

DECEMBER 2011



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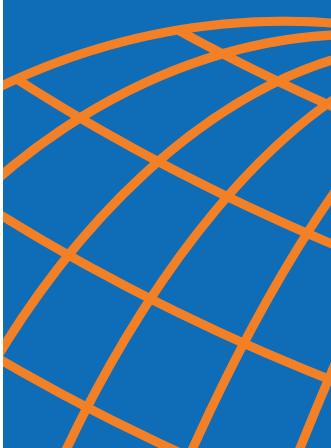
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SmartLessons

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Eyeing the Future of Agriculture: A Vision for Agricultural Innovation in Chile



Chile is one of the leading agricultural producers in Latin America and an important player in world agro-alimentary markets — a position it is determined to maintain. In 2008, the government (through the Ministry of Agriculture) requested technical assistance from the World Bank to define how agricultural innovation can help maintain future competitiveness and how it needs to evolve. However, since changes in its agricultural innovation system will pay off more in

the long run than in the short term, Chile needed a realistic assessment of what it will take to be an agricultural leader in the future, knowing that without an understanding of the future, any major investment in agricultural innovation would be like shooting a cannon in the dark. Although many dynamic changes (such as population growth, improved incomes, market development, climate change, shifting dietary patterns, and advances in technology) can be identified, mapping and tracing their interaction is highly complex. So the Ministry and the Bank jointly engaged in a visioning exercise to understand the factors that drive Chile's agricultural future. This SmartLesson summarizes that exercise and shares some of the lessons learned.

Background

Chile's agricultural sector. Chile has a highly diversified agricultural sector. The country has been following a free trade development model and since the 1980s has been able to enter many international markets. Among the export leaders are fresh fruit, processed fruits and vegetables, wine, and salmon, and the emergence of dairy and white meats. Exports of timber products have also been increasing.

Despite these positive developments, there are implicit challenges that need to be ad-

dressed today to maintain, and potentially increase, Chile's future international market presence. In the last decade, the sector showed a decline in dynamism, partly a reflection of stagnant productivity growth of the overall economy. By the end of 2007, Chile's total factor productivity growth was lower than 10 years earlier, a performance that contrasted sharply with the previous decade, when productivity grew by a cumulative 30 percent. The annual growth rate of agricultural value addition was 11 percent in 2004 and only 2 percent

in 2008. Although the sector has seen efficiency gains in lowering costs within the area of traditional exports as well as in increasing productivity and value added, these areas have not yet reached their potential. Also, because of the importance of mineral exports, agriculture must compete in an environment where exchange-rate appreciation is expected to be more likely than depreciation.

International market dynamics also impose challenges to agricultural production at home. Recent surges in the price of important commodities have made many governments rethink their trade-based food-security policies in favor of increased emphasis on self-sufficiency. Consumers are becoming more quality-sensitive, demanding healthier and more environmentally and socially responsible products; they are also making important shifts in their food baskets toward greater consumption of meat and higher-end products (such as wine). New markets are quickly opening up, especially in Asia, where high economic growth and large populations translate into massive increases in demand. Climate change is starting to play a role in the redistribution of comparative advantages for traditional commodities (toward higher latitudes) and will also affect the location for the production of high-value products.

Tools for understanding the future. Two of the several approaches commonly used to assess and understand the future are trend analysis and scenario analysis. **Trend analysis** is based on the assumption that the factors that drove

change in the past will continue to drive change in the future. For several factors that are important for understanding the future, such trends can be predicted with reasonable precision. **Scenario analysis** recognizes that the future is uncertain and that disruptive events are probable. The methodology combines the major uncertainties with safer trends (trend analysis) of major importance into “stories” — scenarios — about the future. Scenarios are not predictions, or strategies, but rather are plausible narratives that describe alternative future conditions in which a country, an organization, or a system of organizations may have to operate.

Scenario planning itself is a structured process of thinking about the future. It is aimed at breaking away from the idea that the future is a continuation of the past. Such planning can provide useful insights about an uncertain future and improve perceptions and judgments in decision making to adapt to and shape the future. Thus, scenario planning provides a neutral space for discussion, and it helps with building consensus on implications and building a strategic vision. Scenario planning relies on collective anticipatory intelligence to identify emerging trends. It has major implications for future decision making; for consensus generation to promote greater agreement among scientists, funding agencies, and stakeholders on identified needs or opportunities; and for advocacy and communication. The main steps in scenario analysis and vision building are usually organized around a series of information-gathering and knowledge-sharing activities.

