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## Editorial

After four years as Editor-in-Chief of the Journal of Rural Cooperation, I felt that it is time for me to step down and let others lead the way. I am glad to announce that Co-Editor Zvi Lerman has agreed to assume the role of Editor-in-Chief beginning in January 2010. I will continue to serve JRC as Co-Editor. This ensures a smooth transition of responsibilities. The editorial responsibilities of the articles included in the present issue were shared by Zvi Lerman and myself.

During 2006-2009, 56 regular papers were submitted to JRC, and 20 of them were accepted for publication and appeared in 5 regular issues (including this issue). In addition, 25 articles were published in 4 special issues, focusing on specific aspects of rural cooperation. The regular issues also included 8 book reviews and numerous dissertation abstracts.

Yair Levi, JRC Editor-in-Chief between 1978 and 2005, passed away in 2007. It was an honor for me to step into his big shoes, and I hope I succeeded to keep the standards that Yair set and maintained for years. I could not have done it without the cooperation of many, including the team of co-editors, **Zvi Lerman**, **Michal Palgi** and **Michael Sofer**; the editors of the special issues, **Yair Levi**, **Catherine Murray**, **Vardan Urutyanyan**, and **Richard J. Sexton**; the authors, the book reviewers, the referees, and of course, the readers.

Together, we tried to attract new audiences to JRC, especially from developing and transition countries, we went on-line (abstracts only), and we reached an agreement with AgEcon Search, a database including nearly 40,000 working papers and journal articles in Agricultural Economics and related fields, to include older issues of JRC (two years after publication) in the database. In the last 17 months, almost 2,500 downloads of JRC articles were recorded!

I hope and believe that JRC will continue to serve as a leading platform for theoretical, empirical, and case-study articles dealing with all aspects of rural cooperation.

Ayal Kimhi  
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# **Agricultural Cooperatives and Unions of Cooperatives in Bosnia and Herzegovina: Opportunities for Improvement in Providing Services and Educational Programs for Farmers**

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AND JOHN G. RICHARDSON\*\*\***

## **Abstract**

There have been major changes in the agricultural structure in Bosnia and Herzegovina. The remade cooperatives and the unions of cooperatives are struggling. This paper examines the needs of the agricultural cooperatives in order for them to be more successful, and identifies what support will likely come from the unions of cooperatives and what support must come from other sources. Data were obtained through: 1) questionnaires to a large group of cooperatives, 2) focus groups with a smaller number of cooperatives, and 3) personal interviews with union of cooperatives representatives. The findings indicate that the unions of cooperatives are working on issues such as registering and auditing cooperatives and resolving land ownership conflicts. The cooperatives also need help in business management, marketing, legal services, and organizational effectiveness. The unions will not be able to help in these areas so nongovernmental organizations will need to provide these educational programming for farmers.

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**Key Words:** Bosnia and Herzegovina, agricultural cooperatives, union of agricultural cooperatives, agricultural development, agricultural extension, non-governmental organizations.

## **Introduction**

There have been massive changes in the structure of agriculture since the breakup of Yugoslavia and the ensuing war. Prior to the breakup, the dominant organizational unit for Yugoslav farmers was the general agricultural cooperative. These cooperatives were not state-owned, as in much of the former Soviet Union, but rather were state-supported and sanctioned. Farmer-members farmed their own land, but the general agriculture cooperatives provided the vast supply of inputs that these farmers needed and marketed most of their production. For these services, the farmers were required to make a payment to the general agricultural cooperatives' investment funds. After the breakup and the war, the general agricultural cooperatives were eliminated. The current model for agricultural cooperatives is one based on the rule of its members, not the sanction and support of the state.

In Bosnia and Herzegovina<sup>1</sup> (BiH), these new, smaller cooperatives are attempting to survive in a free market economy. However, the market economy is still a new concept to most farmers and members of these new cooperatives do not have the requisite skill sets to ensure their success. Navigating a market economy is difficult for farmers who, if they had been members of cooperatives under the Yugoslav system, were told what crops to grow and what price they would be paid. Or, who after losing their guaranteed livelihoods as factory or office workers in state-owned companies, resorted to agriculture as a survival strategy. The membership of any given agricultural cooperative is often a mix of returnees to pre-war rural homes, displaced people who have chosen to 'start again' rather than returning to pre-war communities where they would remain as minorities, and so-

1 The Dayton Agreement (Dayton, Ohio, U.S.A.) was the peace agreement that ended the 3½ year war in Bosnia and Herzegovina (BiH). It was officially signed in Paris, France on December 14, 1995. The Agreement divided BiH into two halves or entities that are approximately equal in geographic size. One entity is the Federation of Bosnia and Herzegovina (FBiH) and contains mostly Bosniaks and Croats. A second entity is the Republic of Srpska (RS) and contains mostly Bosnian Serbs. These two entities have their own second-tier level of government and oversee internal funds and functions. BiH has the top state-level tier of government. The city of Brcko, located in the northeastern corner of BiH, is under international supervision and considered part of RS and FBiH.

called 'domicile' families who remained in place. Many of a cooperative's members may be fairly new to agriculture as a livelihood and all are relatively new to the market economy. Farmers, whatever their background, would like their agricultural cooperatives to provide the same level of expertise and service as they experienced in the former Yugoslavia.

The leaders of the agricultural cooperatives, recognizing the limitations of their own cooperatives, want these services provided by the union of cooperatives. There are three unions of cooperatives in Bosnia and Herzegovina, one for the national level and one each at the entity-level (e.g., Federation of Bosnia and Herzegovina and Republic of Srpska.) The cooperatives belong to their respective entity unions and all cooperatives belong to the national union. But, it appears that the Unions are not up to the task. This paper identifies the information needs of farmers and explores different alternatives for meeting these needs.

## **Objective and Purpose**

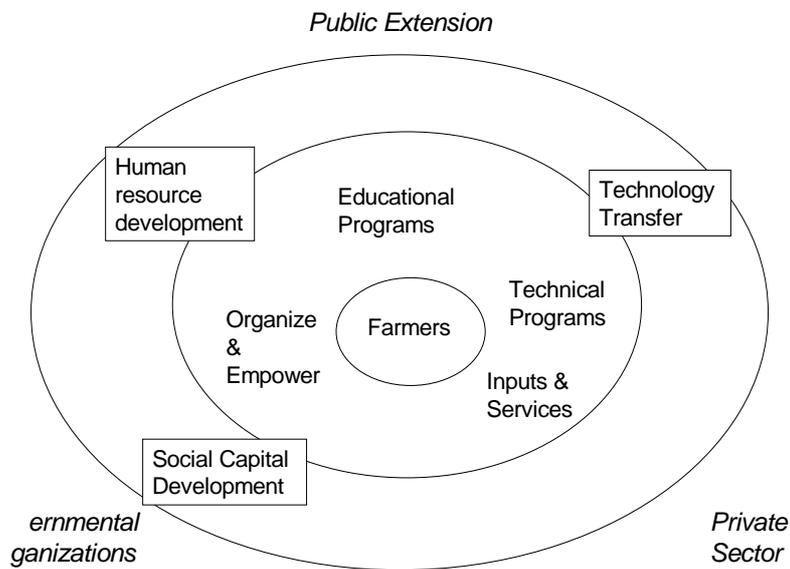
Daku et al. (2005) offered guidance on redesigning the agricultural extension services of South-Eastern Europe, a region of the world that includes Bosnia and Herzegovina. They focused on institutional design and suggested there should be a partnership of public and private extension, but that with agricultural development, there should be a movement to a greater role played by private extension. At the present time, agricultural extension in all of the countries in this region has suffered from budget limitations and lack of experience. Those countries of the former Yugoslavia have suffered additionally from the destruction of war.

The Swedish Institute for Food and Agricultural Economics (2006) noted that a major explanation for the low productivity of BiH agriculture was the lack of education and training for its farmers. They recommended that the extension services should be improved. Also, the Institute, as one of its benchmarks, noted that government of BiH employs much less agricultural staff than comparable countries and that this low financial support for agriculture contributes to its low productivity.

Swanson and Sammy (2002) broadened Daku et al.'s view of the public-private partnership for agricultural extension by including nongovernmental organizations. Specially, they offered a conceptual framework for the partnership among public extension, nongovernmental organizations (NGOs), and the private sector in meeting the needs of farm families (Figure 1). In this framework, public extension provides educational programs, mostly to small and medium-sized farmers, in such subjects as marketing, leadership, natural resource management, and farm management. Public extension would partner with the private sector in technology

transfer and with NGOs in human and social capital development. Within this partnership, NGOs would primarily work with the smaller farms in organizing and empowering their associations and cooperatives, while the private sector would work with the larger farmers to provide inputs and services.

**Figure 1. An integrated approach to supporting the farm community by public extension, private sector, and non-governmental organizations**  
(Adapted from Swanson and Samv. 2002.



The objective of this study was to identify and quantify the demands of the agricultural cooperatives and the services being supplied by their cooperative unions and determine which of the cooperatives' needs are and are not being met by the cooperative unions. Consistent with Figure 1, these tasks could be assigned

### Background and Literature Review

The role of cooperatives in the newly independent countries such as Bosnia and Herzegovina, has changed dramatically from its role in the former Yugoslavia. However, expectations and traditions generated under the old system still affect the performance of cooperatives in the new countries.

*Yugoslavia*

Agricultural cooperatives offer a way of overcoming some of the problems that the countries of the former Yugoslavia face such as small scale, fragmented holdings, lack of production capacity, and better access to inputs (Heijman, Moll, and Wals, 2002). Experiences from the former Soviet republics in the Commonwealth of Independent States (CIS) and Central and Eastern Europe (CEE) indicate that opportunities for cooperatives lie with marketing and input supply rather than production. The negative connotations usually associated with cooperatives across the former USSR are less prevalent for Yugoslavia and Poland where collectivization had not been forced and agriculture was based on individual peasant farms (Gardner and Lerman, 2006). As argued by some, rebuilding social organizations, such as agriculture cooperatives, are as important as rebuilding roads and bridges (Acker, Androulidakis, Lansdale, Lansdale, Smith, and Warner, 2001).

Historically, the socialistic aspects of Yugoslavian agriculture were largely limited to the state sector and cooperative holdings (Hoffman, 1959). The state sector included state agricultural farms and agricultural institutes. The largest component of the cooperative holdings was the general agricultural cooperative.

Even though their production acreage was small, the role that the general agricultural cooperatives played in Yugoslavian agriculture was large (Hoffman, 1959). For example, in 1957, the state sector and cooperative holdings occupied 5.9% and 3.5% of agricultural land, respectively. Private holdings, mostly less than eight hectares, were located on 90.6% of agricultural land. Most of these peasant farmers lacked the assets and knowledge to productively farm their land. The general agricultural cooperatives provided the peasants on these private holdings with seeds, credit, fertilizers, equipment, technical information on farming and marketed most of their products. In 1956, general agricultural cooperatives purchased 86% of the wood, 84% of medicinal plants, 80% of poultry, 78% of alcoholic beverages, and 61% of the cereals produced by the peasants. As payback for these services, the peasants had to provide the cooperatives obligatory investment funds.

By 1987, there were 2.6 million private farmers and they occupied 84% of all agricultural land in Yugoslavia (U.S. Library of Congress, 1990). State farms and general agricultural cooperatives still held the preferred place in agricultural society. Only these organizations received state subsidies and investments. However, these investments were a mixed blessing for the country. The state operations were more productive than private farming because of the investments. Conversely, this investment strategy led to an inefficient allocation of resources between the private and public sectors generating a weak food distribution system and overall low farm income for the nation.

### *Bosnia and Herzegovina*

Bosnia and Herzegovina covers a land area of 5.1 million hectares and has a population of 3.8 million. Fifty percent of the land is arable land and 48% is forested. Of the agricultural land, 20% is located in river valleys and is suitable for intensive agricultural production. Forty-five percent of the agricultural land is hilly and suitable for semi-intensive, pasture-based livestock production (Custovic, 2005).

Bosnia and Herzegovina was traditionally a net exporter of livestock products, wine, and fruits and vegetables. After the war, agricultural export activities lagged and import activities increased significantly because of production problems. In 2001, for example, agricultural production was 70% of 1989-91 levels (Csaki and Zuschlag, 2004). In the same year, 25% of food and agriculture were imported in the country and only .5% were exported.

Besides the devastation to the agricultural infrastructure due to the war, another major problem to farmers in today's BiH is land tenure and ownership. Approximately 80% of the agricultural land is privately owned (Csaki and Nucifora, 2002). However, the average farm size is only 3 hectares and that is fragmented among 8 to 10 plots (Custovic, 2005). It is difficult to establish legal title to this land because many of the records were destroyed during the war and also there are different land titling situations between the Federation BiH and the Republic of Srpska. Besides these impediments, there are additional problems associated with the former cooperative land that had been state-owned. Even with the 2003 Law on Cooperatives, it is not always clear who the previous owners of the state-owned land were. The Law on Cooperatives returned state-owned land to the cooperative that operated it. Also, not all of these cooperatives are operational now and it may be that previous members are using the land for their private benefit. In addition, displaced people that were removed from their lands during the war, sometimes are now on land that is not their own. Finally, land mines are still a major consideration throughout the country. As a result of all these factors, only 50% of the arable land in the country is being farmed (Bojnec, 2005).

One advantage of agriculture, even subsistence agriculture in countries like Bosnia and Herzegovina, is the safety net that it provides to poor people. For example, approximately half of the households in BiH are agricultural households. It has been estimated that each of these households has an unemployed member looking for employment off the farm. The farms form a social buffer by providing subsistence food security for those without incomes – either to those living on farms or to relatives and friends in towns (Bojnec, 2005). Any support that more functional cooperatives could add to the agricultural sector would be beneficial to improving this social safety net.

In an effort to overcome many of the problems associated with the previous cooperative system in Yugoslavia, the Parliamentary Assembly of BiH passed the Law of Cooperatives (2003). This law replaced the two entities' laws on cooperatives (Republic of Srpska (RS) and Federation of Bosnia and Herzegovina (FBiH)). This new law was created to instill principles of cooperatives as accepted around the world, such as voluntarism, democracy, freedom, and transparency. In addition, this law covers all aspects of the cooperative operations such as new cooperative creation, membership, recordkeeping, operations and management, property rights, and distribution of profits and losses. This Law on Cooperatives is based on the principles of "genuine" cooperation from the International Cooperative Alliance in 1995 (Couture et al., 2002). However, as research findings in this paper will demonstrate, the difference between the possibilities offered by the new law and the reality in today's BiH are very different.

The new model for cooperatives is based on the rule of its members, not like the former state-run cooperatives. Specifically, "a cooperative is a form of organization of voluntarily associated members (hereinafter: cooperative members), for the fulfillment of their joint economic, social and cultural needs and aspirations, through joint ownership and democratically controlled management of business activities (Law of Cooperatives, 2003, I, art 1).

The two types of cooperatives unions are business cooperative unions and public interest cooperative unions. "Business unions of cooperatives provide the same activities for their members that cooperatives provide for cooperative members, and regulations on cooperatives apply to them also, unless otherwise stipulated." (Law of Cooperatives, 2003, I, art. 5). There are three public interest cooperative unions. They are two entity cooperative unions with one each for the Republic of Srpska (RS) and the Federation of Bosnia and Herzegovina (FBiH) and one for the country entitled, Bosnia and Herzegovina Union of Cooperatives.

The Law also lists the thirteen activities that cooperative unions should provide its members (Law of Cooperatives, 2003, XII, art. 69). However, five are specifically delegated to the entity public interest cooperative unions (RS and FBiH). They are providing help in the establishment of new cooperatives, advocating on behalf of cooperatives before public bodies, organizing research, education, and marketing activities, deciding on transfer of property should a cooperative be terminated, and conducting audits of cooperatives. There is one task that is only assigned to the state-wide BiH union and that is the authority to represent cooperatives outside of the country.

## **Results**

The objective of this study was to identify and quantify the demands of the agricultural cooperatives and the services being supplied by their cooperative unions and determine which of the cooperatives' needs are and are not being met by the cooperative unions.

Information was gathered in three ways: 1) questionnaires to a large group of cooperatives, 2) focus groups with a smaller number of cooperatives, and 3) personal interviews with cooperative union representatives. In the initial phase, the International Orthodox Christian Charities (IOCC), with two partners, the local NGO, Nesto Vise, and the BiH (state-level) Cooperative Union, sent questionnaires by mail to sixty cooperatives in both entities of BiH in November 2006. Seventeen responded by mail and twenty-five by interview for a total of forty-two completed surveys. Twenty-five cooperatives were located in the Republic of Srpska and seventeen cooperatives were located in the Federation of Bosnia and Herzegovina.

As noted above, agriculture in BiH is at a low ebb. Not only has the country suffered because of the transition from a command economy to a market-based economy but the subsequent war savaged the country. It was felt that a mixture of survey and interviews was the best way to gather information. The focus groups<sup>2</sup> allowed us to confirm findings from the surveys and, importantly, to better assess attitudes and opinions through these small group meetings.

Individual interviews were conducted with the presidents of the Union of Cooperatives of Republic of Srpska in Banja Luka and with the State-level Union of Cooperatives in Sarajevo on December 14, and 15, 2006, respectively. The President of the FBiH Union of Cooperatives responded to the interview questions in writing in early January 2007.

2 Focus groups, with an average of 12 participants, were conducted in Mostar (FBiH) on December 11, 2006 and in Kostajnica (RS) on December 12, 2006. In Mostar, there were representatives from Nesto Vise and five cooperatives from the municipalities of Nevesinje, Jablanica, Mostar, Tarcin, and Trebinje. In Kostajnica, there were representatives from the five cooperatives of Derventa, Kostajnica, Dubica, Donji Agici, and Knezica. The same topics were discussed at both locations. The participants were asked to provide comments and/or suggestions to improve: a) information sharing between cooperatives and unions, b) agricultural marketing, c) the reputation of the cooperative sector, d) organizational and technical services provided by the unions, e) agricultural laws, and f) the role of the cooperative before and after the breakup of Yugoslavia.

*Overview*

Currently, there is not effective communication between the Unions of Cooperatives (two entity unions of cooperatives and state-level union of cooperatives) and the agricultural cooperatives. A permanent and continuous flow of quality information between cooperatives and cooperative union is needed. Although it does not appear that cooperative unions have the capacity to provide such programs, educational programs should be provided to cooperative members on the topics of markets, marketing principles, and quality standards. In addition, a marketing database should be developed that charts recent prices for different commodities, trends in commodity yields, and trends in levels of production (e.g., crop hectares and livestock numbers).

Also, cooperatives need training in legal issues and business management. One of the major sources of uncertainty is land ownership by the cooperatives. Cooperatives need legal advice in terms of property ownership, titling, and registration. The unions need to continue their cooperative audits and help in the legal registration of cooperatives. Similarly, the cooperatives need advice about business opportunities and economic analysis.

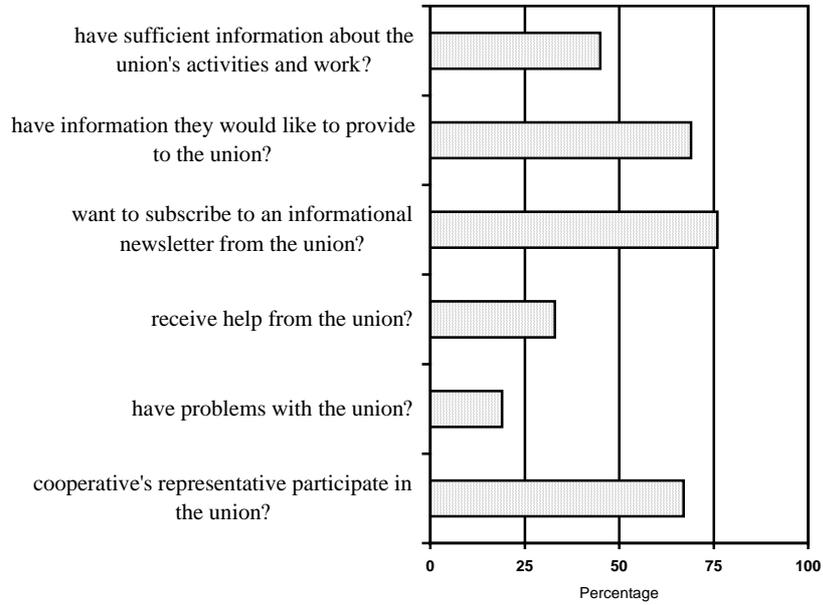
Cooperative principles should be promoted in Bosnian society. Advocacy and lobbying are activities that the union of cooperatives should pursue jointly with their member cooperatives. The unions and cooperatives should work together to develop strategies and partnerships among cooperatives. Currently, the cooperative business center approach allows cooperatives to market together. This approach should be encouraged throughout the country.

*Interactions between Cooperatives and Unions of Cooperatives (Figure 2, Panel A)*

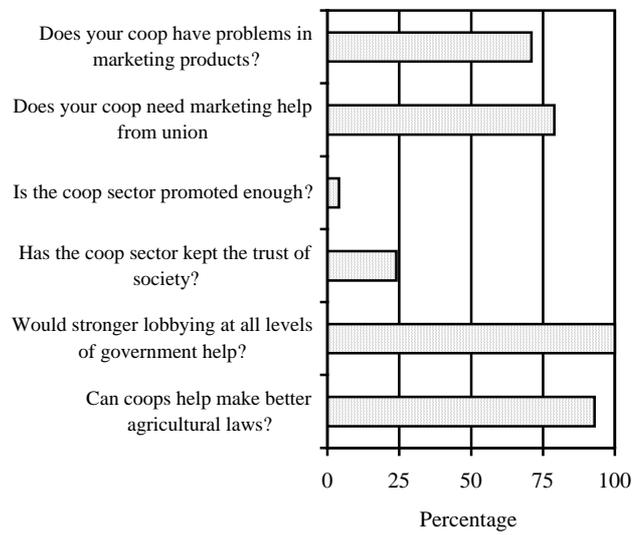
The cooperatives provided input from their perspective on the interactions between Cooperatives and Unions of Cooperatives. Forty-five percent of the cooperatives do have sufficient knowledge about the activities and work of the unions of cooperative. A majority of the cooperatives (69%) would be willing to send information to the Unions. If they were to send information to the Unions, the cooperatives would like to tell the unions about their goals and objectives, current activities, and share with them problems that they are having with their municipalities. In return, 76% of the cooperatives would like to receive an informational newsletter from the union, such as Zadrugar, a popular cooperative newsletter that was previously published. The cooperatives would be willing to share with the unions in the expense of this publication. Newsletters are effective ways to share educational material (Richardson, 1989). Some cooperatives had access to the internet and thought that a webpage that provides market prices, lists of buyers, organization attributes of cooperatives, and other business-related information, would be helpful.

**Figure 2. Survey responses**

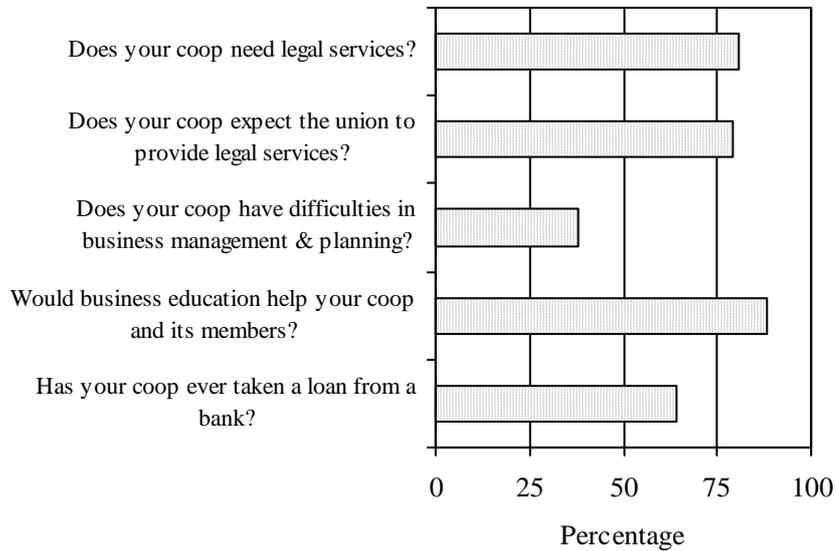
**Panel A: Does your cooperative:**



**Panel B: Marketing and role of cooperatives**



**Panel C: Legal and business issues**



Notes: the figure is based on responses to questions by 42 cooperatives in BiH regarding their relationship with their respective cooperative unions, marketing of agricultural products by cooperatives, role of cooperatives in society, and supply of legal services and business management by their respective cooperative unions, 2006.

Only one-third of the cooperatives have received any help from their union and 19% have had problems (approximately 60% of those who received help). For those that have received help, they noted that the union helped them in registering the cooperative, mediated on behalf of them with government officials, and organized roundtables regarding land ownership. The unions have not developed a strategy to encourage the new law on cooperatives to be applied in BiH. Also, it is difficult to get concrete answers from the unions to the questions. Sixty-seven percent of the cooperatives’ representatives attend union meetings or serve on a board.

*Marketing: A Cooperative Perspective (Figure 2, Panel B)*

Marketing agricultural products is a major problem for 71% of the agricultural cooperatives. Cooperatives are frustrated with the low and fluctuating price of agricultural products. The cooperatives produce small quantities of agricultural

products and the buyers want large quantities. The cooperatives lack storage and processing facilities and they have difficulty finding buyers. The majority of the cooperatives (79%) look to their union to improve the cooperatives marketing success. Unions should help cooperatives to market jointly so that they have sufficient production to meet the needs of the buyers. Also, cooperatives need help from their unions in developing an overall marketing strategy that captures their comparative strengths and an accompanying database that contained information such as prices and buyers.

