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ROLE OF SELF- REGULATORY ORGANIZATIONS IN FORMULATION OF AGRICULTURAL POLICY

ANALYTICAL REVIEW OF INTERNATIONAL EXPERIENCE

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This publication was prepared by Fabio Chaddad under the USAID AgrolInvest Project's subcontract with the University of Missouri. The author's views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development or the United States Government.

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EXECUTIVE SUMMARY

The Cabinet of Ministers of Ukraine approved a Strategy for agricultural sector development until 2020 in October 2013. This Strategy was prepared by the Ministry of Agrarian Policy and Food (MAPF) as a concept for a new detailed Sector Program to be developed by the Ministry during the next months. The approved strategy often refers to *self-regulatory actions by industry associations*, such as “delegating some powers with regard to monitoring compliance of agriculture produce with national standards to self-regulatory associations” and “delegating some regulatory powers to self-regulatory associations of agriculture producers and engaging them in development and implementation of government agrarian policies”.

AgroInvest provides assistance to MAPF in sharing international experiences with such self-regulatory mechanisms in other countries. In this report, three objectives are accomplished:

1. A conceptual framework is provided for the analysis of self-regulatory organizations based on the New Institutional Economics, which highlights the role of institutional and organizational design to explain the performance of economies, industries and organizations¹.
2. Examples of self-regulatory activities of associations/organizations/cooperatives from five countries where self-regulation has been practiced.
3. Lessons learned and policy implications from these examples focusing on the conditions or factors that would make such actions workable or not workable in differing situations.

Based on the conceptual framework provided by the New Institutional Economics and the analysis of the five case studies of self-regulatory organizations described below, we offer the following *policy recommendations* at three levels of analysis – embeddedness, institutional environment and governance.

Embeddedness

- Individuals will try to get the best outcome from the resources they own. This decision, however, is not free from constraints or incentives. The set of constraints and incentives faced by individuals will determine how they use the available resources and the final outcome of their efforts. These constraints and incentives are found at the levels of embeddedness (i.e., social norms, customs and personal relationships) and the formal “rules of the game” found in the institutional environment.

¹ See, for example, Douglass North, *Institutions, Institutional Change and Economic Performance*, Cambridge University Press, 1990; Daron Acemoglu and James Robinson, *Why Nations Fail*, Crown Publishers, 2012; Robert Gibbons and John Roberts, *Handbook of Organizational Economics*, Princeton University Press, 2012; and Oliver Williamson, *The Mechanisms of Governance*, Oxford University Press, 1996.

- Informal rules – such as traditions, customs, and social norms – create a set of constraints to human action that is not necessarily identical to the constraints derived from formal rules. In this sense, creating a new structure of formal incentives – in the form of public policies – demands a full understanding of the informal rules embedded in a given society.
- Successful self-regulatory organizations are seldom created by diktat. Self-regulatory organizations often emerge from voluntary collective action of independent producers and private entities. Whenever individuals or firms decide to interact and coordinate their activities in some form of voluntary collective action, excessive hierarchy precludes the establishment of self-regulatory organizations or weakens their actions.
- Avoiding the risk of “free rider behavior” motivates most – if not all – forms of collective action, including self-regulatory organizations. Informal and formal rules are shaped by participants in order to avoid the appropriation of collective benefits by agents who did not contribute to its creation.
- Most successful self-regulatory organizations are formed and evolve embedded in a dense network of social relations between producer-members. Such social networks provide the social cohesion and trust for these organizations to emerge and design more formal governance rules to mitigate free-riding behavior and other forms of opportunism.

Institutional Environment

- The existence of private property rights enforced by a fair and efficient judicial system fosters the establishment of self-regulatory initiatives.
- Protecting private property rights is necessary. This entails guaranteeing those rights which are established by the State rules and respecting private decisions for the allocation of rights whenever a specific public rule does not exist for an economic sector.
- The State should attempt to eliminate any specific barrier to the right of internal organization by members of self-regulatory organizations. Recognizing the right of producers to organize collectively and providing flexibility in laws and regulations dealing with self-regulatory organizations are important pre-conditions for successful collective action in agriculture.
- The institutional rules may foster the participation of the leaders of self-regulatory initiatives in the political process, by proposing changes in the legislation or suggesting new rules. This initiative, however, has to take into account the diversity of different interest groups in society, creating a competitive system for political ideas. The absence of such competition may open room to inefficient practices and rent-seeking behavior that distort markets and divert economic agents from productive activities.

Governance

- As suggested in the five case studies presented below, there is no unique governance structure for a successful self-regulatory organization.

- These self-regulatory organizations can represent an industry, a regional cluster, a certain form of producer organization or a subset of industry participants. The different types of self-regulatory organizations are described in the examples below.
- The existence of clear boundaries is necessary for the success of self-regulatory organizations. The rules for membership or exclusion of members have to be clear and enforced accordingly.
- Each self-regulatory initiative must create its own rules for the provision and the appropriation of collective goods, which should respect the specificities of its participants and the market where it acts.
- Monitoring costs should be shared among all members of the self-regulatory initiative. The creation of sanction rules that could be efficiently enforced by the participants of the organization reduces organization costs, since it avoids prolonged conflicts. The judicial system should be seen as a credible last resort, used only in extreme cases when the private rules fail to achieve an efficient outcome.

BACKGROUND

The Cabinet of Ministers of Ukraine approved a Strategy for agricultural sector development until 2020 in October 2013. This Strategy was prepared by the Ministry of Agrarian Policy and Food (MAPF) as a concept for a new detailed Sector Program to be developed by the Ministry during the next four months. AgrolInvest provides technical assistance to the Ministry in drafting the Program, with the focus of the support on selected key areas and issues. Given the importance of the Strategy and its impact on the future Sector Program, AgrolInvest reviewed the approved strategy and provided its comments to the MAPF in November 2013.

The approved strategy often refers to *self-regulatory actions by industry associations*, such as “delegating some powers with regard to monitoring compliance of agriculture produce with national standards to self-regulatory associations” and “delegating some regulatory powers to self-regulatory associations of agriculture producers and engaging them in development and implementation of government agrarian policies”. As a part of drafting the new Agriculture Sector Development Program until 2020, MAPF plans to develop and propose implementation mechanisms for such self-regulatory actions by industry associations.

The AgrolInvest project provides assistance to MAPF in sharing international experience with such mechanisms in other countries. The AgrolInvest Project has engaged Agricultural Economist, Dr. Fabio Chaddad, under the subcontract with the University of Missouri to provide international technical assistance on these issues in-country.

CONCEPTUAL FRAMEWORK: SELF-REGULATED INITIATIVES AND THE LEVELS OF SOCIAL ANALYSIS

The five case studies presented below offer complementary perspectives on the state of art of self-regulated initiatives. As private answers to specific challenges, these producer organizations derive their existence and relevance from the context that motivated their foundation. So, a relevant question is: could initiatives such as those described below be established in any society? Although the lessons learned from the examples presented here must be taken seriously, it is important to stress that their decisions are not a panacea. As important as finding the best properties of a new organizational arrangement is grasping the characteristics of the existent structures in a given society and the reasons why they are the way they are. To a great extent, any project devoted to collective action intends to increase the efficiency of a certain set of human relations. Of course, often institutions offer incentives for a behavior focused on the unproductive capture of rents. However, even destructive activities tend to be performed based on the search for more operational efficiency.

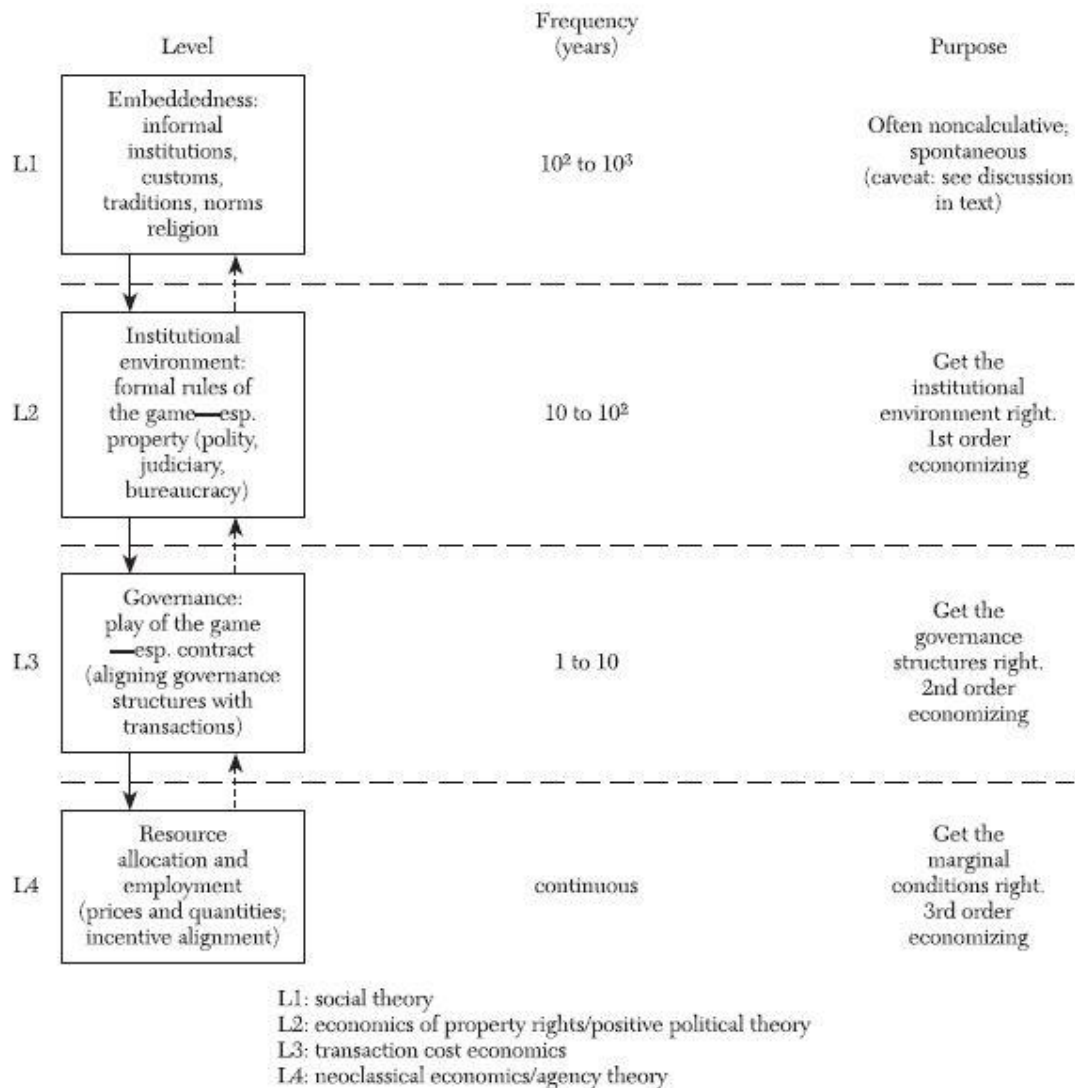
According to the New Institutional Economics, efficient adaptation may be precluded by institutional factors such as the characteristics of the political system or the customs of the society. Figure 1 summarizes this argument, presenting four different levels of social analysis. The first is the one studied by most economists, and denotes the price movements of a typical commodity market. In this dimension, adaptation results from the autonomous actions of millions of economic agents. Decisions are based on rational calculations, taking into account the marginal conditions – prices and quantities – prevalent in the market. Economic exchange is anonymous; in other words, the identity of partners in a typical commodity market is not important, since the products are homogeneous and a huge number of individuals are interested in the same economic good. Supply and demand curves, and the functioning of the price mechanism, a central element in the discourse of Neoclassical Economics, describe this phenomenon accurately. In this level of analysis, securing property rights generally suffices for an efficient allocation of resources.

