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Latvian Co-operatives: Agents of Vertical Coordination?

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Vertical coordination has become increasingly important in the agri-food business in countries such as Latvia, making the use of contractual arrangements such as marketing and production contracts more common. In this work, we analyse the use of these contracts in the Latvian agri-food sector. Because of the Latvian dualistic production structure, which consists of more small farms and fewer large farms, we pay particular attention to co-operatives in this region and evaluate whether co-operatives can act as agents of change by linking small farms to vertically coordinated chains.

Introduction

During the transitional process in Central and Eastern Europe, relationships throughout the entire chain of food production have broken down, resulting in disruptions of supply and inferior-quality food products. Furthermore, with a growing number of large-format retailers, which was initiated by large foreign investments, the retail sector has changed from State-run shops, co-operatives, and farmer's markets to a style that is more western-style model. In Latvia, this has resulted in the number of super- and hypermarkets increasing nine-fold while the number of traditional shops and kiosks has fallen by 30% and 70%, respectively, between 2000 and 2007. On this basis, almost 60% of all purchases currently are made in modern retail stores. Therefore, the role of these stores is growing, and currently more than half of the market in Latvia is ruled by two dominant supermarket chains, both owned by foreign entities. The largest is Maxima, with 33% of the market, and the second largest is Rimi, which controls more than 20% of the market (NRA online, 2009).

These modern retailers have a dual objective for their procurement systems – one is qualitative (to increase the quality and eventually safety of the product) and one is quantitative (to reduce costs and increase the volumes procured). Because such retailers have a difficult time meeting these objectives when using the traditional wholesale sector to procure their products (Reardon et al, 2003), 'western' retailers are applying their own business models to the new markets (Hanf and Pieniadz, 2007).

This has resulted in the following changes: The traditional, local, store-by-store means of procurement has shifted to centralised, large, and modern distribution centres. Furthermore, modern retailers set their own personalised standards of food quality and safety, which are often much higher than those of the local governments (Dries et al, 2004). These newly-established procurement systems demand that suppliers be able to guarantee that the flow of products be free of disruption and that the products maintain a certain level of quality. Thus, domestic producers must keep up with the demanded quantity and quality, or else the products will be imported. Thus, investments from foreign entities are particularly regarded as a catalyst for vertical coordination.

Vertical coordination can be described as the coordination of each link of food production to overcome problems of supply and quality. For example, contracts between farms and traders, agribusinesses, and food companies provide guidance and assistance in return for guaranteed supplies of a certain quality.

In Latvia, where the agri-food business is still characterised by many of these transitional issues such as dualistic production structures at the farm level, disruptions in food supply, and shortcomings in regard to food quality, small producers often have difficulties accessing these markets. In 2007, almost 98% of all farms were 'very small', 'small', or 'medium small', as determined by the European Size Unit (ESU) (CSB online, 2009). Small farms do not have the ability to influence the market process nor the price. They are financially weaker and unable to invest in developments and new technologies, which can also cause shortcomings in quality.

Those who desire more control and influence over these processes, especially producer price, have begun to form co-operatives. Until recently, most development in Latvia has taken the form of horizontal co-operation. When farmers who produce similar crops form co-operatives, they begin to have more influence on the market. As of September 2008, 108 approved co-operatives were operating within

Latvia (LLKA, 2009). Milk and grain sectors dominate this new growth of co-operatives, comprising 62 of the 108 co-operatives. Furthermore, approximately 60% of total turnover every year is concentrated in the milk and grain sectors. The average number of members per co-operative is 51.

Overall, we can observe that vertical coordination is an increasingly important phenomenon in the Latvian agri-food business. Nevertheless, many small producers face difficulties. Some co-operatives try to fulfil new requirements. Therefore, this paper investigates whether co-operatives can act as agents, linking suppliers and processors or retailers together into a single chain. In the first part of the paper, the main characters of contractual arrangements in vertical coordination are introduced according to the related literature. We focus on the goals of the contracting parties to understand the factors that are important to vertical coordination. In the second part of the paper, we analyse the use of contracts in co-operatives to learn how they are integrated into vertical coordination. Therefore, we carry out an empirical survey based on findings in the related literature.