*Role of Cooperatives in Society: A Cooperative Perspective (Figure 2, Panel B)*

Only five percent of the cooperatives think that the cooperative sector is promoted enough. Open forums and media campaigns should be established at all levels of government and society. The campaign should be based on the results achieved by the cooperatives and focus on the most successful cooperatives. Seventy-one percent of the cooperatives thought that the sector had lost the trust of society. To repair the trust, the capabilities of the unions should be improved and the status of those non-performing cooperatives should be resolved. Cooperatives should hold themselves to international standards of performance and the public should understand that a well-operating cooperative system will help in joining the European Union. All cooperatives (100%) thought that lobbying on behalf of the cooperative sector would make a strong impact at all levels of government. An effective cooperative sector can make positive influences in the improvement of agricultural laws and policies and an equitable enforcement of those laws (93%).

*Legal and Business Support: A Cooperative Perspective (Figure 2, Panel C)*

Eighty-one percent of the cooperatives said that they needed legal services. The cooperatives are having difficulties in resolving land ownership issues, registration and re-registration, and in making contracts with buyers and input providers. The cooperatives expect the union to provide this legal assistance (79%). Most cooperatives do not face difficulties in business planning, investments, and organization (38%) yet cooperative members would still benefit significantly from business education (88%). Those cooperatives with economics problems do not think that their personnel are adequately trained to provide good business plans and are unsure of how to reduce their risk in a free market economy (e.g., low and fluctuating prices). Many cooperatives have loans that need to be repaid (64%) and mastering good business practices are important to them.

*Cooperatives before the Breakup of Yugoslavia and Now: A Cooperative Perspective Gathered from Focus Groups*

Statements from cooperative members during the focus group sessions, comparing their experiences before the breakup of Yugoslavia with the current situation, tended to emphasize today's problems. While the new role of cooperatives may be positive, this changing role has caused unanticipated social problems. For example, "Then, farmers had benefits such as pensions and health insurance, today they don't have any." Or, "Today, the relationship between the cooperatives and their members has been reduced to sales." In terms of production and marketing of agricultural products, "It is much more difficult now. In the past, there was a monopoly, there was not any private production. Everything that was produced, the cooperative could sell." And, "Then, we had all the services we needed and the whole system was organized."

Also, land reform may redress historical wrongs, but for the person who grew up on these socialist cooperatives, "Today, we are tenants on our own property." Or, in terms of the relationship between the cooperative and the union of cooperative, then, "The cooperatives were much bigger in the past." "Then, the cooperative union was not very important." "The union is more necessary now if it (the cooperative system) is to function well."

*Priorities for the Unions of Cooperatives*

The Republic of Srpska Union of Cooperatives was established in 1999. According to registration records, there are more than 500 cooperatives, of which, more than 300 are agricultural cooperatives. However, these data are out of date. Currently, there are approximately 100 member-cooperatives (paying dues). The current President of the Republic of Srpska Union of Cooperatives was elected in 2004. In addition to him, there are 3 employees that include a full-time manager, auditor, and a book keeper who works part-time. All three employees have not been paid for the last four months (prior to this interview) and there was not any money to reimburse for operating expenses such as fuel. Their major accomplishments during 2005 and 2006 were that 77 cooperatives were audited according to the specifications of the 2003 law. Their priorities for 2007 included the following: create a strategy for the development of the cooperative sector, permanently finance the cooperative auditing process, develop a process for cooperative registration, and resolve property issues.

The Federation of Bosnia and Herzegovina Union of Cooperatives was established in 1998. In the FBiH there are approximately 200 cooperatives. The Union of Cooperatives has had an acting President since 2006. When he first took office, the financial situation was not satisfactory. He has repaid some debts, but there are still a few to settle such as former employees' salaries, pensions, and

health insurance payments. Currently, there are two full-time and one part-time employee in the Union. His priority has been to familiarize himself with the situations in each Federation cooperative. He has had a series of meetings with representatives of the ministries and international organizations, taken the opportunity available to visit some cooperatives and agricultural markets, and has attended a number of seminars.

The state-level Bosnia and Herzegovina Union of Cooperatives was created in the 1970s. The 2003 Law on Cooperatives in Bosnia and Herzegovina updated the Union of Cooperative's role in Bosnian society so that it now has exclusive authority to represent cooperatives abroad and collaborate with international organizations. Three representatives of the state-level Bosnia and Herzegovina's Union of Cooperatives participated in the interview. They briefly described their recent efforts in resolving the land ownership issue, introducing a database on cooperatives in the country, and representing the BiH cooperative sector abroad. An important initiative has been the development of a cooperative business center approach. In this initiative, individual cooperatives work together either to increase the efficiency of their input buying or marketing of products. While cooperatives have advantages of size over the average farm of three hectares, most cooperatives are still not large enough to compete on a world market.

## **Conclusion**

With varying degrees of success, the three unions of cooperatives are working on institutional issues facing cooperatives such as registration of cooperatives, cooperative audits, resolution of title disputes to land, and new organizational arrangements such as business centers. However, given the smallness of their staff and their meager funding, it is unlikely they will be able to increase their level of service to the cooperatives.

Figure 1 can be adapted to illustrate a new strategy to meet the needs of the farmers in which there is an expanded role for NGOs. In this new strategy, NGOs continue to work with farmer organizations, such as unions of cooperatives, to facilitate social capital development. In terms of BiH, they will organize and empower the unions of cooperatives as they conduct audits of cooperatives and resolve land title issues. Currently, public extension is not providing business, marketing, or production educational programs to a satisfactory level. The cooperatives are asking for this help from the unions of cooperatives but it is unlikely they will be able to provide it. As a result, NGOs, by substituting for public extension where needed, can provide these educational programs directly to cooperatives and their farmer-members.

Similar to the public – private agricultural extension partnership advocated by Daku et al. 2005, there should be an NGO – public agricultural extension partnership while development aid monies continue to flow into BiH. Following the publicly-financed, privately-delivered model of agricultural extension as described in Honduras (Hanson et a., 2006) or in various case studies around the world (Rivera and Alex, 2002), NGOs, funded by international agencies, could be contracted to deliver the educational programs that farmers need. In the future, when BiH has recovered sufficiently, then a handoff could occur with public extension assuming more of these responsibilities.

The growth in the agricultural sector will lead to improvement in the cooperative sector. In the former Yugoslavia, it was a top down system, where the managers of the cooperatives provided services to the farmers. The farmers were receivers in the process, not leaders. The current frustration felt by farmers for their cooperative leaders and for the unions of cooperatives reflects their unrealistic dependence on the ‘old worldview’. This contrasts to the post-Yugoslavian world where the cooperatives are run their members. Stated another way, the performances of today’s cooperatives are dependent on the quality of its members. Educational programs provided by NGOs, agricultural extension, and ministries of agriculture will not only benefit farmers but will also provide a needed boost to agricultural cooperatives and their unions of cooperatives.

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# **A Comparative Analysis of Antitrust Regulations in the Agricultural Sector in Israel, the US and the EU**

**Yael Kachel and Israel Finkelshtain\***

## **Abstract**

The Israeli agricultural sector enjoys a far-reaching exemption from antitrust regulation. The exemption includes farmers and wholesalers of agricultural products and enables restrictive arrangements, which may reduce competition. A comparative analysis of antitrust regulation in Israel, the European Union and the United States shows that the exemption in Israel is relatively narrow with regard to the products included but much wider with regard to the exempted firms. There are economic arguments which support exempting farmers and farmers' associations from the prohibition of restrictive arrangements to enable cooperation in production, marketing, promotion and research, but the exemption of wholesalers of agricultural products could not be justified on the grounds of economic efficiency.

**Key words:** Antitrust Regulation, Agriculture, Cooperatives, Market Power.

## **Introduction**

The objective of antitrust legislation is to protect the public from restriction of competition. The Israeli Antitrust Law (1988) regulates three areas: the definition and supervision of monopolies, the approval of mergers, and the prohibition of arrangements between firms which restrict competition. The Israeli agricultural sector enjoys a far-reaching exemption from the prohibition of restrictive

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arrangements. This exemption includes farmers and wholesalers of agricultural products. The exemption allows three types of restrictive arrangements: (a) between farmers, (b) between wholesalers and farmers, and (c) between wholesalers.

In the past, the agricultural sector in Israel was characterized by government intervention in production (production quotas, minimum prices) and exports (statutory export monopolies). Agricultural cooperatives were responsible for marketing most agricultural products in the domestic market. Since the beginning of the 1990s, the organization of agricultural production and marketing in Israel has changed dramatically. Motivated by government policy to decrease public intervention in the economy and to privatize state monopolies, the agricultural sector was reformed, production quotas were abolished and exports were opened up to competition by granting export licenses to commercial firms, while parastatal monopoly exporters either ceased export operations or had to begin competing with those firms. Despite the decline in government intervention and the transition to a market-oriented sector, the agricultural exemption was not changed.

The agricultural exemption from antitrust regulation is not unique to Israel. Buccirosi et al. (2002) analyzed competition policy and the agribusiness sector in the EU, based on rulings of the EU competition authorities relating to four levels of the agri-food chain: input suppliers, farmers, manufacturers, and retailers. Farmers are seen as the link in the chain with the weakest market power. As farmers are generally atomistic operators, the farm level usually does not pose competitive problems; on the other hand, it bears the negative consequences of upstream and downstream concentration. Buccirosi et al. emphasized the need for an effective competition policy to mitigate the market power of suppliers or customers of farmers. Crespi and Sexton (2003) analyzed the partial exemptions from antitrust law enjoyed by agricultural cooperatives and marketing orders in the US. The authors presented the rationale behind the legislation and discussed the limitations that cooperatives and marketing orders in the US face in achieving substantial market power. Bergman (1997) studied the behavior of marketing cooperatives in light of the preferential antitrust treatment for cooperatives in many countries. His theoretical analysis showed that the welfare effect of a monopolistic cooperative is ambiguous, compared with an integrated investor-owned firm, if there is the possibility of price discrimination. Without price discrimination, the cooperative monopoly will replicate the competitive equilibrium. Reich (2007) performed a comparative law analysis of the agricultural exemption in Israel and in major developed economies against the backdrop of their specific political and economic circumstances. He concluded that the statutory exemption for agriculture in Israel must be replaced by a more restricted exemption incorporated into a new block exemption. An OECD document (2004), summarizing an OECD Competition

Committee debate on competition and regulation in agriculture, concluded that “elimination of competition law exemptions for the agro-food sector would increase the role of markets and generally benefit consumers.” On the other hand, EU and German competition authorities concluded in their submissions to the discussion that their respective agricultural exemptions are of limited relevance because they cover arrangements that in any case would not raise competition concerns.

Several attempts to modify the agricultural exemption in Israel have failed because of strong opposition by farmers’ associations and the representatives of the farm lobby in the Knesset (the Israeli Parliament). In view of the extensive changes in the agricultural sector, it is our objective to provide evidence about the economic impact of the agricultural exemption in Israel and to examine whether it is still justified from the standpoints of economic efficiency and fairness<sup>1</sup>.

We commence with a discussion of the purpose of antitrust regulation and possible justifications for special treatment of the agricultural sector. We then perform a comparative analysis of antitrust policy in Israel, the US and the EU. The proponents of a wide exemption in Israel persistently argue that other countries also exempt the agricultural sector from antitrust regulation, and that the agricultural exemption in those countries is even wider than the current exemption in Israel. Our analysis deals with the rationale for the exemption and its scope (exempted firms, type of agreements and products), the implementation of the law, its economic impact, and other legislation sheltering the agricultural sector from antitrust regulation (marketing boards in Israel, marketing orders in the US, the CAP (Common Agricultural Policy) in the EU). We conclude with suggestions for a reform of Israeli antitrust regulation in the agricultural sector.

### **Is Special Treatment of the Agricultural Sector Justified?**

Most developed countries have laws regulating firms' behavior which are designed to protect competitive markets. According to the former president of the Israeli High Court of Justice, Aharon Barak, "antitrust regulation is the Magna Carta of consumer rights and free competition."<sup>2</sup> Monopolies and cartels are the main threat to competition, but more generally, any dominant firm or group of firms with the

1 A previous version of this paper (in Hebrew) was published as a discussion paper, the Center for Agricultural Economic Research, The Hebrew University of Jerusalem (Kachel and Finkelshtain, 2005).

2 Court ruling of the High Court of Justice (2247/95), Appeal General Director of the Israel Antitrust Authority v. Tnuva in the merger with slaughterhouse “Of Ha’Negev”. The court ruling cites from “United States v. Topco Associates Inc., 405 U.S. 596, 610”.

potential to exercise market power may restrict competition. The tools of antitrust regulation are the definition and supervision of monopolies, the approval of mergers only in cases where competition is not threatened, and the prohibition of arrangements between firms which restrict competition.

The application of antitrust regulation recognizes that cooperation between firms may also have beneficial effects, in particular efficiency gains (OECD, 2004). The trade-off between the exercising of market power, which decreases welfare, and efficiency gains associated with lower cost of production is acknowledged by antitrust legislation. Merger decisions or decisions about restrictive arrangements which do not involve hard-core cartel provisions require an economic analysis of the impact on competition and welfare. In addition, antitrust regulations include exemptions for restrictive arrangements which are generally recognized as economically beneficial.

In many countries, the agricultural sector enjoys a limited exemption from antitrust regulation. Agricultural production is characterized by biological production processes, which are influenced by the weather. As a result, it is impossible to completely control production quantity and quality, and production is often seasonal while demand is generally distributed more evenly throughout the year. The structure of agricultural production is atomistic (many small farmers), while farmers in many countries are faced with a relatively concentrated marketing sector. In addition, many agricultural products are highly perishable. These characteristics lead to large fluctuations in supply and prices, hamper rapid adjustment of production to demand changes, and decrease farmers' bargaining power.

Agricultural products produced by many farmers often enjoy a collective reputation. This may lead to market failure because of externalities of farmers' actions. For example, some farmers sell unripe fruit at the beginning of the season. These farmers enjoy high prices but may cause a decline in demand. More generally, without enforcement of quality standards, farmers have an incentive to exploit a joint reputation if they can save costs by producing a lower quality. Additionally, because of the small size of most farming operations, it is difficult for farmers to differentiate higher quality products without cooperation, which may lead to an undersupply of desirable goods. Cooperation of farmers in the setting of quality standards and their enforcement or in the establishment of a collective brand is justified to prevent these market failures (OECD, 2004).

The small size of farming operations and the public goods character of agricultural research will cause an underinvestment in research if there is no cooperation of farmers or government intervention.

These market failures, caused by the special characteristics of agricultural production, are the main justification for a limited antitrust exemption of the

agricultural sector. Because of the small size of most farming operations, collaboration enables farmers to exploit size economies and save costs, e.g. by establishing joint packing and storage facilities, joint research and promotion. Without the possibility of farmers' cooperation in the marketing of agricultural products, marketing firms may exploit market power to the detriment of farmers and consumers. Economic theory shows that the outcome of bargaining between two firms can be preferable to the equilibrium of an oligopsonistic market from a welfare point of view (Nash, 1950)<sup>3</sup>. Farmers' cooperation in R&D, production and marketing, facilitated by the antitrust exemption, may be welfare-enhancing, not just for farmers but for the economy as a whole.

### **Agriculture and Antitrust Regulation in Israel**

The Israeli antitrust law exempts the agricultural sector from the prohibition of restrictive arrangements but not from the chapters of the law dealing with mergers and monopolies. A "restrictive arrangement" is defined as an arrangement between two or more persons conducting business that limits at least one party to the arrangement in a manner that may prevent or reduce competition. In addition to a general definition of restrictive arrangements, the Israeli antitrust law includes a number of specific restraints, "the existence of which constitute an irrefutable presumption that damage to competition exists."<sup>4</sup> An arrangement involving a restraint with regard to price, profits, the quantity, quality or type of assets or services in the business, or involving division of the market, is always considered a restrictive arrangement (Restrictive Trade Practices Law 5748 – 1988, Paragraph 2(b)). These are the so-called "hard-core" cartelistic agreements where no further evidence of the damage to competition is necessary. In other cases (e.g. vertical agreements which are not exempted by a statutory or block exemption), a case-specific investigation is necessary to determine whether the agreement will damage competition.

3 Kachel and Finkelshtain (2009) quantified these benefits in the case of the Israeli aquaculture sector.

4 Israel Antitrust Authority (IAA). Annual Report 2004-05. The full definition currently included in the law is "A restrictive arrangement is an arrangement entered into by persons conducting business, according to which at least one of the parties restricts itself in a manner liable to eliminate or reduce the business competition between it and the other parties to the arrangement, or any of them, or between it and a person not party to the arrangement" (Paragraph 2(a)). This definition was deemed too wide by an expert committee appointed by the Minister of Trade, Commerce and Labor in March 2005. The committee proposed an amendment of the definition of restrictive arrangements. In 2005, the IAA distributed a bill to amend the law according to the recommendations of the committee (IAA, 2005) but the change has not yet been incorporated into the antitrust law.

The Israeli antitrust law establishes several statutory exemptions (arrangements which “shall not be deemed restrictive”), two of them relevant to the agricultural sector. The first exemption concerns arrangements “involving restraints, all of which are established by law” (Paragraph 3(1)). This exemption allows Israeli marketing boards to conduct restrictive arrangements as long as these arrangements are explicitly covered by the law governing the marketing board. The second exemption is termed the “agricultural exemption” (Paragraph 3(4))<sup>5</sup>. It permits restrictive arrangements between farmers, between farmers and wholesalers, and between wholesalers for domestic agricultural produce.

*What Is the Economic Relevance of the Agricultural Exemption in Israel?*

“Israeli courts have been consistent in ruling that antitrust exclusions should be interpreted very narrowly” (Strum, 2003). The agricultural exemption is no exception.

One disputed concept of the agricultural exemption is the definition of the products exempted. The law states that agricultural produce from a wide variety of agricultural sectors—encompassing practically all commercial agricultural production in Israel—is exempted but restricts the exemption to produce produced domestically and excludes products manufactured from agricultural produce (see footnote 4). Until recently, Israeli courts had not resolved the question of what kind of treatment constitutes a processing activity that excludes an agricultural product from the exemption. For instance, in the case of a restrictive arrangement between Tnuva, a marketing cooperative owned by cooperative agricultural settlements (Kibbutzim and Moshavim)<sup>6</sup>, and four slaughterhouses, both Tnuva and the slaughterhouses claimed that slaughtered chickens are agricultural produce and that their agreement is therefore exempted. The court order to cease the restrictive agreement was reached in consent with the indicted parties and did not include a decision with regard to the exempted products (IAA, 2003b).

In the case of a restrictive arrangement between producers of frozen vegetables, which included the fixing of selling prices and allocation of customers among the firms, the District Court of Jerusalem (2006) defined two criteria in its verdict for

5 The full text of the agricultural exemption (Restrictive Trade Practices Law 5748–1988, **bold** added by authors): 3. Arrangements which are not restrictive ... (4). An arrangement involving restraints, **all** of which relate to the growing or marketing of **domestic** agricultural produce of the following kinds: fruits, vegetables, field crops, milk, honey, cattle, sheep, poultry or fish, provided all parties thereto are growers or wholesale marketers of such produce; the above provision **shall not apply to goods manufactured from such agricultural produce**; the Minister [of Trade and Industry], with the consent of the Minister of Agriculture and the ratification of the Knesset Economic Committee, may, by Order, add or delete types of agricultural produce.

6 In 2008, Tnuva was sold and is now a corporate firm.

determining exempted agricultural products: (1) agricultural produce which has been processed in a way that is necessary for its marketing is included in the exemption, (2) if the processing is not necessary for marketing, it is necessary to verify that the processing has not changed the natural state of the agricultural produce, including its physical state, form, taste or the addition of foreign materials. If the produce was changed in such a way, it is no longer “agricultural produce” but a good manufactured from agricultural produce, and as such not included in the exemption. The accused parties appealed the court decision before the High Court of Justice (2007). The High Court of Justice basically confirmed the decision of the lower court. In addition to the two criteria stated above the High Court considers it necessary to examine if the product in question is characterized by seasonality and a short shelf life. According to the High Court, these two characteristics provide the main justification for the agricultural exemption because they necessitate supply management and coordination of marketing.

According to the criteria established by the District Court and the High Court, the definition of “agricultural produce” is very narrow: processed products are only included in the exemption if the processing is essential to enabling their marketing, or if the processing does not change the agricultural product. This excludes even minimally processed products such as cut and pre-packed salad or frozen vegetables from the agricultural exemption, but allows treatments which are necessary for marketing (e.g. washing and packing, treatment and packing of milk).

On the other hand, the Israeli agricultural exemption is wide with regard to the players included. All sides in an arrangement have to be growers or wholesalers of agricultural produce, and all of the restraints have to relate to the growing or marketing of domestic agricultural produce (see footnote 4). Restrictive arrangements between growers, growers and wholesalers, or only wholesalers of agricultural produce are therefore legal and exempted from the prohibition of restrictive arrangements. According to the current legal situation, it is not necessary to make a precise distinction between growers and wholesalers of agricultural produce because both are exempt.

Several times in recent years, in the framework of the “Economic Arrangements Law”, a restriction of the agricultural exemption was proposed (e.g. Reich, 2007). The proposed change was not included in the final law because of opposition by farmers’ organizations and their representatives in the Knesset. The recurring, albeit unsuccessful attempts to amend the exemption signal the discontent of the Finance Ministry and the Antitrust Authority with the current wide exemption with regard to the players excluded from antitrust scrutiny, as well as the strong opposition to any change from farmers and their representatives. Even a relatively minor change, excluding only wholesalers of agricultural products who

are affiliated with retailers from the exemption<sup>7</sup>, has been strongly objected to (Knesset, 2008).

A restriction of the exemption to growers only would require a definition of who is a grower with respect to restrictive arrangements relating to the growing and marketing of agricultural produce. As cases in point: Is an exporter of agricultural produce who grows part of the produce him/herself a grower (e.g. MTEX<sup>8</sup> for citrus exports)? Or are the regional marketing organizations, owned jointly by Kibbutzim and Moshavim, exempted? As it stands today, processing firms buying agricultural produce from farmers are already not included in the agricultural exemption<sup>9</sup>.

Restrictive arrangements can occur in a wide variety of agreements and arrangements between firms. One way of implementing a restrictive arrangement is to set up a company owned jointly by competitors. An example of this type of restrictive agreement involves the Antitrust Tribunal's indictment of the companies Tnuva and Meir Ezra, both major importers of meat, for implementing a restrictive arrangement by establishing a jointly owned company. This company enabled the competitors to coordinate prices for imported meat and divide the market between them (District Court of Jerusalem, 2001). An example of a company established by two competitors in the market for export services of agricultural produce (mainly citrus fruit) is MTEX. Both parent companies (Mehadrin Ltd. and Tnuport) were major citrus exporters before the establishment of MTEX in 2002. In subsequent years, both companies jointly exported citrus fruit through MTEX, which accounted for about 70% of Israeli citrus exports. In this case, the agricultural exemption enabled two competing companies to export agricultural produce jointly, without a formal merger which might not have been approved by the IAA

7 see: Proposed Economic Arrangements Law for 2008.

8 MTEX (Mehadrin Tnuport Export (L.P.)): a company exporting mainly citrus fruit, jointly owned by Mehadrin Ltd. and Tnuport until 2006, now fully owned by Mehadrin.

9 e.g. in the case of the restrictive agreement between producers of frozen vegetables (District Court of Jerusalem, 3.8.2006) the court determined that firms producing frozen vegetables are not wholesalers of agricultural produce. See also the decision of the General Director of the IAA (19.11.2003) with regard to the request for exemption from approval of a restrictive agreement which was submitted by the processing factories Gat and Ganir. The subject of the agreement between both companies is joint negotiations for a long-term supply contract of citrus fruit from "Mishkei Hevel Aza". The General Director did not grant the requested exemption. This request also demonstrates that processing firms buying agricultural produce from growers are not included in the agricultural exemption. An additional example: slaughterhouses are neither "growers" nor "wholesalers", according to Antitrust Tribunal (2003), Food Club v. the General Director of the Antitrust Authority (Paragraph 139).

because of the high concentration created by the collaboration in the export service market<sup>10</sup>.

In the past, the agricultural sector was characterized by restrictive arrangements and government intervention. The Ministry of Agriculture and the agricultural production and marketing boards were involved in quantitative planning (e.g. production quotas, planting restrictions) of most agricultural sectors, while minimum prices were established for many products. Government-sanctioned export monopolies were responsible for exporting Israeli agricultural produce. Most restrictive arrangements in the agricultural sector were conducted in the framework of statutory marketing boards (e.g. Citrus Marketing Board, Vegetable Production and Marketing Board, Fruit Board). The activities of statutory marketing boards are exempted from antitrust enforcement based on Paragraph 3(1) of the antitrust law (exempting restraints, all of which are established by law), as long as these activities are in the framework of the authorities granted to the particular marketing board by law, which were very wide. At that time, the agricultural exemption (Paragraph 3(4)) was probably mainly relevant to the establishment of restrictive agreements in sectors without statutory marketing boards (e.g. milk, aquaculture).

