SUPPLY CHAIN MANAGEMENT

Business-to-business relationships in parallel vegetable supply chains of Ho Chi Minh City (Viet Nam): reaching for better performance

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Abstract

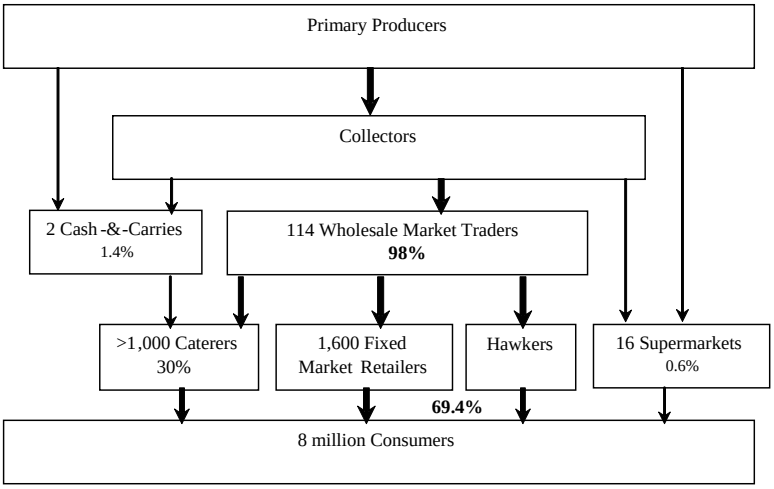
This paper synthesizes research findings on supply chain arrangements and mechanisms in the business-to-business relationships encountered in supply chains distributing fresh vegetables to Ho Chi Minh City. Eleven months were spent in the field from July 2003 to May 2004 to conduct in-depth interviews with stakeholders in the chain. The links between important elements of good supply chain management practice and performance are illustrated by concrete examples from in-depth case studies. The positive impacts on performance of the following elements of business-to-business relationships are reviewed: long-term commitment, coordination and joint planning, market orientation and information sharing, frequency of communication, and innovation. The results show that parallel vegetable supply chains differ in their structure and in the existence or lack of formal links (contracts) between business partners. However, the five elements of good supply chain management practice which are reviewed can be identified at varying degrees in all supply chains as strategies to achieve higher levels of performance. This research shows how all stakeholders in the fresh produce marketing channels – from small farmers and rural collectors to an urban Cash & Carry outlet and its customers in the catering industry – strive to reach a common goal of better performance. It also uncovers the existence of several hybrid forms of economic organization in the local vegetable industry.

Introduction

Different components of the vegetable marketing system to Ho Chi Minh City (HCMC) have been described in previous publications, all derived from the same research project implemented in partnership between CIRAD, Nong Lam University and Imperial College London.

The first article set the Vietnamese vegetable marketing system in its regional context: it emphasized the importance of the institutional, food trading, historical, geographical and cultural environments in shaping the structure of the local supply chains and the marketing relationships between stakeholders (Cadilhon *et al.*, 2003). A second article described the details of the tomato marketing system to HCMC (Cadilhon *et al.*, 2006c): it compared the performance and market share of traditional and modern marketing chains competing to supply tomatoes to eight million city consumers (Figure 1).

Figure 1: Market share of competing HCMC supply chains for tomatoes



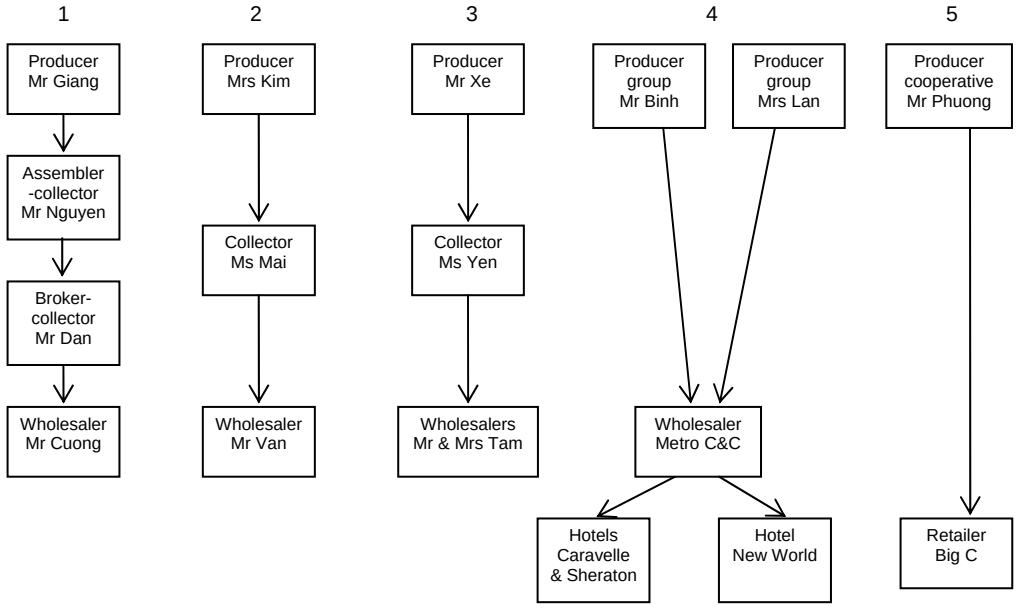
Source: Cadilhon *et al.* (2006c)

A third publication gave our insights on the mixed impacts of supermarket development on the sustainability of the vegetable production and marketing system in Viet Nam (Cadilhon *et al.*, 2006a). Finally, a series of shorter articles presented the detailed case studies of some of the individual traditional and modern vegetable supply chains that had been investigated during this research project (Cadilhon and Fearne, 2005; Cadilhon *et al.*, 2005; 2006b). All these publications are available upon request from the authors. Figure 2 shows the five independent supply chains investigated.