Figure 1: Shaping a Vision for Chile's Agriculture and Its Innovation System

Activity	Output	Number of Participants	Contribution Toward Other Activities
Phase 1: Information Collection and Analysis (October 2009 – December 2009)			
Four analytical driver studies - Science and technology - Markets and consumers - The rural context - Environment and climate	Driver studies	10	Scenario-building workshop Scenario consolidation Vision building for 2030
Information collection on subsectors	Subsector sheets	15	Scenario-building workshop Scenario-implications workdays
Interviews with remarkable people and opinion leaders	Interview report	11	Scenario-building workshop Scenario consolidation Validation of scenario implications Vision for 2030
Phase 2: Participatory Scenario Development (December 2009 – September 2010)			
Scenario-building workshop	Workshop report	30	Scenario consolidation Scenario-implications workdays
Scenario consolidation	Scenario story lines	Project team	Scenario-implications workdays Synthesis of scenario implications Vision for 2030
Phase 3: Vision Development (October 2010 – February 2011)			
Scenario-implications workdays	Implications by subsector and cross-cutting themes	80	Synthesis of scenario implications Vision for 2030
Synthesis of scenario implications	Vision for 2030	10 + Project team	Action Plan
Phase 4: Action Planning (January 2011 – August 2011)			
Organizational and thematic position papers	Action proposals on specific subjects	10	Action Plan
Action planning	Action Plan	Project team	Consultation and dissemination activities
Consultation and dissemination activities	Validated Action Plan	150 participants in meetings + Web feedback	Annual action and budget proposals

Scenario Planning and Vision Building in Chile

The process of scenario planning and vision building in Chile consisted of four phases (see Figure 1). Here we will elaborate the first three phases, where the stakeholders are brought together and the vision is formulated.

Phase 1: Information Collection and Analysis

Driver Studies. Four driver studies were commissioned to provide past and future contexts for markets and trade, rural policies and rural development, natural resource management and climate change, and science and technology. The studies identified key trends that could be used for defining and building the scenarios. Based on each study, a short summary was produced and shared during the first workshop.

Cluster Information. Information on seven clusters (fresh fruit, processed food, wine, native forestry, dairy, red meats, and cereals) was used during the scenario-building process and in the discussions on scenario implications.

Interviews. Further inputs and out-of-the-box ideas — gathered through interviews with 11 “remarkable” people and opinion leaders representing a wide range of views from the public and private sectors as well as academia and civil society — contributed to identifying important elements of the vision for 2030.

Phase 2: Participatory Scenario Development

Scenario-Building Workshop. A group of 24 experts from the public and private sectors, academia, and civil society participated in the workshop in Santiago in December 2009. Workshop facilitators included staff from the World Bank, the Chilean Foundation for Agrarian Innovation (FIA),

and Poloc (a consultant group). During a series of plenary sessions and smaller working groups, the participants developed four scenarios.

Scenario Consolidation. Based on the inputs from the workshop participants, the core team developed a comprehensive description of how the future would look in 2030 under each of the four scenarios. They submitted the scenario story lines for validation to the original workshop participants, the scenario team, other experts in Chile (more than 72 people), and five external peer reviewers. One scenario was considered implausible and did not receive further attention. The team incorporated the feedback and finalized the scenarios, emphasizing Scenario 2 (called “Terra Calida”) and combining Scenarios 1 and 3 into a “Business as Usual (BAU)” scenario (see Figure 2).

Phase 3: Vision Development

Implications Workdays. The focus of the workdays was on sharing the two main scenarios and drawing the implications for seven clusters (fresh fruit, processed food, wine, forestry, dairy, red meat, and cereals) and three cross-cutting themes (natural resource management, human resource development, and quality management). Each workday was comprised of a discussion, among a group of experts, on each cluster and cross-cutting theme.

Synthesis. The core team from FIA and the World Bank then drew the implications, focusing on the common challenges across clusters and scenarios. The next step was to formulate a vision (summarized in Figure 3). The vision is based on the previously derived implications, but it goes one step further: it represents not only an analysis of future challenges and opportunities but also an ambition.

