The Futures of Agriculture

This brief series was developed in preparation for the Foresight Breakout Session of the Global Conference on Agricultural Research for Development (GCARD 2012) and the Global Foresight Hub. The briefs were written to communicate to a wider audience, such as policymakers, civil society organizations, researchers, and funders. The briefs were classified into three categories: Future Studies, Regional Update, and Visioning.

Three scenarios and one “trilemma”

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“Tomorrow belongs to those who prepare for it today” African Proverb

The FONTAGRO “trilemma”

For approximately two decades the world has been undergoing global changes with deep implications for agriculture in Latin America and the Caribbean (LAC) region. The global socioeconomic context is being readjusted in geopolitical blocks that collapse and others that emerge, with new economic giants that rise and environmental changes that affect all human activities. The world has become globalized and markets govern the world’s economy. The world is connected thanks to the communications revolution, and it is undergoing huge demographic changes: countries that are ageing, massive migrations and changes in the distribution of income that affect the global demand of goods and services. Global agriculture and of course LAC’s agriculture, do not escape the impact of these changes.

There is a consensus that innovation systems should change today in order to be able to adapt and respond to the agriculture of the future. However, there is no consensus regarding how to respond to this challenge since the degree of uncertainty about agriculture is very high. This is a challenge for the Board of Directors of the Regional Fund for Agricultural Technology (FONTAGRO). FONTAGRO decides on research investments that perhaps will generate innovations beyond 2015, when agricultural conditions are different. FONTAGRO has to plan in advance for that future, but how can this be achieved in the presence of changes whose intensity and even direction cannot be foreseen with certainty?

Traditional tendency analysis methodologies and simulation models are powerful tools to plan for changes, especially if they concern physical or biological processes. Nevertheless, their value diminishes if processes are complex, if there are multiple interactions and when they involve social phenomena. To this end, scenario methodologies offer advantages since they are based on very different premises. These scenarios are not predictions but visions or coherent narratives of several futures, perhaps with different possibilities of outcomes but all possible. From the point of view of agricultural research planning, in several countries scenarios have been used as test channels to evaluate strategies and especially to select robust ones –those that are useful and efficient in most or in all scenarios.

In addition to anticipating the future, FONTAGRO also has to meet other challenges: support agricultural research to improve competitiveness, manage natural resources in a sustainable way, and reduce poverty. These three complex goals are difficult to pursue simultaneously. This is precisely what we call the FONTAGRO’s “trilemma”.

In relation to this “trilemma”, as principal input for the preparation of the Medium Term Plan 2010-2015, FONTAGRO commissioned the preliminary work to a consultancy firm. The results were discussed at Council during its meeting in Cali, Colombia in June 2010. The results are presented below.

A tour into the future

As LAC’s future agriculture is part of a global agricultural system that will exist in a different world from today’s world, the analysis begins with “a tour into the future” with more than 30 global scenarios prepared by different organizations, with different interests and points of view. These are grouped as follows:

- Market worlds
- Political worlds
- Fragmented worlds
- Transformed worlds
- Collapsed worlds.

• In the market worlds, globalization and market forces are dominant. The characteristics of these markets are: well established free trade, fast economic growth, integrated financial markets, technological advances and institutional modernization, but low commitment to sustainable development objectives and the environment. Wealth increases but so do inequalities.

• In the political worlds, states try to mitigate the negative impact of the economic globalization process and commercial liberalization with public policies designed to control and regulate the markets and correct their weaknesses. Social and economic sustainability emerge as goals of public policies, and technological advances are important.

• In the fragmented worlds and their different variations, the globalization process goes into crisis and the world separates. Protectionism emerges and even isolationism. There is high state intervention in supply chain economies and local markets. Nations are inwardly oriented and governments play an important role in decision making.

• In the transformed worlds, fundamental changes occur that go beyond institutional and technological changes, and visions with deep modifications are included not only in the economic and productive models but also in values, cultures and ways of life. Nations present clear sustainability goals promoted from the bottom up, and the government’s sphere of action is fundamentally local. Both the public and the private sector and civil society organizations play important roles, frequently in alliances. For some, these worlds are utopian but possible.

• In the collapsed worlds, various and very negative situations of social, economic and institutional disintegration or disaster occur.

These worlds are very different and their probabilities also differ, but all are theoretically possible. Perhaps by 2020 LAC will be part of one of those worlds. Then, many questions arise about the region’s future, specifically about agriculture. With these global scenarios as reference frameworks, the document analyzes and discusses possible scenarios with 2020 as the set horizon. These scenarios are based on high-impact variables and uncertainties. To select these variables an online survey was conducted among a carefully selected group of individuals linked to LAC agriculture. A total of 56 respondents submitted valuable information about the most influential variables in the possible changes that will occur in LAC’s agriculture in the next decade. The variables mentioned most frequently were selected as “critical variables” to start building the scenarios. These variables were:

- Climate change
- Changes in energy situation
- Changes in global trade
- Changes in the state of natural resources
- Technological progress, mainly biotechnology
- Food crisis.
Building these scenarios in the middle of a profound crisis, which will probably have an impact for many years, justified using the end of the crisis as the starting point for the 2020 scenarios. Also, a third part of the respondents mentioned financial crisis as a deciding factor in the evolution of LAC’s agriculture in the next decade.