It might be the case, however, that additional governance structures are needed for the organization of a transaction. The best example is given by Williamson (1996)², who states that, whenever a specific investment is made, additional guarantees will have to be designed in order to protect the economic interests of the parties in a transaction. Think about a bakery that needs an idiosyncratic type of wheat flour, whose production would demand a huge investment in control systems. Also, suppose that this specific – and more expensive – flour can only be sold by its regular price to the bakery who demanded it. In other words, if the bakery says that it is not interested anymore in this special flour, the product will be sold in the commodity market at a lower price. The question, then, is the following: why would the miller

² Oliver Williamson, *The Mechanisms of Governance*, Oxford University Press, 1996.

invest in advanced control systems, given the risk that the bakery might renege on the agreement and say that it does not want to buy the flour? Could the bakery pretend that it is not interested in the product and then renegotiate the contract, capturing part of the value between the price of the specific flour and the flour sold in the commodity market?

Figure 1: Levels of social analysis



Source: Oliver Williamson, “The New Institutional Economics: Taking Stock, Looking Ahead,” *Journal of Economic Literature*, 38(3): 595-613, 2000.

According to Williamson (1996), no miller would accept to make the necessary investments if proper guarantees were not established. In this sense, the establishment of a governance structure aligned with the characteristics of the transaction is necessary. For homogeneous goods, market transactions suffice, as we saw above. As the level of specificity of the assets involved in an exchange increases, the governance structures that protect the interests of

the parties also become more complex. In the limit, vertical integration is the only feasible alternative. Between the market and in-house production, however, there is an enormous variety of *hybrid* governance structures, such as the *Unimie* Group described above. Again, efficient adaptation is the objective; agents will choose the arrangement that offers the necessary level of protection to specific investments while, at the same time, minimizes spending on transaction costs.

Above this governance level, the political system influences economic activity by establishing incentives to agents and determining the boundaries for public and private action. More specifically, the State can be a source of more or less development, depending on which activities it is engaged in. Since Adam Smith, there has been an enormous controversy on the roles of public institutions in the economic routine. Although an answer to this question is still open to debate, empirical evidence shows that the State plays a major role in the establishment of a fair judicial system. On the other hand, excessive bureaucracy, such as import and export restrictions, has fueled widespread corruption in several countries. As a rule of thumb, any measure that relies on the approval or denial of one official – or a limited group of individuals working for a bureaucracy – is prone to corruption.

Finally, informal institutions – custom, traditions, and religious norms – help to shape the structure of incentives of any society. These rules, which are independent of legislative activities or even economic calculation, tend to last for long periods of time. Also, the mechanisms that foster changes in informal institutions are, to a great extent, unknown. Indeed, most traditions in our societies have evolved in a decentralized fashion, adding contributions from different generations and answering to diverse social challenges. Political institutions or governance structures that do not take into account the informal institutions of a society are prone to failure or, at least, to function inefficiently. The twentieth century offers several examples of economic and political utopias which had to be adapted to the reality of informal institutions.

EXAMPLES FOR SELF-REGULATORY ASSOCIATIONS IN DIFFERENT COUNTRIES

1. UNICA – THE BRAZILIAN SUGARCANE INDUSTRY ASSOCIATION³

³ Exemplified based on Chaddad, F.R. “UNICA: Challenges to Deliver Sustainability in the Brazilian Sugarcane Industry,” *International Food and Agribusiness Management Review*, 13(4), November 2010.

Brazil has a unique experience with renewable energy. The sugarcane industry is the country's second leading energy source with an estimated 18% of the national energy mix. Sugarcane ethanol is available in practically all service stations across the country and virtually all new cars sold in Brazil are flex fuel. The Brazilian Sugarcane Industry Association (UNICA) estimates that the use of sugarcane ethanol had generated a reduction of about 600 million tons in CO₂ emission since 1975. Despite these achievements, the Brazilian sugarcane industry is the target of considerable criticisms. These criticisms are related to perceived negative externalities of sugarcane production including the food-versus-fuel debate, land use changes, deforestation of natural habitats, air pollution due to sugarcane burning and workers well-being.

Given this backdrop, UNICA faces a complex set of challenges. The first challenge is related to the role of UNICA in coordinating the sustainability agenda in an industry-wide effort. UNICA works with its members to deliver sustainability but also proactively engages with domestic and foreign governments to shape the regulatory environment; to collaborate with NGOs and civil society organizations in multi stakeholder initiatives aiming to develop certifications for sustainable products; and translating the complex sustainability debate to industry participants. In doing so, UNICA attempts to close the gap between industry practices and stakeholder demands and also to gain legitimacy with society.

Overview of the Brazilian Sugarcane Industry

Sugarcane has been an integral part of Brazil's social, political and economic history since Portuguese conquerors introduced sugarcane in the country in the 1500s. It was not until the 1970s that the sugarcane industry started to become less dependent on sugar exports, when it received massive investments in science and technology both from private and public sources. In the mid-1970s the Brazilian government enacted the National Alcohol Program – known as *ProAlcool* – to reduce the country's dependence on foreign oil. The major pillars of *ProAlcool* included investment incentives for the construction of ethanol distilleries attached to existing sugar mills; a 5% mandatory ethanol blend (E-5) in all gasoline sold in the country, which was gradually increased to the current level of 25% (E-25); and incentives to the production of pure ethanol powered vehicles (E-100). These investments caused impressive productivity gains at the farm production and processing levels, which led to lower fuel prices paid by consumers. As a result, production of ethanol per hectare of sugarcane increased from 3,000 liters in 1970 to 7,000 liters in 2010. The industry started to convert sugarcane into a diverse range of value-added products including ethanol, bioelectricity and bioplastics.

The industry was heavily regulated until the beginning of the 1990s. Federal law 4870 enacted under a military dictatorship in 1965 defined the “rules of the game” from sugarcane fields to sugar and ethanol production, distribution and exports. Prices were set at each stage along the value chain and each mill and distillery was allocated production and export quotas. The Sugar and Ethanol Institute (IAA) was the federal agency in charge of regulating the industry. This institutional setting tied the hands of the private sector and restricted entrepreneurial activity. As a result, the industry mindset was production driven. Industry participants also engaged in lobbying activities as profit margins and industry growth were decided at the corridors of the IAA in the nation’s capital, Brasilia.

Starting in the early 1990s the economy was liberalized, Brazil joined the Mercosur trade block and the Real Plan was adopted to control inflation. The sugarcane industry embarked on a gradual process of deregulation starting with the extinction of the IAA in 1990. A new law in 1994 discontinued all price and quantity controls and also liberalized sugar exports. In 1997 the ethanol domestic price control was extinguished. During this transition period, industry participants became increasingly driven by competitiveness and profitability. But still the overwhelming majority of sugar mills and ethanol distilleries were family-owned firms.

Another turning point that shaped the Brazilian sugarcane industry was the introduction of flex-fuel vehicles (FFVs) in 2003. FFV technology allowed consumers to fuel their cars with gasoline, ethanol or any mixture of both. That is, fuel choice could be made at fueling stations reducing risks for car owners and allowing the market to self regulate based on relative prices of each fuel. FFV technology has been very popular among consumers and over 90% of all new light vehicles sold in Brazil in the late 2000s were FFVs. The FFV fleet reached 10 million vehicles in early 2010 or approximately 42% of the light vehicle fleet in the country, which was expected to surpass 50% by 2011. Domestic ethanol demand increased in a similar pace to FFV sales with ethanol use surpassing total gasoline demand in 2008. Ethanol use included anhydrous ethanol blended in gasoline (E-25) and hydrous ethanol (E-100).

A more recent breakthrough was the 2007 Energy Independence and Security Act that significantly increased the mandate for renewable fuel use in the U.S. The Renewable Fuel Standard (RFS) legislation determined an ambitious target of 136 billion liters of renewable fuels by 2022. Other countries followed the U.S. initiative to create a market for renewable fuels including the EU Renewable Energy Directive. Although the global market for ethanol was still very small due to tariffs and import restrictions, these mandates for renewable fuel use represented growth opportunities for the industry. As a result, the industry entered a new phase of rapid growth and structural change in the mid-2000s. Sugar and ethanol processors engaged in joint ventures to make the necessary investments in logistics infrastructure and thereby take advantage of scale economies in distribution, exports and risk management. The industry started a consolidation process with several mergers and acquisitions. According to KPMG Corporate Finance, 99 M&A transactions

involving sugarcane processors occurred between 2000 and 2009. Family-owned processors began to hire professional managers and adopt corporate governance best practices. Some domestic firms converted to publicly traded corporations to access outside sources of capital with IPOs in Brazil and New York. Since 2006, 115 greenfield mills and distilleries were built across the country in non-traditional areas in São Paulo and adjoining states. Foreign players – including Tereos, Dreyfus, Bunge, ADM, Noble Group, Adecoagro and Shree Renuka Sugars Ltd. – and oil companies Shell, BP and Petrobras entered the industry buying existing plants and building new ones. Industry sources estimated that multinational players controlled about 25% of the industry capacity in early 2010.

The Brazilian Sugarcane Industry Association (UNICA)

The history of UNICA started in 1932 with the formation of the Sugarcane Millers Association by processors in the state of São Paulo. Between 1932 and 1990, the Association office was housed at the Copersucar (a cooperative) headquarters together with the sugar and ethanol processors' unions. The presidents of processors – the majority of which were family-owned firms – took turns in managing the association. With the enactment of *ProAlcool* in the 1970s many processors decided to leave Copersucar and form competing industry associations. It was only in 1997 that UNICA was formed as a union of these rival associations. Today UNICA represents about 50% of the total processed sugarcane in the country. Processors in northeastern states have their own industry associations and some processors in the southeastern region are not members of UNICA.

Governance and Organizational Structure

UNICA members are 41 processors located in São Paulo and adjoining states. Membership is voluntary and open but applications of new members had to be approved by the board of directors. These 41 members own 123 processing plants that produce about 50% of the Brazilian sugarcane crop. Membership fees and voting rights in the association are set in proportion to sugarcane crushing volume. As a result, the largest processors contribute more to UNICA's budget but also control more board seats.

The UNICA governance structure is based on a three-tiered model: the Board, three committees and the executive team. The board of directors is responsible for making decisions and setting policy. It is comprised of 24 elected seats in addition to the President-CEO. Each director is elected for a three-year term with no term limits. Board meetings occur every Tuesday afternoon at the UNICA office in São Paulo. The last board meeting of each month is plenary and opened to all members.

The governance structure of UNICA also includes a Fiscal Board and three technical committees. The Fiscal Board – formed by five elected members – meets on a quarterly basis to perform the internal audit function. The three permanent committees are charged with developing the strategic agenda set

by the Board. Each committee is formed by eight board directors with the support from professional staff. They meet monthly to provide strategic leadership related to their assigned areas of responsibility – competitiveness, sustainability and representation. Each committee is charged with developing specific policy proposals regarding key issues and also an action plan that formed the basis for UNICA’s annual strategic plan and budget. A General Assembly of members is held once a year to approve financial statements and the budget and to conduct the election of Board directors.

The execution of the strategic and action plans laid out by the Board and its committees is the responsibility of the professional staff. UNICA’s organizational structure includes the President-CEO and three Directorships – Executive, Technical and Communications. The CEO and the three directors formed the Executive Committee. The staff also includes full-time employees, executives and specialists – in addition to consultants hired on a project basis – bringing a diverse set of skills and experience to UNICA. The professional team is also in charge of coordinating several technical commissions. These commissions are formed on a non-permanent basis to discuss issues of importance to the industry with the participation of members, non-members and industry specialists. The goal is to ensure an efficient operation in tune with the Board and to foster member involvement and participation.

UNICA’s Self-Regulatory Efforts

Since 2007 the UNICA team had been working on several international and domestic fronts to introduce industry-wide sustainability efforts. These efforts include engagements with foreign governments, multistakeholder initiatives, NGOs, labor unions and with several federal and state agencies in Brazil.

UNICA engages with foreign government officials and legislators to influence the development of policies and regulations concerning renewable sources of energy such as the Renewable Fuel Standard (RFS) and California’s Low Carbon Fuel Standard (LCFS) in the U.S. and the EU Renewable Energy Directive. These policy processes are critical to the industry as they have the potential to open or close markets for sugarcane ethanol. UNICA believes that scientific evidence should play an important role in informing the policy making process and thus coordinates the development and communication of technical papers about the Brazilian sugarcane industry. In addition to coordinating the efforts of the scientific community in Brazil, UNICA also established foreign offices in Washington, D.C. and Brussels to coordinate more closely its lobbying efforts and influence the policy debate in a timely fashion.