Since the beginning of the 1990s, the Israeli agricultural sector has undergone far-reaching changes. Direct government intervention in agriculture decreased greatly and is now limited to a few sectors (mainly milk and eggs). The activities of marketing boards were severely restricted. This process began with the liberalization of citrus marketing and continued with the opening of other export sectors to competition. In 2004, the Plant Board replaced four former boards (citrus, fruit, vegetables, flowers). In the new law regulating the Plant Board<sup>11</sup>, the board's authority was restricted relative to the legislation governing the former boards. Much of the authority was transferred to the Minister of Agriculture, e.g. the determination of production levels, conditions for export licenses and rules regulating marketing and price support. The laws governing the four former boards included the explicit possibility of designating a single "monopoly" exporter. Such a paragraph is no longer included in the new law, and the law even determines that one of the considerations in establishing rules for granting export licenses is the efficient and orderly execution of exports, while creating conditions enabling an increase in the number of exporters (Paragraph 31). A major amendment of the new law in 2007<sup>12</sup> once again increased the authority of the Plant Board.

10 In November 2006, the IAA (2006) approved a formal merger and MTEX is now fully owned by Mehadrin Ltd.

11 Plant Board Law–1973 (the new law is based on the law which governed the former Fruit Board).

12 Plant Board Law (Amendment No. 8)–2007.

According to the amended law, the authority to regulate the market was transferred from the Minister of Agriculture to the board, which can now establish marketing quotas, quality standards and additional restrictions with regard to marketing, all of which have to be approved by the minister. Board activities designed to support prices in the form of minimum prices, financial support, or the buying of surpluses can only be approved by the Minister of Agriculture after consultation with the Minister of Finance. Decisions on production restrictions and conditions for export licenses remain the responsibility of the Minister of Agriculture.

The Plant Board is currently using only a small part of its authority. The board's budget has been cut several times, and the flower sector has even decided to terminate its participation in the Plant Board. Nevertheless, the Plant Board law provides a framework for restrictive arrangements in the horticultural sector which may be used, for instance, to restrict production or stabilize prices by removing quantities from the market. The Minister of Agriculture has to set up the most restrictive agreements but the recent change in law has increased the board's power substantially. The horticultural sector is one of the main sectors in Israeli agriculture, and fruit, vegetable and flower production account for about half of the agricultural output value (CBS, 2008). Additional statutory marketing boards exist for poultry (17% of the agricultural output value), groundnuts, olives, and a few processed agricultural products (products from citrus, maize and tomatoes). Thus, about 70% of agricultural production in Israel is governed by statutory marketing boards, which enable the establishment of restrictive arrangements authorized by their respective laws, independent of the agricultural exemption<sup>13</sup>.

Other agricultural sectors do not have statutory marketing boards; examples are the milk sector and the aquaculture sector. The Israeli Dairy Board is a private company, jointly owned and managed by the government, producer organizations and dairy companies. The dairy industry is characterized by allotment of production quotas to producers and the payment of a guaranteed price for milk not exceeding the quota. This policy is partly based on laws and official regulations (Control on Commodities & Services (Milk Production) – 1967; Israeli Dairy Sector Planning Law – 1992), and partly enabled by the agricultural exemption.

Aquaculture producers jointly marketed their production for decades. The collective marketing was organized by the Fish Growers Organization, a voluntary growers' organization including most aquaculture producers<sup>14</sup>. The organization fixed yearly marketing quotas based on historical production and expected

13 The flower sector (about 5% of agricultural production) is no longer included in the Plant Board, but the law includes provisions to enable re-integration of the flower sector into the board.

14 The main aquaculture producers in Israel are Kibbutzim (collective settlements), and about 40 Kibbutzim account for most of the production.

demand. The agricultural marketing cooperative Tnuva supplied marketing services on a commission basis, while the growers' organization was in charge of price setting and accounting. The collective marketing was terminated in 2000, after some large growers decided to market independently. A study of the aquaculture sector (Kachel and Finkelshtain, 2006 and 2009) shows that production quantities in the aquaculture sector, despite being organized like a cartel, approximated a competitive equilibrium. In addition, the results indicate that collective marketing provided fish farmers with bargaining power and increased farmers' prices, compared to recent years without collective marketing.

The agricultural exemption in the Antitrust Law supplied the legal basis for the joint marketing of fish by aquaculture producers. In the avocado sector as well, growers probably manage to increase their bargaining power with the help of the cooperation enabled by the exemption. About 70% of the avocado growers are organized through their packinghouses (most but not all of them cooperatives) in the Avocado Growers' Union. The union is responsible for overseeing avocado exports of its members through Agrexco, a former export monopoly for fruit (not including citrus) and vegetables<sup>15</sup>. Other sectors rely on the agricultural exemption to coordinate marketing (apples, bananas) or to eliminate surpluses (potatoes, carrots). These arrangements usually also include marketing companies that are not owned by growers.

Proponents of the agricultural exemption may argue that it enables the coordination of agricultural exports to avoid competition among Israeli exporters in export markets and increase export revenues and domestic welfare. For most export products, Israel's market share in export markets is small. Thus, the possibility of exercising market power and influencing prices in export markets is probably very limited. A study (Kachel, 2003) investigating market power for Israeli citrus exports in the decade before export liberalization found high residual import demand elasticities for Israeli citrus fruit in main markets. In addition, the Citrus Marketing Board did not exploit the limited potential to exercise market power. However, market power in export markets for avocado was successfully exercised before and after liberalization of avocado exports (Dvir, 2007). Yet, there is no other export sector with high market shares for Israeli produce similar to the avocado sector. In addition, in sectors with export companies that are not owned by growers, an increase in export revenues is likely to increase exporters' profits and not trickle down to growers.

Moreover, statutory marketing boards exploit the agricultural exemption for restrictive arrangements organized with their help but not fully covered by their

15 Dvir (2007) analyzed avocado price transmission in exports and found weak evidence for asymmetric price transmission benefiting Agrexco.

legal authority. For example, surplus removal organized by the Poultry Board included arrangements among wholesalers enabled by the agricultural exemption. Similar activities were performed by the Plant Board. It seems that the recent change in the Plant Board law will enable such arrangements in the fruit and vegetable sector within the framework of that law, without reliance on the agricultural exemption.

The examples presented above involve arrangements to increase or stabilize prices which are perceived to be important by growers. This is probably why growers and their representatives oppose a more limited exemption. It seems that the danger of losing this possibility of stabilizing grower prices is feared more than the danger of the exemption being exploited by wholesalers to the detriment of growers. It is difficult to analyze the competitiveness of the marketing sector because for most products, there are no available data on growers' prices, and only a few studies have been performed. An analysis of the market for citrus export services indicated that a high concentration in the export sector, together with imperfect information of growers with regard to prices, enabled noncompetitive behavior of exporters, with a detrimental effect on grower prices (Kachel et al., 2004).

Similar to other industrialized countries, Israel is experiencing an increase in the concentration and market power of the retail sector (see for example IAA, 2003a) but the market share of supermarket chains is still relatively low compared to most European countries and the US. According to a decision made by the IAA General Director in 2001<sup>16</sup>, the market share of grocery retail chains in that year was estimated at over 50%, as opposed to approx. one-third in 1994. Recent data indicate that in 2007 consumers spent 56% of their retail expenditure for food in stores of supermarket chains (CBS). However, the market share of retail chains is much lower for fresh fruit and vegetables, which account for a large part of the agricultural produce benefiting from the agricultural exemption. In 2007, about 40% of fresh fruit and vegetables were sold by supermarkets, while traditional fruit and vegetable shops and open markets accounted for most of the rest (CBS). An analysis of retail market margins and price transmission for fresh vegetables by Chudakova (2007) provided no evidence for noncompetitive behavior of supermarkets. Absolute retail marketing margins for 11 vegetables did not increase over a period of 8 years, despite the increase in retail concentration. In addition, changes in retail prices corresponded very closely to changes in wholesale prices. An econometric analysis of price transmission with monthly and weekly data did not find evidence for asymmetric price transmission benefiting supermarkets.

16 The objection of the General Director to the merger between Blue Square Israel Ltd. and Yarkon (plus 2000) Wholesale Foods Ltd., 2001, Antitrust 3012217 (cited in IAA, 29.5.2003).

Nevertheless, large supermarket chains could potentially exploit their market power versus consumers as well as suppliers. Despite being excluded from the agricultural exemption, some of the supermarkets own wholesale companies and may therefore indirectly benefit from the agricultural exemption. According to a statement of a representative of the Ministry of Agriculture at a Knesset Economic Committee Meeting, the Ministry of Agriculture asked the IAA to investigate why retail prices had not declined proportionally to wholesale prices during a crisis in the stone fruit sector in 2004 and 2005. The General Director of the IAA explained that the IAA cannot investigate this case because the main retail chains have daughter companies that are wholesalers of agricultural produce and are therefore exempt from the scrutiny of the antitrust authority (Knesset, 2008).

The far-reaching changes in agricultural production and marketing (including the decrease in government involvement in the agricultural sector, the development of exports by private commercial firms and the increase in retail concentration) very likely increased the economic impact of the agricultural exemption, as the scope for its exploitation is now much wider. Despite these changes, the agricultural exemption was not amended.

### **Agriculture and Antitrust Regulation in the EU**

EU antitrust<sup>17</sup> regulation comprises EU legislation and legislation of the EU member countries. The EU legislation applies when an antitrust case affects (or is expected to affect) trade among member countries. If the influence is restricted to one member state, the law of the member state applies. However, this trans-border "effect on trade" is broadly interpreted, and companies generally must comply with both EU competition laws and national laws. In the event of a conflict between these laws, EU competition laws prevail (Esposito, 1999; Tancs, 2000). In some member states, antitrust exemptions dealing with the agricultural sector are very similar to the agricultural exemption in the EU legislation<sup>18</sup> (see, for example, the antitrust exemption for the agricultural sector in the UK<sup>19</sup> and the German<sup>20</sup> antitrust law). In other countries, despite differences, the legislation is quite similar with regard to permitted and prohibited practices (Bergman, 1997). Thus, the analysis in this paper will focus on the EU agricultural exemption and its interpretation in EU case law.

17 In the EU, antitrust regulation is termed competition regulation.

18 Regulation no. 26 applying certain rules of competition to production of and trade in agricultural products (OJ P 30, 20.4.1962, p. 993).

19 Competition Act 1998, Schedule 3—General Exclusions.

20 Gesetz gegen Wettbewerbsbeschränkungen, Paragraph 28.

Articles 81 and 82 of the treaty founding the European Community<sup>21</sup> established antitrust rules governing trade among EU member countries. Article 81 prohibits agreements and concerted practices which have as their objective or effect the restriction of competition, while Article 82 prohibits the abuse of a dominant position. A regulation dealing with merger control in the EU (Reg. 4064/89) entered into force in 1990.

The treaty already included a special reference to agriculture with regard to competition policy. According to Article 36, the rules governing competition policy apply to the agricultural sector only as far as will be decided by the European Council. The European Council established special rules for the agricultural sector in 1962 (Reg. 26/1962)<sup>22</sup>. According to Regulation 26/1962, the provisions of the treaty dealing with competition also apply to agricultural products<sup>23</sup>, with the exception of certain restrictive arrangements. These are defined in Article 2(1) of the regulation as arrangements that:

(1) form an integral part of a national market organization, or  
(2) are necessary for attainment of the objectives set out in Article 33 of the treaty.

(3) “In particular, it [Article 81(1) of the treaty prohibiting restrictive arrangements] shall **not apply to agreements, decisions and practices of farmers, farmers' associations, or associations of such associations** belonging to a single Member State which concern the **production or sale of agricultural products** or the **use of joint facilities for the storage, treatment or processing of agricultural products**, and under which there is no obligation to charge identical prices, unless the Commission finds that competition is thereby excluded or that the objectives of Article 33 of the Treaty are jeopardized” (authors' emphasis in bold).

Like in Israel, the agricultural exemption in the EU regulation just concerns restrictive arrangements but does not relate to monopoly and merger regulation. With regard to merger regulation this is exemplified by the merger case of the Dutch dairy cooperatives Friesland Foods and Campina. The cooperative nature of

21 Consolidated version of the treaty establishing the European Community, 24.12.2002.

22 In 2006, Regulation 26/1962 was repealed and replaced by Regulation 1184/2006. This change was purely technical – the original regulation was codified to include amendments (despite being amended just once in 1962). Since then, market organisations of single sectors were replaced by the common organisation of agricultural markets. Regulation 1234/2007 establishing a common organisation of agricultural markets (Single CMO Regulation) now includes the agricultural exemption for sectors falling under the scope of the regulation (Article 176). Other agricultural products are exempted by Regulation 1184/2006.

23 The definition of agricultural products of the EU is relatively wide. According to Article 32 of the Treaty: 'Agricultural products' means products of the soil, of stock-farming and of fisheries and products of first-stage processing directly related to these products. An appendix to the treaty lists all 'agricultural products'.

both companies did not play any role in the decision of EU competition authorities to approve the merger, subject to several conditions to resolve competition concerns (European Union, 2008).

The main motivation for the special treatment of the agricultural sector with regard to competition policy was the concern that the Common Agricultural Policy (CAP) of the European Community would be in conflict with competition rules. Regulation 26/1962 was primarily established to enable implementation of the CAP (Esposito, 1999; see also introductory paragraphs of Regulation 26/1962). The European Commission, subject to review by the court, has the sole power to determine if a restrictive arrangement in the agricultural sector fulfills the provisions specified in Article 2(1) of Regulation 26/1962. Competition infringements are handled by the Directorate-General for Competition of the European Commission. Its decisions can be appealed before the Court of First Instance and subsequently before the European Court of Justice (Buccirossi et al., 2002).

The Commission and European courts interpret the exemption granted to the agricultural sector narrowly. The first exemption relating to restrictive arrangements that form part of a national market organization was applied just once: the Commission decided in 1988 that the organization of the new potato sector in France is a national market organization and as such exempted from the prohibition of restrictive arrangements (Commission Decision “New Potatoes”, 1988). After the establishment of the European Community, national agricultural policies and market organizations were replaced by the CAP and Common Market organizations, and therefore the first exemption is only barely relevant. There is not a single case in which the second exemption served as justification for a restrictive arrangement in the agricultural sector. The Commission presumes that arrangements established by the CAP are the tools to accomplish the objectives stated in the treaty, and no private restrictive arrangements between farmers or farmers’ organizations are necessary in this regard (OECD, 2004; Esposito, 1999).

Only in 1995, a court decision established that the third exemption (named the “cooperative exemption”) can justify a restrictive arrangement in agriculture on its own, unrelated to the first two exemptions (Esposito, 1999; see also Paragraph 55, Commission Decision Meldoc, 1986). The “cooperative exemption” may assist EU farmers in their efforts to organize the joint growing, marketing or processing of their products. This cooperation usually takes place in the form of cooperatives (even though the regulation does not mention the word “cooperative”), and enables restrictive agreements among farmers or farmers’ organizations. The economic relevance of the “cooperative exemption” appears to be limited (OECD, 2004; Bundeskartellamt, 2003). It allows farmers and their organizations to implement restrictive arrangements, but under several limitations. Regulation 26/1962

includes several provisions restricting the scope of the exemption. One of them stipulates that the exemption does not sanction restrictive arrangements which include an obligation to charge identical prices. This prohibition does not relate to the collective marketing of agricultural products carried out by a cooperative, but restricts price fixing, e.g. among farmers' associations (OECD, 2004; Commission Decision French Beef, 2003, Paragraph 137). Additional provisions allow the European Commission to intervene if the restrictive arrangement **excludes** competition or jeopardizes the CAP objectives stated in the treaty.

In addition, the exemption limits the parties to a restrictive arrangement that includes only farmers, farmers' associations (e.g. cooperatives) or associations of such associations (e.g. secondary cooperatives) belonging to a single member state. A restrictive arrangement which includes a party which is not a farmer or a farmers' association is not exempted (see Commission Decision Meldoc, 1986, Paragraph 55; Commission Decision Milchförderungsfond, 1985, Paragraph 22). Agricultural cooperatives can benefit from the exemption and use restrictive arrangements with little fear of antitrust enforcement, e.g. they may obligate their members to sell (or buy) agricultural products exclusively through the cooperative and pay a fee when withdrawing from the cooperative. Such an arrangement is legal for farmers' cooperatives as long as competition in the market for the agricultural product is not **excluded**. For non-farmer cooperatives (or for non-agricultural products), an exclusivity clause has to be beneficial economically and essential for reaching those benefits while not eliminating competition in a substantial part of the market (Commission Decision Rennet, 1980).

Despite the "cooperative exemption", a farmers' cooperative is not allowed to operate restrictive arrangements involving non-farmers. A case in point is the Commission Decision (1988) against the Dutch flower auction VBA. The VBA rented "processing rooms" on its premises to flower traders while restricting the use of those rooms with regard to flowers not purchased through the VBA. These restrictions, despite being established by a farmers' cooperative, were not exempted from the prohibition of restrictive agreements, because they involved an agreement between the cooperative and non-farmer flower traders.

Proponents of the wide agricultural exemption in Israel may argue that the CAP restricts competition in EU agriculture and provides income support and price stabilization, such that there is little scope for an agricultural exemption. The agricultural policy of the EU encompasses most agricultural sectors in the EU<sup>24</sup>.

24 Measures adopted in the framework of this policy pursue the objectives established in Article 33(1) of the treaty: (a) to increase agricultural productivity by promoting technical progress and by ensuring the rational development of agricultural production and the optimum utilisation of the factors of production, in particular labour; (b) thus to ensure a fair standard of living for the agricultural community, in particular by

Despite substantial changes (notably the shift from market price support to decoupled direct aids), support to agricultural producers is still high, accounting for 29% of gross farm receipts in 2005-2007 (measured as Producer Support Estimate (PSE); OECD, 2008). Although the share of the most distorting types of support (based on commodity output and non-constrained variable input use) had fallen substantially, it still accounted for 48% of total support in 2005-07. Israel grows mainly horticultural crops, in addition to dairy and poultry production. It should be noted that support for the EU horticultural sector has been consistently much lower than support for other agricultural sectors, notably grains, dairy and sugar<sup>25</sup>. Since 1996, EU support for the fruit and vegetable sector has been based mainly on the support of producer organizations in the form of “operational funds” and on subsidies for some fruit and vegetables supplied to the processing industry (mostly for citrus fruit and tomatoes). The reform of the fruit and vegetable sector in 1996 replaced a policy of market price support relying on intervention purchases and export refunds. The latest reform of the fruit and vegetable sector (Regulation 1182/2007)<sup>26</sup> eliminates processing subsidies, strengthens producer organizations by increasing the co-financing of operational funds in areas with low organization, and entrusts producer organization with “crisis management” (European Commission, 2007a). Operational funds are co-financed by the EU<sup>27</sup> and can be used by producer organizations for investments in production and marketing facilities and activities. The reform enables producer organizations to spend up to one-third of the operational fund on various measures of crisis management (e.g. green harvesting or non-harvesting, promotion, harvest insurance, market withdrawal). Under certain circumstances, rules established by producer organizations may be extended by the relevant member state to producers in the same geographical area which are not members of the producer organization (Reg. 1234/2007, Article 125f). In 2004, 34% of fruit and vegetables in the EU (25 member states) were marketed by producer organizations but the share of the

increasing the individual earnings of persons engaged in agriculture; (c) to stabilise markets; (d) to assure the availability of supplies; (e) to ensure that supplies reach consumers at reasonable prices.

25 The EU budget spent in 2007 on the Common Market Organization in the fruit and vegetable sector amounted to 1.25 billion Euro, about 2.5% of the value of production of the sector. In comparison, the total budget of the EU for the agricultural sector (not including rural development measures) accounted for about 12.5% of the value of agricultural output. There was no financial support for flower production; the olive oil and wine sectors were supported by separate schemes (EU, 2009).

26 In 2008, Regulation 1182/2007 regulating the fruit and vegetable sector was incorporated into Regulation No 1234/2007 establishing a common organisation of agricultural markets (Single CMO Regulation).

27 The EU generally co-finances operational funds by 50%, up to 4.1% of the value of the marketed production of each producer organisation.

producer organizations was very different among member states. In Belgium and the Netherlands, about 80% of fruit and vegetable production was marketed by producer organizations, while there were hardly any producer organizations in some of the new member states. A main objective of the EU policy in the fruit and vegetable sector is to increase supply concentration by farmers' organizations in light of increasing concentration of the wholesale and retail trade (European Commission, 2007a).

The EU policy in the fruit and vegetable sector provides active support for the establishment of farmers' organizations, whose operations may be facilitated by the "cooperative exemption" from restrictive arrangements in Regulation 26/1962. In addition, it allows for the establishment of "Interbranch organizations" in the fruit and vegetable sector. These organizations can also include non-farmers, e.g. trader and processing company representatives, and may establish certain rules concerning production and marketing (e.g. agreements relating to the choice of seeds, dates for the commencement of harvesting, minimum quality and size requirements). Additional activities carried out by Interbranch organizations include the provision of information, the improvement of product quality and the promotion of environmental friendly production methods. Interbranch organizations are not allowed to be actively involved in production or marketing. They are explicitly exempted from the prohibition of restrictive arrangements, but their authority is limited to agreements compatible with the objectives stated in the regulation, and after notification to the European Commission (Reg. 1234/2007, Articles 123(3)(c), 176(a)). Certain types of agreements may be extended to non-members in the same region (Reg. 1234/2007, Article 125(l)-(m)). In addition to restricting the scope of agreements, the regulation includes a list of agreements which in any case will not be exempted, including price-fixing and market partitioning agreements. It is therefore likely that Interbranch organizations do not pose a threat to competition (OECD, 2004). There are just eight Interbranch organizations in the EU (European Commission, 2007b).

Despite the "cooperative exemption" and EU involvement in agricultural markets, the EU policy does not intend to allow producer organizations to establish market power and impair competition. On the contrary, "the maintenance of effective competition on the market for agricultural products is one of the objectives of the common agricultural policy and the common organisation of the relevant markets" (Court of Justice, 2003, Paragraphs 57-60). In the decision with regard to the UK farmers cooperative "Milk Marque", the European Court of Justice confirmed the authority of national antitrust enforcement to intervene if a farmers' cooperative exploits market power in the domestic market.

To summarize, the economic relevance of the agricultural exemption in the EU is quite limited, despite also including agricultural products from first-stage

processing and encompassing arrangements related to production, marketing and processing of these products. This is mainly because only farmers and their associations can invoke the exemption. In addition, the scope of the exemption is limited, so as not to exclude competition or jeopardize the objectives of the CAP.

### **Agriculture and Antitrust Regulation in the US**

Antitrust regulation in the US is based on three laws, the Sherman Act (1890), the Clayton Act (1914) and the Federal Trade Commission Act (1914). The Sherman Act prohibits restrictive arrangements (Section 1) and the abuse of a dominant position (Section 2). The Clayton Act deals with specific restrictive agreements (including price discrimination, tie-in sales, and exclusive dealing arrangements) and mergers, while the Federal Trade Commission Act outlaws unfair and deceptive methods of competition and establishes the Federal Trade Commission as an antitrust enforcement agency. The general language of the Sherman Act created the need for interpretation, and courts adopted the rule of reason and the rule of *per se* illegality. The application of the rule of reason often requires extensive economic analyses on a per case basis to decide if an arrangement restricts competition. On the other hand, certain types of agreements (notably price fixing and market division) were found to be so anticompetitive that they were declared to be illegal *per se*, without requiring further investigation<sup>28</sup>. This created a problem for farmers organized in cooperatives because the collective selling of products could be interpreted as an agreement on prices, which is illegal *per se* (Frederick, 1989; see also *April v. National Cranberry Association*, 1958).

The Capper-Volstead Act (1922) provided the necessary statutory protection for agricultural cooperatives<sup>29</sup>. This act grants associations of producers of agricultural products limited exemption from antitrust legislation for “collectively processing, preparing for market, handling, and marketing” agricultural products if they fulfill the following conditions: (a) only agricultural producers are members of the association; (b) voting shall not be based on ownership share in the association<sup>30</sup>, or otherwise, a limitation of the dividend paid to a maximum 8% of

28 This is similar to the distinction made in the Israeli antitrust law which singles out special types of agreements in Paragraph 2(b) as “restrictive arrangements”.

29 The Clayton Act already included an exemption for agricultural organizations instituted for the purpose of mutual help, but this exemption was limited to non-profit organizations without capital stock, and did not state the activities that such an organization could perform (Clayton Act, Section 6).

30 The common statement that the Capper-Volstead Act requires a one-member, one-vote rule is not correct, because not only is voting restriction an option (the other option is

the ownership capital per year; (c) at least 50% of the value of products marketed by the association has to be products of members, and (d) the association operates for the mutual benefit of its members as agricultural producers.

The law does not explicitly require farmers to organize into a cooperative; however, the cooperative organizational form suits the conditions required by the law. Farmers who organize according to the law may, in the framework of the cooperative, agree on prices and sales conditions, cooperate with other agricultural cooperatives, and occupy a substantial market share without violating antitrust law. The Capper-Volstead Act explicitly allows agricultural cooperatives to establish joint marketing agencies (Cobia, 1989; Frederick, 1989; Volkin, 1985).

The Capper-Volstead Act only protects agricultural cooperatives that limit their membership to farmers or organizations of farmers. A farmer is someone performing farming activities, such as growing crops or raising animals. A land-owner renting land to farmers is only considered an agricultural producer if his/her rent is a portion of the crop or its sales proceeds. He/She is not considered a farmer if he/she receives a flat rental fee for the land. US case law supplies additional insights which define the limits of membership in an agricultural cooperative enjoying Capper-Volstead protection. For example, non-cooperative firms that pack or process agricultural products may be members in a cooperative if the firm devotes a substantial portion of its resources to agricultural production. Even a corporate firm with only modest agricultural production can be a member of a cooperative if its role in the cooperative is limited to the extent of its own production and in relation to its production activity. However, if a non-cooperative firm solely engaged in packing or processing agricultural products is accepted as a member, the exemption is lost<sup>31</sup>. A related requirement is the need to revoke membership from members who are no longer producers or who have stopped marketing products through the cooperative (Frederick, 1989). The act's requirement that the activity of the cooperative be for the mutual benefit of members **as producers** prevents misuse of the exemption by members for restrictive arrangements not related to their agricultural production.

