development plans and strategies be made sustainable?
11. How can we establish participatory strategies and mechanisms for reviewing international conventions and their influence on the development and application of S&T?
12. What are the negative externalities of S&T?

Priority setting for agricultural S&T:

1. How can financing be geared toward the chief problems of S&T?
2. How can we identify the gaps in knowledge throughout the agrifood chain? For example, needs in the field of post-harvest and post-production management?
3. How can society in general be involved in determining the priorities of S&T?
4. How can responsibilities be distributed and resources allocated to meet the different S&T needs? Devise technology research and development systems that facilitate the

prioritization of S&T activities by different institutions, users and beneficiaries working together. Use examples like the Dominican Republic.

5. How can S&T programs be made flexible, so they can be adjusted to new problems and changes?
6. How can S&T be generated according to typologies (in line with the users of the technology) and the geographical approach?
7. How can S&T be linked to the demands of consumers and trends in the marketplace?
8. How can the private agricultural sector take part in the financing of S&T and influence priority setting?
9. How can we foster the development of S&T programs designed to make production more efficient and make agricultural products more competitive in the marketplace? S&T should help improve not only productivity but also the quality of products, so that rural families have higher incomes. This aspect should be a constant concern on the research agenda in light of the new context.
10. Is it a priority to promote the development of agribusiness for small-scale agriculture? What are the implications for the establishment of a S&T agenda?
11. How are the implications of free trade in S&T priority setting being considered? How can the impact of subsidies on S&T be evaluated and reduced? When this evaluation is completed, in 2005, the Free Trade Area of the Americas may be in place, with all the consequences that competing against subsidized producers implies.
12. The gender approach should be a priority in S&T development throughout the agrifood chain.

Organization for agricultural S&T - institutional environment

1. Do the research centers' current structures and resources meet the expectations and future requirements of S&T?
2. Are institutional reforms needed to ensure that S&T development is managed using a cross-disciplinary approach?
3. How can S&T institutions be built and strengthened so they can meet the challenge of development?
4. Does the capacity exist for establishing lasting interagency relations?
5. How can we create a regulatory environment that guarantees the quality, safety and safe use of S&T-based products that reach the different markets?
6. How can we create the conditions for greater empowerment of producers, both for the development of S&T and the application of the results?
7. How can (gender) equity be achieved?
8. How can ties be strengthened among the public, private and academic sectors and NGOs, with a view to establishing S&T systems?
9. What is needed to create and/or strengthen the mechanisms for sharing knowledge and transferring technology between developed and less developed countries (North-South) and between developing countries (South-South)?

Promoting innovation; S&T products and goals; dissemination of S&T

1. How can we establish more effective processes for technology dissemination that include the different players or participants in the agrifood chain?

2. What strategies and actions should be implemented to facilitate the adoption of existing technologies and new technological innovations?
3. Are education and technical assistance being fostered, to facilitate technological innovation?
4. How can we develop a common strategy of indicators for monitoring projects and programs, and their achievements and impact?
5. How can we include on the technology agenda the modernization of information and telecommunications, including their use to manage technology dissemination, with emphasis on the neediest productive sectors?
6. How can greater use be made of autochthonous resources, such as biodiversity, denomination of origin, etc.?
7. How can advantage be taken of the contributions made by producers to S&T?
8. How can the ecosystem approach be facilitated in S&T?

Comments on given questions:

In general, there are many issues combined in each of the given questions. The questions need to be regrouped under topic headings and each question subdivided so that each one deals with a specific aspect.

1. Instead of evaluating whether there is less commitment, determine whether there is a commitment at all. There are many ways of analyzing this: financing, infrastructure, support. Another question concerning the same issue: to what extent could the institutes respond to a greater commitment?
2. Instead of talking about the “public and private sectors,” producers should be explicitly incorporated. The sectors would be the governmental, private and social sectors.
3. The institutional environment is part of the context in which S&T operate and the questions barely touch on this point.
4. As well as determining what the priorities are, it would be useful to include a question about how priorities are set. Some questions deal indirectly with this issue, but there should be more explicit questions to determine effective priority setting experiences along the production chain.
5. When dealing with exchange of ideas and knowledge networks, it should refer not only to North-South transfer but also to South-South exchange, which also requires knowledge management mechanisms.
6. A more relevant question regarding IPRs would be: Do existing IPR systems adequately protect the communities or groups that own the knowledge or germplasm?

Key Questions on Science and Technology.

1. What potential do modern technologies have for contributing to the poverty alleviation strategy?
2. What potential does S&T have for developing clean agriculture and safe products?