Supply chain 1 is representative of the traditional vegetable distribution channel from Lam Dong Province to HCMC. The tomatoes in this supply chain are sold by the producer to an assembler-collector who grades the produce but relies on a second broker-collector to find wholesale customers in city markets, gather enough produce for transport to the city on a big truck, and organize the transport logistics. A wholesaler in HCMC then sells the tomatoes to secondary wholesalers and retailers. Supply chains 2 and 3 distribute respectively butterhead lettuce and tomatoes. They are also emblematic

of the traditional marketing channels leading to the city wholesaler. Yet, collaboration and exchange of information between stakeholders within these supply chains are facilitated by the fact that there is only one collector between producers and wholesalers. Supply chains 4 and 5 lead to the modern distribution system. Supply chain 4 consists of Metro Cash & Carry and its network of tomato suppliers in the rural area of Lam Dong Province; these suppliers are mainly producer groups. The Cash & Carry business is determined to improve its customer portfolio of HCMC five-star hotels. It therefore endeavours to satisfy the needs of these special customers. Supply chain 5 is a direct marketing link between a farmers' cooperative in Da Lat supplying vegetables to Big C Supermarket in HCMC.

Figure 2: Five vegetable supply chains investigated



Sources: Cadilhon and Fearne (2005); Cadilhon *et al.* (2005; 2006a; 2006b)

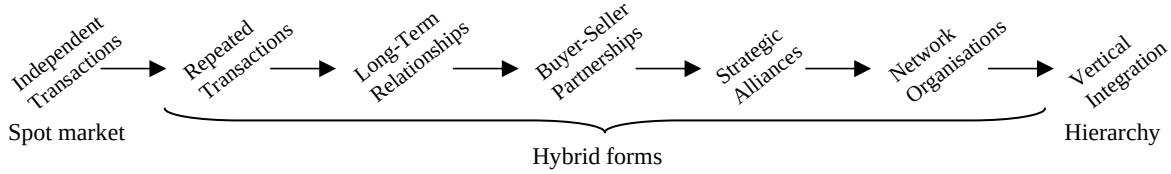
What is still missing is a conceptual framework to create the link between the individual supply chains and the marketing system as a whole. The objective of this article is to present a conceptual framework derived from marketing relationship research. We then show how this model is used to integrate the findings already reported in our previous publications into the characterization of the different business-to-business (B2B) relationships that coexist in the vegetable marketing system to HCMC.

The following section will review the literature for definitions of the key components of B2B relationships. After briefly describing the research methodology, we will show how all the intermediary B2B relationships existing between independent transactions and vertical integration can be identified in this context of food commodity markets in a developing country. The findings will demonstrate how all the supply chains identified strive to increase their level of performance. The final section will draw conclusions from the results and direct recommendations to policy-makers and entrepreneurs involved in developing food marketing systems in the developing countries.

Key components to unveil the business-to-business relationship continuum

All the intermediate marketing arrangements between spot markets and firm integration, which are called hybrid forms by Williamson (1991) and acknowledged as a stable form of governance structure, have only more recently become the focus of research for transaction costs economists (Brousseau and Glachant, 2002; Ménard, 2004). On the other hand, marketing and business management research has been traditionally focused on identifying these various hybrid forms and, in line with transaction cost economics, considered the distribution of information along the chain as the core of its analyses. Webster (1992) defined a marketing continuum which took into account the various intermediate forms of interfirm relationship arrangements. Each position on the continuum builds upon the position to its left. Independent transactions are the closest to the spot market model where buyers have no prior intention of purchasing from the same seller again. The emphasis of this relationship is on low prices. Repeated transactions require at least one previous exchange which can start a learning process in both buyer and seller, leading to regular patronage (Figure 3).

Figure 3: Webster's range of marketing relationships



Source: Webster (1992)

Long-term relationships involve a long-term commitment from both parties in the transaction which may nonetheless coexist with some adversarial behaviour such as comparing prices with competing suppliers or customers in the market. Commitment is a multi-dimensional construct. It reflects the fact that either stakeholder of a marketing dyad believes in and accepts the stated goals of the channel relationship. Both firms also show a willingness to exert effort on behalf of the other partner and a strong desire to maintain the relationship (Mohr and Nevin, 1990). Commitment has often been coupled with a long-term orientation, i.e. the attitudes and perspectives of the relationship stakeholders are focused towards the long term as opposed to lengthening the duration of the relationship (Lusch and Brown, 1996).

Buyer-seller partnerships represent a state of interdependence with market-oriented common goals, cooperation, joint planning and trust, leading to mutual benefits. Market orientation has been defined as the active search for, generation of, dissemination of, and reaction to market information on customers, competitors and environmental forces in order to satisfy the needs of the final customer in a supply chain to the benefit of supply chain stakeholders (Elg, 2002). Cooperation has been defined as "similar or complementary coordinated actions taken by firms in interdependent relationships to achieve mutual outcomes or singular outcomes with expected reciprocation over time" (Anderson and Narus, 1984, p. 45). Joint planning is part of cooperation and specifically addresses the actions decided by both firms together (Claro *et al.*, 2003). Market

orientation of firms has been directly linked by past empirical research to information sharing (Sanzo *et al.,* 2003). Rather than keeping information to themselves, market-oriented firms in successful partnerships exchange information so as to customize their activities better to those of their partners and to the needs of the final consumer. To be efficacious, information sharing should be meaningful and timely (Dyer and Ouchi, 1993).