Using Contractual Arrangements in Vertical Coordination

Contractual arrangements are widely used in the agri-food chain to overcome problems with quality standards and quantity between suppliers and customers. Successful vertical contracting typically includes conditions for product delivery and prompt payments; furthermore, it might provide farm assistance programs for suppliers. Farm assistance can include input supply programs, investment assistance, trade credit, bank loan guarantees, extension and management advisory services and so forth.

As Swinnen (2005) shows, successful vertical contracting has important positive effects, both direct and indirect. One direct impact is increased output and productivity of the processing company, which initiates vertical contracting; indirectly contract support measures have positive effects on farm productivity and product quality. The measures with the greatest impact on yields are specialised storage (cooling equipment in dairy), veterinary support, and physical inputs. Prompt payments, guaranteed prices, and market access also have significant positive effects. Quality of output improves greatly in response to specific programs. For example, direct loans and loan guarantee programs stimulate farm investments, and programs that help farms to accessing inputs (mainly feed) enhance investment indirectly by lowering input costs or reducing transaction costs, thus improving profitability.

A variety of factors influence contract arrangements. According to the USDA (1996), the main factors that motivate farmers to enter into marketing and production contracts are:

- *Income stability* (to reduce the risks associated with marketing through traditional channels).
- *Improved efficiency* (transfer management decisions to the farmers).
- *Market security* (provide a level of security because the product will be sold if it meets the processor's requirements).
- *Access to capital* (obtain inputs from the contractor, which reduces the use of credit).

Likewise, processors and other entities enter into contracts for a variety of reasons, including control over input supply. By asserting more control over the production process, contractors can better respond to changing market conditions. Contracts help processors to produce the uniform and predictable products that consumers desire, and they also help to lower the costs of processing, packing, and grading (USDA, 1996). For example, processors introduced programs to improve farms' access to inputs as a way to enforce contracts late in the production process. Inversely, input suppliers became involved in harvesting and marketing the output from farms to enforce contracts in the early stages of farm production (Gow and Swinnen, 2001).

Research shows that vertical coordination can take various forms, ranging from spot market exchanges to full ownership integration. An intermediate form of vertical coordination is the use of marketing contracts and production contracts. *Marketing contracts* between a contractor and a grower specify the form of a price (system) and outlet *ex ante*. "*Production contracts* are more extensive forms of coordination, vary widely, and additionally include some form of farm insistence, such as extension and management services, inputs or credit supplied by the contractor" (Swinnen and Maertens 2007, p91). Such marketing and

production contracts are becoming increasingly valuable (Tsoulouhas and Vukina, 1999; Sykuta and Parcell, 2003). Drabenstott (1999) shows that as a result of the increasing role of contracts, producers are trying to meet demands of consumer discerning by developing new products and services and becoming more efficient by closely coordinating their buyer and supplier relationships (Sykuta and Parcell, 2003).

Marketing contracts

Marketing contracts identify a buyer, seller, and product, and have two main requirements: quantity and price (Boland et al, 2002). The contracts simply address the issue of supply disruptions by private contractual initiatives (Swinnen, 2005) and focus on the delivered commodity to the contractor (Macdonald, 2006), "specifying the commodity's price or a mechanism for determining the price", quantity to be delivered, and a delivery outlet. The pricing mechanisms may limit a farmer's exposure to the risks of wide fluctuations in market prices, and they often "specify price premiums to be paid for commodities with desired levels of specified attributes" (Macdonald, 2006). Quality is becoming increasingly important in marketing contracts. For example, a contract may regulate the minimum amount of a crop component, specified physical properties, specific growing conditions, or a specific seed variety (Boland et al, 2002).

Marketing contracts focus on controlling market and price risk. The producer owns and manages the crop, and is therefore responsible for delivering the specified quantity and quality of product. This means the producer still must cover the risk of crop production loss. Thus, marketing contracts are closer to open market transactions and therefore have the least effect on parties beyond the producer and processor (Boland et al, 2002). Growers are exposed to a greater percentage of the risk, since they retain ownership while the commodity is being produced; however, contractors "share price risk" (USDA, 1996)

Production contracts

Production contracts have three main parts. They specify in detail the production inputs supplied by the contractor (processor, feed mill, other farm operation, or business), "the quality and quantity of a particular commodity", and the type of compensation to the grower (contracted) for services rendered (USDA, 1996). A production contract is often a multi-period agreement between a large firm and a farmer that requires the farmer to meet specific production standards (Martin, 1997). According to MacDonald (2006), with farmers who enter into production contracts primarily provide grower services, contractor responsibilities, and compensation, all of which are negotiable.