The Capper-Volstead Act protects the collective action of farmers in processing and marketing their agricultural products. The term "marketing" is interpreted widely by US courts as including all activities necessary to move goods from producer to consumer (e.g. buying and selling, storing, transporting, standardizing,

restriction of the amount of dividends), but patronage-based voting is not prohibited (Cobia, 1989).

31 See *Case-Swayne Co. v. Sunkist Growers, Inc.* 389 U.S. 384 (1967); *United States v. National Broiler Marketing Association*, 436 U.S. 816 (1978); *Northern California Supermarkets v. Central California Lettuce Producers Cooperative*, 413 ESupp. 984 (N.D.Cal. 1976). *affd.* 580 F2.d369 (9th Cir. 1978). *cert. denied*, 439 U.S. 1090 (1979), all cited in Frederick (1989).

financing and supplying market information; see Frederick, 1989). The protected collective action of an agricultural cooperative can be minimal; for example, it can only involve information sharing or collective bargaining. On the other hand, there are large, vertically integrated cooperatives dealing with every aspect of marketing and providing consumer-ready agricultural products directly to retailers. Examples are Ocean Spray, a cooperative that processes and markets juices, which unites more than 800 cranberry and grapefruit growers, and Blue Diamond, a cooperative of about 3000 almond growers in California. A cooperative may restrict the quantity it accepts from members for marketing. The cooperative may not be used to restrict production by members, but it is permitted to provide information to members suggesting that they produce less (Frederick, 1989).

Farmers' associations may even, in the framework of a single cooperative or resulting from cooperation among cooperatives, develop a dominant supply position in a market without being challenged by antitrust authorities. The conditions are that the cooperation be voluntary and that the dominant position be achieved without resort to noncompetitive conduct vis-à-vis competing firms. Cooperatives are not exempted from merger supervision, but mergers of cooperatives are rarely challenged and are commonly considered to be protected under the Capper-Volstead Act. Acquisitions of non-cooperative firms by a cooperative are not exempt and are subject to regular merger supervision (Frederick, 1989; Crespi and Sexton, 2003).

Similar to the EU agricultural exemption, the Capper-Volstead Act also includes a provision allowing intervention when an association exercises market power "to such an extent that the price of any agricultural product is unduly enhanced" (Capper-Volstead, Section 2). The Secretary of Agriculture is authorized to enforce this provision, in contrast to the EU where the comparable safeguard is enforced by the Directorate-General for Competition of the European Commission or by national competition authorities. It is likely that supervision by the minister responsible for agriculture will be more lenient than that by competition authorities. According to Carstensen (2003) and Crespi and Sexton (2003), the Secretary of Agriculture has never enforced this provision. However, the US courts also consider themselves authorized under the act to prevent abuse of the exemption (Reich, 2007).

Several studies have attempted to measure the effect of cooperatives on market performance. The evidence from most of these is inconclusive with regard to the cooperatives' ability to exercise market power and increase prices for their products (see for example Wills, 1985; Petraglia and Rogers, 1991; Haller, 1992), with the exception of cooperatives in the US dairy sector. According to Masson and Eisenstat (1980) and Madhavan et al. (1994), US dairy cooperatives succeeded in raising retail fluid milk prices by using price discrimination in the years before 1975.

Estimating the US cooperatives' exercising of market power is complicated by the fact that many fruit, vegetable and milk markets are additionally regulated by marketing orders. The establishment of a marketing order may enable producers of a specific product in a specific geographical region to organize as a cartel. The legal basis of marketing orders is the Agricultural Marketing Agreement Act (AMAA) from 1937. This act provides for four types of actions: (a) generic promotion and advertising, (b) R&D, (c) establishment of standards with regard to product quality and required packaging, and (d) restrictions on the quantities of a product sold (Powers, 1990).

Marketing orders, once adopted by grower referendum and approved by the Secretary of Agriculture, are binding for all growers and handlers of the product, and thus eliminate the "free-rider" problem experienced by cooperatives. A sector organized in a marketing order is not allowed to agree on selling prices but the AMAA provides several quantity restrictions which may be used to exercise monopoly power and increase grower prices. The use of quantity restrictions has to be approved by the Secretary of Agriculture. Quantity restrictions have been challenged in the past (e.g. suspension of the California-Arizona lemon order, Richards et al., 1996; opposition of the US Department of Justice to a marketing order restricting hop supply, DOJ, 2004). At present, only 12 out of 32 federal marketing orders in the horticultural sector are authorized to use volume controls, and not all of them actually use them (USDA-AMS, 2009). A more critical attitude towards the use of quantity restrictions is probably one reason for the decrease in the number of marketing orders observed in the last two decades<sup>32</sup>.

In any event, despite the binding nature of regulations drawn up by a marketing order and approved by the Secretary of Agriculture, there are several factors that limit the potential of marketing orders to exercise market power. We have already mentioned one factor—the unpopularity of volume controls. In addition, regardless of the binding nature of the regulation, growers and handlers may be cheating. Approval by the Secretary of Agriculture has to be renewed yearly and cannot be regarded as assured. An increase in grower prices realized by volume controls has the potential to stimulate entry, which orders are not allowed to prevent. If volume controls are used to provide relief in a structural oversupply situation, this relief will only postpone the inevitable restructuring (Crespi and Sexton, 2003). This may be the reason why empirical studies of market orders often fail to detect cartel-like behavior (e.g., Thompson and Lyon, 1989 for California-Arizona navel oranges, French and Nuckton, 1991 for California raisins and Richards et al., 1996

32 In the 1980s, there were 42 marketing orders for fruit, vegetables and specialty crops (Powers, 1990).

for California-Arizona lemons)<sup>33</sup>. Richards et al. even provide evidence for an increase in marketing margins for lemons during periods of volume-control suspension, resulting from the exercising of monopsony market power by distributors and retailers. A study by Crespi and Chacón-Cascante (2004) showed that the California Almond Marketing Board exploits only about one-third of its potential market power, despite supplying more than 95% of the US almond market and approx. two-thirds of the world almond market. This suggests that other marketing orders with smaller market shares will be even less likely to exploit a significant amount of market power<sup>34</sup>.

Presently, most marketing orders appear to be focused on collective action deemed to be beneficial to all growers in a sector (e.g. R&D, generic promotion and quality standards which may decrease transaction costs and allow product differentiation) but difficult to organize voluntarily because of the free-rider problem. Contrary to the EU, there has been little sector-specific support to the US fruit and vegetable sector, with most budget outlays stemming from a variety of general, noncrop-specific programs, e.g. disaster payments, subsidized crop insurance, export promotion, and food purchase and donation programs (Lucier et al., 2006; USDA-ERS, 2009a, b).

To summarize, the Capper-Volstead Act and its interpretation by US courts enable far-reaching cooperation of farmers in the form of cooperatives. Farmers' cooperatives in the US may dominate a market without being challenged by antitrust authorities. There are several factors mitigating the power of cooperatives to act as cartels, e.g. the free-rider problem and the inability to restrict supply. Market orders have the legal authority to overcome the free-rider problem, but share some of the difficulties of cooperatives in exercising market power. Today, market orders focus less on volume control and more on R&D, generic promotion and quality standards.

## **A Comparative Analysis of Antitrust Regulation in the Agricultural Sector in Israel, the US and the EU**

In this section, we perform a comparative analysis of antitrust policy in the agricultural sector in Israel, the US and the EU, based on the description of these

33 There are also studies asserting the exploitation of market power by marketing orders, e.g. Powers' (1992) investigation of the California-Arizona navel orange order found that this order successfully exercised some market power in allocating oranges between fresh and processed uses.

34 According to Crespi and Sexton (2003), "Beyond milk and, to a lesser extent, navel oranges, there is very little evidence of market power achieved through marketing orders".

policies presented in the previous chapters. The analysis focuses on two related aspects: the scope of the legal exemption and its economic relevance. The economic relevance of the exemption is a function of its scope but also depends on additional institutions replacing the “need” for restrictive arrangements in the framework of the exemption.

Table 1 presents a comparison of the scope of the agricultural exemption. Arrangements restricting competition concerning activities, products and types of firms included in the table are not prohibited.

**Table 1: A comparison of the scope of the “agricultural exemption” in Israel, the EU and the US**

	<b>Israel</b>	<b>European Union</b>	<b>United States</b>
<b>Activities included in the exemption</b>	production, marketing	production, sales, use of joint facilities for storage, treatment or processing	processing, preparing for market, handling and marketing
<b>Exempted products</b>	agricultural produce, does not include processed products (tendency to narrow interpretation)	all agricultural products included in Appendix 1 of the EU treaty, including many processed products	agricultural products are not specified, include fresh and processed agricultural products
<b>Exempted firms</b>	farmers and wholesalers	farmers, farmers’ associations	farmers, farmers’ associations
<b>Limitations</b>	no possibility of prohibiting restrictive agreement if competition is severely limited or excluded	prohibition of arrangements that exclude competition or jeopardize the objectives of the CAP	farmers’ associations have to fulfill certain conditions; Secretary of Agriculture can intervene if prices are “unduly enhanced”

The main difference between Israel and the antitrust exemptions in the US and EU is the type of firms which can participate in a restrictive arrangement in the agricultural sector. In Israel, farmers and wholesalers of agricultural produce are exempted, while in the other countries, only farmers and their associations are allowed to set up competitive restraints. The exemption in Israel allows wholesalers to participate in restrictive arrangements with farmers, or even conclude restrictive arrangements among themselves. The rationale for this wide exemption lies in the purpose of the legislation. The first antitrust law legislated in Israel in 1959 already contained an “agricultural exemption”. During the debate over the proposed law, the finance minister at the time, Levi Eshkol, explained that for most agricultural produce, rapid marketing is a necessary condition, and therefore the marketing has to be organized in a cartel (District Court Jerusalem, 2006). This explains the rationale of the legislator: because most agricultural products are perishable, resulting in very inelastic short-term supply, the exemption is needed to enable farmers to coordinate production and marketing and thus to avoid surpluses and price instability. At that time, a large part of the agricultural production was marketed by cooperatives established by agricultural cooperative settlements. The wide agricultural exemption facilitated effective volume controls by permitting sector-wide arrangements, including agricultural marketing cooperatives and private wholesalers<sup>35</sup>.

In contrast, the purpose of the agricultural exemptions in US and EU legislation is different. In the US, the agricultural exemption was necessary to resolve a discrepancy between the interpretation of antitrust legislation and the functioning of cooperatives. Its main objective is to enable growers to establish cooperatives for collectively processing and marketing their products. The main objective of the EU exemption is to prevent legal conflicts between the CAP and competition policy, and, in addition, to provide farmer cooperatives with some leeway in the organization of their relationship with members and in their cooperation with other farmers' cooperatives. Both the EU and the US recognize the important role farmer cooperatives can play in concentrating supply, enabling farmers to process and market their products by themselves, and improving their bargaining power in an oligopsonistic market. However, it was not the intention of the US or the EU legislators to enable sector-wide cartels of farmers and marketers in order to regulate supply. So there was no “need” to include wholesalers in the exemption.

Additional differences between the exemptions in Israel, the US and the EU are related to the different purposes of the regulations. With regard to the exempted products and activities, the Israeli exemption is much narrower than its

35 The original exemption even included retailers. Retailers were removed from the exemption in 1963.

counterparts in the US and EU. The included products in Israel encompass mainly fresh, unprocessed or minimally processed products. The exempted agreements have to relate exclusively to the production and marketing of agricultural produce, and do not include agreements relating to product processing, or those related to processed agricultural products. Treatment or processing is only allowed if it is essential for marketing the agricultural product, or if it does not change the agricultural product. Because the main objective of the exemption was to enable sector-wide coordination of production and marketing of perishable agricultural produce, agreements relating to processing or processed agricultural products are not included. On the other hand, the agricultural exemptions in the EU and the US are designed to facilitate the organization of farmers for collective processing and marketing of their products—therefore processed products and agreements related to processing are included in the exemption.

The limitations placed on the exemption of farmers' restrictive arrangements in the EU and US are also explained by the intentions of the legislators: both exemptions include a safeguard which enables the authorities to intervene if the restrictive arrangement creates a farmers' cartel which may cause a substantial increase in consumer prices and a decline in welfare. In Israel, the intention of the legislator was to enable sector-wide coordination of quantities; therefore, no such safeguard was included in the law.

To summarize, the agricultural exemption in Israel is relatively narrow with regard to the range of products and activities exempted, compared to the parallel exemptions in the EU and US, but much wider with regard to the firms which can be party to a restrictive agreement. In Israel, deregulation of the agricultural sector and a decline in market regulation by marketing boards seem to have increased the significance of the exemption, enabling restrictive agreements in the agricultural sector which try to stabilize and enhance grower prices. The principal importance of the Capper-Volstead exemption is that it legalized the activities of farmers' cooperatives in processing and marketing. It also created conditions that would allow farmers' cooperatives to grow and acquire substantial market shares in some markets. The economic relevance of the EU exemption appears to be limited mainly to resolving the conflict between EU competition regulation and intervention in agricultural markets in the framework of the CAP. The concentration of supply by producer organizations is actively supported by EU agricultural policy. In most cases, the size and activities of producer organizations do not raise antitrust concerns, although a number of member countries are characterized by agricultural cooperatives with substantial market share in some sectors (e.g. Sweden, Denmark, and the Netherlands).

There is little empirical evidence for the extent to which the agricultural exemption enables the exploitation of market power in the framework of large

producer organizations or agreements between such organizations. Economic theory identifies four conditions necessary for the successful exercising of cartel power: (a) an agreement among sellers, (b) the ability to detect cheating, (c) the punishment of cheating, and (d) the prevention of outside entry (Jacquemin and Slade, 1989). Cooperatives can sign binding marketing agreements with members. These agreements may prevent or at least minimize cheating if the probability of detection and the penalty for breach of agreement are high enough. On the other hand, cooperatives generally do not manage to organize all producers, enabling outsiders to free ride. Preventing entry is the most formidable obstacle to the exploitation of market power in the long run (Crespi and Sexton, 2003). Cooperatives generally cannot restrict members' production, and even if this were possible, they cannot prevent outside entry. Entry barriers in many agricultural sectors are quite low, and may simply entail a shift in production from one crop to another (one exception is orchards). Thus, if a cartel-like agreement of producers manages to increase prices above the competitive equilibrium, these profits will be eroded in the long run by an increase in output. Consequently, it appears that the potential to exploit market power via voluntary grower cooperation is limited. The analysis of voluntary cooperation in the Israeli fish sector confirms the theoretical prediction that equilibrium in a market with a monopoly cooperative will be close to the competitive equilibrium if the cooperative cannot restrict production effectively (Kachel and Finkelshtain, 2009). The study of Crespi and Chacón-Cascante (2004) demonstrated that even in the case of a marketing order which enables effective volume controls and controls nearly all of the US and most of the world market, the exploitation of market power is limited.

On the other hand, grower cooperation clearly has beneficial effects in imperfectly competitive markets. Small-scale production, inelastic short-term supply and buyer concentration are conducive to the exploitation of oligopsonistic market power. Grower cooperation in marketing may enable the exercise of countervailing bargaining power and enhance grower prices and welfare.

Yet, there is little justification for including wholesalers of agricultural products in the agricultural exemption if they are not owned by farmers and market to a large extent the products of their grower-owners. Arguments in favor of a limited antitrust exemption for the agricultural sector are based on the special characteristics of agricultural production which, on the one hand, are at the root of the inherent instability in farm prices and incomes, and, on the other, constrict farmers' possibility of exploiting economies of scale and scope in marketing and processing their products, establishing brands, investing in research and development and creating countervailing bargaining power in concentrated markets for their products.

Farmers can cooperate in marketing and processing their products, or establish

collective brands, without creating restrictive arrangements with non-farmer owned wholesalers. On the other hand, the collaboration with wholesalers is necessary to create effective restrictive arrangements regulating supply. However, such arrangements have the largest potential to restrict competition, increase farmer and consumer prices and cause a decline in welfare, and are therefore the most problematic from an antitrust point of view. It is controversial if supply management for stabilizing farm prices is necessary and beneficial<sup>36</sup>. If deemed necessary by the government, supply management should be implemented in a transparent way that enables government control, rather than in the framework of restrictive arrangements of growers and wholesalers.

The EU abolished its system for stabilizing prices of certain fruit and vegetables by market withdrawals in 2008. Now crisis management is the responsibility of producer organizations (usually marketing cooperatives owned by farmers), co-financed by the EU. The authority of Interbranch organizations is limited with regard to quantity regulation: they can set rules regarding the beginning of the marketing season and establish minimum quality and size requirements (Reg. 1234/2007). In the US, a limited number of marketing boards have the authority to regulate marketed quantities, under the supervision of the Ministry of Agriculture. The Israeli legislation provides boards with substantial authority to regulate quantities or buy surplus production, especially after the recent amendment of the Plant Board law. This authority can be employed to manage market supply, without relying on the agricultural exemption.

An additional reason for restricting the agricultural exemption to farmers is the inherent conflict of interest between farmers and wholesalers: while farmers would like to receive the highest possible price, profit-maximizing wholesale companies will try to pay farmers the lowest possible price. Wholesalers that are not owned by farmers may exploit the agricultural exemption against farmers, either by cartelistic agreements or tacit understandings among them, or by restrictive vertical arrangements which decrease competition (for example, arrangements creating barriers for switching wholesalers). Because of the wide exemption, the IAA cannot investigate whether there are restrictive arrangements in agricultural marketing that reduce competition, and it has no power to order the determination of such arrangements.

Proponents of the current exemption may argue that farmers in the EU and US are receiving additional support that is not available to Israeli farmers, thus

36 According to rulings of Israeli courts (District Court of Jerusalem, 2006; High Court of Justice, 2007) perishability and seasonality of agricultural products necessitate supply management and coordination of marketing. On the other hand, economists tend to rely on the market mechanism to regulate supply and demand also for perishable and seasonal products.

decreasing the “need” for a wide agricultural exemption which can be used to substitute for government support. However, horticulture, the main agricultural sector in Israel, receives relatively little direct government support in the EU and hardly any support in the US. In any event, this argument does not provide any justification for including wholesalers in the agricultural exemption.

Our analysis suggests that it is necessary to amend the Israeli agricultural exemption from the prohibition of restrictive arrangements. We propose to consider two major changes: exclusion of wholesalers not owned by farmers from the exemption, and inclusion of a safeguard enabling intervention of antitrust authorities in cases of exploitation.

## **Summary and Conclusions**

The agricultural exemption in Israel is more restricted with regard to the products and activities exempted than those in the US and EU. In contrast, the Israeli exemption is very wide with regard to the firms included. In Israel, farmers and wholesalers of agricultural products are exempted from the prohibition of restrictive arrangements, while the exemptions in the US and EU include only farmers and farmers' associations. Our analysis suggests that the Israeli exemption of wholesalers from the prohibition of restrictive arrangements is not justified and may be detrimental for farmers. Another important difference is that the regulations in the US and EU include safeguards which can prevent exploitation of the exemption, while there are no such safeguards in the Israeli regulation.

The antitrust exemption in the US is necessary to enable the functioning of grower cooperatives for processing and marketing agricultural produce. In the EU, the exemption prevents conflicts between the CAP and antitrust regulation. It seems that farmers in Israel perceive the wide exemption as necessary for supply management of agricultural produce. However market intervention, if deemed necessary by the government, should be done under government supervision, and could be carried out in Israel by production boards.

Studies of the almond sector in the US and the aquaculture sector in Israel show that despite sector-wide cooperation among growers, little market power is exploited. Analysis of the Israeli citrus sector demonstrates that there is little scope to increase growers' revenues through cooperation in exports, while growers are hurt by concentration in the export sector. This appears to be different for avocado exports, but the avocado sector represents the only Israeli agricultural product enjoying relatively high market shares in export markets. To summarize, there seems to be little danger that cooperation among growers will lead to the exploitation of market power. On the other hand, cooperation of growers has many

benefits, e.g. the exploitation of economies of scale, the possibility of establishing collective brands, and the creation of bargaining power versus dominant buyers.

Additional quantitative research is necessary to estimate the economic impact of the broad scope of the Israeli antitrust exemption. Nonetheless, our analysis suggests that the Israeli antitrust exemption of the agricultural sector should be amended in order to prevent restrictive arrangements which might be detrimental to farmers and consumers. We recommend to consider restricting the Israeli agricultural exemption to farmers and farmers' associations, while abolishing the exemption for wholesalers who are not farmers or an association of farmers. A widening of the exemption with regard to the products included should be contemplated. This will ensure that farmers can cooperate in processing and marketing their products without worrying about antitrust regulation. Nevertheless, it should be considered to establish the possibility of intervention by antitrust authorities if the exemption is exploited to create a producers' cartel.

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## Compliance with Rules and Sanctions in Producer Groups in Poland\*

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### Abstract

This paper examines the determinants of compliance with rules and imposing sanctions in Polish farmer cooperative organizations called producer groups. The main task performed by these groups is to organize joint sales of the output produced by individual farmers. Members of some groups broke the group rules and sold their output independently of the group without the group permission. The results show that the likelihood of unpermitted sales outside the group is significantly negatively affected by the price premium which members get for their output and positively affected by the group size. The likelihood of imposing sanctions on the farmers who broke the group rules is significantly negatively affected by the price premium and positively affected by having a long-term contract by the group. Price premium also negatively affects the severity of the imposed sanctions.

**Key words:** cooperation, compliance, sanctions, producer groups, Poland.

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## **Introduction**

The globalization and internationalization of food trade is causing significant institutional changes that affect, in particular, small agricultural producers and the livelihoods of rural communities. The markets are becoming buyer driven and down-stream segments are determining quality and safety standards, packaging requirements, and consistency of supply (Biénabe et al., 2007: 3). Establishing farmers' co-operative organizations – which could help farmers to increase the amount of goods offered on the market, save on transaction costs, and overtake a portion of the profits conventionally gained by a middleman – could be expected as an important response to such a problem. Farmer organizations are particularly attractive for smallholders. Acting collectively gives smallholders a chance to reduce transaction costs of accessing inputs and outputs, obtain better market information, introduce new technologies, and access high value markets (Markelova et al., 2009).

While the cooperative sector has been evolving and gaining importance over the last 150 years in Western Countries, such as Austria, Germany, and Denmark, the initial development of the sector and the original accumulation of social capital and local networks in Central and Eastern Europe was destroyed by the communist regime. The communist regime introduced a command and control system into the cooperatives, which was destructive to their self-governing functions and eventually led to a lack of member involvement. As the socialistic farms grew in size, their members adopted a wage-worker mentality in relation to the enterprise and its property (Chloupkova et al., 2003: 249, 250). Distrust based on the past experience, strong individualism, and slow progress towards cooperation characterizes cooperative organizations in post-socialist countries (Wilkin et al., 2007: 102, 103; Chloupkova, 2002: 12).

Lack of trust and not fulfilling group agreements are observed in the Polish cooperative marketing organizations called producer groups. These groups appeared in Poland in the mid 1990s. Participation in producer groups is voluntary. The main aim of producer groups is to introduce agricultural output produced by individual farmers to the market. Groups marketing bigger quantities of the product are able to negotiate a higher price premium and access markets not available to smaller producers (Banaszak, 2008: 76).

Despite of all the prospective benefits of collective action on the markets, most of the existing groups in Poland report problems with members' commitment and loyalty. The main problem is individuals selling independently of the group without the group permission. Selling products outside the group reduces the profits of all the other members and, in the long run, can destroy the group due to problems with fulfilling contractual obligations. Thirty three out of forty producer

groups examined in this article reported to have problems with members who broke the group rules and were selling their output outside of their groups without the group permission. At the same time only 15 of the 33 groups imposed sanctions on the farmers performing unpermitted sales outside the group.

In this article we analyze the unpermitted sales situation and search for the factors which influence the group decision to impose a penalty on the deviators. This paper is organized as follows: Section 2 presents the literature review and formulates propositions to be further tested, Section 3 presents the methodology of the research and basic information about the researched organizations, Section 4 presents the results of the research and, finally, Section 5 concludes and discusses the practical implications of the findings. The findings show that the variable representing the price premium which the members get for selling their products through the group has the strongest explanatory power regarding both rule-breaking and the imposing of sanctions. Group characteristic variables are also significant.

## **Literature review and hypotheses**

### *Loyalty and commitment problems in cooperative marketing organizations*

A few authors point out that member commitment, loyalty, and trust to other members and the managerial board are crucial factors for achieving success by farmer cooperative marketing organizations. Bruynis (1997) executed an empirical survey with 52 American marketing cooperatives through which he found eight keys that lead to a successful cooperation. The author points out that using marketing agreements to secure business volume commitments from the members was one of these eight keys. Other keys to success included implementation of a management training process; employing an experienced, full-time general manager; regularly distributing accurate financial statements among the management team; and utilizing human resources (Bruynis, 1997: 54). Iskow and Sexton (1992), who present the results of an empirical survey carried out with bargaining associations of U.S. fruits and vegetables representing 36 commodities, point out that the associations' most common obstacles were lack of volume control and the inability to attract membership.