A strategic alliance is formed when two firms are ready to commit resources in time and investment into the partnership to bring further benefit for both. Network organizations are formed when firms simultaneously engage in several relationships, partnerships and strategic alliances. Finally, the ultimate marketing relationship is vertical integration of all activities into one firm (Fontenot and Wilson, 1997).

A final key component of successful relationship marketing is innovation. Product innovation is the creation of value in a form that can be perceived by the consumer. It is a determinant factor of successful supply chains as innovation prevents the product from being commoditized and thus losing value (Desbarats, 1999).

The research presented in this article means to characterize the B2B relationships in competing vegetable supply chains in HCMC by utilizing Webster's range of marketing relationships and the key components of successful B2B relationships.

Research methodology

The tomato and butterhead lettuce supply chains were selected as case studies because of the widespread use of these vegetables by consumers and the problems in marketing and transport identified by previous research (IFPRI, 2002). Data was collected in HCMC between 2002 and 2004. The principal method of data collection was in-depth interviews with marketing system stakeholders – farmers, collectors, wholesalers and supermarket managers – followed by five case studies: three case studies of traditional supply chains and case studies of the modern tomato supply chains of Metro Cash & Carry and Big C supermarket.

A survey of HCMC wholesale traders was also implemented to understand the working conditions at the wholesale level of the traditional supply chains. A detailed questionnaire was used to interview 53 tomato wholesalers and 44 butterhead lettuce wholesalers (respectively 46 and 37 percent of all traders of their respective commodity enumerated at the time of survey in the three principal wholesale markets of the city). Finally, insights into the functioning of the food marketing system in HCMC were collected by key informant interviews with government officials, local researchers and industry experts.

Performance indicators to compare the different supply chains within the marketing system were elaborated so as to cover market share, satisfaction of stakeholders, prices, margins, a labour index and supply chain efficiency (Cadilhon *et al.,* 2006a; Cadilhon *et al.,* 2006c). However, the in-depth interviews showed that indicators of better performance would be very subjective. Depending on the stakeholder interviewed, "better performance" could be increased sales, increased market share, lower levels of

waste, supply of better-quality produce, better risk management, shorter delivery time, better reactivity to changing market demand, greater satisfaction from the business relationship, etc. The links between the elements of good supply chain management practice and performance will now be illustrated by examples from the case studies.

Results

The impact of long-term commitment

In-depth interviews uncovered some evidence of an indirect impact of long-term commitment on levels of waste and increased sales. Firstly, the stakeholders interviewed in supply chains number 2 and 3 identified the positive impact of long-term commitment on building a good interfirm relationship. Interviewees also linked good business relationships to performance, so there is evidence for an indirect link between long-term commitment of business partners and performance through the fostering of good B2B relationships. The case studies also revealed that long-term commitment and the successful interfirm relationships that resulted from it allowed supply chain stakeholders to manage risk more successfully given the uncertain context of produce marketing in Viet Nam.

Second, in supply chain number 5, which led to the Big C supermarket, the long-term commitment of the supplier, Mr Phuong, to his relationship with Big C, has had a direct positive impact on his willingness to be flexible to the needs of Big C. Mr Phuong's long-term commitment has also led to his great satisfaction about his business relationship with Big C. In both modern distribution channels (cases 4 and 5), the contract signed between suppliers on the one hand and the supermarket and cash-and-carry businesses on the other, are considered by the suppliers as the tangible proof of the long-term commitment between the two parties signing the supply contract. This finding thus backs previous research emphasizing the more important role of trust and information transparency in successful B2B relationships, with contracts providing only tangible proof of the business relationship, rather than its founding rules (Roxenhall and Ghauri, 2004). What is more, the incomplete nature of these supply contracts (Brousseau and Fares, 1998) also leads to automatic negotiations between partners when market conditions vary or conflict arises. These incomplete contracts can be seen as a more flexible and thus more efficient contracting solution in the context of strong uncertainty to environmental conditions and behaviours of business partners that is endemic in Viet Nam. Indeed, no occurrence of using the judicial system to enforce the supply contract was reported by either Metro or Big C. This could be explained by the lower cost of the self-enforcement of disciplinary action by the distributor compared with litigation.

The important finding concerning long-term commitment in vegetable marketing channels to HCMC is that it is a fundamental component of a B2B relationship in this particular context. Despite the multitude of supplier or customer alternatives, the majority of traders prefer to be committed to their regular business partners because of the high switching barriers and the difficulty and time needed to build trust between traders. This leads to the surprising case of Ms Mai, in supply chain number 2, who keeps a long-term commitment with her customer Mr Van, although she voices some dissatisfaction about this marketing relationship.

The impact of coordination and joint planning

According to the lettuce wholesaler Mr Van and Metro vegetable buyers, supply chain coordination in the form of advanced planning of sales and orders leads to higher quantities sold, better quality produce, and a good reputation among customers for the end business of the supply chain. However, this forward planning has a mixed impact on the rapidity of the chain to supply the order. In the traditional lettuce supply chain leading to Mr Van, forward planning of sales is done five days before the delivery. On the other hand, the modern supply chain leading to Metro can provide the same quality produce with only 24 hours' notice. Thus, in terms of time between order and delivery, the modern supply chains to Metro are faster in distributing quality produce than their direct competitors leading to the traditional markets. However, the quantities involved are much smaller in the modern distribution channels, making it easier to manage fast logistics. What is more, because of the more advanced ordering, Mr Van has to take the risk of frequent market fluctuations impacting on his profits between the time of ordering and effective delivery.