UNICA also participates in discussion groups involving multilateral organizations, NGOs and foreign governments. An example was the Global Bioenergy Partnership (GBEP), an inter-governmental forum bringing together governments, inter-governmental agencies (like the FAO and UNEP) and the UN Foundation (an NGO) in a joint commitment to promote bioenergy for sustainable development. UNICA only participated in GBEP as an advisor to

the Brazilian government. GBEP focused its activities in three strategic areas: sustainable development, climate change, and food and energy security. UNICA also helped establish the Sugarcane Discussion Group (GDC) to foster sustainable development practices in Brazil. These discussion groups identified and debated relevant issues but did not have clearly defined goals.

Lastly, UNICA represents sugarcane producers in relevant roundtables including the Roundtable of Sustainable Biofuels (RSB) and the Bonsucro. These multistakeholder initiatives (MSIs) are governing systems intended to regulate business behavior and promote sustainable business practices with the development of certification processes. They were formed by a broad range of participants such as NGOs, civil society organizations, trade unions and multinational corporations. UNICA decided to participate in these MSIs to represent the interests of producers from a developing country perspective. The main challenge in these roundtables is to close the gap between the sustainability demands of consumers, processors and retailers in the developed world and the realities faced by commodity producers in developing countries.

Certification Initiatives in Brazil

UNICA approaches sustainability in the sugarcane industry as “a two-way communication and coordination process.” First, UNICA ensures that information flows upstream from consumers to sugarcane producers and, second, producers must be ready to respond to the demands of customers and end consumers. Examples of certification of sustainable practices involving the sugarcane industry included the Green Protocol, the National Labor Commitment and the RenovAction program.

The Green Protocol

In June 2007 the São Paulo Governor and Secretaries of Agriculture and the Environment signed with UNICA the Agro-Environmental Protocol – also known as the Green Protocol – to promote sustainable environmental practices in sugarcane production and processing in the state. The protocol established a series of guidelines to be voluntarily followed by processors seeking eligibility for the Certificate of Environmental Compliance. These guidelines comprised practices related to soil and water resource conservation, riverside forest protection, greenhouse gas emission reduction and responsible agro-chemical use, among others.

Despite the breadth of the protocol, the most important directive was the more rapid introduction of sugarcane harvest mechanization in substitution for the traditional practice of sugarcane burning that allowed cutters to manually harvest the fields. Prior state legislation required sugarcane burning to be eliminated by 2021 in areas where mechanization was possible and by 2031 in areas where mechanization was not feasible due to land steepness. Under Green Protocol directives, these deadlines were anticipated to 2014 and 2017 respectively. According to UNICA estimates, accelerating the harvest

mechanization process would reduce CO₂ emissions from sugarcane straw burning by 8.2 million tons by 2017. Furthermore, the protocol required all new sugarcane plantations in the state to be developed in fields where mechanization was possible.

According to UNICA statistics, 160 sugarcane mills had voluntarily adopted the protocol since 2007 representing 85% of the total number of processing plants in the state. Approximately 54% of the cane harvested area had already been mechanized by the 2009-10 crop year and the industry was on target to eliminating sugarcane burning by 2017. The Green Protocol had become an important instrument to evaluate the environmental performance of the sugarcane industry. Also, it had fostered research in new technology development such as bioelectricity production from sugarcane straw and the adaptation of mechanical harvesting processes for small- and medium-sized sugarcane producers.

Green Protocol Certification Criteria

Processors seeking the Green Protocol certificate need to follow these guidelines:

- a. Anticipate the deadline for eliminating pre-harvest burning of sugarcane from 2021 to 2014, in fields with an inclination of up to 12%, accelerating the percentage of mechanized sugarcane harvesting from 50% to 70% by 2010.
 - b. Anticipate the deadline for eliminating pre-harvest burning of sugarcane from 2031 to 2017, in fields with inclination above 12%, accelerating the percentage of mechanized sugarcane harvesting from 10% to 30% by 2010.
 - c. Pre-harvest sugarcane burning is not allowed in expansion areas.
 - d. Take the necessary actions to ensure that cane straw burning or of any other sugarcane byproduct does not occur.
 - e. Protect riverside forests in sugarcane production areas given their importance in preserving the environment and protecting biodiversity.
 - f. Protect river or stream headwaters in sugarcane production areas recovering the surrounding vegetation.
 - g. Implement a soil conservation plan including the control of erosion and surface runoff.
 - h. Implement a water conservation plan favoring the adequate functioning of the hydrologic cycle, including a water quality control program and the reuse of water utilized in industrial processes.
 - i. Adopt good practices in the disposal of agrochemical containers by conducting triple wash, correct storage, adequate labor training and mandatory use of individual protection equipment.
 - j. Adopt good practices to minimize atmospheric pollution from industrial processes and assure adequate recycling and reuse of the residues generated in sugar and ethanol production.
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The National Labor Commitment

In June 2009 the National Commitment for the Improvement of Labor Conditions in Sugarcane Production was launched by the Brazilian federal government, UNICA, the Federation of Rural Workers in the State of São Paulo (FERAESP), the National Confederation of Workers in Agriculture (CONTAG) and the National Sugar-Energy Forum. The main purpose of the National Labor Commitment (NLC) was to encourage and recognize best labor practices in the sugarcane industry. Also, it was intended to promote education, training and placement of workers whose jobs were at risk due to sugarcane harvest mechanization. The Brazilian sugarcane industry employed approximately 1.2 million workers in both the farm production and processing sectors in 20 states. Although the industry had made significant progress in improving work conditions, labor related issues still persisted even among some large processors.

Processors that voluntarily committed to the program seeking to receive the Conformity Certificate had to follow 30 guidelines set forth by the terms of the agreement. These guidelines included labor best practices that were stricter than the legal obligations of federal labor laws. They addressed issues related to safety, health, and general working and hiring conditions of workers engaged in manual operations in sugarcane fields. Furthermore, under the NLC the federal government was responsible for implementing public policies for worker education, requalification and job placement to mitigate unemployment caused by increased mechanization. According to UNICA, more than 300 processors representing approximately 75% of total industry output embraced the NLC in its first day of operation.

The RenovAction Project

RenovAction was a training program created by UNICA in partnership with the Federation of Rural Workers of the State of São Paulo (FERAESP). The project also received financial support from the Inter-American Development Bank (IDB), Syngenta, John Deere and Case IH. The initiative was launched in 2009 as a response to the fast mechanization of sugarcane planting and harvesting triggered by growing environmental and social concerns. The phasing-out of pre-harvest burning and manual harvest suggested that a great number of workers employed as sugarcane cutters would eventually lose their jobs. The industry estimated that every mechanical harvester would replace up to 80 cane cutters while creating 18 higher-paid jobs that required training. As a result, 75% of the 150,000 cane cutters employed in the state had their jobs at risk. The other 25% would have to be retrained to perform other functions in the sugarcane industry. It was within this context that the RenovAction program would operate.

The objective of the RenovAction program was to train every year 7,000 workers from local communities in six sugarcane production areas in the state of São Paulo. The training program was divided into two major components: courses to reposition cane cutters within the sugarcane industry (e.g., as mechanical harvester operators, mechanics, truck drivers, electricians, etc.)

and courses to reposition displaced cane cutters in other sectors of the local economy (e.g., construction, pulp and paper mills, and horticulture). Course development was “demand driven” as offerings would target local opportunities and specific labor demands in each affected community.

Corporate Social Responsibility Efforts

In addition to providing industry leadership and representing members in the negotiation and development of certification processes, UNICA also coordinates the development of corporate social responsibility (CSR) efforts at the processor level. Since it had signed agreements such as the Green Protocol and the NLC, UNICA needed to bring its members along to be able to deliver on its commitments. Because the adoption of sustainable practices by sugarcane processors was voluntary, UNICA provides incentives for industry participants to follow their leadership and deliver sustainability.

UNICA’s CSR team collects information directly from processors to develop industry benchmarks for key social and environmental indicators. These indicators serve as a management tool allowing processors to benchmark their sustainability performance against industry averages and best practices. Additionally, bankers, customers and the Brazilian society at large are increasingly demanding sustainable business practices. It is more and more difficult to get funding from major banks or do business with large customers if a processor does not follow sustainable practices.

The combined CSR efforts and projects of UNICA members are compiled in the industry sustainability report. In 2009 UNICA became the first Brazilian industry association to publish a sustainability report based on the guidelines developed by the Global Reporting Initiative (GRI), an international organization based in the Netherlands. The GRI was created to give sustainability reports levels of consistency equivalent to financial reports. In its 2008-09 sustainability report – meeting the requirements of GRI version G3, level B checked – UNICA described 618 CSR programs implemented by its members during that crop year. These programs in the areas of education, culture, health, quality of life and the environment required annual investments of R\$ 158 million and benefited 480,000 people living in communities around sugarcane mills. UNICA’s GRI-checked sustainability report served as an important communication tool, a subject to which we now turn.

1. The Brazilian Cooperative Organization (OCB)⁴

Up until 1966, cooperative leaders had considerable flexibility to form and organize cooperative associations in Brazil. The first law mentioning cooperatives in Brazil dates back to federal decree 979 of January 6, 1903,

⁴ Example based on Chaddad, F.R. “Responding to the External Environment: The Evolution of Brazilian Dairy Cooperatives,” in Tim Mazzarol, Sophie Reboud and Elena Limnios (eds.), *Sustainable Cooperative Enterprise: Case Studies of Organisational Resilience in the Co-operative Business Model*, Cheltenham, UK: Edward Elgar Publishing, chapter 6, 2014.

which recognized and allowed the organization of rural credit, consumer and agricultural cooperatives. However, this decree did not include specific rules or regulations governing the organization and functioning of patron-owned organizations in the country. On January 5, 1907 the federal government issued decree 1637 recognizing the economic role of cooperatives but without specifying their legal organizational form. Consequently, cooperatives were formed using the legal framework provided for other organizational forms.

It was only with decree 22.239 of 1932 that the federal government set rules concerning the organizational characteristics of a cooperative and thus established the doctrines of the country's cooperative system. These rules and doctrines closely followed the Rochdale principles of cooperation, including open and voluntary membership, democratic control, service at cost and limited return on capital. In addition, cooperatives were granted special tax treatment relative to for-profit business enterprises. This initial phase of cooperative development in Brazil was liberal regarding the formation and functioning of cooperatives.

The subsequent development of agricultural cooperatives in Brazil was significantly affected by the increased centralism and public sector interference of the federal government – in both monitoring and control of cooperatives, but also regulating agricultural markets – from the mid- 1960s to the late 1980s. This period is characterized by “massive” federal government intervention in agricultural commodity markets primarily by means of agricultural credit and price support programs. At that time, agricultural policy had the objective of promoting food self-sufficiency while compensating the agricultural sector for the anti-export bias of the import substitution model.

Decree-law 59 of 1966 instituted a phase of increased federal intervention in cooperatives that lasted until 1988. This phase also saw the enactment of law 5764 on December 16, 1971 establishing the institutional framework within which the Brazilian cooperative system operates until today. With articles 92 through 94 of the 1971 cooperative law, the Brazilian cooperative system lost its independence as the federal government reserved the right to oversee the organization and functioning of all types of cooperatives in the country. Between 1966 and 1988, a state agency known as INCRA (*Instituto Nacional de Colonização e Reforma Agrária*) regulated and controlled agricultural cooperatives. The 1971 law defined the legal status of cooperatives and set rules for their formation and functioning.

More specifically, the 1971 cooperative law included the following restrictions:

- The cooperative organization is defined as a society of people and not of capital, distinguishing it from for-profit organizations. Net earnings from cooperative operations with members that are defined by law as a “cooperative act” are thus not taxed.
- Cooperative societies are patron owned and controlled organizations. Capital may only be provided by patron-members and cooperatives are not allowed to issue any form of equity and debt security.