Hansen et al. (2002) investigates the effect of trust on the relationships between members and management teams. A questionnaire addressing scale of trust measurement was carried out among members of two marketing cooperatives in the US. The authors concluded that trust among members and cooperative management is an important indicator of group cohesion. Trust influences the strength of a member's desire to remain in the cooperative and his/her commitment

to it. Markelova et al. (2009) put forward that rule monitoring and enforcement is important for ensuring transparency in marketing cooperatives. Allowing members to develop their own rules might lead to developing a stronger identity with their organizations. The authors also argue that organizational structure and rules are critical for any form of collective action (Markelova et al., 2009: 4).

In this article we investigate how group characteristics affect the problem of compliance with rules and imposing sanctions in the Polish producer groups. Compliance with rules is understood to be the selling of the farmers' product through the producer group. Defection is understood to be the selling of the products by a member farmer outside the group without the group permission to e.g. a competing middleman. Imposing sanctions is understood as sanctions imposed by the group on the defecting member.

*Parameters affecting the likelihood of defection and imposing sanctions*

We might expect the most important parameter affecting the decision of members of producer groups whether to comply with group rules and sell their produce through the group or defect and sell the produce independently, is the price premium members get for their output sold through the group and entering by a producer group a long-term contract with a fixed price. The higher the premium, the more attractive it will be for group members to sell their products through the group, thus price premium is expected to affect negatively the probability of experiencing sales independently of the group. Similarly, the probability of imposing sanction on the defecting member is expected to decrease with increasing price premium as selling products outside in such situations decreases the defector's earnings, so we expect additional group pressure is in such situation not needed.

Furthermore, a group that enters a long-term contract with a fixed price may face a situation where the price offered on the spot market will be higher than that stated in the contract. Even if this is a temporary case, it increases the benefits of selling outside the group and thus increases the probability of experiencing defection. The defection also lowers the earnings of the cooperating farmers. Since the quantity of the product sold through the group decreases, the per-unit transaction costs increase and the group may also lose contracts with purchasers. A long-term contract variable will therefore be expected to increase the likelihood of imposing sanctions.

In addition to financial and market factors, there are also group characteristics which could affect the likelihood of both experiencing a deviation from the group and imposing sanction towards the deviators. One such factor is group size. Due to increasing organization costs, bigger groups find it harder to communicate and coordinate their actions (Olson, 1965: 59-60, Kollock, 1998: 201). From a

transaction costs perspective, we might expect that a larger group size would reduce the value of both costs of breaking the rule for the other farmers and costs of imposing the sanction for the other farmers. The more members a group has, the less costly the defection of one member is for the group. However, if the group is large, the social and organizational costs of imposing sanctions are expected to be lower. Consequently, the group size is expected to have an indeterminate impact on the likelihood of exercising sanctions.

Other factors affecting compliance with group rules are repetition and member acquaintance. Groups where members interact more durably or frequently increase identifiability, and information about individuals' past actions are expected to cause higher cooperation (Axelrod, 1984: 62-63). Knowing the identity and history of other group members allows the group to develop reputations that allow the members to respond in an appropriate manner (Kollock, 1998: 199, Kleindorfer et al., 1993: 247-251). Aggarwal (2000: 1490-1491) provides empirical evidence that family relationships among group members facilitate group investments. We might expect that prior acquaintance will negatively affect the benefits of sales outside the group and thus will decrease the likelihood of unpermitted sales. However, we might also expect that in a situation where the group members know each other well, the cost of imposing sanctions will be higher, decreasing the likelihood of imposing sanctions on the deviators.

In summary, the likelihood of both experiencing a deviation from the group rules and the likelihood of exercising punishment against the deviators will be affected by financial and market factors such as price premium and possession of a long-term contract. However, group structure factors such as group size and prior acquaintance are expected to influence the values of the game parameters changing both rates of unpermitted sales outside the group and imposition of sanctions on the defectors.

## **Research design and basic data about producer groups**

### *Methods and techniques of the research*

Producer groups in one province were selected as the object of the research. Wielkopolska is one of the 16 provinces in Poland and is located in the western part of the country. The province covers 9.53% of the area of the country, and is inhabited by 8.66% of the population in Poland (GUS, 2004:1). The province was selected as the research cluster since it has long traditions of rural cooperation – reaching back to the 19<sup>th</sup> century – and the number of producer groups in this province was the highest in the country at the time the research was carried out (Banaszak, 2008: 74).

The research employed a cross-sectional research design across producer groups. The research was carried out in 2005. That time there were 40 producer groups registered in the Wielkopolska Province which were functioning and performing the task of organizing joint sales. We carried out a survey questionnaire with leaders of all producer groups in the Province. Consequently, 40 producer groups are subjected to the empirical analysis in this article.

#### *Computation of variables*

To determine the relationship between the variables, the statistical technique of probit regression modeling was employed. The probit model extends the principles of generalized linear models such as regression analysis and is applied to cases of dichotomous dependent variables. They are used to understand the relevance of multiple independent variables in predicting a dependent variable. The probit model uses the function of the inverse of the standard normal cumulative distribution function. The probit model enables a use of a mixture of categorical and continuous independent variables in relation to a dichotomous categorical dependent variable (Greene, 2003: 667, 675-676).

The occurrence of sales outside the group, that is deviation ( $D$ ) from the group rules, and the occurrence of sanctions ( $S$ ) are treated as dichotomous dependent variables in two separate econometric models. The independent variables that the theories predict will influence compliance with the rules and the exercising of sanctioning are price premium ( $PP$ ), possession of a long-term contract ( $Con$ ), group size ( $GS$ ), and prior acquaintance ( $Acq$ ):

$$\begin{aligned} D_i &= \beta_0 + \beta_1 PP + \beta_2 Con + \beta_3 GS + \beta_4 Acq + \varepsilon_i \\ S_i &= \beta_0 + \beta_1 PP + \beta_2 Con + \beta_3 GS + \beta_4 Acq + \varepsilon_i \\ &\text{where } i=1, \dots, n \text{ producer groups in the sample} \end{aligned}$$

We will also test how the distinguished dependent variables affect the severity of sanctions imposed ( $s$ ). This will be measured using an ordered probit model that uses the form  $s_i^* = \beta'x_i + \varepsilon_i$ , where  $s_i^*$  is the dependent variable where the imposed by the group  $i$  sanction severity is coded as 1,2, or 3;  $\beta'$  is the vector of estimated parameters and  $x_i$  is the vector of explanatory variables (in this case  $PP$ ,  $Con$ ,  $GS$ , and  $Acq$ ) and  $\varepsilon_i$  is the error term. Given an imposed sanction, a producer group falls in category  $m$  if  $\mu_{m-1} < s^* < \mu_m$ . The data on the sanction severity,  $s$ , are related to the underlying latent variable  $s^*$ , through thresholds  $\mu_m$ , where  $m = 1,2,3$ . This corresponds to oral sanctions (1), financial sanctions (2), and expulsion from the group (3).

## **Empirical results**

### *Basic facts about producer groups*

The cooperative movement in Poland has a long but difficult history. The communist regime restricted voluntary cooperation and introduced a command-and-control system into cooperatives which was destructive to their self-governing functions and eventually led to a lack of member involvement (Chloupkova et al., 2003: 249). Producer groups are the first bottom-up, voluntary organizations which appeared in Poland after the transformation. Their main purpose is to jointly sell their members' output. Jointly selling the output both improves the market position of the members and may also lead to higher prices. Additionally, associated farmers may benefit from information and knowledge sharing within the group. The formation of producer groups does not, however, imply a change in the property rights of the means of production. The farmers jointly own only profits of their group but they do not merge their farms into one firm. Therefore the agreements on joint sales farmers sign with their groups are difficult and costly to enforce through courts. Producer groups have to rely on their own internal mechanisms of enforcing farmer agreements.

Forty examined in the research groups associated 3,763 farmers. The largest proportion of the groups was established in 1998, 1999 and 2000. The biggest fraction of the groups were initiated by one of the farmers (43%), and others by political protests which brought farmers together (19%), extension services (17%), processing companies (19%), municipality cooperatives (4.9%), or outside businessmen (2.4%).

Most of the groups associated were hog producers (56%) and vegetable producers (24%). Except organizing joint sales of members' output, the groups were also involved in organizing training and educational activities for their members (80%), organizing joint purchases of the means of production (65%), integration events (61%), and joint transportation of the products (34%).

### *Characteristics of the dependent variables*

Deviation from the group rules was measured by asking the interviewees a question whether, at the moment the research was carried out, there were any incidents of sales independent of the group without permission. The reaction towards defectors was measured by asking the respondents whether there were any sanctions imposed for outside sales without group permission. The respondents were also asked to specify what kinds of sanctions were in use.

The majority of the groups (33 or 82.5%) reported having problems with members' unpermitted sales outside the group. Only 15 of them (45.45% out of the 33 cases), imposed sanctions against the members who broke the rules. In four cases (27%)

the sanctions were only oral, in two cases (13%) financial and in nine cases (60%) the deviants were expelled from the group (Table 1).

*Characteristics of the independent variables*

The price premium offered to the members was measured by asking the interviewees to give the average difference between the price which the members received and that which non-member farmers received. On average, farmers associated in producer groups got 9.5% more for their output. The most successful group in these terms was able to negotiate a 39.3% higher price than that available for non-associated farmers. The standard deviation equaled 11.4%. Twenty-five groups, comprising 61% of those performing joint sales, had a long-term contract with their buyers (Table 1).

The producer groups on average associated 94 members. The smallest group had only five members, the biggest 700. The standard deviation was therefore quite high at 135. Furthermore, the members were quite heterogeneous. Only 12.5% of group leaders said their members had similar economic potentials (Table 1).

Prior acquaintance was measured by inquiring whether the members knew each other before the establishment of the producer group. In most cases all the members had known each other before (57.5%); in 37.5% of the cases, the majority of the members had known each other before; in only two groups (5%) the majority of the members had not known each other before (Table 1).

**Table 1: Descriptive statistics for the dependent and independent variables**

Variables	Measurement (Mean Value)	Coding	N	Mean	Min.	Max.	S. D.
<b>Dependent variables</b>							
Sales outside	Are there any incidents of sales independent of the group without permission?	1-Yes 0-no	40	0.825	0	1	0.38
Imposing sanctions	For groups that reported unpermitted independent sales: Did the group impose any sanctions on members who sold their products outside without group permission?	1-Yes 0-no	33	0.45	0	1	0.51
Type of sanction	For groups that imposed sanctions: What was the type of imposed sanction?	1-Oral 2-Financial 3-Expelled from the group	15	2.33	1	3	0.90
<b>Independent variables</b>							
Price premium	Percentage that group members receive for their products sold through the group above what non-members receive on the market.	%	40	9.55	0	39.30	11.56
Possession of a long-term contract	Does the group have a long-term contract with its buyers	1-Yes 0-no	40	0.63	0	1	0.49
Group size	Number of members	No.	40	94.08	5	700	134.89
Prior acquaintance	Had the members known each other before group establishment	1-no members had known the others, 2-majority hadn't known each other, 3-some hadn't known each other, 4-all members had known each other	40	3.53	2	4	0.59

*Regression modeling results*

The incidence of independent sales is negatively correlated with the variables indicating price premium ( $p=0.0047$ ) and positively correlated with prior acquaintance ( $p=0.062$ ). The exercise of sanctions is positively correlated with the variable indicating possession of a long term contract ( $p=0.011$ ). The variable indicating prior acquaintance is also negatively correlated with the variable representing possession of a long term contract ( $p=0.0224$ ) and the number of group members ( $p=0.0002$ ). Due to colinearity the regression was additionally run stepwise. Stepwise methods help to evaluate the individual contribution of dependent variables to the regression equation (Menard, 2002). Regression modeling results are shown in Tables 2 (probit regression) and 3 (stepwise probit regression).

**Table 2: Probit regressions results**

<b>Independent variable</b>	<b>Sales outside</b>	<b>Imposing sanctions</b>
Price premium	-0.127 ** (0.061)	-0.062* (0.034)
Having a long-term contract	3.712 (2.828)	1.701 *** (0.602)
Group size	0.014* (0.009)	0.002 (0.003)
Prior acquaintance	4.893 (3.357)	0.943 (0.643)
Pseudo R2	0.531	0.270
No. of obs.	40	33

Notes: Standard errors in parentheses.

\*\*\* significant at 0.01 level

\*\* significant at 0.05 level

\* significant at 0.10 level

The price premium which the group members get for their output appears to have the strongest predictive power with regard to the occurrence of sales outside the group. The lower the returns the members get for following the group rules and marketing their output through the group and the more attractive the benefits from breaking the rules for the member are, the more likely the members will search for outside options and break the group agreements. Also in line with theoretical

predictions, this variable negatively influences the likelihood of exercising sanctions against deviators, while the sign suggests that there is an inverse relationship between these two variables. We might assume, therefore, that the higher the price premium, the less the payoffs are affected by the costs of breaking the rules for the group.

Possession of a long-term contract does not have a significant impact on the likelihood of sales outside the group; however, it does have the most significant predictive power for the exercise of sanctions. We posit that having a long-term contract significantly increases the costs of breaking the rules for the group and that the group, therefore, will be more willing to punish the deviating member.

The number of group members had a positive impact on the likelihood of experiencing sales outside the group. We suppose that, as suggested by Olson (1965) and Kollock (1998), bigger groups experience more problems with communication and action coordination. The results of the stepwise regression are similar, except that it shows the variable indicating prior acquaintance significantly impacts the likelihood of sales outside the group (Table 3). The more acquainted the group members were beforehand, the more likely they were to experience a deviation from the group rules. This contradicts the theoretical prediction that information about individuals' past actions is expected to cause higher cooperation (Axelrod, 1997: 62-63). Groups which were established among people who knew each other very well (e.g. among neighbors) tended to have a much less advanced governance structure; the group leaders often complained about difficulties with discipline among members, who were often their close friends or relatives but who were also sometimes involved in neighborhood conflicts (Banaszak, 2008: 80). If one organization has too many overlapping social relationship layers, that organization might have difficulties in performing professional and business functions. Prior acquaintance was strongly negatively correlated with the variable indicating the number of group members. This is logical, since the bigger the group the less probable it is that the members know each other before establishing the group.

We also tested whether the parameters influence the type of sanction exercised. Due to the low number of observations, the regressions were run separately for each independent variable. The sanctions were ordered from the lightest to the most serious: oral sanctions (1), financial sanctions (2), and expulsion from the group (3). As presented in Table 4 only one variable, price premium, was significant and negatively affected the likelihood of the severity of the sanction. We may stipulate that in a situation where the price premium is high, serious sanctions are not needed since the loss of the high price premium is a sufficient penalty on its own.

**Table 3: Stepwise probit regressions results ( $p < 0.1$ )**

<b>Independent variable</b>	<b>Sales outside</b>	<b>Imposing sanction</b>
Price premium	-0.089 ** (0.036)	-
Having a long-term contract	-	1.270** (0.512)
Group size	0.011** (0.006)	-
Prior acquaintance	1.485** (0.677)	-
Pseudo R2	0.416	0.148
No. of obs.	40	33

Notes: Standard errors in parentheses.

\*\* significant at 0.05 level

**Table 4: Ordered probit regression for the type of sanction, regressions run separately**

<b>Independent variable</b>	<b>Type of sanction: 1-oral, 2-financial, 3-expel Ordered probit</b>
<b>Price premium</b>	-0.362 ** (0.153)
Pseudo R2	0.293
No. of obs.	15
<b>Possession of a long-term contract</b>	0.505 (0.924)
Pseudo R2	0.010
No. of obs.	15
<b>Group size</b>	0.001 (0.002)
Pseudo R2	0.002
No. of Obs.	15
<b>Prior acquaintance</b>	0.066 (0.632)
Pseudo R2	0.000
No. of obs.	15

Notes: Standard errors in parentheses.

\*\* significant at 0.05 level

## **Conclusions**

Many studies advocate that entering producer organizations can help farmers to participate in the market more effectively and improve the livelihoods of local communities. At the same time, authors researching cooperation and cooperatives in Central and Eastern Europe point out that the communistic regime destroyed social capital and social networks and thus cooperatives in this region experience problems with distrust and lack of members' loyalty.

In this article we focused on cooperative marketing organizations – producer groups – that were established in Poland after the transformation. The most frequent problem group leaders reported was lack of members' commitment and selling the products by members independently and without the group permission. In effect the producer groups were not being able to fulfill their contractual obligations. Nevertheless, not all groups imposed sanctions on the defecting members.

We searched for both market and group structure factors that could explain why members are not loyal to their groups and also which groups are more likely to enforce sanctions. The unpermitted sales outside the group turn out to be mostly related to the group price premium. Groups which are able to negotiate in the market a high enough price premium for the members' products were less likely to have problems with members selling their products independently without the group permission. Similarly, very rational are the cases of imposing sanctions on the disloyal members. Those groups which had a long-term contract, due to increased costs of not being able to fulfill their contractual obligations, were more likely to punish the defectors.

Being embedded in the local networks measured through earlier member acquaintance increased the likelihood of disloyalty. This could be related to the legacy of the communist regime which weakened local networks and local social capital (Cholupkova et al., 2003). However, the counter explanation could be that good knowledge of each other simply increased the ability to observe defection from the group rules.

We might conclude that although group characteristics certainly play a role, the decision of farmers to participate in cooperative marketing organizations is primarily very rational and they enter them with expectations to increase their profits. As long as the group fulfils these expectations the farmers are loyal, however, if other market opportunities are more attractive, the farmers tend to break the group agreements. Although producer groups are forms of cooperative enterprises the Polish farmers perceive them as a business and do not hesitate to take advantage of other, even short term, business opportunities if it means more profits for them in the given moment. This lack of sentiments could be another

legacy of the communist system which intervened in the management of cooperatives imposing a wage-worker mentality to the cooperatives' members. Currently, the high discount rates of producer group members impose problems for producer group managers negotiating long-term contracts. Having a long-term contract increases chances the spot market price might be temporarily higher than the one in the contract, which leads to increased likelihood of unpermitted sales outside the group and in consequence may cause the group to be unable to fulfill its contractual obligations.

This problem shows that the agreements producer groups sign with their members are very important. Making the agreements more formal and legal enforcement of cases where the agreements were broken could offset the short time horizons and high discount rates. Testing this hypothesis requires further research.

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## **Spurring Dairy Buffalo Development in the Philippines through Cooperatives, Negotiations, and Networks**

**ERIC P. PALACPAC\***

### **Abstract**

The paper aimed to analyze the roles and implications of cooperatives, negotiations and networks in the implementation of the National Impact Zone (NIZ) Program for dairy buffalo development in the Philippines. It detailed how the program evolved from a series of negotiations involving the Philippine Carabao Center (PCC), cooperatives, individual farmers, local officials and other stakeholders. Through successful negotiations, several actors were enlisted until a network of relations shaped up. Negotiations and networks anchored on the cooperatives and as facilitated or managed by the intermediaries (mainly the NIZ Management Staff and field technicians from the PCC), have resulted in integrative agreements regarding adoption of particular innovations, marketing strategies, and policy implementation. Continuous improvement and sustainability of the NIZ Program depends on the effective management of its network. Strategic alliance with other actors or private groups to help in the business aspect of the NIZ operations is also recommended.

**Key words:** dairy buffalo, negotiation, cooperatives, network, script, interface instrument.

\* Philippine Carabao Center, National Headquarters and Gene Pool, Science City of Muñoz, Nueva Ecija, Philippines. E-mail: paladin\_libra24@yahoo.com. The author developed this paper from a case study in the province of Nueva Ecija, Philippines from July 2007 to February 2008 as part of his PhD dissertation. Qualitative information were generated from face-to-face focus-group interviews with officials from 25 primary cooperatives in the NIZ and individual interviews with 38 farmer-cooperators and 12 PCC personnel (five scientists, four field technicians, and three members of the NIZ Management Staff). Additional information was gathered from secondary sources (e.g. NIZ progress reports and archival records). The author is particularly grateful to Dr. Alan Grainger of the School of Geography at the University of Leeds for his guidance during the conceptualization and write up of this paper. He is also indebted to all informants for this research, namely the National Impact Zone Program team and scientists of the Philippine Carabao Center, the cooperative officials, and the individual farmers.

## **Introduction**

For many years, the growth of the dairy industry in the Philippines has been sluggish. From 2003 to 2008, local milk production (in terms of liquid milk equivalent) averaged only 12.53 million liters a year (NDA, 2009). Growth rates have also been erratic during the same period. Meanwhile, the local consumption or actual demand has been steadily increasing from 1.5 billion liters in 2003 to 1.72 billion liters in 2008. This implies that the rest of the local milk supply, equivalent to 99%, is provided by importation (mainly from New Zealand, United States, and Australia) at an annual average volume of 1.79 billion liters (or an annual average value of \$626 M) over a five-year period.

While the national government has continuously adopted a “stop-gap” measure, it also recognizes that developing the local dairy sector is a more sustainable and empowering approach for Filipinos. Thus, current government initiatives are anchored on multi-pronged strategies that include massive herd build-up, provision of support to post-production infrastructure, establishment of market linkages, human resource development, and deployment of livestock research and development instruments.

The Philippine water buffalo or *carabao* is a key instrument in these initiatives, by providing a population base for reproductive purposes. While cattle is the traditional animal for dairying, water buffalo has the advantage of subsisting better under a tropical climate. From the 1980s until early 1990s, however, the carabao population has been declining (reaching a low of 2.56 million) due to indiscriminate slaughter of local stocks for meat. To address this concern, the government allowed the increased importation of buffalo meat. The creation of the Philippine Carabao Center (PCC) in 1992 as an attached agency of the Department of Agriculture has also proved instrumental in this respect. As a result, the carabao population has gradually increased starting 1995 and as of January 1, 2008, it is estimated to be at 3.34 million (BAS, 2008).

To fast track the dairy buffalo development efforts in the country, the PCC conceptualized the National Impact Zone (NIZ) Program. The program has achieved moderate success since its launch in 1998. Along the way, it has also encountered many challenges, most of which were ‘socio-cultural’ in manifestations. This paper aims to examine the dynamics of the latter by revisiting the NIZ Program’s evolution and analysing the significant roles and implications of farmers’ cooperatives, negotiations and networks in its continuous development.

### **The National Impact Zone**

The concept of an 'impact zone' involves putting together in a compact area, preferably one or few adjoining village(s), all ingredients necessary towards a sustainable buffalo-based enterprise development. Since the PCC has 13 regional centers, each center is expected to assist in the development of one impact zone (referred to as 'regional impact zone'). The NIZ serves as the national template for this endeavour and thus operates on a relatively bigger scale covering the whole province of Nueva Ecija.

Nueva Ecija is located in Central Luzon. Its first town (Gapan City) is about 96 km north of Manila, the capital city of the Philippines. The province has vast areas devoted to rice and relay crops such as onions, garlic, and vegetables. Raising water buffalos is also popular because of the draught power for ploughing, harrowing, and carrying of farm products that these animals provide especially in traditional and upland rain-fed farms. The province was chosen as the NIZ for various reasons. Foremost, it is situated near the commercial markets for dairy products. Likewise, the province is home to many farmers' cooperatives and to the PCC National Headquarters, which is based at the Science City of Muñoz, one of the five cities in Nueva Ecija.

Producing a buffalo with close to a purebred dairy bloodline can be achieved through crossbreeding of native carabaos with a superior dairy buffalo breed. This is pursued through the PCC's artificial insemination and natural mating (via bull loan) programs. However, it will take approximately 25 years of successive backcrossing to produce dairy-type animals. Clearly, the farmers cannot wait that long. This prompted PCC to introduce purebred dairy buffalos, originally procured from Bulgaria, in the NIZ. A Bulgarian buffalo can produce up to ten liters of milk a day compared with a native carabao's daily milk yield of one to two liters.

The NIZ template is anchored on the PCC's 'dairy buffalo module', which offers a Bulgarian buffalo to a qualified smallholder-farmer (i.e., marginal farmer owning or tending less than five hectares of land) who must be a member of a primary cooperative. Pre-existing agricultural cooperatives were chosen to facilitate the organizational aspect of the program.

The module is obtained as a 'soft loan' for a period of five years i.e., for every buffalo cow loaned out, one offspring-calf is given to the PCC in return. Prior to the awarding of the loan, the farmers must participate in social and technical trainings conducted by the PCC, free of charge. They must also commit to providing 0.1 ha forage area, an appropriate animal shed, and contribution to the 'guarantee fund', an alternative to animal insurance.

## **Evolution of the NIZ Network**

The NIZ Program can be thought of as a ‘network’ that evolved from several ‘stages’ or a series of ‘negotiations’ involving a wide range of actors. A ‘network’ represents “patterned lines of interpersonal contacts connecting individuals in a system” (Rogers, 2002: 334). It requires a form of ‘investment’ in establishing and maintaining links or relationships (Barrett, 2004). On the other hand, ‘negotiation’ is a joint decision-making process, combining “the conflicting points of view into a single decision” (Zartman, 1978: 70). In that sense, ‘collaboration’ is an aim or an outcome of negotiation.

The stages that led to the network-like character of the NIZ Program are listed below, followed by a discussion of each stage.