A joint agreement on prices prior to sale was directly linked to greater satisfaction of business partners in both the traditional and modern supply chains. When the joint agreement on prices was backed by a deposit, as implemented by Ms Mai with her butterhead lettuce farmer-suppliers, the level of supplier satisfaction increased as did the level of trust towards the farmers: Ms Mai could trust that farmers would not sell their harvest to another collector after they had agreed to keep it for her.

The impact of market orientation, information sharing and communication

Case study findings show that stakeholders in the two shorter traditional supply chains 2 and 3 have stronger market orientation than those in the longer supply chain number 1. In these market-oriented supply chains, customers will actively search for potential suppliers, rather than relying on potential suppliers coming to them to sell their produce. Actively looking for suppliers has a direct impact on the better quality of the product delivered by carefully chosen suppliers, as witnessed in the cases of the supply chains leading to the wholesalers Mr Van and the Tam couple, but also in the case of the modern supply chains.

Finally, market orientation of firms has been identified by both traditional traders and vegetable buyers in the modern distribution sector as being very important because it helped predict future market conditions in order to plan orders and sales activities. This in turn had a positive impact on performance through the reduction in levels of waste after grading and leftovers.

The positive impact of both market orientation and information sharing on increasing the levels of consumer satisfaction can be witnessed in the case of tomato supply chain stakeholders sharing information to prevent farmers sowing a second crop of a new variety of tomatoes that had not satisfied traders and HCMC consumers because of its short shelf-life. Sharing information enabled supply chain stakeholders to react to market information and distribute produce that was more appropriate to the consumer demand.

Sharing more information has been directly linked to increased levels of satisfaction about the relationship by both the Big C supermarket and its supplier Mr Phuong of the farmers' cooperative. Similarly, low levels of information sharing led to low levels of satisfaction as epitomized by the case of Mr Giang, the dependent tomato producer in supply chain 1 who does not get any market information whatsoever from his dedicated customer.

Information sharing has also been linked to better coordination by the stakeholders interviewed. In both traditional and modern supply chains, information sharing about prices, quality requirements and plans for promotion, led to better coordination and joint planning between stakeholders.

Finally, sharing information has also been linked to increased levels of trust among supply chain stakeholders, although the more refined component of information transparency has generally been quoted by the traders interviewed to determine trust. Information transparency has been defined as the subjective perception of an individual of being informed about the relevant actions and properties of the other party in the interaction (Eggert and Helm, 2003). All the stakeholders interviewed supported the role of transparency on prices, activities and general market information in facilitating the development of trust in their relationships with both individuals and organizations. For example, more transparency between traders involved in the traditional supply chains led to easier joint resolution of conflict. Furthermore, being transparent on the different grades of product and their respective value had a direct impact on increasing profits for both farmers and collectors, as both had a joint-interest in harvesting and selling more of the better-quality product which would be sold for higher prices.

Likewise, being transparent on the grading of produce and the different price premiums that these grades may get for both farmers and collectors had a strong impact on increasing producer satisfaction as shown by the case of Mr Xe and his tomato collector Ms Yen in supply chain 3, who assessed the potential value of the harvest together. When farmers were not made aware of these price differentials, but had to rely on other channels of information to get this information, or when farmers were not present at the grading stage to establish the value of harvest, the level of satisfaction decreased, as was the case of the dependent tomato producer Mr Giang.

Our research identified that enhanced levels of communication could come either in more frequent communication or in the use of a greater variety of modes of communication. Indeed, the positive impact of frequent communication in fostering good business relationships was voiced by traders in the two shorter traditional supply chains 2 and 3. Moreover, frequent communication had a positive impact on joint conflict resolution in the relationships between Messrs Cuong and Dan in the longer traditional tomato supply chain. Finally, the case studies of the modern supply chains, which show better levels of performance measured by waste levels for the final customer, can point to the positive impact of frequent communication between suppliers and customers on lowering levels of waste and increasing the quality of the produce through more efficient sorting.

The impact of innovation

Mr Binh and Mrs Lan, both suppliers of Metro, and Mr Phuong, the manager of the farmers' cooperative distributing through Big C supermarket, voiced the importance of innovation in maintaining good levels of performance. The innovation these three stakeholders implemented comes not only from the focus on quality in order to satisfy their demanding customers, but also their organization of the producers into an association of farmers for Mr Binh and Mrs Lan, or an official cooperative for farmers working with Mr Phuong.

The organization of farmers into bigger groups has enabled the three stakeholders in charge of the marketing activity for the farmers' groups to increase the quantities sold and to sign supply contracts with big customers. Furthermore, establishing a formal cooperative enabled the farmers working with Mr Phuong to sell some produce, including tomatoes, free of value-added tax in application of a new law regulating farmers' cooperatives in Viet Nam.

However, the results from the case studies have also shown other positive impacts from the capacity to innovate. The capacity to innovate can be linked to increased market share: the example of Mrs Lan and her farmers' association is representative of this. Thanks to their focus on producing a large array of quality produce specifically designed to satisfy the orders of Metro Cash & Carry, Mrs Lan and her group of farmers have effectively captured the bulk of Da Lat vegetable supplies to Metro. Their market share to Metro has increased to surpass the quantities delivered by other longer-lasting Metro suppliers. Moreover, the capacity to introduce new methods of harvesting and packaging had a positive impact on fostering good business relationships as shown by the case of the farmer Mrs Kim and the collector Mrs Mai in the traditional lettuce supply chain.