According to Boland et al (2002), there are two kinds of production contracts: "production-management contracts and resource-providing contracts". In production-management contracts, buyers take part in the crop management. Producers provide most inputs and retain title. However, contractors (buyers) may provide some inputs (for example, seed), and provide management assistance. As mentioned above, farm assistance can include input supply programmes, investment assistance, trade credit, bank loan guarantees, extension and management advisory services, etc (Swinnen, 2005). In exchange, a processor agrees to purchase the entire crop and provide economic incentives for quality and quantity. These contracts are popular in specialty field crops, such as fruits and vegetables.

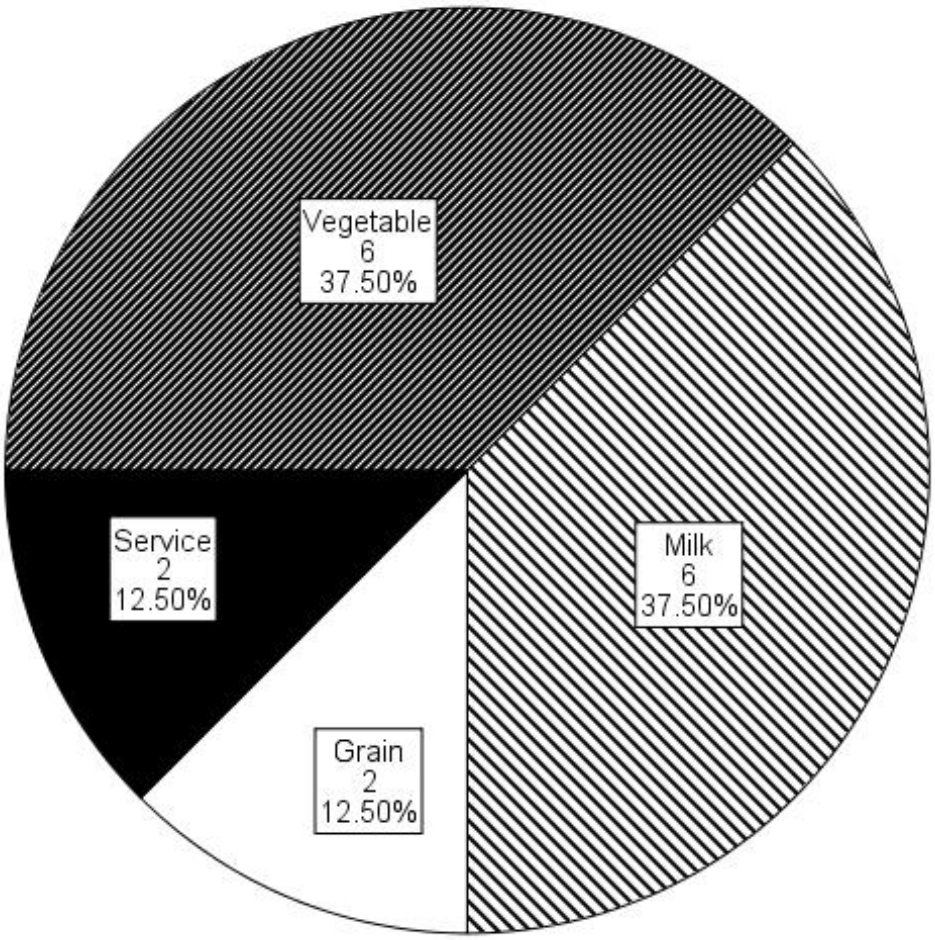
Resource-providing contracts are the highest level of vertical coordination contracts. In these contracts, the buyers supply most production inputs and are very involved in management practices throughout the whole production process. Producers in resource-providing contracts often only offer land and labour and are compensated for their services. This type of contract is used often in the poultry industry, where processors supply chicks, feed, and management.