- Initiation and Consultations with Local Governments
- Consultations with Cooperatives
- Creating Awareness among Farmers
- Consolidation and Activation
- External Involvement
- Federating the Cooperatives
- Operationalizing and Maintaining the Network

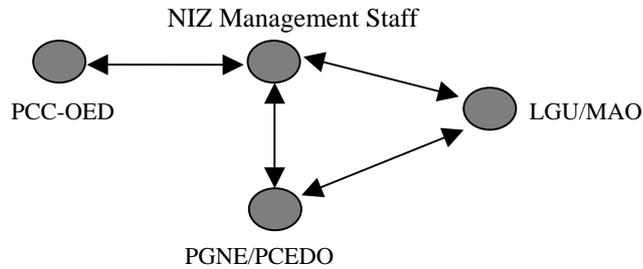
### *Initiation and Consultations with Local Governments*

In November 1998, the PCC Office of the Executive Director (PCC-OED) created a small group, called here the NIZ Management Staff, to lay the foundation for the program (Figure 1). This group initially paid a courtesy call on the Provincial Government of Nueva Ecija (PGNE) to discuss the program’s rationale. A Memorandum of Agreement was then formalized between the provincial governor and the PCC’s Executive Director, declaring the province of Nueva Ecija as the NIZ. Thereafter, the PGNE, through its Provincial Cooperative and Entrepreneurship Development Office (PCEDO), collaborated with the NIZ Management Staff to generate awareness in municipalities by paying courtesy calls on the local government units (LGUs), headed by mayors, and conducting orientation dialogues with the municipal agricultural offices (MAOs).

### *Consultations with Cooperatives*

The MAOs assisted the NIZ Management Staff and PCEDO in identifying active farmers’ cooperatives in their villages and in conducting orientation dialogues with cooperative officials (Figure 2). The latter identified prospective farmer-participants in the program and helped organize a two-day Social Preparation Training, which was designed and facilitated by the NIZ Management Staff. From this point on, PCEDO and MAOs no longer played an active role.

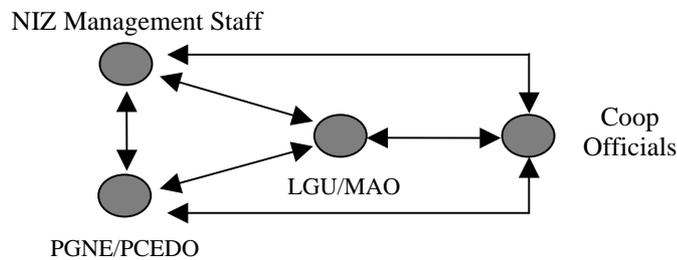
**Figure 1 Initiation and Consultations with Local Governments**



Key:

- LGU Local Government Unit
- MAO Municipal Agricultural Office
- PCC-OED Philippine Carabao Center-Office of the Executive Director
- PGNE Provincial Government of Nueva Ecija
- PCEDO Provincial Cooperative and Entrepreneurship Development Office

**Figure 2 Consultations with Cooperatives**



Key:

- LGU Local Government Unit
- MAO Municipal Agricultural Office
- PCEDO Provincial Cooperative and Entrepreneurship Development Office
- PGNE Provincial Government of Nueva Ecija

*Creating Awareness among Farmers*

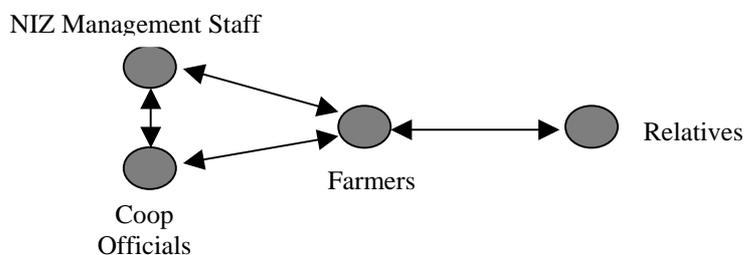
The Social Preparation Training sessions aimed to develop a sense of awareness, preparedness, and co-ownership among farmers in relation to the technical and

social requirements and implications of the dairy buffalo module. These sessions were often conducted in the villages and hosted by the mother cooperative(s) of participating farmers.

During these sessions, the character of the network was shaped by negotiations between the farmers and the NIZ Management Staff. The central issue was the farmers' contribution to the 'guarantee fund', which originally required that each farmer contributes an amount of Php2,000 annually until each one of them gives to the PCC a buffalo calf that is 16 to 18 months old. Many farmers asked why a guarantee fund was needed if the government really wanted to help them. To address this concern and as part of the 'leveling-off' process, the NIZ Management Staff often emphasized that "the dairy buffalo module is not intended for the poorest of the poor but for those farmers who can commit themselves to providing their counterpart resources for the project" (Baltazar, 2003).

Prior to deciding to participate in the dairy buffalo module under the NIZ Program, some farmers consulted with close associates e.g., relatives or cooperative chairs (Figure 3). This indicates that farmers tend to mobilize their personal communication network before deciding on a particular economic activity. During the last day of the Social Preparation Training sessions, those who were keen to join the program were asked to write and sign their declaration of support and commitment to the project.

**Figure 3 Creating Awareness among Farmers**

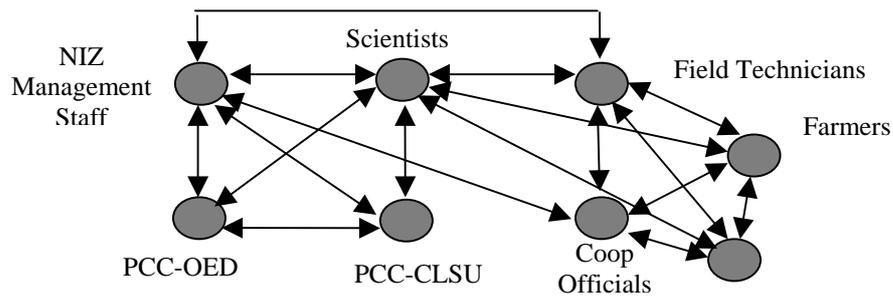


*Consolidation and Activation of the Network*

The network was consolidated and activated by the Technical Training sessions held at the PCC headquarters. The NIZ Management Staff arranged with scientists at PCC-OED and PCC-Central Luzon State University or PCC-CLSU (a regional center of PCC, which is also based at the Science City of Muñoz) about who would deliver lectures (Figure 4). Thereafter, the NIZ Management Staff coordinated with the cooperative officials, scientists, and field technicians regarding the session schedules. The cooperative officials informed the individual farmer-cooperative

members about their participation. Many cooperative officials also applied for a dairy buffalo module and participated, too.

**Fig. 4 Consolidation and Activation of the Network**



Key:

- PCC-CLSU      Philippine Carabao Center-Central Luzon State University
- PCC-OED      Philippine Carabao Center-Office of the Executive Director

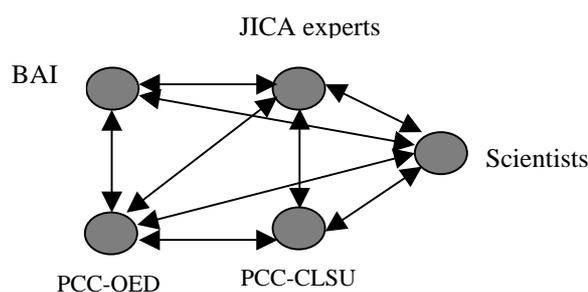
The field technicians primarily served as facilitators in the initial training sessions. Later on, they became resource speakers themselves and mediated between the farmers and the scientists during open forum and individual consultations. Subsequently, the field technicians have become ‘proxies’ for the scientists in ‘field negotiations’, during which integrative agreements were reached as regards performance of certain innovations (see later section). They have directly coordinated with cooperative officials about the schedules of subsequent training sessions at the PCC. The PCC (through its scientists) also trained and developed vet aides i.e. farmer-members of cooperatives, which now assist the field technicians in providing animal health services in the NIZ.

*External Involvement*

During the early years of the NIZ Program, the PCC-OED collaborated with the Bureau of Animal Industry (BAI) and the Japan International Cooperation Agency (JICA) in the Water Buffalo and Beef Cattle Improvement Project, which complemented the NIZ Program (Figure 5). The PCC-OED’s Gene Pool farm and the PCC-CLSU’s semen processing laboratory are two of the three sites identified under the project, which worked on animal breeding and selection, semen processing and artificial insemination, and feeds and feeding. Thus, Japanese

scientists interacted closely with PCC scientists, who then infused their lectures during the Technical Training sessions with innovations developed by the project. Through the same collaboration, the PCC has also acquired modern equipment in milk quality testing, semen processing, and forage production.

**Figure 5 External Involvement**



Key:

- BAI Bureau of Animal Industry
- JICA Japan International Cooperation Agency
- PCC-CLSU Philippine Carabao Center-Central Luzon State University
- PCC-OED Philippine Carabao Center-Office of the Executive Director

*Federating the Primary Cooperatives*

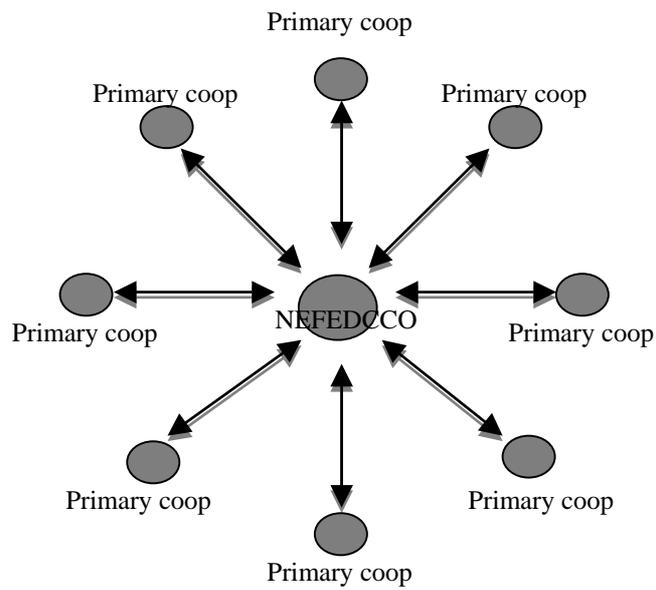
When the buffalos started producing milk in the early 2000s, each cooperative was selling milk on its own and at times was competing with each other for the same market. Realizing this, the NIZ Management Staff and field technicians (called here as ‘NIZ team’) negotiated with the chairs of five primary cooperatives a way to ‘cluster’ their cooperatives to pool milk and establish a common marketing scheme in late 2001. Subsequently, 14 other cooperatives joined the cluster and they federated into Nueva Ecija Federation of Dairy Carabao Cooperatives (NEFEDCCO) in May 2002 (Figure 6). As of December 2008, the federation has grown to a membership of 26 cooperatives. Thus, NEFEDCCO can be considered as a distinct network itself, being comprised by the 26 primary cooperatives, which elect officials to its board of directors.

*Operationalizing and Maintaining the Network*

The NIZ Management Staff subsequently helped to operationalize the network by assisting negotiations between the NEFEDCCO, cooperative officials, financial institutions, other government agencies, and private groups about marketing

arrangements and other postproduction assistance (Figure 7). Foremost of which resulted in linkages with private markets in Metro Manila and other areas that have since become regular outlets for their milk products. Linkages with other government agencies e.g., National Dairy Authority, PGNE, and participating

**Figure 6 Federating the Primary Cooperatives**

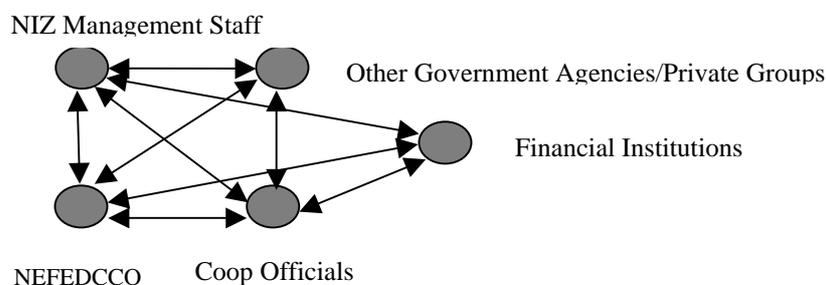


Key:

NEFEDCCO Nueva Ecija Federation of Dairy Carabaos Cooperative

LGUs also facilitate the financing of the Milk Feeding Program intended for malnourished schoolchildren in Nueva Ecija and other areas. It has since become one of the important avenues for the marketing of processed milk products from NEFEDCCO. Such linking roles by the NIZ Management Staff indicate how they spanned the “structural holes” (Burt, 1992) in the NIZ network.

**Figure 7 Operationalizing and Maintaining the Network**



Key:

NEFEDCCO Nueva Ecija Federation of Dairy Carabaos Cooperative

Two other types of negotiations sustained the network. First, at representative level, is on the boards of directors of the primary cooperatives and NEFEDCCO. Two members of NIZ Management Staff sit as ex-officio members of these boards. Frequent topics for discussion include guarantee fund payments by farmers and upholding the policy that prohibits farmers from transferring, selling or disposing of dairy buffalos without written approval from the PCC.

The second type of negotiation is collective in character. All key actors in the NIZ network converge during the annual one-day Farmer’s Forum held at the PCC headquarters. This follows a ‘question-and-answer’ format, in which farmers ask questions, make clarifications, and raise relevant issues. The PCC scientists or top management, as appropriate, provide answers or suggest solutions for further discussion while the NIZ Management Staff act as moderators or facilitators. Key topics for discussion in the past have included guarantee fund payments, milk marketing, and animal health matters and the result has been a set of integrative solutions and agreements.

### **Network Management**

The possible problematic situations at the various nodal interactions in the NIZ Program, viewed here as one big network, necessitate that an actor has to manage such interactions. While this study supports the earlier view (Klijn and Teisman, 1997) that there is no central or single actor in charge of ‘network management’, it

appears that the NIZ Management Staff, particularly the NIZ Program Coordinator, assumes much of this responsibility.

To illustrate, the NIZ network was ‘activated’ when actors who comprise a ‘network of intermediaries’ have set multiple “obligatory passage points” (Star and Griesemer, 1989; Callon, 1986) i.e., conditions for enlisting and translating the key actors e.g., farmers and scientists, in the NIZ Program. These are represented by the broad requirements under the dairy buffalo module, which became more detailed and formalized when finally inscribed in the form of a loan contract. The latter served as an ‘interface instrument’, which helped in stabilizing the network of actors involved in the program by providing a common reference or ‘script’. A ‘script’ in this sense refers to “standard operating procedures” (Dougherty, 2002), the rules and conventions, or the distinctive patterns of cultural behavior or practices (Silvasti, 2003) that became internalized by the actors. They serve as cognitive tools or “mental maps” that guide the actors on how to act or behave in particular situations (Wiederman, 2005).

Network management has also been manifested in the ways the NIZ Management Staff mediate, coordinate, and facilitate the interaction among several actors in the NIZ Program. Such activities, which are centered on managing the interactions of actors in a network, go beyond the “boundary management” concept (Cash *et al.*, 2003) in considering not one but multiple interfaces. Instead, it is consistent with the “game management” concept in networks as earlier articulated by Kickert and Koppenjan (1997).

“Network structuring”, which involves institutional modifications, was also manifested when policy changes were effected following the field observations by the NIZ team and feedbacks from the farmers. This is illustrated by the revision of the old loan contract under the dairy buffalo module. The new Memorandum of Agreement is encompassing, as it requires all parties i.e., the PCC, the farmer-cooperator, the municipal mayor, and the cooperative chair as signatories in a single legal document. Thus, the new Memorandum of Agreement serves as a major interface instrument that endeavours not simply to unify but to transform the scripts of all key actors in the NIZ Program. In other words, it facilitates the evolution of a “collective script” (Pruitt, 1995) that now guides or informs the frames of reference of participating actors.

### **Outcomes of Negotiations and Networks**

Successful negotiations and ensuing linkages among actors have resulted in integrative agreements and other beneficial outcomes. These include the adoption of innovations by farmers, increased buffalo inventory, milk production, and

income as well as empowerment, collaboration and complementation among actors.

*Adoption of “Negotiated” Innovations*

In communicating the innovations on dairy buffalo production, the center of gravity of the NIZ network lies on the link between the farmers and the PCC scientists, as mediated by the PCC field technicians (Figure 8). This is evident during the conduct of Technical Trainings wherein the field technicians facilitate an ‘open forum’ between the two actors. They also accompany the farmers to the offices of the scientists during individual consultations. More importantly, the field technicians serve as the ‘proxies’ of the scientists in the field where most negotiations with the farmers about particular innovations take place. Two examples of these ‘negotiated innovations’ are presented below.

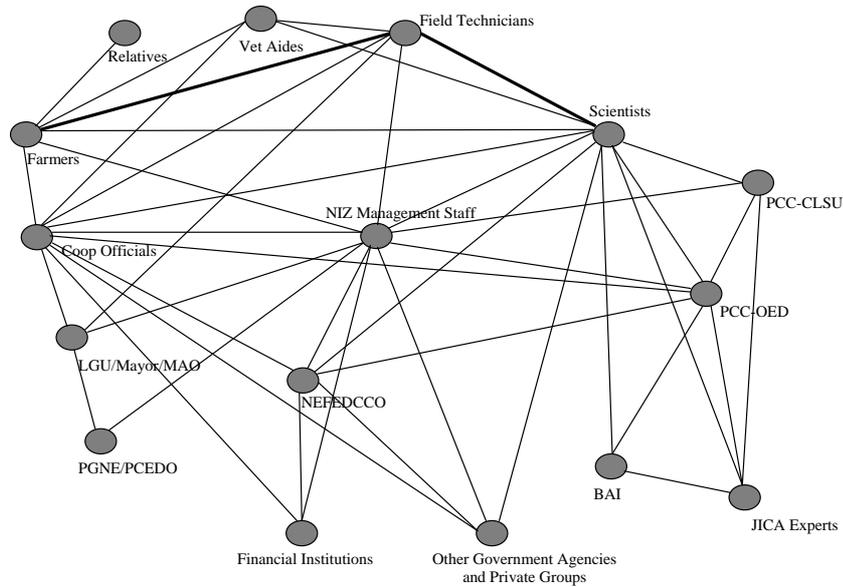
Feeding Management. The script of the scientists requires keeping the dairy buffalo under complete confinement and feeding it with improved grasses, a practice called ‘zero grazing’. Instead of doing this intensive feeding system, the field technicians discovered that farmers were practicing semi-intensive feeding i.e., letting the buffalos graze on a communal pasture at certain times of the day and then bringing them to shelter for hand feeding with mixed forages (native grasses, weeds, shrubs, and rice straw). The field technicians let the farmers continue this practice, in return for their agreement that the buffalo be dewormed regularly, as it can be infested with helminths while grazing. Farmers have to sacrifice a little for this. They need to pay for the anthelmintics. There is also a three-day withdrawal period for the buffalo’s milk, for safety reasons. Since this deprives them of income from milk for three days, a few farmers refused the deworming of their buffalos, but the majority recognized its long-term benefits and agreed to do so once every three months.

Reproduction Management. Proper and early detection of heat or estrus, i.e. a period when animals are sexually receptive, facilitates reproduction management. In-heat buffalos are bred via artificial insemination by a skilled technician. However, adoption of artificial insemination is only about 65%. Other farmers prefer natural mating as it has a relatively higher success rate. Recognizing the advantages and disadvantages of both approaches, the field technicians negotiated with the farmers a revised arrangement whereby they utilize artificial insemination first but if the buffalos do not get pregnant after three successive inseminations, they will use a bull for natural mating. To increase efficiency, they also agreed to establish a ‘night corral’, wherein a breeding bull and female buffalos are put together overnight. This practice has resulted in a high conception rate.

*Increased Buffalo Inventory, Milk Production and Income*

An objective measure of negotiation outcomes is expressed through the production and economic performances of the NIZ Program since its launch in 1998. In terms of animal inventory, the total number of buffalos has increased from an initial stock of 1,000 (distributed to farmers from 1998 to 2002) to 2,894 as of December 2006 (Table 1). Female calves are managed as replacement or fresh stocks for loan to new farmer-cooperators. Male calves are raised as breeding bulls and made available via the PCC’s Bull Loan Program. Those that do not qualify for breeding purposes are managed and marketed for meat.

**Figure 8 A Simplified Representation of the NIZ network and its Center of Gravity in Communicating Innovations Highlighted**



- Key:**
- BAI Bureau of Animal Industry
  - JICA Japan International Cooperation Agency
  - LGU Local Government Unit
  - MAO Municipal Agricultural Office
  - NEFEDCCO Nueva Ecija Federation of Dairy Carabaos Cooperative
  - PCC-CLSU Philippine Carabao Center-Central Luzon State University
  - PCC-OED Philippine Carabao Center-Office of the Executive Director
  - PCEDO Provincial Cooperative and Entrepreneurship Development Office
  - PGNE Provincial Government of Nueva Ecija

**Table 1. Buffalo inventory at the NIZ (as of December 2006)**

<b>Particulars</b>	<b>Number of Head</b>
Original female buffalos loaned out to farmers	1,000
<i>Mortality</i>	<i>(260)</i>
Subtotal	740
Calves produced	2,634
Male	1,369
Female	1,265
<i>Mortality</i>	<i>(480)</i>
Subtotal	2,154
<b>TOTAL</b>	<b>2,894</b>

Source: Del Rosario *et al.* (2007)

Annual milk production from participating cooperatives has also increased from 873 kg in 2000 to 318,820 kg in 2006 (Table 2). Raw milk was sold to NEFEDCCO for centralized processing and marketing. This has generated income for both the individual farmers and the primary cooperatives.

**Table 2. Annual milk production and income of farmers and cooperatives in the NIZ**

<b>Particulars</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>
Milk Production (kg)	873	17,530	117,579	249,296	322,930	344,276	318,820
Value (Php32/kg)	27,936	560,960	3,762,528	7,977,472	10,333,760	11,016,832	10,202,240
<i>Income of Farmers (Php30/kg)</i>	<i>26,190</i>	<i>525,900</i>	<i>3,527,370</i>	<i>7,478,880</i>	<i>9,687,900</i>	<i>10,328,280</i>	<i>9,564,600</i>
<i>Income of Primary Cooperatives (Php2/kg)</i>	<i>1,746</i>	<i>35,060</i>	<i>235,158</i>	<i>498,592</i>	<i>645,860</i>	<i>688,552</i>	<i>637,640</i>

Source: Del Rosario *et al.* (2007)

*Empowerment, Collaboration and Complementation*

The linkages have helped empower the smallholder-farmers. Individually, they may look disadvantaged owing to their limited income and resources. However, their membership in primary cooperatives facilitated the access to additional livelihood (dairying) and knowledge (improved husbandry practices) offered by the dairy buffalo module. The eventual creation of NEFEDCCO out of these cooperatives further strengthened their position in the society as entrepreneurs.

Thus, power is portrayed in the NIZ as the capacity of the smallholder-farmers to collaborate or “act in concert” to achieve a common goal (Arendt, 1970).

Becoming part of the NIZ Program has also extended the farmers’ networks via their linkages with other actors in the program e.g., NIZ Management Staff, field technicians, scientists, funding agencies, and market players. In other words, these connections have made it possible to improve their “bridging” (Putnam, 2000) and “linking” (Woolcock, 2001) social capital, which they now mobilize in gaining new skills and knowledge in dairying, marketing their milk products, generating extra income, sourcing out funds, and others. Conversely, scientists, field technicians, and NIZ Management Staff also derive benefits from their linkages with farmers, primary cooperatives, and NEFEDCCO in line with pursuing their own objectives or interests as employees of the PCC. These complementarities, made possible by being part of a single network, even out any power differentials among actors that may surface during their encounters at specific interfaces. In other words, “generalized symmetry” (Latour, 1987) is shown here to be a possible outcome of negotiation processes in the NIZ, which blurs any barriers or boundaries that may have divided the actors prior to their interfacing.

## **Conclusions**

While not devoid of any constraints, the approach by the PCC and its partner-actors to spurring dairy buffalo development in the Philippines via the NIZ Program is proving effective. It hinges on the concept of ‘negotiation’, with the assumption that farmers, scientists, cooperative officials, and other key stakeholders have differing scripts or frames of reference, as influenced by their respective socio-cultural contexts. Thus, the greatest challenge was to promote two-way communication and perspective taking towards an integrative decision-making. This was made possible through the mediating functions of the NIZ Management Staff and the field technicians. As evidenced in the case study, negotiation is a necessary prelude to eliciting active participation among various actors and to establishing and maintaining the NIZ network. The main entry point for these initiatives is the primary cooperative, as it embodies a cohesive entity, which facilitates communication and coordination activities. The role of the cooperative officials is therefore of prime significance in this respect, as they are strategically positioned as ‘gatekeepers’ who can represent the individual farmers in particular negotiation activities with the PCC or with other actors in the network. While various socio-economic factors could affect the continuous success of the NIZ Program, a critical aspect would be the effective management of the network of actors that the program represents. The NIZ Management Staff currently does a

good job in this regard but there are limitations in performing their tasks in terms of budget and administrative or policy concerns. The NEFEDCCO, while tasked to perform centralized marketing, also had difficulties especially when there are milk surpluses. Thus, exploring strategic alliances with other (private) actors or organizations particularly on the business aspects of the NIZ operations could be helpful.

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**Difference can make a change: A literature review of heterogeneity in non-hierarchical organizational systems**

Publication Number AAT 1473606

Thurtle, Mary Charlotte, M.A., Prescott College (U.S.A.), 2010, 282 pages; Advisor: June Covington

**Abstract (Summary)**

Some organizational scholars believe viability in non-hierarchical organizations is encouraged by a homogeneous membership. From a systems thinking perspective, heterogeneity may provide the needed tension for organizations to self-organize, change, and adapt to both internal and external environments. This thesis explores these differing perspectives by critically analyzing the literature on heterogeneity in non-hierarchical organizations using qualitative and quantitative methods and a situated systems theory lens. This study is significant in that it seeks out literature in all disciplines that address the issue of heterogeneity in non-hierarchical organization emergence and sustainability. In doing so, it provides a foundation for interdisciplinary research on the topic. The literature on heterogeneity in non-hierarchical organizations indicates that homogeneous groups have less tension and therefore need fewer organizational structures and mechanisms to balance variety. However, homogeneous non-hierarchical organizations may not be viable in the long term because they do not reflect the larger socio-economic environment in which they operate. Within the socio-economic environment are dominant, or hegemonic, beliefs about people based on their gender, class, and ethnicity. Heterogeneity in non-hierarchical organizations can reveal hegemonic beliefs, which have organizational consequences particular to the organization and its surrounding socio-economic environment. Innovatively structured heterogeneous non-hierarchical organizations may have the potential to overcome hegemonic

beliefs and be an avenue for organizational viability that challenges existing power structures and creates real change.