- Equity capital provided by members – known as “social capital” – is non-transferable and non-appreciable. Net earnings from member business are returned to members in proportion to business volume (patronage). The law sets limited return on capital at 12% per year.
- Control resides with cooperative society members in the form of the Rochdale-based one-member, one-vote democratic system in tier-one, local cooperatives. Tier-two, regional cooperatives, federations and confederations may adopt a proportional voting system based on members’ business volumes, but not capital.
- At least 10 percent of net earnings generated from member-related business must be retained in a Reserve Fund with the objective of providing the cooperative with a safety net in the case of negative operating results. An additional 5 percent of net earnings originated from member business must also be retained in a specific reserve account known as FATES (Fundo de Assistência Técnica, Educacional e Social). Both the Reserve Fund and FATES are unallocated equity accounts not linked to specific member accounts.

The debt crisis of the 1980s, however, forced the Brazilian government to decrease support to farmers and to review agricultural policy goals. Beginning in the late 1980s, Brazil started to adopt liberal, market-oriented policies, which significantly impacted the performance of its agrifood system. Agricultural markets were completely deregulated in the 1990s, as the government discontinued its price control programs. Since then producer and consumer prices have been set by the market forces of supply and demand. The federal rural credit system suffered significant cuts in the volume of available credit and interest rates were set at market levels.

In addition to industry deregulation, the 1988 constitution introduced the principle known as “self-regulation,” as the federal government waived its constitutional rights to interfere in the formation, organization and functioning of cooperatives. As a result of these institutional and policy changes, agricultural cooperatives started to face an increasingly liberal, unprotected market environment. Since the 1980s, the Brazilian Cooperative Organization (OCB) played an increasingly important role in self-regulating the cooperative movement in Brazil.

Evolution and Current Situation of the Brazilian Cooperative Organization (OCB)

In the 1960s, two entities represented the cooperative movement in Brazil: the Brazilian Cooperative Alliance (ABCOOP) and National the Union of Cooperative Associations (Unasco). The most direct consequence of this was that their needs were not well attended to by the State. However, the State had an interest in seeing the movement consolidate. The great cooperative strength at the time was in the countryside and the government perceived in the sector the support it needed to carry out its economic policy for agriculture. On December 2, 1969, the Brazilian Cooperative Organization

(OCB) was created during the IV Brazilian Cooperative Congress. The entity substituted ABCOOP and Unasco as the single organization representing the cooperative movement in the country. Unification was the decision of the cooperatives themselves.

On June 8, 1970 the OCB was registered in a notary office, an act that formalized its existence as a single entity, which represented and defended the interests of the Brazilian cooperative movement. The Extraordinary General Assembly of June 30, 1970 approved the OCB Articles of Incorporation and installed its board of directors with a mandate until 1973. This was the beginning of the struggle of cooperative leaders to achieve legal support for the Brazilian cooperative system. The result came soon afterwards with promulgation of Law 5.764, on December 16, 1971. That law replaced all previous legislation regarding the cooperative movement and provided official legitimacy to the unification of the system based on sole representation by the OCB.

Although it called for major interference by the government, Federal Law 5.764/71 is a watershed for the movement. It provided the legal basis for the OCB system to organize and become viable. As a result, it was able to promote organization of representative state entities, since it had become the sole representative of the cooperative movement on a national level. Consequently, all cooperatives operating in Brazil began to follow and conform to a standard business model, enabling their economic expansion and their adjustment to the demands of market-oriented, agro-industrial development. In 1988, OCB joined the International Cooperative Alliance (ICA). From that point on, the entity began to promote international events and enable an exchange of experiences with Brazilian and foreign cooperative members, meaning that the national movement began to accompany, participate and help define guidelines for the World Cooperative Movement.

The National Cooperative Secretariat (Senacoop) – which substituted Incra in the functions of controlling the cooperative movement – and the National Cooperative Council (CNC) ceased their oversight role and began only to stimulate the cooperative movement, after the 1988 Constitution. Specific legislation was still needed to create mechanisms for self-management and self-regulation by the cooperatives.

The OCB pursued the strategic vision of making the cooperative movement competitive in a market economy. To accomplish this vision, two programs were designed, but these would only bring results if they were approved by

the government. The first called for releasing funds for cooperatives that presented a complete restructuring project. The second enabled effective implementation of the Self-Management Program. Thus, on September 3, 1998, the government published Provisional Measure 1.715, creating the Revitalization Program for Agricultural Production Cooperatives (Recoop) and the National Cooperative Learning Service (Sescoop).

In 2004 OCB was reorganized into eight governing bodies: General Assembly, Executive Directors, Board of Directors, Fiscal Council, Ethics Council, Specialized National Councils by Sector, Technical Association Council and Superintendency. Today the Brazilian Cooperative Organization (OCB) is the highest agency for representing cooperatives in the country. Among its attributions, the OCB is responsible for promoting, stimulating and defending the cooperative system, at all political and institutional instances. It also has the responsibility for preserving and enhancing that system, and for encouraging and advising the cooperative societies.

Since its creation, the OCB has assumed the responsibility for organizing the cooperative movement, in order to strengthen and consolidate it. Since then information has been generated on the number and profile of Brazilian cooperatives. Today there are 27 state organizations representing 7.6 thousand cooperatives in 13 sectors of activity.

Cooperatives role in the Brazilian economy

In Brazil there are cooperatives in 13 sectors of the economy: agriculture, consumer, credit, educational, housing, infrastructure, mining, production, health, worker, transportation and tourism. All sectors are nationally represented by the Brazilian Cooperative Organization (OCB). In the states, cooperatives are represented by state organizations (OCEs).

To better carry out its function as a representative entity, the OCB classifies cooperatives into sectors, based on the various areas of activity. The current division was approved by the OCB Supervising Council on May 4, 1993. This division also facilitates the vertical organization of cooperatives into confederations, federations and centrals. Cooperatives are managed differently based on area of activity, type of cooperative education, organizational and administrative structure, knowledge, experience, skills, and attitudes of managers.

The OCB system, comprised of the Brazilian Cooperative Organization (OCB) and the National Cooperative Learning Service (Sescoop) are entities that are respectively responsible for cooperative representation and training. Their objectives are made evident through a series of services offered to the entire cooperative community. In permanent contact with its various audiences, the OCB System is a national reference for cooperatives. As such, it is the point of entry to cooperatives, pertinent legislation, legal and commercial information, as well as a series of publications.

2. OCB STATE-LEVEL ORGANIZATIONS (OCES)

In designing the organization that represents the Brazilian cooperative movement and accepting the challenge of developing and consolidating the movement, cooperative leaders were absolutely aware of the difficulties of organizing a single system in a country of continental proportions. Distances, cultural differences and development questions might compromise the movement's unity. Because of this, state organizations (OCES) were created to make up the OCB. The 27 OCES are the link between the national entity and the reality in each Brazilian municipality where the Cooperative movement is present. Through them the system can have the exact dimension for the movement's needs in time, and provide the necessary responses in a timely and cost-effective way. Through the OCES, the OCB knows the dimensions for each step to be taken and each decision to be made.

These state-level OCES began to be the political agents and representatives who fight for and disseminate cooperative doctrine, defending the movement's interests in their states. As members of the OCB system, the OCES received the responsibility for registering, guiding and integrating cooperatives; promoting training and capacity-building; and enabling cooperative professionalism and self-management.

Participation in forums guarantees defense and promotion of the cooperative movement

OCB is present on various public and private councils and forums in order to represent and defend the interests of the Brazilian cooperative movement, which include the following:

International Cooperative Alliance (ICA)

The International Cooperative Alliance is the organization for representing the cooperative movement and for defending cooperative identity at a worldwide level. With headquarters in Geneva, Switzerland, it has been in existence for more than 100 years and bring together around 800 million people connected

to 230 cooperative organizations in more than 100 countries. It maintains five continental offices and is also structured into sector organizations.

International Cooperative Alliance for the Americas (ICA-Americas)

This is the regional section for the ICA and follows the same principles as the ICA International with regard to recognizing the cooperative movement as a form for promoting economic development. The ICA-Americas has actively participated in the preparatory process for various strategic meetings at a sub-regional level.

Economic and Social Development Council (CDES)

The Economic and Social Development Council is a national agency made up mostly of representatives from civil society, of a consultative nature with the President of the Republic. Through promotion of social dialogue, the entity qualifies and enables discussion of the Government's social agenda, as an institution representing society. Its principle challenge is to establish dialogue among various representations of social society in order to discuss public policies and propose measures for leveraging growth. The members of the Council are nominated by a formal act of the President of the Republic for two years. 102 council members participate in the CEDES, including Ministers of State and representatives of civil society, nominated by the President of the Republic for two year mandates, with a repeat mandate allowed.

National Food and Nutritional Security Council (Consea)

The National Food and Nutritional Security Council is a forum for coordination between government and civil society. The Council has a consultative nature and advises the President of the Republic in formulating policies and defining guidelines in order for the country to reach its food security and food safety goals. The Consea today is made up of 59 council members - 42 representatives of organized civil society and 17 ministers of State and representatives of the Federal Government, as well as 16 invited observers.

National Aquaculture and Fisheries Council (Conape)

A governmental forum with the objective of advising the Special Secretariat for Aquaculture and Fishing (SEAP) in formulating policies for the sector and monitoring actions developed by the Federal Government for the sector. The Council has a consultative nature and is made up of 54 members, with 27 being from federal government agencies and 27 from entities of organized civil society. It is made up of representatives of fishers, aquaculturalists, business leaders, shippers, researchers and their correlated ministries. Presided over by the Special Secretary for Aquaculture and Fishing of the President of the Republic, the entity's functional structure is made up of a Plenary, Secretariat and Thematic Groups, and presided over by the Special Secretary for Aquaculture and Fisheries of the Presidency of the Republic. It

has 54 members, besides the Special Secretary for Aquaculture and Fisheries (27 government representatives and 27 members of civil society).

National Agricultural Policy Council (CNPA)

Both the National Agricultural Policy Council and the Agribusiness Council are agencies linked to the Ministry of Agriculture, Livestock and Supply (Mapa), with the latter composed in parity form of representatives of the public and private sectors. OCB representation in this chamber has the objectives of supporting formulation of policies directed towards productive chains in which the cooperative movement is involved, articulating with public and private agents to define priority actions of common interest, and seeking systematic and integrated action by the different productive segments.

Agribusiness Council (Consagro)

Both the National Agricultural Policy Council and the Agribusiness Council are agencies linked to the Ministry of Agriculture, Livestock and Supply (Mapa), with the latter composed in parity form of representatives of the public and private sectors. OCB representation in this chamber has the objectives of supporting formulation of policies directed towards productive chains in which the cooperative movement is involved, articulating with public and private agents to define priority actions of common interest, and seeking systematic and integrated action by the different productive segments.

Council for Cities (ConCidades)

The Council for Cities is made up of 71 full members – 41 representatives of segments of civil society and 30 from the federal, state and municipal public powers – besides 71 alternates, with two year mandates. It brings together representatives of entities from popular movements, workers, business leaders, NGOs and academic and professional entities with the mission of advising and proposing guidelines for urban development, housing policies, environmental sanitation, traffic, transportation and urban mobility. It is an instrument for assuring citizen participation in decisions on public policies. Another attribute of the Council is to contribute to municipalities in applying the City Statute, Federal Law 10.257, instituted in 2001.

Special Commission on Proagro Funds (CER)

The Special Commission on Funds makes decisions regarding funds related to determining damages and the respective indemnifications in the *Proagro* program, whose objectives include: to release the rural producer from financial operations related to rural credit financing, whose settlement is complicated by the occurrence of natural phenomena, pests and diseases that affect goods, herds and plantations, and to indemnify the rural producer's own funds used in financial rural activities, when losses occur due to the aforementioned events.

Permanent Forum for Rural Insurance

Federal Law 10.823 was issued in 2003 to regulate federal assistance to the Rural Insurance premium. In 2004, the Permanent Forum for Rural Insurance was created, seeking to systematically follow up actions necessary for implanting the subsidy for Rural Insurance in Brazil, which works with the Productive, Legislative and Executive sectors, uniting them for developing Rural Insurance as an instrument of agricultural policy.

Semi-arid Aquaculture Development Program

The program seeks to strengthen and modernize productive infrastructure in the aquaculture sector in the Semi-arid region of Brazil, stimulating its competitiveness and sustainability, through financing items necessary for economic enabling of the undertakings, except for financing for lands and land plots, transference of buildings, passenger vehicles and imported vehicles, among other items and activities excluded from this program.