In sum, different types of contracts are used in the process of vertical coordination. Despite the type of contract, all participants must remember that "even economically-efficient contracts leave potential for opportunistic behaviour" (Sykuta and Parcell, 2003).

Investigation of Contractual Arrangements of Latvian Co-operatives in Vertical Coordination

This study investigates the contractual relationships between co-operatives and farmers (members of the co-operative) and between Latvian co-operatives and buyers. The aim is to better understand how these co-operatives can be integrated as agents into the new agri-food environment. The question is

Figure 1: Production of Co-operatives



how to apply the different forms of contracts (marketing and production contracts), which are used as tool of vertical coordination, to Latvian co-operatives. This study investigates the above query, as described in the literature. The respondents were interviewed in person, on the phone (approximately 20-30 minutes). The questions were both structured and open-ended. In this paper, only the results of structured questions are introduced.

Data collection

Data were collected from 16 co-operative managers in the agricultural sector, who were asked about contracts with producers and buyers. This investigation covers about 15% of all co-operatives in Latvian agri-food business. All respondent co-operatives are members of a Latvian co-operative association.

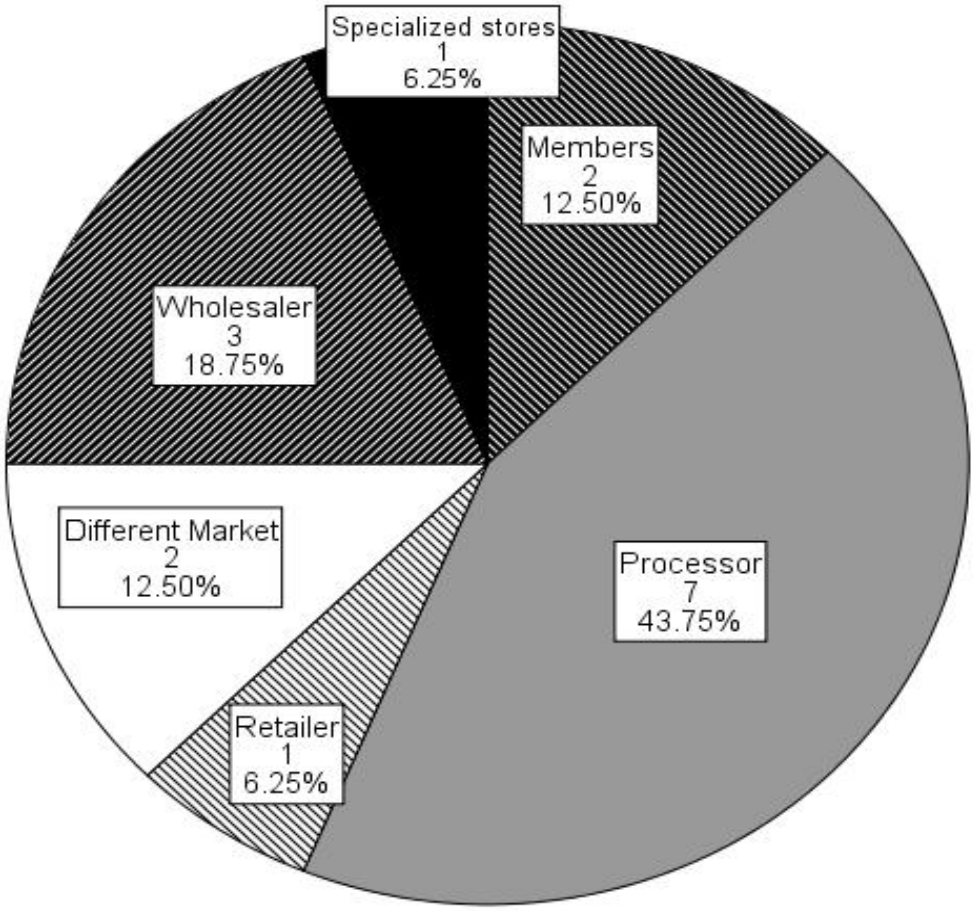
The co-operatives represented have 721 members, with an average of 45 members each; three have more than 100 members. On average, 63% of the members are small producers; the rate of these small producers was higher in cases of smaller co-operatives. Six of the co-operatives produce milk, six produce vegetables, two produce grains, and two provide services (Figure 1). The milk co-operatives have an average of 61 members; vegetable co-operatives, 12.5 members; grain producer co-operatives, 27 members; and service co-operatives, 111 members. The co-operatives have a wide range of buyers; generally, they sell their products to processors, wholesalers, retailers, specialised stores, and to other markets (Figure 2). Most of the milk producers sell to processors. Only vegetable co-operatives sell to retailers.