3. How can we create an S&T agenda that makes provision for future needs for poverty alleviation?
4. S&T's potential is acknowledged but the actions need to be focused more on issues such as:
 - a. Reduction of negative environmental impacts
 - b. Socioeconomic research
 - c. Social capital formation
 - d. Post-harvest and value added
 - e. Preventive technologies and that minimize the impact of natural disasters
 - f. Clean agriculture
5. To what extent could the knowledge of local communities be used to improve production in other communities?
6. The Research System should also consider the institutional players (groups that generate traditional knowledge) and technologies based on traditional and ancestral knowledge.
7. What potential do S&T have for improving the quality of products from the standpoint of safety, nutritional quality, health quality, etc.?
8. What potential do S&T have for improving the development of communities from the standpoint of their organization and management capability? (e.g., GPS for resolving conflicts between indigenous communities; software for management, etc.)
9. Technology is available but it is insufficient to meet the challenges mentioned. How can we identify more precisely the technologies needed to reduce hunger and poverty?

Important S&T issues that were mentioned include:

1. Use and sustainable management of natural resources (water, soils, biodiversity)
2. Biotechnology vs. traditional technology-organic agriculture
3. Food safety
4. Nutraceuticals-cosmeceutics
5. Production systems, integration of production processes
6. Plant protection and animal health
7. Impact of technology on human health
8. Post-harvest and processing activities
9. Market-oriented and multidisciplinary approach
10. Diversification of agriculture and agro-ecotourism

Scope of the evaluation

1. The results of the evaluation should make it possible to:
 - i. Identify the long-term goals of the countries, regardless of the government in power.
 - ii. Determine the opportunities that exist within civil society for generating and using S&T to combat poverty and food insecurity, and also recommend courses of action for doing it more efficiently.
 - iii. Evaluate the policies and regulations of the World Bank concerning access to financial resources for S&T development.
 - iv. Evaluate the requirements of the agencies that finance S&T programs, to facilitate women's access to technological products.
2. S&T should be geared toward agriculture and the improvement of the quality of rural life.
3. The evaluation should include all the countries in the region. Given the complexity of the task, however, a way should be found of addressing this situation by stages in the process.
4. The evaluation should make provision for actions with a medium and long-term projection, so that S&T achieve the required impact and to avoid political influences due to changes of government; in other words, it should impact long-term, cross-government actions.
5. The evaluation should consider the scope of agriculture from two perspectives:
 - a. Different sectors: agricultural, forestry, aquaculture
 - b. The integrated approach of agroindustrial chains
6. Establish a database, characterizing the problems that can be solved by S&T and ascertaining the other factors that influence the problem of poverty.
7. Analyze the status of the human resources available for S&T development and the areas in which they need to be strengthened.
8. Evaluate international cooperation: ongoing projects, efficiency, potential or real duplications of effort, priorities, coordination.
9. It is recommended that the work of the evaluation be validated at the country level and then at the international level, with the participation of civil society and institutions related to agricultural and rural development.

Module 2: Working groups on regional needs

This section presents a synthesis of the recommendations regarding the regional needs derived from the discussions of four working groups. The section highlights a short view of the needs that should be included in a global agenda from the perspective of the Mesoamerica and also the needs of regional scope. Finally, a list of on the major priorities themes for an agenda is presented as a mean to contribute to reduce hunger and rural poverty and to achieve the competitiveness of agriculture in the Region from the S&T perspective.

1. GLOBAL NEEDS

1.1. The context of the evaluation, its results and the activities that it gives rise to should take into account the social factor, as a basic element of all actions.

1.2. All aspects of education are a core consideration of the social factor, from general education to education related to agriculture and rural life and S&T. Education and training should focus on training in different areas:

- a- Management of resources for production.
- b- Small-farmer business development, to empower the agrifood chain and ties with industry
- c- Small-farmer training in non-agricultural activities
- d- Training in agricultural science and technology activities

1.3. Rational and optimal use of water resources must be sought, in relation to watershed conservation and agricultural production.

1.4. The conservation and utilization of biodiversity, with emphasis on autochthonous genetic resources.

1.5. Mechanisms should be implemented to identify new market niches for the products of small and medium-scale producers.

1.6 The problems posed by climate change must be taken into account, to prevent and manage natural disasters.

2. REGIONAL NEEDS

2.1. Priorities on Institutional Aspects:

- 2.1.1. Develop a forum to identify and integrate the needs in this area and the environment with regard to agriculture and rural life, focused on science and technology, but participatory and open.
- 2.1.2. Support policies and programs that will strengthen horizontal cooperation among countries in the region and with other countries outside the region, on agricultural issues.