**More, with more security, for which purpose?**

Other strategic foresight studies of the region prepared by other organizations were also considered for building the scenarios. Then three very different scenarios for LAC 2020 emerged. It is worth repeating that these are not predictions but hypotheses of possible futures. The scenarios are:

- MORE
- MORE BUT WITH SECURITY
- WHY MORE?

In the MORE scenario, one rapidly comes out of a crisis more benign than expected, with optimism and confidence in the markets. In the future, societies want more solid economies and this is only achieved through more production, more growth and wealth creation. Merely some adjustments to the model are needed but also more open markets. Here the government’s role diminishes and LAC agriculture’s main role is to continue producing food and raw materials for export. The agro-export sector is very strong. At the end of the decade rural space will be segmented among commercial agriculture with high inputs and very dynamic; and traditional family-based farming, with low inputs, that very often occupies marginal land. In MORE, agriculture is globally very competitive and some progress has been made in relation to poverty reduction; however, the natural resources situation is still worrying.

In the MORE BUT WITH SECURITY scenario the crisis is very severe and has affected all segments of society. There are still consequences and the way out is slow. The situation goes rapidly from pessimism to moderated optimism, and society wants more security (e.g. food, energy, personal, health) for the future. There are doubts about the market but society keeps accepting it as a development motor, although the society demands more regulations. The state plays an important role in rectifying market faults. Technological development is fast. Rural space diversifies in agricultural and non-agricultural activities, and its social and environmental functions are validated. Progressively it turns into a mosaic where low-input traditional family farming that diminishes in extension coexists with very dynamic, high-input commercial export agriculture that advances, and with small- and medium-scale agriculture, frequently household-engaged, where development objectives are compatible with other good natural resources management objectives. Everywhere, non-agricultural economic activities that share the use of natural resources mix with agriculture. At the end of the decade progress has been made in poverty reduction and natural resources management, while agricultural competitiveness is acceptable, although less than in the MORE scenario.

In the WHY MORE scenario the crisis is very severe, it transcended the financial situation and it modified the perception of agriculture as a human activity, the value of the environment and organizational forms. One leaves the crisis with pessimism but also with hope and with an attitude of renewal. Thanks to the crisis, systemic changes that were needed to live in a different society come about. The state continues to play a fundamental role but there is a vigilant civil society that intervenes in debates and influences decisions so that changes are directed towards sustainability. At the end of the decade rural spaces continue to be a mosaic as in previous scenarios. The difference is an agro-ecological revolution that advances gradually in production units that are relatively small and frequently household-engaged, with variable input levels and acceptable productivity, although not very high, which creates diverse external and internal demand. Also, positive changes are observed in natural resources management and some progress is made in poverty reduction; however competitiveness in agriculture has decreased.
Towards robust strategies

The methodology allowed the construction of three very different scenarios for 2020. At the end of the period, innovation demand, including technological demand in the agricultural sector, is noticeably different. The document lists examples of thematic areas that could be prioritized for each of the future contexts.

The scenarios were discussed among specialists in FONTAGRO's country members, for the purpose of comparing possible thematic areas and strategies that FONTAGRO could prioritize in its strategic plan. The discussion was very valuable, although for many the approach was new. The objective was to select robust strategies – those that display good behavior application in the highest number of scenarios, with relevant thematic areas for the countries of the region in different future situations. For the design of FONTAGRO's new Medium Term Plan (2010-2015), the scenarios were only a complementary tool to other tools that FONTAGRO had already used: tendency analysis, models and the opinion of experts, among others. Also, three elements cannot be ignored that are critical for the objective: a) potential and limitations of research and agricultural extension, the tools that FONTAGRO has been financing; b) the region's heterogeneity, which requires differentiated strategies; and c) availability of FONTAGRO's resources which demand that the principle of concentration be applied.

Resolving the “trilemma”

The use of this strategic prospective study to develop the Medium Term Plan was a new experience for FONTAGRO. It was not easy for such a heterogeneous group of experts as the one involved in the surveys and discussions to rapidly capture the nature of the scenarios approach, which differs considerably to the commonly used traditional strategic planning approaches. However, once the group captured the approach, the discussion was very valuable, and consensus and opportunities to incorporate it into the Medium Term Plan design began to arise.

The three narratives that hypothetically described the evolution of each of the scenarios were very helpful. The initial debate served to elaborate the first strategic proposal, which later underwent a new round of consultations by experts. After these contributions, a final draft emerged, which was discussed and finally approved by the Board of Directors in October 2010 during the XIV Board of Directors Annual Meeting held in the Dominican Republic. There, the “trilemma” that upholds FONTAGRO's original three goals was resolved ——improve competitiveness, manage natural resources in a sustainable way and reduce poverty — but taking a fundamental decision: to prioritize the contributions for the reduction of poverty and food security for the period 2010-2015:

Based on this new prioritization, “technological innovations for agricultural units and small-scale businesses” appears in the center of the Medium Term Plan. It has been decided that FONTAGRO will go forward with a new agenda that will concentrate its investments in three areas of “opportunities” for more competitive, efficient and sustainable family farming: a) opportunities to link producers with markets and knowledge flows and value generation; b) opportunities for productive and sustainable exploitation of natural resources; and c) adaptation to climate change opportunities. The group concluded that this is a robust strategy that takes into account the three possible LAC 2020 scenarios that emerged during the preliminary exercise.

Citation:

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