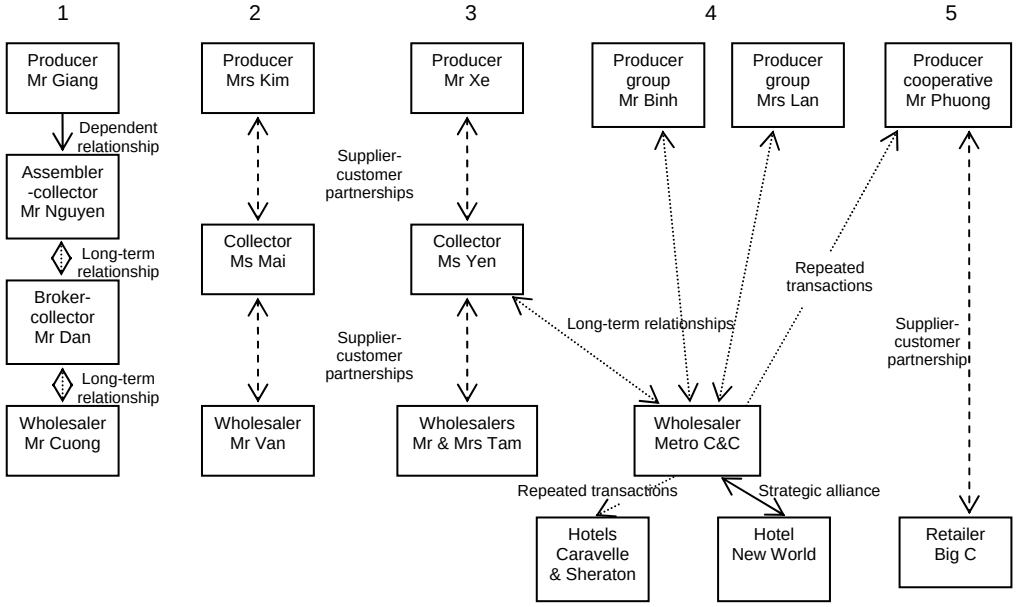
Finally, there are specific positive impacts on performance brought by an innovative focus on quality. The quality-focus of farmers had a direct impact on improving their trading conditions with collectors. For example, Mr Xe always sold his entire tomato harvest at the beginning of the season to his regular collector, Ms Yen, which meant he had found a secure outlet for his harvest, thus diminishing his risk. Likewise, the lettuce producer, Mrs Kim, had a very strong bargaining position with her regular collector, Ms Mai, as the latter had to follow her pricing decisions. The same relationship was true between Metro and its suppliers. The very good quality of the produce sold by Mrs Lan and Ms Yen to Metro enabled them to achieve higher prices than their direct competitors or successfully to resist demands to lower prices for a promotion period, as demonstrated by the case of Ms Yen.

The focus on quality enabled suppliers to be less prone to the coercive use of power by their customers. This was exemplified by the case of Ms Yen in her successful negotiations on promotion prices with Metro. Likewise, Ms Yen's tomato producer Mr Xe had also benefited from less abuse of power by his regular collector thanks to his special focus on good quality produce.

Conclusions and discussion

The results reported here and in our previous publications show that Webster's range of marketing relationships is an adequate model to characterize the B2B relationships present in the vegetable marketing system in HCMC, as shown in Figure 4. It is worth noting that all the hybrid forms between spot market and hierarchy have been uncovered as Metro has created a real network of suppliers. Likewise, some traditional collectors deal with a portfolio of customers. Webster's model enables all the individual supplier-customer relationships studied in competing vegetable supply chains to form a coherent description of the various subsets of the vegetable marketing system.

Figure 4: Characterization of B2B relationships in the vegetable marketing system to HCMC



Sources: Cadilhon and Fearne (2005); Cadilhon *et al. (2005; 2006b; 2006c)*

The principal result from this research is the identification that relationship marketing is the dominant form of economic organization in the vegetable marketing system in HCMC, even in the traditional wholesale market. The supply strategies of modern distributors and of some traditional traders who specialize in the supply of quality foods (for such customers as restaurants, schools and quality shops) have added some innovations to the practices witnessed in the traditional channels: formal contracts, joint conflict resolution and quality focus. The loose nature of these contracts also enables both supplier and customer to decide quickly whether or not to transact with each other given the prevailing market conditions. Such incomplete contracts may be a solution for agribusiness companies wanting to devise supply strategies in developing countries while escaping the high occurrence of reneging on strict contractual arrangements in the fresh produce sector.

Vertical supply chains act as a channel for market information between city customers and their rural suppliers. Stakeholders also use their involvement in marketing channels as a strategy to reduce marketing risks.
All the supply chains investigated – whether traditional or modern – strive to achieve better levels of performance, although the indicator used by each individual to measure performance may be relatively subjective.

These findings lead to strong policy and business recommendations. First, there is a need for a paradigm shift among policy makers and their advisers to acknowledge the importance of relationship marketing in the traditional food marketing systems. This paradigm shift will lead to a better understanding of the determinant role that the private sector plays in managing the food distribution system and therefore diminish engrained wariness of public-private partnerships and private sector-led marketing initiatives.

Despite recent efforts to develop the capacity of farmers, there is still need for increased extension efforts towards producers in order to develop their business and technical skills, notably in the field of safe production techniques and quality management. Most of the innovative farmers identified by this research were “asset-rich” in terms of human and financial assets (Reardon and Timmer, in press). Thus, government support to group farmers in order to achieve a better focus on quality and customization of activities would be useful.