The results are presented as follows: First, the aims of contracting are outlined. Second, the risk-taking actors are introduced to better identify marketing and production contracts. Next, the motives for the various factors are discussed in more detail, along with whether the negotiating parties use reward or punishment tools. Finally, the satisfaction level of the contractors is described.

Contracting with producers

Seven of the responding co-operatives use contracts with producers. As can be seen in Table 1, three of the co-operatives produce milk,

Figure 2: Buyers of Co-operatives



two produce vegetables, one produces grain, and one provides services. Five co-operatives sell to processors and one sells to retailers.

Aims of contracting

Managers of these co-operatives were asked about what they and their members aim to achieve with contracting and about the importance of the relevant factors of a production contract. Definition of quantity is important to all co-operative managers, more so than defining quality. Furthermore, the goals 'control over production' and 'improvement of efficiency' are less important and, for almost half of the respondent managers, of little value. All of the managers rate 'improvement of stability' as the most important goal, followed by 'income stability' and 'market security'. 'reduction of price risk' and 'access to capital' were only considered important by five respondents.

		Number of co-operative						
		1	4	5	6	10	12	13
Type of buyer	Members							Service
	Processor	Vegetable	Milk	Milk	Milk		Grain	
	Retailer					Vegetable		
	Different market							
	Wholesaler							
	Specialised stores							

Table 1: Buyers and Production of Co-operatives Using Contact with Producers

Risk-taking actors

In the contracts between producers and co-operatives, only five respondents (one is a service provider) and three co-operatives take the risk of loss. The latter three produce milk and sell their products to processors. The producer takes the risk in one case; the co-operative members are grain producers, and they sell their products to processors.

Motivation tools

A 'reward system' was used by co-operatives in four cases, and for producers in only two cases. However, punishment systems are used by every co-operative and by every producer except the two noted. A contract alone was only efficient in 50 % of the cases, and all of the unsatisfied respondents sell to processors. A contract was insufficient for preventing opportunistic behaviour for only two co-operatives, both of which sell to processors.

Contracting with Buyers

Ten co-operative managers use contracts with their buyers. Five of the co-operatives produce vegetables, three produce milk, and two produce grain. Three of the co-operatives sell to producers, another three sell to wholesalers, two are in different markets, and only one sells to retailers (Table 2).

Aims of contracting

Co-operative managers were asked what they and their buyers aimed to achieve with contracts. For seven of the ten managers, 'the improvement of efficiency' is an important goal and for nearly half, 'control pricing mechanisms' are important.

For the buyers (according to the opinion of the co-operative managers), the most important goals are the 'improvement of stability' and 'control over supply', according to nine of the ten respondents, and 'reduction of price risk' for seven of the respondents.

Risk-taking actors

In contrast, the contracts between buyers and co-operatives show different means of risk taking. In all cases of contracting between co-operatives and buyers, the co-operatives take the risk of loss: two co-operatives produce vegetables and sell to wholesalers, one produces milk for different markets, and one produces grain to processors.

Motivation tools

A 'reward system' was used by co-operatives in eight cases and by producers only in two cases. The eight co-operatives use punishment for producers, but five also use a punishment system for buyers. These contracts are only efficient in 50 % of cases, and only 30% of the managers interviewed said that a contract is an efficient tool for avoiding opportunistic behaviour.

Contracting with Both Producers and Buyers

Among the 16 respondent co-operative managers, only two use contracts with both producers and buyers (Table 3). These two co-operatives produce vegetables and grains, selling their products to retailers (supermarkets) and processors (bakery).