- 2.1.3. Investment programs should include institution building for the development of science and technology, including the needs of the public and private sectors.
- 2.1.4. Policies and mechanisms that will ensure the allocation of resources to develop science and technology, to improve quality of life and reduce poverty.
- 2.1.5. Review policies on technological services that include the public and private sectors, and promote the study of new mechanisms and higher levels of investment in such services.
- 2.1.6. Territorial organization and access to land are essential aspects for agricultural development and these calls for regulatory frameworks for the various agricultural development activities. This framework should be based on an agro-ecological approach.
- 2.1.7. Investments should include a component aimed at social capital formation (organization of producers). This is essential for the development of agricultural extension from the socioeconomic point of view.
- 2.1.8. Promote the development of strategic partnerships and focus investments within the framework of agricultural development, with emphasis on technology acquisition.
- 2.1.9. Public-private partnerships (institutional arrangements) for research and technological innovation.

Several examples were presented on the issue of partnerships to highlight the importance of this regional need. This is the case of agricultural health in the State of Sonora, Mexico, where science and technology made it possible to eradicate the fruit fly and, as a result, provide access to world markets. In the case of livestock resources, strict health standards and public-private sector management made it possible to export to the USA without restrictions. Also the case Cacao in the Dominican Republic, where they got organized two years ago and are now the biggest exporters of quality cacao. Examples of good education centers and universities models like the Zamorano, CATIE, ICDA (Food Research and Development Center, in Sonora, Mexico), University of Knowledge (in Panama) were given. Finally, the NGOs – “Fundaciones Produce” Model - public-private partnership for the financing of research in Mexico was highlighted as a way to mobilize resources to attend the needs of producers

2.2. Priorities on Major Production Systems

A major goal should be to work on food security and the products of the family shopping basket. In particular, efforts should be orientated to the development of sustainable production systems through environmental, economic and social approaches. The following major production systems are suggested:

2.2.1 Crops

- Traditional exports
- Tropical fruits
- Ornamental plants
- Vegetables
- Green markets (“nutraceuticals”, pharmaceuticals and “cosmeceuticals”)

- Nutrition and plant health
- Development of new products

2.2.2. Livestock Resources

- Intensive production systems
- Diversification
- Genetic improvement
- Nutrition and animal health
- Sustainable management of wild fauna

2.2.3. Aquaculture and Fisheries (Specific areas were not mentioned)

2.2.3. Food security and

Basic food crops
Family shopping basket products

2.3. *Priorities on Major Approaches*

The implementation of activities aimed to the sustainable development of agriculture and the rural milieu such as R&D and others must follow agribusiness chain approaches and ecosystems approaches as well and the interaction between them. Also there is a need to consider actions focused on interactions among economic, environmental and social dimensions of development. A brief summary of the major components of these approaches is presented as follow:

2.3.1. Agribusiness Chains Approach

- Inputs
- Production
- Value added
- Marketing

2.3.2. Ecosystems Approach

- Integrated management of natural resources
- Participatory
- Interdisciplinary
- Interagency
- Inter-Sectors

2.3.3. Social Approach

- Formation of social capital
- Strengthening organization and management of social capital

2.3.4. Risk prevention Approach capabilities

- Strengthening of general capabilities
- Management of risks posed by natural disasters

- Management of risks posed by climate change
- Technological development for risks

3. PRIORITY THEMES FOR THE DEVELOPMENT OF S&T

This will be a crucial aspect to be identified in the future assessment (evaluation), with the public and private sectors, users and rural communities, all involved and reaching agreement together. An initial set of priority themes mentioned by the participants in groups is listed here. They are not presented in any specific order of priority, but all are very relevant.

- 1- Integrated management of natural resources: water, soils, forestry, biodiversity
- 2- Social capital formation
- 3- Climate change (in general) and surveillance of the behavior of the Niño/Niña phenomena (specific).
- 4- Agro-ecosystem management.
- 5- Bioprospection of native species.
- 6- Utilization of native genetic resources.
- 7- Clean agricultural production.
- 8- Analysis of climate change and mitigation of natural disasters (i.e. Mitch)
- 9- Rehabilitation of degraded soils.
- 10- Production of bio-fuels and bio-energy.
- 11- Use of biotechnology applied to small-scale agriculture.
- 12- Biosafety for the use of genetically modified organisms and derivatives.
- 13- Post-harvest management and value added.
- 14- Sustainable production of fisheries (conservation of snappers, sea bass and lobster).
- 15- Sustainable use of forests and of non-timber forest resources as well.
- 16- Methodologies on agricultural research to include non traditional players (participatory research)