Collecting and disseminating such success stories of good B2B relationships and the lessons learned from these examples to policy makers, traders and farmers should be encouraged. Indeed, sharing this information can only be beneficial to all stakeholders in the food marketing systems of developing countries.

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Supply chain coordination in a traditional wholesale market[7]

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Abstract

Mercer Mooney is a "traditional" fresh produce wholesaler that has constantly evolved over time. The role of a good wholesale trader is to predict market trends accurately and ensure the company and its people are well positioned to be actively involved in the change and not to become a victim of it. The supply base continues to consolidate, requiring alliances to be built with large national supply organizations while at the same time maintaining relationships with small, high-quality producers. In fruit production, there is typically an inverse relationship between the size of a farm and the quality of the produce. Large-scale plantings are relatively new to Australia and are largely driven by managed investment schemes. The production from these farms puts a large volume of fruit of various quality onto the market. The challenge large operations have in managing their fruit crop is to find enough suitably trained staff to manage and harvest the crop. While machinery overcomes this problem for large-scale vegetable production, it is seldom available for most fruit crops. In contrast, the majority of small owner–operators produce excellent quality fruit, but such requires a higher level of management. Growers with consistent high-quality produce are always highly valued. However relationships with large corporate producers must be balanced in the supply equation. The customer base for Mercer Mooney is diverse and includes national supermarket chains, high-quality independently owned stores, food service outlets and secondary wholesalers. Servicing Western Australia's supermarkets represents just over 30 percent of the business. While this is valued business, Mercer Mooney is not dependent on their trade for survival. Servicing these customers requires high levels of quality assurance, supply planning, logistics and business management. Servicing the independent stores requires attention to detail and developing a good relationship with individual buyers. Whilst having a good relationship is critical, sales to this market are still made on a day-by-day basis. The company now employs quality managers, business managers and logistics managers to deal with the changing requirements of these groups effectively. Successful wholesaling requires a good balance between small- and large-scale suppliers and a diverse mix of customers to provide the best marketing option for a given consignment of fruit. In this instance, Mercer Mooney is able to market a producer's entire crop at the best price, not just a particular portion of it.

[7] The following paper is an edited transcript of a presentation delivered to the International Symposium on Fresh Produce Supply Chain Management

Introduction

Good morning. I have two roles this morning. Firstly I want to give you a brief background into fresh produce marketing in Western Australia through the eyes of a wholesaler and then I want to talk a little about our business as it currently operates.

Historically, central marketing in Western Australia has traditionally been done by auction. In those days, the producers would bring all their produce into the market, the retailers would wander around and inspect it, decide what they wanted, and then the auction would start and people would place their bids. This was quite a lengthy process and quite restrictive. There was no sort of placing orders or anything like that. Typically, about 80 percent of the business was done through the auction system, with private treaty, which is sale by negotiation, accounting for 10 to 15 percent of the business. Slowly, over time, that began to change as retailers wanted a bit more customer service. They wanted to be able to put in orders. They wanted to have a guaranteed supply, and so, by the late 1980s or early 1990s, we had the last auction for fresh produce in Western Australia.

When we talk about traditional wholesaling, to be in business today, you have to move with the times. People who stuck to what they were doing then are no longer with us. Just a quick family history: our company started in 1915 with my great-grandfather Benjamin Mercer. His three sons got involved. My great-cousins and all my uncles and father became involved. Everyone bought each other out and on and on it went until the present day.

Wholesale marketing of fresh produce in Perth

We operate today at the Canning Vale site in Perth, Western Australia. This is a purpose-built facility constructed by the State Government in 1989 and is the most modern wholesale market in Australia. Basically, there is a central trading area. Surrounding this is a covered area where the retailers park their trucks. On the central trading floor, produce comes in from the growers. The retailers have a look at it, face it, discuss it, negotiate a price, put their order in (if they haven't done so already the night before), and then the produce is divided up and delivered to the retailers' truck. From here it goes back to the shop. Around the perimeter are the warehouses where we store the produce. In one of these warehouses we have a separate refrigerated area from where we conduct our supermarket business.

Mercer Mooney is a little bit unusual in that we handle quite a range of produce. We do tropical fruit, stone fruit, apples, citrus, berries, mushrooms, and all the vegetable lines. Typically you will find that wholesalers will tend to specialize in a certain area. The way our business is structured, we actually have businesses within the business, so even although we cover a broad range, the people selling each particular line, for example, citrus, have been doing that for the last 10 to 15 years and are specialists in their area. This is probably something that is a bit unique. We also have a packing facility where we do pre-packed produce, mostly for the supermarkets. Again, we have a large number of prepacked lines, but we only pack a small volume for each of those lines. Our system is set up to be flexible: we can change over very quickly. In Europe, while large pack

houses have invested heavily in specialized machinery, we don't do the volumes that are necessary to recover the investment. Consequently, our labour costs are high.

The supply base

Basically, Western Australia is characterized by a large number of small-to-medium-sized family owned farms. Labour is very expensive and families supply their own labour for the great proportion of the year and then bring in labour for harvesting. The minimum wage is AU$13.47, but if you're not paying AU$18 an hour at the moment, you won't get anyone to turn up. So, labour is a very high-cost input. We deal with several large national marketing cooperatives, which are organizations that consolidate the produce from these small-to-medium-sized farms. A good example is Australian Fresh Mangoes. How we deal with them is to manage their market sales. While they tend to go direct into the supermarkets, we still manage the logistics for them. We do the quality inspections, get the load ready, and manage the logistics into the store. A lot of people ask why we help them, because essentially they are a competitor. However, we do it because we make money. We charge a fee per unit. Secondly, if we don't do it, somebody else will. But the third reason we work with them is because we get all of the information about what they are doing and that is particularly valuable to us. We get a national picture on what is going on and who is doing what.