National Management Committee for Universalizing Electricity

The State Management Committee is responsible for receiving demands, defining priorities, following up goal fulfillment and guaranteeing implementation of the Program. Additionally, it does inspection and follows up execution (indicators and physical inspection) of work. To do this, the Committee has a team of 3 engineers, 6 agents and 1 inspector, who travel 4 days per week to respond to any doubts and/or procedures to be executed.

Permanent Forum for Small-Scale Companies

The Permanent Forum for Small-Scale Companies presided over and coordinated by the Ministry for Development, Industry and Foreign Trade, is an organization designed to address all themes and challenges related to this business segment, except for tax issues. It has the role of guiding and advising coordination of the national policy for developing micro-companies and small-scale companies, as well as following up and assessing their implementation.

Mercosur Economic and Social Consultative Forum (FCES)

The Mercosur Economic and Social Consultative Forum is a privileged interlocution channel between civil society in the four Member States of Mercosur (Argentina, Brazil, Paraguay and Uruguay) and the Common Market Group (GMC). It is the instance that represents the Mercosur economic and social sectors, with a consultative function. The forum has the task of analyzing and assessing the economic and social impact of the bloc's integration policies. The entity promotes cooperative movement interests in the continental policy agenda, as well as strengthening the sector in spaces for national and international negotiation. It is made up of 36 representatives,

with nine for each Member State. It is thus a space for defending civil society interests in Bloc countries.

Specialized Meeting for Mercosur Cooperatives (RECM)

The specialized Mercosur meetings discuss agreements and instruments signed related to its themes of competence, in legal instruments and recommendations agreed on by the member States. In this sphere, the Specialized Meeting for Mercosur Cooperative was created in 2001. This instance acts as an agency for governmental representation in coordinating private entities from the cooperative sector in each country. Setting it up does not imply creation of bureaucratic structures, but formalization of a pre-existing situation that is favorable to cooperative activity. In this sphere, national cooperative movements were inserted into the Mercosur integration process.

3. COEXPHAL: SELF-REGULATION IN THE ALMERIA FRUIT AND VEGETABLE CLUSTER⁵

Geographical clusters can be defined as a geographically proximate group of interconnected companies and associated institutions in a particular field, linked by commonalities and complementarities. Geographical clusters are site-specific configurations of industries that affect the viability and activities of their participants. Geographic site specificity is an important element for understanding the development of sustainable industries. Site specificity exists when the viability and activities of an industry's participants are heavily influenced by the location in which those activities take place. The companies sharing a common location and interests can benefit from agglomeration effects through the development of common institutions, such as universities, technological institutes and producer organizations. In this example, we focus on the role of regional associations in self-regulating and coordinating the activities of cluster members. Regional associations can be defined as locally-oriented organizations that provide a host of collective support services to firms located in the same region.

The regional cluster of Almeria, a province located in southern Spain, is of particular interest in demonstrating the role of a regional association –

⁵ Example based on Cynthia Giagnocavo, Luis F. Perez and David U. Aguilera, “The Case for Proactive Cooperative Banks and Local Development: Innovation, Growth, and Community Building in Almeria, Spain,” in Silvio Goglio and Yiorgos Alexopoulos (eds.), *Financial Cooperatives and Local Development*, London: Routledge, chapter 5, 2013.

COEXPHAL – in social, economic and institutional development. COEXPHAL has been a proactive force in developing economic activity and technological innovation, establishing cooperative organizations and filling a civil society vacuum in the midst of a dictatorship. The province of Almeria is known as an example of rapid development based on smallholdings and the expansion of intensive agriculture. The average landholding sufficient to support a family is 2 hectares, and most are held by farmers or small enterprises that are members of agricultural cooperatives. Currently, the cluster of Almeria is comprised of:

- About 13,500 smallholder producers with 28,000 hectares of greenhouses, with total output of 3.1 million tons of fruits and vegetables in 2013;
- 40,000 workers;
- More than 100 cooperatives and producer organizations that assemble, package and market about 70% of total fruit and vegetable production in the cluster;
- A host of 250 dedicated suppliers and service providers to the cluster, including farm input suppliers, seed companies, greenhouse builders, packaging companies, technology firms, quality assurance labs, consulting companies, financial institutions, and auction houses, among others.

In 2013, the total value of fruit and vegetable production in the Almeria region reached 2.3 billion euros with 70% of production exported to international markets, primarily in the EU. The Almeria model has been exported to various countries and has been studied as an example of cluster support for a successful model of sustainable, agriculture-based development.

During the 1950s and 1960s, Almeria was known for its abject poverty and arid landscapes. In terms of GDP per capita, Almeria ranked last in an already poor Spain with less than 50% of the national average income. At that time, Spain was suffering from the autarky imposed by the Franco dictatorship, which lasted until 1975. Today, Almeria ranks among the top third of Spanish provinces in GDP per capita in large part due to the development of intensive agriculture.

Almeria has experienced a huge transformation during the last 50 years. Between 1970 and 2000, the rate of population growth of the province was 90% higher than that of Spain as a whole, 84% more in production, and 130% more in employment growth. With its arid land, extensive out-migration, lack of infrastructure, geographic isolation, and subsistence level of livelihood, the coastal area of Almeria was not the best candidate for agricultural development. For example, in 1956 crops were planted under irrigation with abysmal results since the saline subterranean water was not well suited for irrigation.

The development of the fruit and vegetable cluster in Almeria started in the 1950s, when poor farmers who had come from the interior part of the province introduced a technological innovation that consisted in putting down a layer of fertilizer, and then covering this with a layer of sand to keep roots moist and filter the salty water. These farmers were used to grape production using trellises in the inland regions, so they adopted this system for other fruits and

vegetables building structures with wooden posts and galvanized wire. With the arrival of plastic sheeting, these structures served as rudimentary greenhouses. This basic innovation revolutionized the economy in the area. In 1961, the government introduced an electrification plan, which allowed farmers to use more efficient water pumps to irrigate the greenhouses. Following a “colonization program” of the Franco regime, the barren land around Almeria was sold to families for cultivation, with a maximum of 3.5 hectares for each family.

In 1963, the *Caja Rural Provincial de Almeria* (Cajamar) – a credit union formed by local producers – was formed to provide credit and financial services to the local economy. In 1966, the cooperative bank linked to Cajamar was officially formed, which could provide credit and provide loans to agricultural cooperatives. The cooperative bank served as an impetus for farmers to organize collectively. It followed a strategy of creating cooperatives in many small towns and villages, dedicating resources and personnel to the task. Cajamar was pursuing two objectives with this strategy: to find new clients and to create an agricultural cooperative network in the province. A key strategic decision was made in 1975, when three experimental farms were initiated and fully financed by Cajamar with the goal of increasing the technical level of local agricultural cooperatives by testing, developing and sharing results with cooperative member farmers. Sustainable technologies – particularly related to water use and pest control – were an important area of research at a time when no university or research center existed in the province. The technological innovations developed in the experimental farms funded by Cajamar significantly increased production but also allowed products to enter the market two months earlier than producers from other regions, which was a source of competitive advantage relative to other countries.

The cooperative movement contributed to changing the mentality of farmers in that they are now participants in the marketing process, with a deeper understanding of the workings of the market and consumer demand. With increased production, families needed a market place to sell their produce. At that time, fruit and vegetable marketing was controlled by large groups with export permits granted by the Franco regime. Commercialization was thus controlled by large, regime-friendly companies that could buy Almeria’s products and re-export to other regions of Spain and abroad. Agricultural cooperatives provided an alternative. The pressures that they could now begin to exert as producer-exporters at the level of the national administration, which was dominated by other producer areas in Spain, became stronger as the sector grew. As a result, they found themselves with a political voice and power not previously experienced.

The Association of Cooperative Producers (COEXPHAL)

The Association of Cooperative Producers (**COEXPHAL**) was formed in 1977 to defend the economic interests, open new markets and provide services, market and economic information to the agricultural cooperatives and

producer organizations of Almeria. Today COEXPHAL is the provincial association that has a majority representation in the agricultural production sector, both in area and production, coordinating the sector in a single direction and defending their interests before various government agencies at the local, national and European levels.

COEXPHAL comprises 60 fruit and vegetable companies, which together represent **65%** of fruits and vegetables exports and **70%** of production in the province of Almeria. COEXPHAL's associated companies and cooperatives produce 1.9 million tons of fruits and vegetables annually with a combined turnover of 1.64 billion Euros. They provide employment for 18,500 workers, while marketing the production of 7,800 farmer-owners who cultivate 20,100 hectares and employ some 35,000 people.

Since its inception, COEXPHAL has led the major changes that have occurred in the Almeria fruit and vegetable cluster, including improvements in marketing channels, search for new market opportunities, and the implementation of biological pest control, among others. The main objective of **COEXPHAL** is to promote sustained and sustainable development of the agricultural sector in the province, based on the quality of Almeria's products, respect for the environment and to the people, while satisfying the needs of its members.

Evolution and Industry Leadership

COEXPHAL was formed on June 1, 1977 by a group of cooperative exporters to obtain recognition and bargaining power the sector lacked at the time. Its initial objectives were twofold:

- Negotiate and sign agreements at the provincial, national or international levels;
- Implement shared services that might be of interest to members.

Already in the first Board of Directors meetings (October 1977, January and March 1978) is evident the interest of members for various issues. The main one was to seek independence from Murcia, a neighboring province. Another major highlight was the defense of tomato and cucumber exports, products facing strong trade restrictions at the time. Although vegetable production in greenhouses in Almeria began in the late 1960s, it was not until 1976 that the cluster experienced dramatic growth in greenhouse area from 3,440 to more than 25,000 hectares.

During the first year of work, COEXPHAL members exported 87 million kilos of fruits and vegetables, compared to 835 million kilos exported in the 2007/2008 marketing year. In addition to export growth, another important achievement of COEXPHAL was broadening the number of export

destinations. Initially, Almeria fruit and vegetable exports were highly concentrated in the French market but have since diversified into other EU countries, the United States and Canada. COEXPHAL efforts also led to an increase in the number of vegetable species cultivated and exported from Almeria. Initially with a heavy dependence on tomato exports, Almeria has expanded production and exports to 47 species, including pepper, cucumber, watermelon, cantaloupe, lettuce, zucchini, and eggplant.

COEXPHAL has also been instrumental in assisting Almeria cooperatives to make improvements in the presentation and quality of their products, which have shifted from bulk shipments to small, homogeneous and perfectly tagged packages with normalization and classification from source. **COEXPHAL** fostered among Almeria farmers field application of biological control as an alternative to pesticides in pest fight, following sustainable agriculture practices, clear guidance to consumers, and strict food safety and plant health requirements.

The **Spanish Federation of Fruit and Vegetables (FEPEX)** was formed in 1987 with COEXPHAL as a founding member. In 1996, the provincial representation constituted the **Andalusian Federation of Agricultural Enterprises (FAECA)**. FAECA has assisted COEXPHAL bring together exporting companies from Almeria that are not primarily in the fruit and vegetable sector. Today **COEXPHAL** continues to lead the Almeria horticultural sector to face current market challenges, such as competition from Mediterranean countries, changes in the buying habits of consumers, more demanding levels of food quality, safety and traceability, and societal concerns for the environment and fair trade. COEXPHAL provides services and information for Almeria exporters to exploit the opportunities offered by the market, always for the benefit of its members.

Mission and Objectives

The mission of COEXPHAL is two-fold:

- Provide support services that streamline management processes to member companies, so that they can focus on their core business;
- Represent and defend the interests of members in different forums: local, regional, national and European.

To accomplish this mission, COEXPHAL pursues the following objectives:

- Promote the Almeria cluster development with consolidation of exporters;
- Encourage the use of biological pest control and respect for the environment;
- Ensure employment of legal labor and good working practices;
- Improve rural health and plant health;
- Development of research and technology transfer;
- Maintain fluid communication channels with members;

- Add value to member products, exploiting new market opportunities;
- Promote the image of the Almeria cluster by various marketing projects and external promotion;
- Improve marketing channels to increase the profitability of member operations;
- Promote and strengthen the development of organizations of interest to the sector.