Module 3: Working groups on governance of the evaluation

Characteristics of the evaluation

In general, the working groups did not disagree with the proposed characteristics for the evaluation, but the participants did add to or complement them with the some elements: The characteristics would be as follows:

- The evaluation should not be limited only to studies already published but complemented with current research findings, as well as information obtained through rapid participatory assessments, and take into account the very diverse actions carried out by different rural groups. It should use primary and secondary information sources.
- Steps should be taken to perform a mapping exercise and a good characterization of rural poverty and other aspects of agriculture, to focus the priorities better.
- The evaluation should address the context, as well as the risks and impact of science and technology. It should include a risk assessment and impact evaluation, management and communication
- The evaluation should lead to elements for formulating policies relevant to agriculture and rural life from a scientific-technological perspective.
- The results of the evaluation should be used to review and, where appropriate, help modify the policies of the World Bank and other multilateral agencies, as well as the policies of governments in the region.
- The **direct** participation of the people involved in the generation and use of S&T should be ensured (e.g., women and young people and their producer organizations).
- Have a local, regional and global perspective, and it should consider the differences and complexities of each region.
- Consider typologies of users, taking cultural, ethical, geopolitical and social factors into consideration
- Doubts and uncertainties should be taken into account, without being ignored in the analysis, discussion and conclusions that result from the evaluation. It should involve different views, quantify doubts and be very open.
- The progress and results of the evaluation process should reach all the groups involved, going beyond the traditional circuits that have been utilized for dissemination.
- The evaluation should have reports that are practical and useful for the different users.
- Be geared toward measuring the impact of S&T on economic, social, cultural and environmental factors
- Involve the talent available in the region in the evaluation
- It should be technically precise, pertinent and accurate.
- It should establish (qualitative and quantitative) evaluation criteria and indicators

Additional characteristics concerning the use of the results

- The results should be made available so that they produce elements for formulating policies relevant to agriculture and rural life from the scientific and technological perspective in the countries and the region.
- The results of the evaluation should be validated for each country and then shared and validated at an international meeting involving small-farmers' communities, governments and international cooperation organizations, to gauge progress.
- The process should lead to a global protocol on the improvement of rural life and agriculture, from the science and technology perspective.
- A regional meeting could be held every two years to evaluate the impact of policies, S&T themselves and the tasks and goals proposed for measuring progress. All sectors should be broadly represented at this meeting.
- In addition, measures should be taken to conduct a mapping exercise and a better characterization of rural poverty or other factors that may be necessary.

How should the evaluation be organized and managed?

- The evaluation's approach should be to actively involve the different sectors, both governments and civil society in the region and the multilateral agency itself.
- The evaluation should be coordinated by a council made up of representatives of different interests who could decide the institutional framework of the body to coordinate the evaluation.
- Take advantage of existing regional institutions, existing cooperative mechanisms and technology research and development forums to direct the evaluation process, before thinking about creating new organizational forms. In other words, take advantage of what already exists. (FORAGRO could play a key role for the region: this would be decided by the regional council).
- The subregions for the evaluation could be Mesoamerica, the South American Tropics and the countries of the Temperate Area. If the resources are not sufficient, priority should be given to Mesoamerica, emphasizing countries and/or regions where the conditions are less favorable (or which are poorer).
- A group should be set up in each country to coordinate the evaluation. One of the members of the group would serve as the focal point and the link, representing the group in the regional coordination meetings and meetings of the management committee. It is recommended that advantage be taken of the agricultural forums that exist in some countries, or their equivalent. They involve governments, productive sectors, the technological sector and civil society. They can be used to organize the discussions related to the design of the evaluation and the analysis of its results.
- Prepared by experts on the subject of the various groups around the world
- The Global evaluation should be managed by FAO, UNDP and World Bank