On the supply side, the newest emerging factor is the large managed investment schemes that operate in Australia. This is quite new and we are not quite sure how that is going to shape up yet. For example, the Rewards Group in the last three years have put 800 hectares of irrigated horticulture under production. In Australia, with a population of just 21 million, that will have a very significant impact and they are not alone.

In terms of how we deal with our suppliers, we operate on both commission sales and net farm gate pricing. We tend to have suppliers with whom we have established a long-term partnership. In these instances, we will get involved with supply planning, what varieties they are planning, when to pick, how long to store, and what to pack into. Because we operate on commission, the higher we sell it for, the more money we make, so there is a very strong incentive to do the right thing here. We also work with what we call a grower or trader category in which case we get some growers who will ring us, then ring the competition to see who has the best price on the day. If there is an opportunity to do business, we will, but if not, we won't. So, we have quite a different style of business for those two categories.

The thing that keeps us honest is that information is very, very easy to obtain and it is very open. However, there is a temporal dimension. Because we deal daily with the supermarkets, the exporters, the retailers and the secondary wholesalers, at any point in time, we should have the best knowledge of what is going on and can provide the best advice with that in mind. Within a week or so, everybody else will also have that knowledge and thus it is very easy to see if we have given the right advice or not and if we have done our job properly. Consequently, there is a great deal of pressure.

The customer base

Our customer base has a large influence on how we do things. About six years ago I had the great privilege to listen to Professor David Hughes talking on vertically integrated supply chains. At that stage I wasn't working for the business. I listened to this talk and it was very informative. I just couldn't see where a wholesaler would fit into the picture in the three to four years. So, with a heavy heart, I trudged home and told my dad: "It's great all the effort you put into the business for the last 30 years, but I'm sorry things are changing and we are not going to be in business in the next two to three years."

He said, "Really?"

I said: "Yes, I've been to this talk and I know."

And he said, "Really?"

So, then we proceeded to have a discussion about the differences between the United Kingdom and Australia (and not just about cricket). We talked about a lot of other things, and yes, there are a few differences, even although we are generally heading the same way. One of the big differences is that the independent retail base, particularly in Western Australia, is very, very strong. Because of legislation, retail groups that employ less than ten people can open from 7:00 in the morning until 10:00 at night seven days a week, whereas if you employ more than ten people, you can only trade from 8:00 in the morning until 6:00 at night, Monday to Saturday. The people who are working hard come home late and do their shopping at night and they shop with the independent retailers. It's no surprise that they have the highest quality produce: they pay the highest price to secure it and they resell it at the highest price. This is still the most valued sector in our customer base.

One store in particular is by far and away the leader. The reason for this is because of the customer service they provide. They are there all the time; they have a very good relationship with the customers and provide good information. We still do a lot of business with the supermarkets, but there are really only two national retail companies in Australia: Woolworths and Coles. We essentially have a preferred supplier status on many lines. However, we're definitely not a category manager: we're nowhere near that. What we do for them is a six-month supply plan. We work together on promotions. We have all the quality assurance and the endless audits that we are delighted to do for them. However, we know what is happening globally and we have a plan that should we need to move, if they ask us to take the responsibility for that step, we can hit the button should that day come. Part of that is working with a network of other companies around Australia to provide a national service to these chain stores. So, we have a foot in each camp at the moment.

Our export and interstate trade is increasing – and this gives you some idea about the psyche of Western Australian producers as we put them both in the same category. This year, the drought has hit harder than ever before and we know growers in the eastern states who are deciding what crops they should leave the water on for and for what crops they should turn the water off. They have to make those heavy decisions. At the

moment, we still have enough water in Western Australia: we are surviving. Export, however, is not a market in which we see a great deal of growth. It is niche lines only and we will maintain our current status.

The business

To give you an idea about the structure of our business, if you were to walk into our business ten years ago, you would have seen sales persons, labourers and administration staff, and that was it. Now, of course, we still have sales people, labourers and administration staff, but we have account managers, quality managers, logistic managers, information technology (IT) managers and in-store demonstration staff. Our business has a very diversified skill base to ensure we service our customers properly. Some of the changes in technology are well known throughout the industry worldwide, but there have been a lot of advances in cool chain technology. The IT system is of particular interest for me because it lets us do some really good analysis on our supply base. It enables us to identify the gaps. We can also do it for our customers and identify where our value really lies.

Quality assessment. Ten years ago if you got a consignment of fruit that was not good, you would ring up the grower and say: “This doesn’t taste sweet enough” and the grower said, “Yes, it does” and “No, it doesn’t”, “Yes, it does”, “No, it doesn’t” and on it would go. Today we have refractometers and we will test 100 pieces of fruit. Today, the conversation goes something like this: “Sixty-six percent of your fruit was under 9^{o}. What are you going to do about it?” Of course, we have digital cameras and we can also send a photo. This has greatly helped to increase the level of trust along the supply chain because the information is more accurate. Faster transport has improved market access, but good communication is essential. We spend our lives on the phone and generally have a pretty good coverage between the morning and the afternoon shift as a rule to know what is going on.