### **Income diversification among fishing communities in western Kenya**

Publication Number AAT NR58280

Olale, Edward, Ph.D., University of Guelph (Canada), 2010, 275 pages; Advisor: unknown

#### **Abstract (Summary)**

Fisheries represent an important component of the renewable natural resources sector in many developing countries. Regardless of the key role played by fisheries, fishing communities in developing countries remain among the poorest communities. Two reasons may explain the high rate of poverty among the fishing communities: declining fish resources; and lack of access to alternative income-generating opportunities. It may be contended that in practice, it is the lack of access to alternative income-generating opportunities which is the principal cause of poverty among the fishing communities, rather than the declining fish resources per se. As a result, this study investigates the degree, determinants and welfare impacts of income diversification among the fishing communities, with a focus on those living on the Kenyan shores of Lake Victoria.

The study finds that around 26 percent of fish workers diversify income into farm work or non-agricultural work. In addition, individual characteristics, fish work characteristics, locational factors, barriers to income diversification and variability of fish income explain income diversification behaviour of fish workers. The results also show that income diversification improves the welfare of the fish workers, through higher incomes. There is, therefore, need to encourage income diversification by improving accessibility to credit, promoting membership in associations such as cooperative societies and women groups, and providing adult education to fish workers.

The academic and research contribution of this study is four-fold. First, the study contributes to the literature on income diversification by evaluating the determinants and welfare impacts of income diversification among fishing communities. Secondly, the study develops a theoretical model that explains income diversification behaviour of fish workers. Thirdly, the study applies propensity score matching to evaluate the impact of income diversification on the welfare of fishing communities, which is a deviation from past studies on income diversification. In addition to other advantages, propensity score matching gives

more consistent and realistic estimates compared to other methods used to undertake impact analysis. Finally, information generated from this study contributes to the literature on the potential strategies that can be used to improve the welfare of fishing communities in developing countries.

**A case study of community participation in primary education in three rural village schools in Ethiopia**

Publication Number AAT 3338887

Ternieden, Marie DeLucia, Ed.D., The George Washington University (U.S.A.), 2009 , 182 pages; Advisor: James H. Williams.

**Abstract (Summary)**

This study examines community participation in education in the rural Ethiopia villages of Khisha, Triab, and Shinkah by an NGO, Improvement for Ethiopian Education and Development (IEED). This study used a case study methodology to address a problem that current literature does not adequately cover; mainly, community participation in rural communities or by NGOs in Ethiopia in the area of education.

The study's results demonstrated that community participation occurred in the schools of the three villages of Khisha, Triab and Shinkah in several different ways. The NGO, IEED, integrated the concept of community participation into their mission, which resulted in the community directing the priorities of the school project. The NGO also built a trusting relationship with the community, which also positively influenced community participation in the villages. Interviews with the community's parents and teachers in Khisha, Triab, and Shinkah showed that geography and history influence the level of community participation, as seen particularly in the village of Khisha. Parents also indicated they were motivated to participate in school improvement because of child health and safety. The community was represented by the active participation of local school improvement committees and farmer's cooperatives. Finally, the study found that most often community participation was influenced by the positive interaction between IEED and the Ethiopian government sub-district official.

An important finding of the case study was that the concept of community participation includes more than just a particular community (or village) and how the community participates. In this case community participation included the government and the NGO, IEED. Each stakeholder took an interest in how community participation in education occurred in the three villages. The

implication from these research findings is that understanding the perceptions of stakeholders expands the dialogue at the local level and can be used to inform larger policy goals, such as increased access to education

### **Essays in development economics**

Publication Number AAT 3365447

Sukhtankar, Sandip Rajeev, Ph.D., Harvard University (U.S.A.), 2009, 135 pages;  
Advisor: Sendhill Mullainathan

#### **Abstract (Summary)**

This dissertation consists of three essays on the economics and politics of developing countries.

The first essay examines the effect of political connections on firm outcomes. Political control of firms is prevalent across the world. While there is evidence that firms benefit from political connections, we know less about whether politicians profit from control over firms. I investigate whether and how politicians use firms to further their electoral goals, examining sugar mills in India--many of which have chairmen who are politicians. I find evidence of embezzlement in politically controlled mills during election years, which is reflected in lower reported output and/or lower input prices paid to farmers for cane. Misappropriation of mill resources might represent either pure theft, or indirect campaign contributions for which farmers receive compensation in later years. To distinguish between these interpretations, I examine whether farmers are recompensed after elections. I find that farmers receive higher cane prices after mill chairmen win elections, as well as when the mill chairman's party controls the state government. This result suggests that at least some of the theft is returned in the form of higher prices and may help explain why farmers would be willing to continue supporting politicians who engage in embezzlement.

The second essay studies dynamic incentives for corruption in one of the world's largest public transfer programs, India's National Rural Employment Guarantee Act. We uncover large-scale embezzlement along multiple margins: theft from beneficiaries and theft from taxpayers. Using exogenous changes in statutory wages, we then test a simple, dynamic model of rent extraction. We find evidence for a "golden goose" effect: when expected future opportunities for rent extraction are high, officials extract less rent today in order to preserve tomorrow's opportunities. This behavioral response tends to stabilize levels of corruption in the face of external shocks.

The third essay examines the effect of ownership structure on farmer outcomes. The promotion of agricultural cooperatives has been an integral part of developing country governments' efforts to develop rural areas, yet whether governments should subsidize and promote cooperatives is an empirical question that has yet to be convincingly answered. This paper seeks to answer part of this question by examining the effect that different ownership structures have on the outcomes of sugarcane farmers in India. It exploits the zoning system--whereby farmers living within a zone are forced to sell sugar to the mill designated to that zone--to estimate this effect, by surveying farmers at the boundaries of the zones. I find that private mills encourage sugarcane production, but also draw in marginally poorer farmers. Farmers on the private mill side of the borders appear to invest less in cane development and have lower cane yields. Whether this is due to the composition of farmers or cooperative mill cane development efforts is unclear.

**Essays on the effects of coffee market reforms, supply chains, and income improvement in Rwanda**

Publication Number AAT 3396002

Murekezi, Abdoul Karim, Ph.D., Michigan State University (U.S.A.), 2009, 128 pages; Advisor: Scott Loveridge

**Abstract (Summary)**

This dissertation assesses the effects of policy reforms on farmers. These reforms were started by the Government of Rwanda (GOR) in the early 2000s. The first essay is based on a national agricultural household cross sectional survey of 498 coffee growers and 4,376 non-coffee farmers. The first essay identifies determinants of rural household income in Rwanda and elucidates differences between farmers growing coffee and non-coffee farmers. Results from quantile regressions showed that growing a large number of staple crops was positively associated with household expenditures for both coffee growers and non-coffee farmers. Moreover, the results also found that increasing farm size per capita, off-farm income opportunities and formal wage were associated with increasing household income. Similarly, sales of livestock products, such as milk or eggs, as well as the production and sale of fruit contribute significantly to improving household income. The analysis also highlights the high return of education for both coffee and non-coffee growers.

The second essay of this dissertation determines the effects of coffee sector reforms on coffee-growing households. The effects of the reforms are represented

in terms of the yearly household expenditures per adult equivalent, a proxy of income. This essay uses a representative panel data of 252 coffee households surveyed in 2001 and 2007. Using fixed effects model and the instrumental variable method, results show that coffee farmers benefited from the reforms by increasing their expenditures over time. In addition, the results show that coffee growers that sell to the new coffee cherry market benefited more from these reforms than farmers who sell to the traditional parchment market. These effects were, however, not statistically significant.

The third essay compares the effects of two organizational forms of coffee supply chains (cooperatives and private processors) on household income. It also assesses which supply chain has benefited coffee growers the most. This essay uses a reduced panel data of 148 coffee households that were derived from the panel data used in the second essay. Only farmers selling coffee cherries were retained in the analysis. Using the walking distance (in minutes) as an instrument for the choice of the supply chain, estimations from the instrumental variable method show that there is no indication that farmers benefited from selling cherries to processing cooperatives instead of selling to private processors. These findings provide important information that may assist the Rwandan Government, international funding and development agencies in assessing the impacts of coffee policies and in developing other policies or interventions that induce the poverty reduction of farmers.

**'Maybe our children can see better days' a brief history and analysis of farmers' cooperative organizations in Turkey**

Publication Number AAT 1472732

Sakinc, Mustafa Erdem, M.A., University of Massachusetts Lowell (U.S.A.), 2009, 137 pages; Advisor: Robert Farrant.

**Abstract (Summary)**

This thesis examines rural cooperatives in Turkey and identify the reasons behind the weaknesses and ineffectiveness of the rural cooperative system today. The problematic is based on two issues: The historical ill-development of the cooperative organizations in Turkey and the recent pressures of neoliberal policies and deregulation. The particular focus is a careful study of Turkey's Unions of Agricultural Sales Cooperatives (UASCs), historically one of the country's main components of agricultural production and policy. A review of the history of UASCs since 1930s along with the general agricultural policy explains how the

rural cooperative system marched along the transformation of government policies on agriculture. More recently the effects of European integration and a World Bank sponsored agricultural reform have had substantial effects on agriculture and cooperatives. Oral history interviews with cooperative managers and members conducted at three cooperative unions clarify the causes of contemporary issues of cooperatives which are a mixture of historical conditions and recent policy changes. A grassroots perspective allowing the democratic participation and commitment of small-scale farmers to their cooperatives is questioned to halt the potential destruction of the rural cooperative system at the expense of small farmers.

**Reassessing forest transition theory: Gender, land tenure insecurity and forest cover change in rural El Salvador**

Publication Number AAT 3386791

Kelly, Jessica Jean, Ph.D., Rutgers The State University of New Jersey - New Brunswick (U.S.A.), 2009, 185 pages; Advisor: Thomas K. Rudel.

**Abstract (Summary)**

Rural out-migration, increasing market orientation and forest resource scarcity, according to the forest transition theory, promote the recovery of forests on landscapes in rural areas. However, the drivers and paths in the North American and European case studies, on which the theory was developed, differ in important ways from those drivers and paths observed in case studies conducted in the tropics. The forest transition theory, through a feminist lens, is reassessed by examining the social drivers of forest cover change in a case study in El Salvador. A gender sensitive construction of forest transition theory incorporates the ways in which the social and cultural roles of women interact with migration patterns, land tenure structures, and organizations, such as cooperatives. The results of qualitative research conducted in El Salvador (2005-2007) at the household level and of quantitative research at the regional and national levels demonstrate that ecological processes of forest recovery, through a confluence of factors, have an important, heretofore unrecognized gendered dimension.

**Tending the garden: The country life movement between productivity and sustainability**

Publication Number AAT 3386708

Motter, Jeffrey Brian, Ph.D., Indiana University (U.S.A.), 2009, 269 pages;  
Advisor: Robert L. Ivie.

**Abstract (Summary)**

This study explores the seventy-five year history of the Country Life Movement (CLM), 1901-1976, and its attempt to reconcile agricultural modernization with traditional agrarian practices. Drawing on themes of democracy, globalization, and sustainable development and theories of articulation, metaphor, and myth, I provide an account of a social movement's rhetorical invention of symbolic resources for cultural production.

The CLM is divided, for purposes of analysis, into three rhetorical phases of social action. I argue that rhetorical representations of the land were transformed through these three phases from an image of cooperation to one of division and domination.

In its first phase, 1901-1914, the movement drew on the narrative of America's mythic garden to invent an emergent rhetoric of sustainable development through an articulation of productivity that was compatible with land ecology. Concurrently with an emphasis on land ecology, the CLM expressed an initial attitude of globalization as a cooperative process of mutual economic and agrarian exchange.

While remaining insistent on the land's ecology, the second phase, 1914-1939, confronted a government and state unconcerned with the declining economic and social position of American agrarians. With the land as a symbol of cooperation, country lifers challenged the state on democratic grounds by dissociating citizens from the state and the state from democracy. A democratic attitude of cooperation and equality, grounded in an affinity with the land, was embodied in agrarians.

The final phase, 1939-1976, illustrates how a movement can become captive to the very symbolic resources it invents. As the movement began to cast aside its emphasis on land ecology, the mythic garden was symbolically transformed into an industrial Eden, driven by a metaphor of development which undermined the movement's commitment to sustainable development. As the land became a symbol of place-based division, an attitude of domination resulted that emphasized rural virtue over urban blight and U.S. exceptionalism over international iniquity.

Overall, this study reveals the centrality of the symbolic land in the attitudes and practices of citizens. With the land developing over time into a rhetorical source of place-based divisions, the CLM ultimately expressed an exploitative attitude of imperial globalization.

**Three essays on applied economics: Rural electric cooperative call center demand, fertilizer price risk, and estimating efficiency with data aggregation**

Publication Number AAT 3372174

Kim, Taeyoon, Ph.D., Oklahoma State University (U.S.A.), 2009, 87 pages;  
Advisor: Philip Kenkel.

**Abstract (Summary)**

*Scope and Method of Study.* This study consists of three sections. The purpose of first section is to forecast peak call volume to allow a centralized after-hours call center for rural electric cooperatives to estimate staffing levels. A Gaussian copula is used to capture the dependence among nonnormal distributions. The purpose of second section is to examine the effectiveness of systematic cash purchase strategies in reducing fertilizer price risk for Oklahoma fertilizer dealers. The historical effectiveness of hedging with the fertilizer future market contracts (which have been discontinued) is also analyzed to provide a benchmark for comparison. The purpose of last section is to determine the effects of data aggregation on estimation of a stochastic frontier cost function using a Monte Carlo study.

*Findings and Conclusions.* For the first section, ignoring the dependence that the copula includes, would have resulted in an underestimation of peak values. The centralized call center resulted in cost savings of approximately 75% relative to individual centers at each cooperative. Adding cooperatives to the centralized call center is projected to further decrease costs per member. The magnitude of additional cost savings depends on the regional location of the new call center member. For the second section, cash purchase strategies were shown to be slightly effective in reducing average price and moderately effective in reducing risk. The reduction in price variance through cash purchase strategies was comparable to the historical effectiveness of hedging. For the last section, when the translog form of a stochastic frontier cost function with aggregated data is estimated, the variations of total cost decrease as output increases. If the variations of explanatory variables are small, then heteroscedasticity on the inefficiency error might be negligible. Stochastic frontier functions hold up rather well in the presence of data aggregation, but efficiency measurement from DEA diverges from true efficiency measurement.

**Making a living in Kassumba, Guinea-Bissau**

Publication Number AAT 3356115

Lundy, Brandon Daniel, Ph.D., State University of New York at Buffalo (U.S.A.), 2009, 496 pages; Advisor: Phillips Stevens, Jr.

**Abstract (Summary)**

Development initiatives in Africa have proven largely ineffective. Neoliberal policies promoted by international aid agencies have done little to improve the livelihoods of civil society. For example, a push for cashew nut production and the opening of fishing grounds to foreigners have left Guinea-Bissau's citizenry with fewer fish, neglected rice fields, and little capital. In addition, the colonial legacy exacerbates underdevelopment in a hierarchical world-system. Therefore, development, as it is understood today, is inherently flawed and in need of serious alternatives.

This study examines the socio-economic milieu of a rural community and investigates unfolding negotiations between everyday activities, conceptions of cultural identity, globalization, and national politics. Through the use of ethnographic methods including household surveys, interviews, local histories and participant observation, the researcher describes and analyses the southern village of Kassumba divided between Islamic Nalú landowners and the majority, spiritist Balanta immigrants. This work demonstrates how the local inhabitants understand their historical realities and political economy, meet their subsistence needs, and modify their household livelihood strategies in order to adapt to poorly understood economic deprivations. This study finds that socio-economic cooperation and flexibility play important roles in adjusting to rapidly changing circumstances.

Traditional field methods are once again proving effective in response to new and pressing needs for fresh research on the changes today's peripheral economies are being forced to make. This thesis is intended to be a policy paper, local history, and ethnography.

**The microfoundations of state building: Informal institutions and local public goods in rural Afghanistan**

Publication Number AAT 3384135

Murtazashvili, Jennifer Brick, Ph.D., The University of Wisconsin - Madison (U.S.A.), 2009, 389 pages; Advisor: Melanie Manion.

**Abstract (Summary)**

Despite persistent central government weakness and decades of conflict, self-ordered customary village organizations provide public goods at the community level in Afghanistan, usually without government support or interference. This project explores how communities are able to provide public goods in the context of a very fragile central government and, by doing so, demonstrates that there is a great deal of informal order even in failed states. The dissertation develops a theoretical framework of local self-governance and systematically tests its implications, using previously unexploited data from two recent, nationally representative surveys as well as original qualitative data from over 300 interviews and focus groups collected in villages across six provinces of rural Afghanistan. The qualitative data represent the most expansive, independent study of local governance conducted in post-2001 Afghanistan.

The empirical analysis considers public good provision at three levels: within villages, between villages, and between villages and the lowest level of formal government. First, through analysis of public opinion data, I demonstrate that customary organizations do not hinder support for the central government. Second, I develop a theoretical framework showing why customary organizations are effective in providing public goods and services. This is mainly due to the fact that authority in villages is diffused among several customary organizations, namely village executives ( *maliks* ), village councils ( *shuras/jirgas* ), and religious arbiters ( *mullahs/imams* ), each of which derives legitimacy from distinct sources. Third, the dissertation demonstrates that customary organizations are not a panacea and are limited in the kinds of public goods they can provide. Finally, empirical analysis demonstrates the conditions under which customary organizations cooperate with local governments. Such cooperation between these formal and informal organizations is widespread.

This project brings comparative and local politics into the study of post-conflict state building and has several implications for persistently "weak" states. In the absence of central authority, individuals may organize productively to provide public goods. While state failure leads to central government anarchy, such power vacuums do not eliminate non-governmental sources of public goods provision.

**What advances effective community-driven development: A cultural perspective of gender mainstreaming and self-organization in rural China**

Publication Number AAT 3375356

Xie, Huiping, Ph.D., University of Pittsburgh (U.S.A.), 2009, 249 pages; Advisor: Louis A. Picard.

**Abstract (Summary)**

The international development agencies and the Chinese government have become increasingly more aware of the importance of bottom-up community-driven development. Some scholars argue that the problems for community-driven development in China are mainly because of the lack of favorable policy environment and effective monitoring mechanisms. The research in this dissertation does not intend to deny the importance of those factors. The goal of this work, however, is to offer perspectives that can help organizations at all levels and of different sectors to understand the importance of embracing and integrating the local culture into development policy making and program designing. To achieve effective community-driven development, the policy makers and practitioners should first understand and respect the culture and interests of the beneficiaries.

Instead of addressing institutional and structural development issues as "hardware", this research takes a cultural perspective as "software" to contribute to the existing literature of this field. To achieve effective community-driven development in China, partnership and cooperation between different players is crucial. Culture, both as means and ends of development, is an important factor that bonds them together. Emphasizing the significance of gender roles and responsibilities, a gendered perspective of community development in China is presented in this research.

This research also refers to theories of Complex Adaptive Systems and Self-organization mechanisms, which explain how complex, adaptive macro behavior emerges from simple, local micro decisions and how simple agents collectively solve difficult problems. The roles of community, government, and NGOs [domestic and international] in this development process will be addressed here. During the author's field study in the rural areas of China in the summer of 2007, data was collected through participatory observation, interviews, and focus groups with multiple stakeholders involved in the community-driven development programs in China. This work highlights the opportunities and challenges for effective community-driven development in China. Based upon the analysis, this research also offers policy implications for different stakeholders.

**Towards improved partnerships in the water sector in the Middle East: A case study of Jordan**

Publication Number AAT 0822308

Odeh, Nancy, Ph.D., Massachusetts Institute of Technology (U.S.A.), 2009;  
Advisor: Lawrence E. Susskind.

**Abstract (Summary)**

This dissertation focuses on the use of public-private partnerships (PPPs) in the water sector in Jordan, a Middle East pioneer with respect to experimenting with different approaches to delivering water services in both cities and rural areas. Jordan's efforts to decentralize water services began in the late 1990s at the prodding of the World Bank. A management contract was awarded to a private consortium to operate and maintain Amman's water system.

One major stumbling block has been finding the right organizational and legal arrangements. In this inquiry, I selected four cases that vary in terms of the institutional arrangement which I hypothesize impacts the effectiveness of partnerships. These were (i) the Greater Amman water supply and wastewater services management contract; (ii) the Northern Governorates Water Administration Managing Consultant contract; (iii) the water user cooperatives in the Jordan Rift Valley; and (iv) the Red Dam Cooperative for Agricultural Water Reuse in Wadi Mousa. I selected four indicators to assess effectiveness: water quality, sustainability of the water supply, affordability and financial arrangements, and efficiency of the water services.

My initial expectations were confirmed: institutional arrangements did have a significant impact on partnership effectiveness. The factors that appear to have the most impact are the contracts, the structure of governance arrangements, and the legal context. Contracts embodying clearly defined targets are deemed crucial in ensuring accountability to customers receiving water services. However, sufficient flexibility in order to allow for a considered review and possible adjustments of initially set targets is also important. Contracts must also allow the service provider adequate autonomy to operate effectively. Second, in the case of governance structures, it is those which encourage consistent and inclusive participation of partners in decision-making and information sharing that bring a positive effect to bear on PPP arrangements. And third, relevant laws and regulations need to enhance accountability to customers in urban partnerships, and farmers as irrigation water users through cooperatives in rural partnerships. My findings also suggest that failure to implement knowledge transfer and the impact of troublesome historical relationships and events can thwart even well designed partnerships in the water sector.

**Assessing the impact of water harvesting on water resources in rural India**

Publication Number AAT 1450732

Oblinger, Jennifer Ann, M.S., Clemson University (U.S.A.), 2008, 124 pages;  
Advisor: Stephen Moysey.

**Abstract (Summary)**

Clean water supplies, like all natural resources, are becoming scarce all over the world, but especially in developing countries where special interest groups (such as city governments, commercial farmers, other villages downstream, etc.) fight over water rights. The Foundation for Ecological Security (FES) is a non-government organization in India whose mission is to restore degraded lands through cooperation with rural villages. In order to increase the water supply to the ecosystem, FES constructs water harvesting structures (WHS) which impound rainfall, water that would have otherwise runoff and contributed to erosion, in surface storage. This study was conducted to assess the impact of the WHS on the environment and the effectiveness of extending the water supply through the dry season. To accomplish this task, a surface water balance was formulated to estimate the natural hydrologic characteristics of the system and an analytical balance over the WHS was designed to approximate the infiltration from the standing pool.

A conceptual model of the hydrogeology of the Deccan Traps was created to determine the approach to the solution of the water balance. Digital data provided by FES was compiled and organized using ESRI's ArcGIS. The geology of the study area was surveyed in the spring of 2007 through surface mapping and vertical electrical sounding. A geologic map was drawn and a basic conceptualization of the flow of groundwater through the subsurface was formulated.

It is hoped that this study will be the beginning of a project which will aid FES, other NGO's and the Indian government in promoting self-management and cooperative usage of available water resources in rural villages.

**Career benefits of cooperative education and internships: Perceptions of graduates from a rural Midwest engineering and science institution**

Publication Number AAT 3318828

Sawyer, Darrell, Ed.D., University of South Dakota (U.S.A.), 2008, 149 pages; Advisor: Karen Card.

**Abstract (Summary)**

Although many studies have been conducted related to the initial career-related benefits received by graduates with cooperative education or internship experience, limited research has been done to examine this career development from longer-term perspectives. The purpose of this study was to assess the perceptions of

graduates from the South Dakota School of Mines and Technology (SDSM&T) regarding their co-op or internship experiences and to examine what differences exist among graduates in their early, middle or advanced career stages.

A researcher-developed survey instrument with five-point Liked scale questions was used to collect data from SDSM&T 1986-2006 graduates regarding their perceptions of their co-op or internship experiences and their career development. The survey questions were organized into four subscales: career actualization, professional development, personal growth, and overall satisfaction. The survey was sent electronically to all graduates for whom an email address was available. A total of 276 graduates completed the survey. The respondents were generally distributed among the early, middle, or advanced career stages.

Computation of the means for the survey questions and the composite subscale means indicated that the graduates viewed their co-op or internship experiences as positive influences on their career development regardless of gender, ethnicity, age, or major. The respondents strongly recommended that current students obtain such experiences before they graduate. Female and non-Caucasian graduates considered their co-ops and internships to have increased their understanding of their professional, ethical, and social responsibilities at a higher level than males or Caucasians.

The graduates' perceptions were positive regardless of whether they were in their early, mid-, or advanced career stages, with advanced career respondents indicating a statistically significant higher positive level than early career stage respondents. The value that graduates attribute to their co-ops and internships does not diminish over time and actually is slightly higher by graduates in their mid- or advanced career stages. Multiple linear regression analysis indicated that the graduates' perceptions regarding career actualization, professional development, and personal growth all are significant predictors of graduates' overall satisfaction with their co-op or internship experiences ( $p < .05$ ).

**Community development in historical perspectives: Tianjin from the Qing to the People's Republic of China**

Publication Number AAT 3315919

Kongridhisuksakorn, Prangtip, Ph.D., Indiana University (U.S.A.), 2008, 381 pages; Advisors: Jeffrey Wasserstrom, Lynn Struve.