Figure 2: Scenario Framework for Chile's Agricultural Innovation System

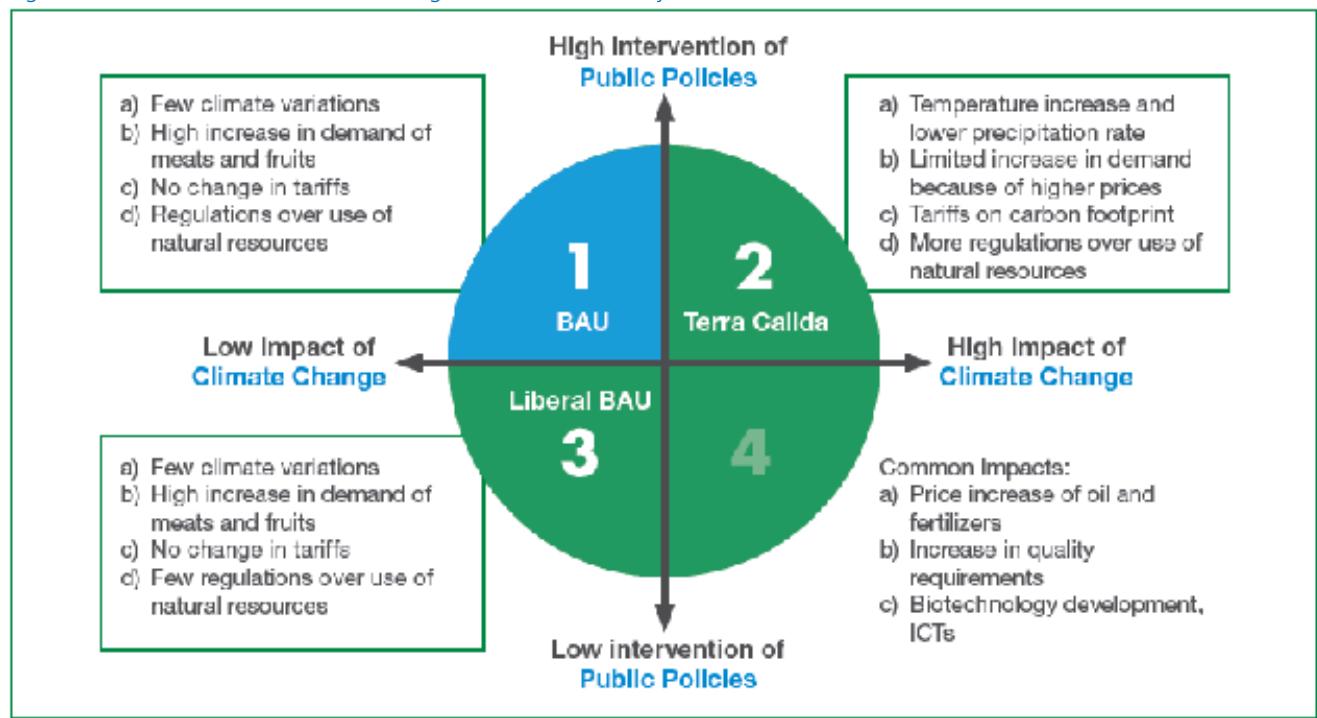


Figure 3: A Vision for Chile's Agriculture in 2030



In 2030 Chile is a quality producer of a range of food and fiber products. Its international image is marked by the diversity that its geography allows it to produce. The sector has an emphasis on environmental sustainability and wholesomeness, valued by both domestic and international consumers. Through the application of ICT, investments in agricultural technology and the training of its labor force, Chile has been able to develop profitable value chains, well integrated from production to final markets, and able to remunerate its participants at comparable levels to the rest of the Chilean economy.



C Clean

H Healthy and wholesome

I Information based and Internationally integrated

L Learning oriented

E Efficient and Equitable

English

Lessons Learned

Lesson 1: The process of formulating a vision for something as broad and complex as agricultural innovation in Chile has value in and of itself.

The vision-building process taught both the World Bank team and the client to think about the future as not just an extension of the past. This is not an easy task, because it requires a high level of trust and a willingness to disengage from what is and venture into what could be. It tested both skeptics and optimists. Hence, the value is not only in the final product (the vision) but also in the process.

Lesson 2: Benefits of the approach derive from its constructive, creative, and collaborative features.

The involvement of many different people (former presidents, ministers, journalists, scientists, businessmen, farmers, and so on) was highly productive. For example:

- **Creative collaboration.** The discussion was held in simple, frank language. Participants shared and developed knowledge and linked it to action. The plan recognized that Chile has sophisticated ambitions and is not satisfied with imitating wealthier countries.

- **Formulating ambitions.** The development of a vision that expresses an ambition made the study interesting to the political players in the sector. Politicians cannot easily sell the need for more institutional integration or long-term research, but they can piggyback those measures onto the ambition for higher farm incomes or less pollution.

- **Forgetting differences of opinion, for now.** The forward-looking nature of the study motivated strong participation and interest in its results. By looking far into the future, participants ensured that several issues that had been forgotten or considered out of bounds regained relevance and received attention.

- **Robustness.** Somewhat by chance, the approach proved politically robust: the work was started by a left-leaning government and finished by a right-leaning government. Nor did the second-biggest earthquake in the history of the world derail the study.

Lesson 3: The local partnership was key to success.

Vision building is labor — and communication — intensive. Only the national partner could have organized the many consultation and dissemination sessions. Identifying resource people (for background studies and workdays) requires in-depth understanding of the



national setting. And if someone (a journalist, an entrepreneur, or a student) has questions, someone must be there who can answer the phone.

Conclusion

Chile is now starting the implementation of the Action Plan that grew out of the vision-building process in order to strengthen its agricultural innovation system. But the results of the work will not stop with Chile. The World Bank team has received inquiries about applying this approach to improving agricultural innovation systems in other countries in Latin America (for example, Peru and Colombia) as well as in other regions, such as Russia. The end for a vision in Chile is just the beginning elsewhere...

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