Services Provided to Members

COEXPLHAL provides the following services to its members:

- Prevention of labor risks;
- Quality management and certification;
- Human resource training and development;
- Management of subsidies and grants;
- Human resources management and immigration;
- Economic analysis and statistics;
- Communication and stakeholder management;
- Insurance services;
- Research and development.

Quality Management System

COEXPHAL's efforts in self-regulating the quality of Almeria exports are based on the European excellence model of total quality management (EFQM). It has implemented a Quality Management System based on the ISO 9001 normative and an Environmental Management System based on the ISO 14001 normative. The overall objectives are:

- Member satisfaction, so that the perceived value of services fully exceed the expectations of partners;
- Continuous improvement of the association, through the establishment of objectives, development programs thereof, monitoring and measurement of key processes with key performance indicators;
- Economic efficiency in the use of resources, such as energy and water consumption;
- Commitment to society, ensuring the development of a key sector in Almeria's economy by promoting nutrition and a healthy lifestyles in schools and households, and ensuring the social and labor integration of immigrants and their families;
- Commitment to the environment through pollution prevention, compliance with environmental laws, and the proper management of all waste generated at the premises of the association and its members.

Research and Development

Currently COEXPHAL is recognized by the Regional Government of Andalucía in Spain as a Center for Innovation and Technology (CIT), which means it is an agent of the Andalusian Knowledge System (with registration number AC0009CIT). Aware of the importance of advancing scientific knowledge in the food industry, COEXPHAL has always dedicated resources to developing and disseminating knowledge to its members. Specific areas of

research conducted by COEXPHAL include food hygiene, safety, taste and health; plant pathology; and pesticide residues. The objectives of COEXPHAL in the R&D arena include:

- Improve productivity at the farm level;
- Enhance quality in the production of fruits and vegetables;
- Improve post-harvest processes, such as storage, handling, packaging and logistics.

With a growing interest in participating in international projects, COEXPHAL has recently joined the technology platform FOOD FOR LIFE, where the major institutions of Spain come together to work in organized research groups.

The COEXPHAL Group (COEX)

To deliver services to its members and achieve its goals and objectives, COEXPHAL has developed a group of affiliated companies and agencies that form the COEX Group. The following companies are part of the COEX group:

- *Agrocolor S.L.* Agrocolor is responsible for product inspection and quality certification. It provides audit and consulting services to members and performs tests of plant protection products accredited with official recognition.
- *Biocolor S.L.* Biocolor is a company specialized in the development of techniques and methods for biological pest control and for disseminating biological pest control among COEXPHAL members.
- *Alcoex Mediterraneo S.L.* Alcoex produces and markets gama IV and V.
- *Insufese S.L.* Insufese is an insurance brokerage firm that offers a wide array of insurance products and services to members and producers in the Almeria cluster.
- *Nayades Consultores S.L.* Nayades Consultores is a service provider that outsources activities to members, including human resources management, general management, safety, and accounting.

4. THE MENDOZA WINE CLUSTER: THE ROLE OF PUBLIC-PRIVATE INSTITUTIONS IN PRODUCT UPGRADING AND EXPORT ORIENTATION⁶

Argentina has been historically one of the largest-volume producers of wine in the world. Up until the 1980s, production focused on low-quality wine and grapes for the domestic market. By the end of the 1990s, the industry had

⁶ Example based on Gerald A. McDermott, Rafael A. Corredoira and Gregory Kruse, "Public-Private Institutions as Catalysts of Upgrading in Emerging Market Societies," *Strategic Management Journal*, 52(6): 1270-1296, 2009.

undergone a profound transformation, with wine exports growing from a few million dollars in 1990 to over \$600 million in 2008. These gains came especially from consistent advances in product quality and innovation. Argentine vineyards significantly increased the grape varieties of high enological value from 20 percent of vine surface area in 1990 to about 43 percent by 2001. Wine quality improved to the extent that 85 percent of wine exports represented fine wines sold in sophisticated, competitive markets like the United States and the European Union. Argentine wineries were increasingly ranked among the world's elite, particularly for their ability to produce a variety of new products, such as previously undervalued varieties, redesigned varieties from other regions of the world, and distinctive blends.

The wine regions of Mendoza became the leader of this transformation, charting a path of innovation in the 1990s that diverged remarkably from both its own past and that of its neighbor, San Juan, despite their common, unproductive histories. Mendoza and San Juan account for roughly 60% and 30%, respectively, of the country's wine production. But the former's share of wine exports is over 90% and the latter's only 6%. This divergent path occurred because improvements in product quality and vineyard conversion were both more widespread and advanced among firms in Mendoza than in San Juan by the late 1990s. Indeed, even a number of firms from zones of Mendoza (such as the Zona Este and Zona Sur) historically viewed as backward and with substandard climates were becoming industry leaders.

But how did Mendoza become a leader in wine product upgrading? What explains its success as a regional wine cluster? This product upgrading is a particular form of innovation in which firms focus on the creation of new products for higher value by experimenting with new combinations of existing material and natural inputs. This process of recombination is fraught with technological and market uncertainties, demanding that firms gain the knowledge and expertise to convert different types of inputs into specific products, to assess the reliability of suppliers, and to learn which types of products can gain traction in different market niches. Although firms gain experience from their own in-house activities and human capital, they access a variety of basic and applied knowledge through their peers, customers, and suppliers, as well as via nonmarket actors such as trade associations and *government support institutions* (GSIs) that provide training, research and development services.

Given the coordination problems associated with product upgrading and that upgrading depends on access to a variety of knowledge resources, how were a broad set of firms in Mendoza able to upgrade their products and increase exports as a result? What types of new institutional mechanisms were created to help firms access a variety of knowledge resources and learn? The research on networks and innovation has shown that the presence of cross-cutting ties between firms from distinct producer networks or geographical locations can help them overcome these barriers and access new knowledge resources. When more encompassing, bridging structures are not historically or organically present, government can provide them and so improve

coordination and knowledge diffusion. Network scholars have recently supported such views in showing how some GSIs, in providing new training and R&D programs, can bridge socially and geographically isolated groups of firms, legitimize new standards, and promote new forms of joint action.

In particular, new GSIs – that are governed by a variety of public and private actors – have the potential to reshape the social and knowledge ties among the government and previously isolated, even antagonistic, producer communities. These new GSIs are constituted with rules of empowered inclusion and multiparty governance, whereby participants representing the government and a variety of relevant stakeholder groups, such as trade associations, have rights and responsibilities in defining and evaluating the development of certain industry support programs. As such, they offer cluster participants new structures for engaging in collective problem solving, improving mutual monitoring, and building broader strategic considerations on top of their past rent-seeking, opportunistic instincts. This subgroup of new GSIs is known as *public-private institutions*. Their governance principles foster multiplex, cross-cutting ties among previously isolated public and private actors and improve firms' access to a variety of knowledge resources.

The Emergence of Public-Private Institutions in Mendoza

With the Argentine economy stagnating and the wine industry collapsing in the early 1990s, the focal points of the crisis were both provinces' state-owned, perennially loss-making wineries (*Cavic* in San Juan and *Giol* in Mendoza), whose purchasing contracts and inflated prices effectively promoted the production of large volumes of low-quality wine. San Juan's government sought to insulate itself and rapidly imposed high-powered, arm's-length economic incentives on society to induce change. It first chose to privatize *Cavic*, brushing off the protests of dependent small grape growers and wineries. The privatized firm soon failed again, causing the government to intervene and liquidate it. Then, through the 1990s the government focused on attracting new investment through a federally subsidized tax incentive. This policy did bring record levels of investment into the wine industry but failed to encourage broad-based upgrading. The economic benefits remained concentrated among a few large firms that had little interest in incorporating and diffusing new practices along the value chain.

This top-down approach pursued in San Juan also exacerbated the fragmentation and animosities among relevant sectoral associations and the state and perpetuated the old strategies of "divide-and-rule" and widespread rent-seeking behavior. For instance, on several occasions during the 1990s, different associations proposed new institutions to support training and export promotion. All attempts failed, with the state and the associations accusing each other of free riding and attempting to gain control of state resources. Suspicion became so endemic that as late as 1997, San Juan's largest grape producer association declared that the incorporation of new technologies and vineyard management techniques proposed by some of the larger wineries

were simply attempts to cut labor costs and undermine the stability of smaller producers.

In contrast, Mendoza gradually built a new set of GSIs to provide a variety of new support services and resources in agriculture and especially in the wine-making value chain – including hazard insurance, training, R&D, and export promotion. The first experiment came in 1987, when the newly elected provincial administration chose to transform *Giol* into *Fecovita*, a federation of cooperatives that were created from the previously dependent thousands of small grape growers and wineries. This experience not only revitalized the cooperative sector, but also initiated a broader effort by the Mendoza government to create public-private institutions *de novo* and then later reform existing GSIs with socioeconomic partners over ten years.

Table 1 (next page) provides brief descriptions of the most prominent public-private institutions, their support activities, and shared governance traits. They are public-private in their legal form, governance structures, resources, and membership, which includes representatives from the government and associations of a variety of zones and subsectors. As a subgroup of GSIs, they too received at least partial public funding, had state representatives on their boards, and had a public mandate. But the aforementioned characteristics made the public-private institutions distinct from the existing, “old-style” GSIs, as the latter had governance centered in the state and bureaucracy and had only *ad hoc* contact with a few elite groups instead of having governance and resource ties to a variety of associations. They were also distinct from the existing industry associations, as the latter were voluntary organizations with no government representation or resources, were narrow in membership and mission, and provided few services other than lobbying the government.

Table 1. Public-Private Institutions in Mendoza Created in the 1990s

Institution	Year of Creation or Restructuring	Governing Members	Activities	Resources	Legal Form
Instituto Nacional de Tecnología Agropecuaria (INTA) subregional centers ^b	1991; INTA San Juan reformed in 1996	Government of Mendoza, 15 agriculture associations, national and provincial institutes and universities	R&D (inputs, plants, technology), extension training, consulting	50 percent, government budget (salaries and overhead); 50 percent, services, alliances, cooperadoras ^c	Part of INTA Cuyo; four in Mendoza, one in San Juan; public, nonstate, nonprofit entity
Fondo Vitivinicola	1993–94	Government Mendoza, 11 wine/grape associations	Oversight of new wine regulations, promotion of wine industry/ marketing	Tax on firms from overproduction of wine	Public, nonstate, nonprofit entity
Fondo para la Transformacion y el Crecimiento (FTC)	1993–94	Government of Mendoza, regional advisory councils, associations	Subsidized loans and credit guarantees to small-to-medium-sized enterprises (SMEs) for technology against extreme weather and for grape conversion	Self-financing; initial capital from government	Independent legal entity under authority of governor
Instituto Desarrollo Rural (IDR)	1994–95	36 founders: INTA Cuyo, government of Mendoza, two peak-level business federations, various agriculture sectoral associations	Technical information collection and dissemination; data base management; R&D, training, consulting	Mendoza government; services; gradual increase of fees from member associations	Nonprofit foundation, with oversight by ministry of economy
Instituto Tecnológico Universitario (ITU)	1994	Founders: Government of Mendoza, Universidad Nacional Cuyo, Universidad Tecnológica Nacional (UTN), two peak level business federations	Continuing education for managers and some R&D in management and technology	Founders; fees for services	Nonprofit foundation
Pro Mendoza	1995–96	Government of Mendoza, three peak-level business federations	Export promotion: organize fairs, delegations, strategic information, training	Government of Mendoza; peak-level business federations; services	Nonprofit foundation

Source: McDermott et al. (2009).

The distinct governance rules of these public-private institutions anchored their ability to act as bridges between the public and private domains, as well as among the relevant producer communities, and in turn created mechanisms to improve firm access to a variety of knowledge resources. The rules of inclusion allowed the public-private institutions to become more intertwined with one another, the preexisting GSIs (such as the regulator of the wine industry, the center for small business support, and the agency for phytosanitary control), and the producer associations of Mendoza. The bridging quality of public-private institutions was institutionalized in their statutes, which explicitly mentioned certain government agencies and relevant sectoral and zonal associations as members of governing and advisory boards. Deliberations about the formation and performance of the public-

private institutions opened up new cross-cutting lines of communication among these associations.