When the managers were asked what they and other negotiating parties aimed to achieve with the use of contracts, the responded that almost every aim was important. Only a few

	Number of co-operative									
	3	7	8	9	10	11	12	14	15	16
Members										
Processor							Grain	Milk		Milk
Retailer					Vegetable					
Different market	Milk			Vegetable						
Wholesaler		Vegetable	Grain			Vegetable				
Specialised stores									Vegetable	

Table 2: Buyers and Production of Co-operatives Using Contact with Buyers

Table 3: Buyers and Production of Co-operatives Using Contact with Both Producers and Buyers

		Number of co-operative	
		10	12
Type of buyer	Members		
	Processor		Grain
	Retailer	Vegetable	
	Different market		
	Wholesaler		
	Specialised stores		

differences can be observed (Table 1). For example, for the manager of a co-operative that sells to processors, control over pricing mechanisms is not important. Furthermore, that manager indicated that 'income stability' is only 'rather important' for producers and that 'improvement of stability' is not as important to buyers.

Satisfaction level

Some of the questions concerned the satisfaction level of producers and buyers. The co-op managers interviewed indicated that 47% of producers are satisfied, and 26% are rather satisfied with their benefits from the co-operatives. The same question was asked of co-op managers regarding buyers' satisfaction with their products. They responded that 42% of buyers are satisfied and only 14% are rather satisfied. None of the co-operative managers who contract only with producers had information about buyers' satisfaction, and all of them sell their product to processors.

Summary

For many years there has been a demand to improve efficiency and quality in the agri-food business by aligning all players within food production chains. The establishment of strictly vertically-coordinated chain organisations is a worldwide phenomenon that does not stop at transitional countries. However, well-known scientists such as Swinnen and Reardon assume that retailers and foreign direct investments can be regarded as more powerful sources of structural changes in transitional countries than WTO and trade policy.

Today, there are no significant differences between Eastern and Western Europe in regard to procurement systems and quality demands, and thereby in vertical coordination. However, the agricultural sector of the Central and Eastern European countries is a mixture of small scale – even household – production and large-scale farming. Often, the majority of goods are still produced by small-scale farms. Thus, the question arises as to whether small farmers can be integrated into the modern marketing channels of retailers, and if so, how this can be accomplished. In response, strictly coordinated chain organisations have evolved and consequently, supply chain networks have emerged. Taking into account agricultural production characteristics, most often supply chain networks are still comprised of many farms.

To overcome problems within agri-food chains, contractual arrangements are widely used to maintain standards of quality and quantity. Generally, the aims of the negotiating participants are different, but in an environment of vertical coordination, producers can jointly address the question of income stability, improved efficiency, market security, access to capital, sharing the price risk with the contractor, and specified price premiums to be paid for commodities. For processors, the control over input supply, quality and quantity of a particular commodity, prices of commodities, and price mechanisms are important elements of these contracts.

Therefore, we investigated whether Latvian co-operatives can be agents between modern procurement systems and small undeveloped producers by using contracts. The results show that these most of these co-operatives are still not integrated into modern chains, and co-operative managers have low levels of coordination between buyers and producers.

These contracts are often (in the half of the cases) not used effectively, probably because the interests of the involved parties are not in alignment. This is confirmed by the satisfaction level of buyers and producers, according to information from co-operative managers.

In sum, we can conclude that the respondent Latvian co-operatives still have difficulties in the new agri-food business environment and therefore cannot be the agents within the vertically coordinated supply chains.

Timea Török holds a bachelor and masters degree in agriculture economics from Gödollo (Hungry) as well as a bachelor degree from Dronthen (the Netherlands). At the moment she is working on her PhD-thesis in Germany. Her research interests are co-operatives, small farmers, verticalisation, transition processes. After finishing his diploma in economics at Hohenheim University (Germany) Jon H Hanf completed his PhD at the Justus-Liebig-University (JLU) Giessen (Germany). At the same time he was working as the manager of the co-operative research institute of the JLU. Afterwards he worked as a research group leader in Halle (Saale, Germany). Today he holds the professorship of International Wine Business at the University of Applied Sciences RheinMain, Campus Geisenheim (Germany). His research interests among others are: Strategic Management and Marketing, and Networks and Co-operatives. Zanete Gruzina completed her bachelor studies on Agriculture in Latvia (Riga) and the Netherlands (Dronten). Today she continues her master studies in Riga. Besides Agriculture economics Zanete is interested in co-operatives and transition processes.

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