**Abstract (Summary)**

This dissertation focuses on the role of relief and post-relief institutions in Tianjin from the Qing Dynasty to the People's Republic of China, as they have played out in China's development history. I use the Buddhist Middle Way economic principles as my methodology in assessing achievements and limitations of development efforts since the Buddhist concept of the Middle Way was incorporated into the Confucian Centrality and its standard of a *xiaokang* society. As a commercial, industrial, educational, and political center, Tianjin has successfully contributed to the rapid development of China's national economy. Tianjin cultivated the world-famous Xiaozhan rice. It spearheaded the establishment of the first China's modern agricultural schools, agricultural associations, and experimental areas, the National Products Promotion Society, as well as the Rural Reconstruction cooperative movement and village folk educational halls. It has played a leading role in scientific and technological innovations in the realm of agriculture and industry, particularly metallurgy and machinery, electronics, bio-technology, and energy and petrochemicals. In order to further move China towards its final goal of common prosperity based on its own classic standards of comprehensive well-being, Tianjin is reviving its traditional central role of relief and philanthropy, reinforcing the growth of traditional products along with new and high technology industry, bridging the gaps between the city and its surrounding areas, and addressing the problems of environment. This is in order to promote the traditional values of harmony and true well-being.

**Conflict and accommodation: The politics of rural local government in the post-apartheid South Africa**

Publication Number AAT 3331904

Fikeni, Somadoda, Ph.D., Michigan State University (U.S.A.), 2008, 346 pages; Advisor: Michael Bratton.

**Abstract (Summary)**

The point of departure in this dissertation is that traditional leadership remains an important political force within the modern African states. Its role and form of accommodation within the modern state has come into sharp focus in the context of democratizing states. Post-apartheid South Africa, just like many post-colonial African countries, faces a challenge of accommodating traditional authority particularly in its local government system. The focus of this study is on the politics of South African rural local government with particular attention on the

relationship between the traditional leaders, elected local councilors and local civic leaders. The first chapters of the study provide a context by looking at the literature on this subject as well historical evolution of South African rural local government and reactions of traditional leaders to liberation politics into the current configuration of rural local government in post-apartheid democratic South Africa.

This comparative case study looks at factors and variables that are associated with conflict and cooperation between traditional leaders, elected local councilors and civic leaders. The questions that this study seeks to answer are the following: What is the composition, function and structure of rural local government in the post-apartheid South Africa? What sorts of relations have actually evolved between the traditional leaders and the emergent political elite of elected councilors? What are the factors that are associated with conflictual relations and cooperative or accommodative relations between the traditional leaders and the elected councilors and civic leaders?

Nine South African rural communities in three provinces, namely KwaZulu-Natal, Eastern Cape and Mpumalanga, are surveyed. A range of demographic and attitudinal variables as well as leadership styles were assessed to examine if they had any association with one form of relationship or another. The findings in this study and analysis indicated that age, education, party affiliation, income, and employment status are demographic variables that have influence on or are associated with rural elite relations. More specifically, this study indicates that cooperation is associated with communities where traditional elites and elected councilors or civic leaders share most the aforementioned attributes and demographic features whereas conflict is associated with instances where they have less in common. Leadership style also proved to be an important factor in rural elite relations though more needs to be done to understand the specific manner this variable impacts on the relationship. Overall, this study reveals challenges of accommodating two distinct political systems within a modern democratic arrangement, but also demonstrates that this arrangement does not always end up in conflict.

**Conservation and development: Following the middle path in the Kingdom of Bhutan**

Publication Number AAT 3336226

Brooks, Jeremy Scott, Ph.D., University of California, Davis (U.S.A.), 2008, 174 pages; Advisor: unknown.

**Abstract (Summary)**

The three components of this dissertation are designed to explore the relationship between development and conservation at different scales. The first component of the study was a meta-analysis based on a global sample of conservation and development projects in which my colleagues and I find support for the prediction that market integration, access to local resources, and participation in project design and implementation are associated with multiple ecological, economic and social indicators of success.

The second component of the study was conducted in the Kingdom of Bhutan and was designed to test alternative hypotheses for how development affects environmental values and resource use behaviors. While development may threaten the Buddhist-based cultural and political foundations for conservation success in Bhutan, it could provide economic security and market access that can facilitate the growth of environmental support and minimize pressure on local resources. I found that, across rural and urban communities, measures of wealth and market integration are better indicators of pro-environmental values and environmental behaviors than religiosity. However, I also found that development can exacerbate the negative environmental impacts of market-oriented, suggesting that the relationship between development and conservation may depend on the nature of individual behaviors. Additionally, though Buddhist values and social norms are largely unimportant among individuals, they may be crucial for motivating environmental support as Bhutan's development continues.

With the third component, I explored the coevolutionary dynamics between individual behaviors and common pool resource management institutions in the same rural communities in Bhutan. I found that neither social nor economic factors were paramount in explaining cooperative behaviors and I discuss how the evolution of community institutions both depends on and influences the knowledge and behaviors of individual collectors.

Overall, I suggest that the Bhutanese government's explicit emphasis on protecting their environmental and cultural heritage may provide an example of truly sustainable development. The degree to which traditional norms and values continue to be reinforced and merge with contemporary environmental awareness may a crucial factor in determining the continued success of this approach, particularly as the Bhutanese transition to a more democratic form of governance.

**Intergroup contact caused by institutional change: An exploration of the link between deregulation in Rwanda's coffee sector and attitudes towards reconciliation**

Publication Number AAT 3382994

Tobias, Jutta Mathilde, Ph.D., Washington State University (U.S.A.), 2008, 116 pages; Advisor: Craig D. Parks.

**Abstract (Summary)**

An exploratory field survey was conducted among a sample of rural Rwandan coffee farmers who have been experiencing new commercial opportunities and associations since the deregulation of Rwanda's coffee industry in the aftermath of the 1994 genocide. Participants were interviewed in confidential settings on their attitudes towards reconciliation and on other social and economic factors that may have changed since the economic liberalisation of coffee in Rwanda's recent history.

Results from correlational analyses suggest that membership in a coffee cooperative, being associated with a particular coffee washing station comparatively longer, and economic as well as general life satisfaction are significant correlates of positive attitudes towards reconciliation among participants, beyond a clear indication that frequent, deep, and pleasant contact with members from the other ethnic group in Rwanda is strongly linked to an attitude of reconciliation.

These observations were discernible independent of ethnicity of particular participants, or of the specific ethnic mix of community members in a given survey location, indicating that forgiveness and reconciliation are equally salient for all Rwandans, and that those individuals who benefit from the coffee sector deregulation economically may also experience positive social change as an ancillary result.

Although the study's sample represents a minority of coffee farmers in Rwanda, i.e. those benefiting from the results of privatisation in Rwanda's coffee sector, and the survey design prohibits generalisations beyond the group examined, the observed correlations match current theories of reconciliation, and extend the small body of field studies in reconciliation research, thus providing a quantitative insight into the potential mediating effect of commercially induced intergroup contact on positive intergroup relations in post-conflict environments with lingering ethnic discord.

Limitations of survey research in post-conflict settings are discussed in conjunction with recommendations for follow-up inquiries on the social factors

that may contribute to a reduction in inter-ethnic hostility, even if on the face of it, they may seem utterly unrelated to psychology.

**Jumping the gun: Local agency and early experiments in the socialist transformation of rural society in revolutionary China**

Publication Number AAT 3330040

Hou, Xiaojia, Ph.D., Cornell University, 2008 (U.S.A.), 232 pages; Advisor: Sherman Cochran.

**Abstract (Summary)**

This dissertation studies why in the early 1950s the Chinese Communist Party launched the agricultural cooperative movement, a movement in many crucial ways resembled the collectivization in the Soviet Union. Past research has treated China's cooperative movement as a campaign imposed from above by Mao Zedong. By refocusing the scholarly attention from the center to localities, instead, this dissertation discovers that in its early stage this movement had a measure of strong social support from below. Not denying Mao's dominant role, this dissertation examines the roles of others who were not at the top of the party's hierarchy. It shows how certain provincial and prefecture cadres provided Mao Zedong with inspiration, evidence, even the theories and finally succeeded in convincing Mao to endorse their plans. Refuting the conventional wisdom that takes this movement as a pre-determined one, this dissertation contends that this movement was the outcome of a complex combination of ideology, circumstances, contingencies, domestic politics, and personal ambitions. In addition to highlighting the institutional uncertainty and fluidity, this dissertation also studies the complex interplay between the state's agency and peasants. Peasants were not simply the receptacle of policies formulated at the highest levels of power: they were always seeking to adapt directives sent down from above to local conditions. By studying the cooperative movement at a key experimental site--Changzhi prefecture in Shanxi province from 1950 to 1953, this dissertation explores the process of mass mobilization from the province to villages.

**"Keep America American": Great Depression, government intervention, and conservative response in Somerset County, Pennsylvania, 1920s--1940**

Publication Number AAT 3326477

Egolf, Jennifer Ann, Ph.D., West Virginia University (U.S.A.), 2008, 351 pages; Advisors: Elizabeth Fones-Wolf, Ronald L. Lewis.

**Abstract (Summary)**

This study of one rural county in western Pennsylvania during the Great Depression highlights people's response to government recovery programs. Rural folks in Somerset County experienced the depression before the crash in 1929, and throughout the 1920s, miners and farmers in the area found ways to cope with rising unemployment and declining farm prices. Miners used the strike to fight for better conditions; farmers organized into cooperatives to secure the best prices for their products. Each promulgated a set of values that reflected their vision of America. The 1920s was only a prelude to the economic downturn in the 1930s, when rural folks had to adapt to changes in the way that the government approached the economy. Many residents in Somerset County favored the approaches of Herbert Hoover, who honored their cherished values of thrift, self-help, and minimal government. For similar reasons, they also supported Republican Governor Gifford Pinchot, until he began to implement new taxes and to consolidate power at the state level. To many conservatives and localists, Pinchot resembled Franklin Roosevelt, who entered office promising federal assistance to the needy.

When Roosevelt took office, he implemented programs that often contradicted their cherished values. He passed costly federal direct and work relief programs that ran counter to their belief in private charity, self-help, and local control. His and Governor George Earle's "new deals" also included farm policy that set limits on production and forced processors to pay a tax and consumers to pay more for food. County residents generally favored the laissez faire, supply and demand model for the economy. Even more troubling to the county's localists and conservatives was the labor legislation that Roosevelt and Earle approved. The National Labor Relations Act, passed in 1935, and Pennsylvania's Labor Relations Act, passed two years later, forced companies to recognize unions, and residents believed that this also prevented individual workers from freely negotiating for employment. When the Pennsylvania Turnpike began construction in 1939, the county experienced one of the worst labor disputes since the "strike for union" of coal miners in 1922. The protracted battle underscored conservative's fears that the

unions and Roosevelt conspired to deny Americans jobs unless they had a "union card" and supported the Democratic Party.

Somerset County residents' steadfast values informed their voting behavior and political actions. Because their values were often conservative and they had a long history of voting Republican, the residents fought to preserve the party's conservative principles and also to retain the Republican Party in power at the local, state, and national levels. Although this is a community study, it is important because the region's people helped to shape the political landscape of the late 1930s and beyond.

**Mutual aid as community development: Accessing potable water in rural El Salvador**

Publication Number AAT MR41694

Ewart, Sande, M.A., Saint Mary's University (Canada), 2008, 138 pages; Advisor: unknown.

**Abstract (Summary)**

This study looks at the potable water problematic in the rural Salvadoran community of Delicias in the department of Cuscatlán. It proposes a new approach to community management of a common-property resource (CPR) like potable water by focusing on the cooperative aspects of human nature hardwired into us by natural selection. This cooperative instinct was initially referred to as Mutual Aid by Russian evolutionists, and was introduced to the English speaking world by Peter Kropotkin in the late-nineteenth and early twentieth century. Although the Western obsession with practicality competition and conflict in the sciences and social sciences, known as the "English doctrine", has resulted in a serious neglect of this cooperative evolutionary perspectives, in recent years scientists have begun to re-evaluate the value of cooperation in the evolutionary process. In this study we will look at how this re-emerging area of study can inform community development thinking and practice.

**Shadows over Goshen: Plain whites, progressives and paternalism in the Depression South**

Publication Number AAT 3329751

Smith, Freddy Carl, Ph.D., The University of Southern Mississippi (U.S.A.), 2008, 323 pages; Advisor: Louis Kyriakoudes.

**Abstract (Summary)**

This dissertation is about poverty and rural Southerners and the beginnings of America's rational assault on poverty. By 1932, a sense of emergency and desperation permeated American economic and political thinking. The apparent collapse of the industrial economy and credit markets created an environment in which politicians allowed and the public demanded bold experimentation. The period, 1933-1937, in which most of America approved or tolerated progressive notions, offered an opportunity for progressives to demonstrate their solutions to persistent southern poverty.

The Division of Subsistence Homesteads (DSH), an agency of the Department of Interior, created communities that combined subsistence gardening with part-time wage work. The Resettlement Administration (RA) developed the New Deal's most progressive efforts to cure southern poverty, entire towns populated by subsistence yeoman farmers. However, other progressives, especially liberal churchmen and the Socialist Party of America envisioned a more radical solution for rural southern poverty.

This study of three communitarian projects reveals that the clients of those communities, representing the lower and lower middle class, were intensely concerned with maintaining or achieving a specific class status. A subordinate thesis of this dissertation, evidenced by the words of the clients, suggests that the dispossessed (for whatever reasons) rural Southerners made a distinction between "poor whites" and "plain whites." All of the clients of the communities in this study were poor; not all of them were plain. "Plain whites," as employed in this study, refers to poor rural southerners without access to financial or political power. Three projects typify the approach by progressive liberals of the 1930s. Success for all three projects would be determined, in large part, by the willingness of their clients to forego voluntarily some of the privileges and rights associated with American individualism. In all three projects success depended on the economic cooperation of the clients. The Tupelo Homesteads were designed to meet the requirements of a "pleasure economy" and a radically different manufacturing world. Dyess Colony was an attempt to create in flesh and blood what had often been an American myth, a robust class of independent and disinterested yeoman farmers. Delta Cooperative Farm was supposed to give the means of production to the people and to turn the hearts of man to God. To say, categorically, that these projects failed is to ignore the primary purpose of experimentation.

All three projects promised dignity, self-determination, and refuge for those at the bottom of the economic pyramid. Activists associated with New Deal in general and the Federal Emergency Relief Administration, Division of Subsistence Homesteads, Works Progress Administration, Resettlement Administration, and Farm Security Administration in particular encouraged their clients to be satisfied

with subsistence. The Socialist Party of America joined with a coterie of liberal churchmen and promised social and economic justice and control of the means of production. Despite the powerful influence of such notables as Rexford G. Tugwell, M. L. Wilson, Lawrence Westbrook, Harry Hopkins, Sherwood Eddy, and most famously, Reinhold Niebuhr, the clients refused to abandon their notions of dignity and their aspirations to upward mobility.

Arguably, the greatest benefit from experimentation is falsification of theory. Two of the experiments, Tupelo Homesteads and Dyess Colony were certain to be failures from the very beginning. The failure of Delta Cooperative Farm was self-inflicted by its liberal leaders. The various "wars" on poverty since the Great Depression have been shaped, in part, by the first attempts of liberal progressives to take advantage of the crises and opportunities of the Great Depression.

### **Social support and women's health in El Alto, Bolivia**

Publication Number AAT 3331102

Hicks, Kathryn Ann, Ph.D., Northwestern University (U.S.A.), 2008, 232 pages; Advisor: William R. Leonard.

#### **Abstract (Summary)**

As in other parts of the global south, economic difficulties in rural areas of Bolivia have forced many of Bolivia's indigenous people to migrate to urban areas such as El Alto, where formal employment and access to services are limited. Women are particularly vulnerable as they must balance economic activities with childcare, and are increasingly likely to head their own household. Social support is positively related to a number of aspects of health, but work on this topic has tended not to explicitly consider the larger-scale cultural, political and economic contexts which may affect this relationship. This dissertation examines the importance of social support for women's health, in this marginal urban setting, with a focus on cultural definitions of social support, and prevailing political economic conditions in Bolivia. The specific objectives are to explore the cultural context of social support, to determine whether instrumental or economic social support is particularly important in this setting, and to determine whether instrumental support is a stronger predictor of health for women who head their own household.

This project was carried out with women working in a knitting cooperative (N=91), and uses a mix of qualitative and quantitative ethnographic methods to examine relationships between emotional and instrumental social support and body

composition, inflammation (C-reactive protein) and immune function (antibodies to the Epstein-Barr Virus).

The findings of this study include relatively high levels of overweight and obesity, consistent with other studies, suggesting that overnutrition is becoming as much of a problem as undernutrition in Bolivia. Instrumental support is relatively less common than emotional support in this sample, but is positively related to percent body fat, indicating that it may help improve food security. Although few women report strong relationships with fictive kin, emotional support from these relationships is positively related to immune function, suggesting that individuals able to maintain these ties experience material health benefits. Finally, there is no evidence that social support interacts either with socioeconomic status or household composition in predicting health outcomes, suggesting that social support does not serve as a means for coping with economic inequality for women in El Alto.

**The orange proletariat: Social relations in the pais Valenciano, 1860--1939**

Publication Number AAT 3315998

Hudson-Richards, Julia, Ph.D., The University of Arizona (U.S.A.), 2008, 260 pages; Advisor: David Ortiz, Jr.

**Abstract (Summary)**

This dissertation examines the formation of an agro-industrial working class within the citrus industry of Valencia, Spain. In a region that was historically defined by intensive agricultural production for market, the citrus industry in Valencia became the dominant economic sector in the decades prior to the outbreak of the Spanish Civil War in 1936. Its workers, straddling the agricultural and the industrial, the rural and the urban, entered into a socio-economic relationship with the rural bourgeoisie in charge of the industry. This relationship was administered through the formation of *jurados mixtos* (mixed commissions), associations, and citrus cooperatives that directed the harvest, worked out export contracts, began irrigation projects, and organized labor. World War I produced a crisis within the industry due to the collapse of export markets and the lack of available shipping. Workers and small farmers suffered the brunt of the effects, and as a result, their relationships with the bourgeoisie began to break down. By the declaration of the Second Republic in 1931, workers and farmers had become far more politicized and dissatisfied. As landowners and commercial agents fled Valencia after the outbreak of war in 1936, workers and smallholders banded together in collectives,

based on the established tradition of cooperation, to preserve the harvest and direct orange exports, the profits of which were increasingly important in the face of prolonged conflict.

I rely heavily on documentary evidence from local journals and newspapers, political organizations, contemporary photographs, and local associations. Utilizing gender and labor theory and theories from cultural studies, I show the process of proletarianization through an examination of the labor culture within Valencia in order to complicate our categories of agricultural and industrial work and how the people of Valencia created a regional identity based on orange production.

**Alternative approaches for sharing machinery, labor, and other resources among small- and medium-sized agricultural producers**

Publication Number AAT 1453142

Colson, Greg, M.S., Iowa State University (U.S.A.), 2008, 186 pages; Advisor: Roger Ginder.

**Abstract (Summary)**

As the U.S. agriculture industry continues to become increasingly concentrated, the viability of small- and medium-sized farms faced with diminishing profit margins per unit of output hinges in part on their ability to expand operations. In this study, the solution to this problem of taking advantage of economies of scale through farm-level resource sharing arrangements is considered. Through a two phase data collection procedure, Midwestern farmer groups engaged in resource sharing arrangements were identified and investigated through a case study approach. Evidence from the case studies suggest that sharing of equipment and labor can yield not only financial benefits but also enable expansions in cultivated acreage, access to better technologies, greater operational efficiencies, and improved access to information. As well, a cost-benefit model is developed to explore the potential economies of scale in sharing machinery among multiple farms. The model quantifies the significant potential for equipment cost reductions through cooperation.

**Factors affecting milk yield, milk fat, milk quality, and economic performance of dairy farms in the central region of Thailand**

Publication Number AAT 0820445

Rhone, Jeffrey Andrew, Ph.D., University of Florida (U.S.A.), 2008; Advisor: Mauricio A. Elzo.

**Abstract (Summary)**

A study was conducted to characterize the dairy production, educational experiences, decision making practices, and income and expenses of dairy farms and to determine the effects of season, farm location, farm size, and management practices on farm milk yield (FMY), average milk yield per cow (AYC), milk fat, bacterial score, bulk tank somatic cell count (BTSCC) and economics of dairy farms in the central region of Thailand. The farms were located in Lopburi, Nakhon Ratchasima, and Saraburi provinces. Farm groups were identified as farms from the Muaklek dairy cooperative (Muaklek farms) and farms from other dairy cooperatives (Non-Muaklek farms). Collection of data was at the farm level; individual animal records were unavailable. A total of 967,110 daily farm milk yield, 58,575 milk fat and bacterial score, 24,109 BTSCC and 58,575 milk price records from 1,034 farms were collected from July of 2003 to June of 2006. Additional details of farm management practices and educational experiences were collected through a questionnaire in May of 2006. There were three seasons: rainy, summer and winter. Farm size was defined as the number of cows milked per day. Farms were categorized into small, medium, and large according to their size. Two pricing systems were defined as 1 = base price plus additions/deductions for milk fat percentage, solids-non-fat, and bacterial score, and 2 = same as 1 plus bulk tank somatic cell count (BTSCC).

Results showed that most farms from both groups had a primary or high school educational level, used a combination confinement and pasture production system, gave a mineral supplement, raised their own replacement females, milked approximately 16 cows/day, used crossbred Holstein cows (75% Holstein or more), and mated purebred Holstein sires to their cows. More Non-Muaklek farms (80%;  $P < 0.05$ ) used a combination of genetic and phenotypic information when selecting sires than Muaklek farms (54%).

When looking only at Muaklek farms, FMY and AYC were higher ( $P < 0.05$ ) in winter and lower in the summer and rainy seasons. In addition, the majority of small size farms had higher ( $P < 0.05$ ) AYC and milk fat values, and lower bacterial score and BTSCC values than medium and large size farms. Farm milk prices were lower ( $P < 0.05$ ) in pricing system 1 than pricing system 2. Most small

farms had higher ( $P < 0.05$ ) milk prices than medium and large farms across both pricing systems. Large farms lost more milk revenue due to deductions from bacterial score and BTSCC than small and medium farms. Farms that kept records on individual animals had higher ( $P < 0.05$ ) milk fat percentages and lower bacterial scores than farms that did not. Farms that used genetic information (EBV) and phenotypes when selecting sires were higher ( $P < 0.05$ ) for milk fat percentage than farms that used only phenotypes and personal opinion. Farms milking cows with a single unit milking machine and by hand, had higher ( $P < 0.05$ ) bacterial scores and BTSCC than farms using only a single or multi unit machine.

Overall small size farms had higher AYC and milk prices and lower losses in milk revenue compared to larger farms. Additionally, farms that kept individual animal records used EBV when selecting sires, used a single method for collecting milk, and used family labor achieved higher performance from their herds than farms that did not. (Full text of this dissertation may be available via the University of Florida Libraries web site. Please check <http://www.uflib.ufl.edu/etd.html>)

### **Manitoba producers' willingness-to-invest in New Generation Cooperatives**

Publication Number AAT MR41481

Turko, Tasha J., M.Sc., University of Manitoba (Canada), 2008, 128 pages; Advisor: unknown.

#### **Abstract (Summary)**

The New Generation Cooperative (NGC) has been a popular form of farmer-owned enterprise widely adopted by producers in the United States, especially in North Dakota and Minnesota. The adoption rate of this organizational form has been comparatively slow in the province of Manitoba, which is geographically adjacent to these two states.

The objective of this thesis is to ascertain which factors affect Manitoba producers' willingness-to-invest and willingness-to-commit to NGCs, as well as potential monetary investment in NGCs. Finally, whether or not these decisions are affected by producer farm type is determined.

Data collected from surveying Manitoba producers are analyzed using ordered logit to examine the producers' willingness-to-invest and willingness-to-commit, and tobit to examine the producers' potential monetary investment in NGCs. Further statistical analysis is shown through producer profiles, odds ratios and marginal effects.

Positive and significant associations are found between a producer's self-assessed knowledge about NGCs, having been approached, farm size, education level and their willingness-to-invest, while there is a negative association with age. Self-assessed knowledge level and contracted commodities have positive and significant associations with willingness-to-commit. Finally, self-assessed knowledge level, having been approached, farm size, net cash income, minimum rate of return required, age, and education level have positive and significant associations with potential monetary investment, while production of commodities under contract and risk-aversion levels have negative associations with potential monetary investment.

**Ontario soybean producers and organizational structure in vertical integration:  
Case study**

Publication Number AAT MR42817

Pate, Gregory, M.Sc., University of Guelph (Canada), 2008, 176 pages; Advisor: unknown.

**Abstract (Summary)**

Ontario soybean producers aim to improve farm profitability by best positioning themselves in the bio-product industry. This thesis examines factors (stakeholders, corporate governance and financial governance) that influence a choice of organizational structure. The research investigates factors influencing the organizational structures of three Ontario agricultural co-operatives using case studies. The research develops the Organizational Selection Scorecard (derived from the Balanced Scorecard) along theoretical characteristics, tests the scorecard with the Ontario agricultural co-operative case studies and applies the scorecard to future investment opportunities in biodiesel and an IP crushing facility. Combining literature, case studies and the Organizational Selection Scorecard, this work creates final recommendations for producers. The recommendations for Ontario soybean producers are (1) use a member-investor cooperative for the biodiesel investment and (2) use new generation co-operative for an IP crushing facility.

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