Public-private institutions are neither domineering nor isolated, but appear almost as brokers between different constituencies. In doing so, the public-private institutions were key hubs of diverse membership and potentially diverse information. The public-private institutions (as well as some of the reformed GSIs) tied the different associations and communities together. The strength of the ties between the public-private institutions and different producer communities emerged from rules that gave participants both joint decision-making rights and resource responsibilities for programs and services.

As a participant in regular performance evaluations, the representative of each association transmitted the interests of his or her constituents. In meeting their material responsibilities to the public-private institutions and in trying to ensure that the relevant programs attended to the needs of their constituents, the participants also opened up two-way channels for the transmission of knowledge and resources. For instance, although the government often provided the bulk of initial financing, participating associations provided personnel, facilities, and financing, as well as the experience of and information from their constituent firms. As the associations incrementally and jointly helped develop services, they increased their confidence in the public-private institutions and encouraged firms to use the new resources.

New Access to Knowledge Resources

The combination of these governance rules and network qualities in public-private institutions fostered three mechanisms for transmitting a new variety of applied knowledge to firms. First, in combining the material and informational contributions of the public and private participants, the public-private institutions gradually built up knowledge resources at a scale, scope, and cost that had not existed before or in other provinces and that the government and the associations could not have provided individually. For instance, INTA Mendoza, IDR, and ProMendoza pioneered in:

- developing new detailed mappings of the microclimates for grapes and other agricultural products;
- developing databases on “best practices” (internationally and regionally), harvests, and product markets;
- benchmarking and training programs for different sectors and zones;
- and forming teams of experienced consultants.

In addition, the staffs of these public-private institutions acquired contextualized knowledge from the input of the associations themselves, their own research, and the various service contracts with constituent firms. These public-private institutions became public repositories of diverse practices and standards and of repackaged knowledge to be adapted to particular settings.

Second, the public-private institutions produced services that integrated the needs of their different constituencies with international standards. The leverage of each participant came from its ability to provide or withhold resources and to voice proposals and grievances through the institution's board. Even if consensus could not be reached in one moment, the iterative nature of joint evaluations and the government's interest in maintaining a broad coalition allowed minorities to look to further rounds of deliberation and other GSIs to attend to their needs. For instance, few generic extension programs in INTA and IDR were initially criticized by firms and by the representatives of their associations who sat on the governing councils. Such pressure gradually forced these public-private institutions to build programs that tailored vineyard maintenance practices and grape-fermenting techniques to the distinct climates and firm capabilities that characterized the different zones. It also led them and the *Fondo para la Transformacion y el Crecimiento* (FTC) to establish satellite offices in the different zones. Similarly, firms and associations from both elite and backward zones strongly protested that the new export promotion programs of ProMendoza were favoring one group over the other. Pro-Mendoza thus altered its practices to support the different sets of firms.

Third, the public-private institutions built programs to help firms learn from one another and create new relationships. Both firm managers and the directors of these institutions repeatedly told us that one of the most valued qualities of services was the way they helped to diffuse standards, practices, and experiences from one zone or sector to another. A typical example of an indirect method was the use of INTA Mendoza's testing labs and viticulture consultants by a variety of firms, including the most elite ones and the fragile cooperatives. With this diverse experience, INTA Mendoza began documenting, benchmarking, and teaching practices ranging from the most advanced form of computer monitored drip watering to new applications of the more traditional orthogonal vine-training systems.

The most common examples of a more direct method of knowledge transmission and relationship building was the use by INTA, IDR, and Pro-Mendoza of multi-firm training and research programs based on collective problem-solving techniques. A key component of all these programs was having managers, enologists, and agronomists from different zones jointly resolve particular fermentation, blending, and viticulture problems on site at the different firms. An important by-product of these programs was the creation of new professional relationships among firms.

INTA and the Fondo Vitivinicola also collaborated with associations to establish annual wine evaluation competitions in the late 1990s in the more backward zones (Zona Sur and Zona Este), as well as in San Juan, where both institutions had satellite offices. By including enologists from different zones on the evaluation committees, firms with little previous contact were directly learning from one another about their product development methods. At the same time, the public-private institutions were becoming "network

facilitators,” playing a vital role to help firms share practices and tighten relationships between loosely linked networks.

By the end of the 1990s, the overlapping ties and demonstration effects of the new institutions channeled spillovers across policy domains and provinces. In Mendoza, the older, more archaic institutions and GSIs, such as the regional university and the national regulating agency for wine, began to change their programs, standards, and governance structures largely because of their participation in new advisory councils. The Mendoza government and associations also spearheaded replication of the institutional model at a national level, which was signed into law in late 2004. Beginning in 2002, the San Juan government openly criticized the old approach of tax incentives and advocated the creation of new public-private institutional resources for training, R&D, and export promotion.

In sum, Mendoza’s approach to building new GSIs appeared to induce upgrading by improving the access that firms had to a variety of knowledge resources and by functioning similarly to a network facilitator. The rules of inclusion and multiparty governance helped representatives of previously isolated producer communities gradually forge common strategies and a coherent, dynamic set of support policies with the state. Consequently, the programs and services of the relevant institutions helped firms learn how to apply new knowledge with existing natural inputs and build new relationships with one another.

5. THE UNIMIE GROUP IN FRANCE

Bread has been an integral part of life in France during the last centuries. Major historical events, such as the French Revolution, were directly shaped by the characteristics of the bread market or its availability. Not surprisingly, different standards have been established in order to regulate the production and commercialization of bread as new forms of economic exchange replaced the remaining institutions of the *Ancien Régime*. In the nineteenth century, Napoleon announced a series of decrees that specified, among other things, ingredients, baking methods, the size and the shape of the French bread. It is possible to say that the French bread, thanks to its pervasiveness and the rules that have shaped its current characteristics, is a national institution.

The “golden age” of millers and bakers that started after the French Revolution, however, would not last forever. During the last three decades of the twentieth century, societal changes led to the emergence of new challenges. First, bread consumption decreased considerably from about 900 grams of bread per capita in 1900 to 150 grams in 2000. Also, the nature of bread consumption was transformed, as new retail options, such as supermarkets and food chains, were popularized and competed with traditional bakeries. Finally, the entry of large-scale processors with considerable milling capacity significantly changed industry structure since the 1970s, affecting both local and regional millers and the traditional bakeries

that had dominated the French market during the first half of the twentieth century. Departing from a market share of 95% in the 1960s, the traditional bakeries experienced substantial market share reduction, which reached 65% in 2010. The millers, in turn, were exposed to fierce price competition fuelled by a process of progressive concentration of the processing sector.

Given the new features of the flour milling and bread market in France, how could the traditional players economically survive? In other words, which measures could be taken by local millers and traditional bakeries so as to adapt to the new market context and industry structure? The case presented below describes the experience of the *Unimie* Group⁷, a self-regulated initiative comprising 35 millers and around 3,200 traditional bakeries from different regions of the French territory. A complex strategy of private collective action, the *Unimie* Group has opened the possibility of niche differentiation to thousands of agents. On the other hand, as any collective action initiative, the *Unimie* Group has to deal with several coordination challenges, which influence the evolving characteristics of the group.

The French wheat sector

One of the most important agricultural exporters in the world, France is also a major agricultural player in the European Union (EU). Sixteen percent of the agricultural land of the UE is under French jurisdiction and the sector employs around 1 million people. France is also characterized by a high level of organizational complexity among its farmers. Of the 490,000 French farms, one-fourth uses a quality brand, while almost 90,000 farms access non-traditional, short supply chains for the commercialization of their production.

France also holds a protagonist role in the grain sector. According to the International Grains Council (ICG), French farmers produced about 68 million tonnes of grains in 2012-2013, the largest volume in the EU. Of this total, 38 million tonnes corresponded to the wheat crop. Thanks to this performance, France is one of the five big players in the wheat sector, behind China, India, Russia and the United States. Data from *France Export Céréales* shows that in 2011-2012 the country exported about 16 million tonnes, which were sold to other EU members (7.5 million tonnes) and to countries outside de EU (8.4 million tonnes). The main buyers of French wheat are the Maghreb countries, including Algeria and Morocco. Other African countries with previous colonial relations with France, such as Ivory Cost and Senegal, also import substantial amounts of French wheat.

In the domestic market, the French wheat is processed by around 450 mills. This capital intensive industry is characterized by the following characteristics: i) use of a stable technology over the last four decades; ii) the existence of a regional competition among relatively small mills, which coexist with a few large, national mills. In other words, while industry concentration has increased in the last 40 years, a large number of small mills still exist in

⁷ Example based on Claude Ménard and Emmanuel Raynaud, "Ulysses and the Sirens: Hands-Tying Governance in Hybrid Organizations", *Unpublished paper*, 2012.

France. The four largest wheat millers – *Nutrixo*, *Moulins Soufflet*, *ARIANE Meunerie* and *Les Grands Moulins de Strasbourg* – account for 58% of total flour milling. Eleven multi-regional groups, in turn, are responsible for 18% of total wheat processing, while 60 regional mills produce around 17% of the total output. The remaining 7% of the French flour market is split by almost 300 small, local mills.

The French flour is mainly used for bread making, which accounts for around 70% of the demand for the product. Two main groups compose this market, including: traditional bakeries that supply households and restaurants; and industrial bakeries that supply large retailers and food chains. While historically traditional bakeries have dominated the domestic market in France, their market share has been decreasing since the 1970s. More specifically, from a 95% market share in the 1960s, traditional bakeries now supply around 65% of the domestic market. This process has been accompanied by other market transformations, such as the establishment of a growing number of larger mills and a decrease in bread consumption.

Among other consequences, this progressive change in market structure has impacted the profitability of small local mills. Indeed, traditional bakeries pay an average price differential of 20% on the flour, which is mainly supplied by local mills. Therefore, an alternative had to be found. Created in 1979, the group *Unimie* is composed of 35 firms based on different parts of the French territory. Its main goal is the establishment of a market strategy based on product differentiation, which helps small and medium millers to survive the fierce price competition imposed by the larger flour producers in the country.

The main characteristics of the *Unimie* Group

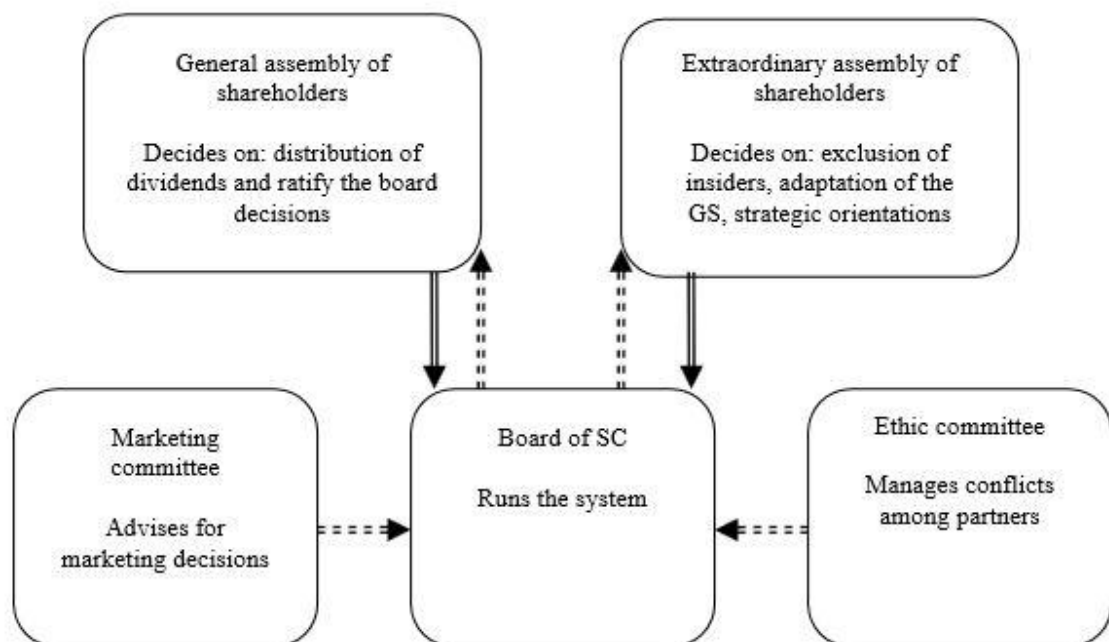
The *Unimie* Group was created in 1979 by twelve millers. Social ties were fundamental for the development of the group: not only were the twelve “pioneers” affiliated to the national miller association, but the subsequent expansion of the group was entirely based on the personal relationships and the reputation of each miller. Three years later, the millers invested equity capital in a business venture and group members were became shareholders. Therefore, the ownership and control of the company – a master-franchised system – is shared among the millers that invested in the initiative.