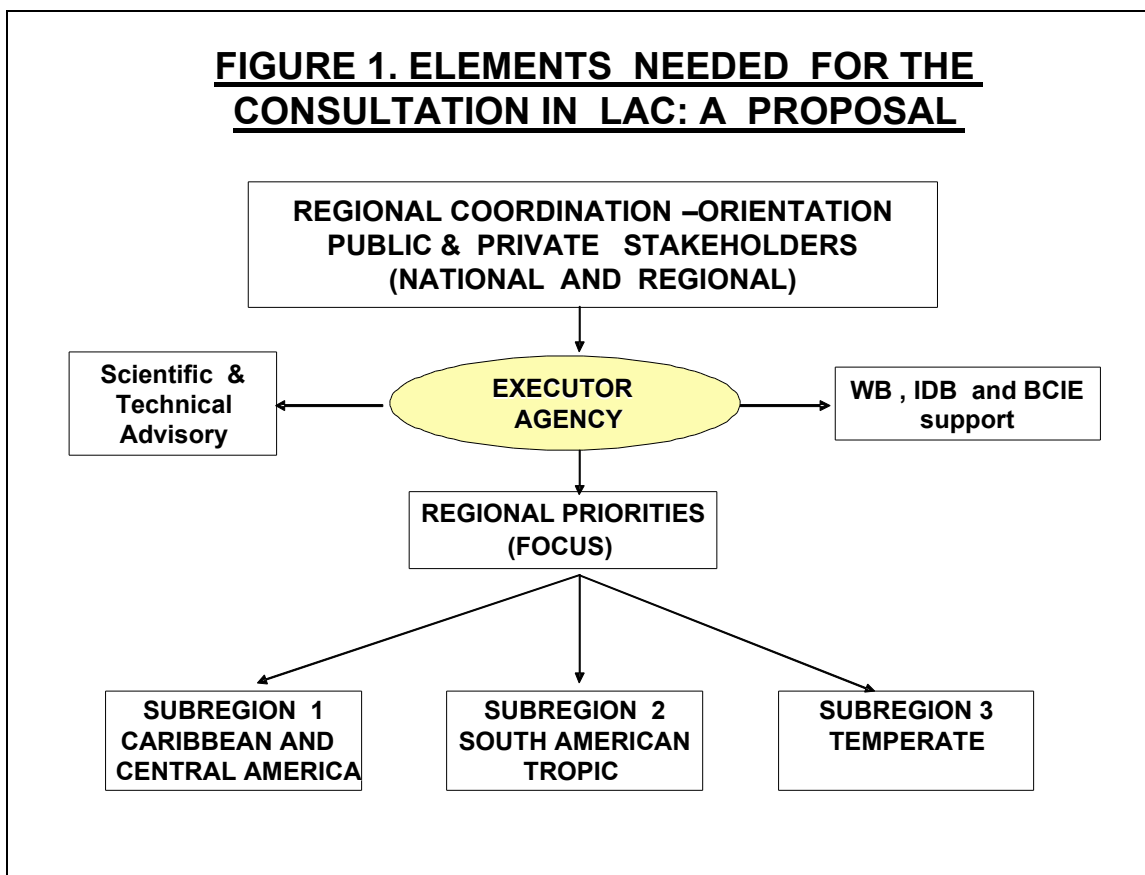
Final Recommendations

A. On the elements to carry out the consultation:

As a result of the discussions, we believe that at least the following elements should be considered as indispensable for the development of a successful consultation (Figure 1)

1. A Regional Coordination level, with the participation of the main stakeholders, at the National and Regional level, private and public.
2. An Executor agency, to coordinate the consultation, and to manage the financial resources. It is important to select a Regional Organization, with experience in the region, and capacity to coordinate such a exercise.
3. A Scientific and Technical independent advisory council, conformed by regional experts, that can advise the executor agency and orient it in the solution of problems
4. Institutional support of the Banking System, International and Regional (World Bank, IDB, BCIE, CDB,...)
5. Focusing regional priorities: Because of the socioeconomic and agroecological differences in the region, we strongly suggest the preparation of three Subregional Consultations. (Caribbean and Central America, South American Tropics, and Temperate regions of LAC)

FIGURE 1. ELEMENTS NEEDED FOR THE CONSULTATION IN LAC: A PROPOSAL



B. **Toward a specific model for the LAC consultation.**

Although during the meeting it was discussed widely on the form to organize the consultation, we want to present an alternative that finally arrived at greater detail, and that, therefore, it could be of interest. (See figure 2)

In this figure, at the top level it is suggested a Directive Committee, with participation of Global organizations, to facilitate the articulation and coordination with other consultations in the world.

The Directive Committee would select an Executor Agency , preferably a Regional Institution with experience and knowledge in agriculture, to manage resources and coordinate the consultation. (under agreement with the World Bank)

The Executor Agency would contract, under competition, a Regional coordinator, preferably of the private or academic sector, responsible for developing the consultation, with the help of a advisory Committee.

At the Sub-regional Level, the consultation would be developed by local consultants (private) in each country, with the participation of a National Committee, and, at the end of the exercise, a National Workshop and a National Report, to be prepared by the Sub-regional Coordinator.

FIGURE 2. THE CONSULTATION IN LAC: A PROPOSED MODEL