The first concern of the *Unimie* Group was related to the definition of a quality standard for their flour. Quality homogeneity was the final goal of the initiative. To achieve this goal, the strategy chosen by group members was the creation of a laboratory for the assessment of wheat quality, as well as a set of quality criteria that could be checked and enforced. In order to increase awareness among consumers, the group subsequently established a national brand that would be used by the traditional bakeries that used the wheat flour produced by the group. Because this market strategy added more complexity to the arrangement, the *Unimie* Group had to implement more comprehensive quality standards, which would encompass different aspects of production, marketing and distribution of both bread and wheat.

The organizational solution to the quality dilemma was found in 1986, when the millers created a master-franchised system, formalizing the relations among millers and between millers and bakers. Under the new scheme, the firm jointly owned by the millers is the franchisor and the traditional bakers are the franchisees. The *Unimie Group* is governed by a Board of Administration composed by the millers. The members of the initiative have different equity shares in the group. Twenty five years after the establishment of the master-franchised system, the *Unimie Group* achieved a market share of about 10% in France and 3,200 bakers were part of the initiative.

Figure 2 describes the structure of the self-regulatory initiative. The Strategic Center (SC) is a legally autonomous entity which holds property rights over the laboratory and the brand, operating as the franchisor. More specifically, the SC retains the right to decide which millers can use the brand name owned by the *Unimie Group*. Moreover, the entity is responsible for monitoring and the enforcement of the standard. In practice, this prerogative is used for the establishment of franchise contracts that authorize the use of the brand by the millers and for the exclusion of members that do not respect the standards set by the group. The millers, in turn, are free to attract as many traditional bakers they can to the system, marketing their flour and the rights to use the brand owned by the *Unimie Group*. Of course, the use of the brand is conditional on the acceptance by the traditional bakers of the standards determined by the SC, which include measures on the characteristics of the inputs and the design of the stores.

Figure 2. Governance of the *Unimie Group*



Source: Ménard and Raynaud (2012).

Although the actions of the SC are a fundamental component of the *Unimie* Group, they do not suffice to run the initiative. Indeed, adaptation is critical to the success of the arrangement, as new challenges are constantly identified in the relationship among the millers or between millers and bakeries. Since writing complete contracts is impossible, additional entities were created in order to facilitate efficient adaptation among group participants:

- The *General Assembly of Shareholders*, which elects or fires the managers of the Group and determine how the annual dividends are distributed among group members. Since the equity capital of the initiative is unevenly distributed, the millers decided to set the logic of “one firm, one vote” as a strategy to avoid the risk of capture of decisions by the most powerful millers. In other words, the voting system of the *Unimie* Group resembles the scheme adopted by traditional agricultural cooperatives.

Whenever at least 50% of the shares decide, the General Assembly can call the *Extraordinary General Assembly*. Strategic decisions, such as changes in the contractual relations with the bakeries or the exclusion of a partner, may be approved with two-third of the votes. Importantly, the General Assembly is not in charge of operational measures or the implementation of specific policies, which are duties of the *Executive Committee* of the SC.

Finally, the *General Assembly of Shareholders* has to approve transactions involving shares of the current stakeholders. The measure was taken as a protection against external takeover or the addition of an undesired partner. Moreover, strict rules prevent the concentration of shares in the hands of only one firm. According to the rules of the *Unimie* Group, a shareholder cannot retain more than 15% of the group shares.

- An *Executive Committee* is in charge of implementing policies that affect the whole group. This entity is composed by twelve millers, elected for terms of six years. This entity meets at least three times a year.
- The *Marketing Committee*, composed by three millers, which provides advice on the development of the brand name.
- The *Ethics Committee*, a private court of appeal for the users of the system, which is composed by five elected members. The Ethic Committee is especially important to monitor the competition of the millers based in Paris, the only region where firms linked to the *Unimie* Group compete for bakeries. According to the rules established by the initiative, trying to convince a baker to sign a contract with a miller after a competitor negotiated with the same individual may lead to the expulsion of the collective action. The reason is simple: until a bakery decides to use the brand, the miller spends resources in a series of activities, such as maintaining a sales team, crafting an agreement and so on. Avoiding opportunist actions by members of the Group – who could offer better deals to the bakeries after a first mover had incurred the costs needed for an

agreement – is the main goal of the initiative.

Since it is a pioneering initiative, the *Unimie* Group had to deal with the fact that there were no previous knowledge on how to craft contracts governing the transactions between millers and traditional bakeries. Not surprisingly, the agreement among the agents linked to the Group is based on a strong relational component. This feature increases the relevance of the SC not only as a monitoring entity, but also as an active promoter of efficient adaptation. Indeed, one of the employees of the group suggested that an interesting aspect of his job was that he was responsible for “monitoring his own bosses.” In fact, the employee can even “fire his boss” in the case the miller does not respect the rules of the standard. In other words, given the lack of previous information, the contracts under the *Unimie* system are open frameworks that only state the initial conditions of the relationship. Provisions on conflict resolution, monitoring of the parties and brand name use exist, but both millers and bakeries know that further decisions by the SC may be made in order to adapt the scheme to changes in the business environment.

Finally, the *Unimie* Group also had to design rules for rent sharing. First, the *Unimie* Group itself must have an adequate amount of resources to organize the collective action and promote the brand. Funding for these activities is obtained through the sale of inputs to the millers, from fees paid for the use of the laboratory or from royalties paid by the millers. Since profits depend on the volume of flour sold to traditional bakeries, in some cases the miller may be entitled to additional profits – resources that go beyond mandatory fees and royalties. Since its establishment, however, the *Unimie* Group has decided to reinvest this additional profit in the brand or the laboratory. Given the fact that the brand has created a territory where the regional millers can sell their flour with exclusivity, the main incentive to participate in the initiative is the premium of around 20% paid by the traditional bakeries for the high quality flour.

LESSONS LEARNED FROM THE CASE STUDIES: POLICY IMPLICATIONS

Based on the conceptual framework offered by the New Institutional Economics outlined above, we offer the following lessons learned from the five case studies of self-regulatory organizations at three levels of analysis – embeddedness, institutional environment and governance. This set of lessons learned from the five cases presented in this report provide *policy guidance* regarding the conditions or factors that would make self-regulatory actions by producer organizations workable in differing situations.

Embeddedness

- Individuals will always try to get the best outcome from the resources they

own. This decision, however, is not free from constraints or incentives. Indeed, the set of constraints and incentives faced by an individual will determine how he will use the available resources and the final result of his efforts. Therefore, if a certain outcome differs from a theory, it is not because people are stupid. The reason is probably that policy makers or researchers were not able to grasp the whole structure of constraints or incentives facing individuals. As suggested above, these constraints and incentives are found at the levels of embeddedness (i.e., social norms, customs and personal relationships) and the formal “rules of the game” found in the institutional environment.

- Informal rules – traditions, customs, and social norms – create a set of constraints to human action that is not necessarily identical to the constraints derived from formal rules. In this sense, creating a new structure of formal incentives – in the form of public policies – demands a full understanding of the informal rules embedded in a given society. Often, the existence of informal rules explains why individuals do not take the action that policy makers believe would be the most appropriate given the existing laws. The reason is not that individuals are not pursuing their self-interest, but that individuals understand “self-interest” according to a different set of preferences and constraints.
- Whenever individuals or firms decide to interact and coordinate their activities in some form of voluntary collective action, excessive hierarchy precludes the establishment of self-regulatory organizations or weakens their actions for the following reasons. Excessive hierarchy is only possible if one of the agents pays the costs of organization or has sufficient power to enforce the rules based on his preferences. A self-regulatory organization is, above all, a space where agents discuss different views for their business and try to find a common denominator for collective action. In this sense, active and voluntary participation of members is a requisite for the formation and well-functioning of collective action organizations.
- Avoiding the risk of “free rider behavior” motivates most – if not all – forms of collective action. In other words, informal and formal rules are shaped in order to avoid the appropriation of collective benefits by agents who did not contribute to its creation. Of course, these so-called selective incentives and sanctions are imperfect, and therefore, some level of “free rider behavior” will always exist. Since self-regulatory organizations also have to deal with “free rider behavior” of members, it is important to grasp what are the most common practices related to this behavior in society before the initiative is established. An organizational design that recognizes these different layers of social action and looks for certain alignment among them has greater probability of success.
- Most successful self-regulatory organizations are formed and evolve embedded in a dense network of social relations between producer-members. Such social networks provide the social cohesion and trust for these organizations to emerge and design more formal governance rules to mitigate free-riding behavior and other forms of opportunism.

Institutional Environment

- The existence of private property rights enforced by a fair and efficient judicial system fosters the establishment of self-regulatory initiatives. This is not a necessary condition for the establishment of such arrangements, since the individuals or firms involved in the collective action may create their own system of sanctions. However, State enforcement is cheaper and more credible than its “multi-purpose competitors” whenever it is available. It is important to stress that State enforcement works as a last resort for the participants of a self-regulatory initiative. In most cases, they are able to settle disputes and reach an agreement based on negotiation or the use of internal rules without the interference of third-parties.
- Protecting private property rights is necessary. This entails guaranteeing those rights which are established by the State rules and respecting private decisions for the allocation of rights whenever a specific public rule does not exist for an economic sector. In the process of codification of practices concerning a specific economic sector, the State should follow those solutions found by the agents directly involved with the sector. The individual who deals every day with a certain activity probably knows more about it than the policy maker who has to work on several different topics.
- The State should attempt to eliminate any specific barrier to the right of internal organization by members of a self-regulatory organization. The only limitations that should prevail are those that apply to any citizen – of course, the more liberal the rules in this sense, the better for initiatives involving producer collective action. Recognizing the right of producers to organize collectively and providing flexibility in laws and regulations dealing with self-regulatory organizations are important pre-conditions for successful collective action in agriculture.
- The institutional rules may foster the participation of the leaders of self-regulatory initiatives in the political process, by proposing changes in the legislation or suggesting new rules. This initiative, however, has to take into account the diversity of different interest groups in society, creating a competitive system for political ideas. The absence of such competition may open room to inefficient practices, such as “rent seeking behavior”, that would distort markets and divert economic agents from productive activities.

Governance

- As suggested in the five case studies, there is no unique governance structure for a successful self-regulatory organization. Cooperatives, industry associations, inter-professional organizations and public-private institutions are different expressions of voluntary collective action in agriculture that seek to self-regulate activities of members, provide missing services, define and guarantee quality attributes, open new markets and interact with government officials to inform policy-making.
- These self-regulatory organizations can represent an industry (e.g., UNICA in the Brazilian sugarcane industry), a regional cluster (e.g., COEXPHAL in Almeria, Spain; or public-private institutions in Mendoza, Argentina), a certain form of producer organization (e.g., the Brazilian Cooperative Organization) or a subset of industry participants (e.g., the traditional millers and bakeries that formed the Unimie Group in France).

- However, the existence of clear boundaries is necessary for the success of a self-regulatory organization. In other words, the rules for membership or exclusion of members have to be clear and enforced accordingly. This measure diminishes the probability of “free rider behavior” among the participants of the initiative.
- Each self-regulatory initiative must create its own rules for the provision and the appropriation of collective goods, which should respect the specificities of its participants and the market where it acts. More specifically, rules for individual contribution to the initiative – provision – or distribution of benefits (e.g. royalties) – appropriation – should not follow a unique model, but one aligned with the preferences and characteristics of individuals or firms that created the collective action organization.
- Monitoring costs should be shared among all members of the self-regulatory initiative. The creation of sanction rules that could be efficiently enforced by the participants of the organization reduces organization costs, since it avoids prolonged conflicts. As said before, the judicial system should be seen as a credible last resort, used only in extreme cases when the private rules fail to achieve an efficient outcome.