One of the things that we have always done is invest in new innovations. In one particularly case, we lost a lot of money. What we do now is to look for partners across Australia to invest in innovations. This is not just new varieties, but also new processing lines. One thing we are looking at now is a new fresh cut processing system which focuses on the hygiene throughout the system. There are some really exciting things happening here, but if we share the investment we share the risk, and when it gets to the development stage, you have a group of companies around Australia that can roll something out nationally straight away.

We get asked all the time, how do we add value as a wholesaler? “You don’t do anything; you don’t grow anything; you don’t sell anything. You just get stuff in and move it out. What do you do?” For our growers, the ones with whom we have a good relationship, we get involved right at the start in terms of helping them get access to different varieties. We help plan the crop. For fruit like apples, we help them with their storage, telling them when to pull it out, when to pack it, and increasingly what to pack it into, because right back at the start of the chain, the type of package will determine what markets you can access and that will have a significant effect on your net price at the end of the day.

We pay quickly which is an important thing for a grower. For some particular growers, we will actually help them with advance payments and investments in the crop. But the most important thing we do is communicate market changes quickly. We are able to respond. For our customers, we have a very serious customer service focus, and that means being able to supply what they want, when they need it. Because we cover such a broad geography, we are generally able to provide that. If there is something they need which we said we would have and we don't have it, then we go and get it. We are continually looking at improving our logistics. We do all the quality management. We get involved in supply and promotion planning and for supermarkets this is a six-month thing. For the retailers on the floor, that is just about daily, "Next week we will have this; next week we will have that; next week we are not going to have this" and that kind of thing. We are working with other companies in terms of the variety management issues that are a day-to-day part of our business, and we invest as things become available.

In summary, we work with all the participants in the fresh produce supply network. I was pretty impressed to hear that word yesterday, the "network" not the chain, because we have to deal with many different scales of suppliers and customers. If there is one thing that we do particularly well, I believe it is that we are consistently gathering information from all sectors of the market and working with our suppliers to respond quickly and take advantage of that. I am happy to take any questions.

DELEGATE: Jenny, in the future with those large investment companies, how are you planning to handle the volume of fruit in your domestic market?

MS MERCER: It's fair to say that we weren't involved in the planning of them to start with, but given that they're here now, they intend to export. We are working with them. We obviously have some opportunities working with the supermarkets because of the large volumes, and these companies are quite prepared to invest in the grading and the technical management of the fruit. I suspect the first couple of years will be quite rough, but more than likely, if they are prepared to keep investing, we will be able to get to a stage where we will be able to grade and deal with that fruit and be able to programme it into the large retail environments.

DELEGATE: I would like to ask how you control the quality of produce from the farms?

MS MERCER: We have an approved supplier programme where we encourage our suppliers to adopt quality management systems on their farms. There are a range of them: SQF (safe quality food), HACCP (hazard analysis critical control points) and in Australia, we have a programme called Freshcare which is specifically designed for on-farm horticultural production. We encourage all of our producers to adopt them. Of course, not all of them do, so then it is our responsibility to segregate the fruit from those who have and those who have not. Typically, the growers who have fresh produce quality assurance are able to access a lot more markets and subsequently get a higher return. Slowly, most growers are starting to understand that if they do invest in on-farm quality management, they actually get a better price, even though that is more often a

result of being able to access more markets rather than a price premium. This is something that takes quite a long time to work.

DELEGATE: Do you have to do internal audits of the farms?

MS MERCER: No. We don't do the audits. We insist that our producers have a third-party auditor system. There are internationally accredited audit companies that go out and do the audits on-farm. Our responsibility is to get a copy of their accreditation and check that it is up-to-date. We do ask for a copy of the minimum residue limits, the chemical test, and for high-risk crops, a copy of their microbial testing. This is how we check that they have done the right thing.

DELEGATE: You did not mention the word contract farming. As a typical wholesaler, you're probably not involved in that, but my question is: is there extensive contract farming in Western Australia and other supply chains that bypass your wholesale chain?

MS MERCER: Contract pricing doesn't happen that much in Australia except in the food service industries. As you know, people who service McDonalds do so under a contract, but typically in Australia, none of the supermarkets offers a long-term contract. They tend to offer long-term supply plans where they say, "we will take X amount of produce off you", but at this stage, they don't accompany that with a price. The way we work with suppliers is not with a contract price, but for the suppliers that we work closely with, we get involved right at the start in terms of what varieties to plant and how to plan their farm. We often get involved in sharing some of the risk and will invest in some of those new varieties with them. This is partly to help them manage their cash flow, but also partly to secure that variety so that we have it available to supply our customers.

DELEGATE: What is the competitive situation? How many firms do you compete with for product? How are the farmers assured of the best price?

MS MERCER: There are 22 wholesalers in the Canning Vale market. There are not too many industries in the world where you can go to a place and have all the competitors in one spot and run around and get the best price. So it is a very competitive environment to start with. When you get good growers, you want to keep them. The way we do that is to make sure we give them the best possible price. Because we work with exporters, the supermarkets, the independent retailers and the food service people, we have a very good understanding of what the price is on most days. We will place their produce where we can get the best price. We operate on a commission, so obviously the higher we sell the produce for, the more money we make as well. If you get a good grower that does the right thing, you really want to keep them. We can't afford to pay them the wrong amount of money or give them the impression that we have done the wrong thing, because once you have lost them, you have lost them for a very long time.

The fresh sweet potato market chain in Bataan (the Philippines): the importance of interrelationships between actors for chain management

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Abstract

This paper discusses an application of the structure – conduct – performance model to analyse the trade of fresh sweet potato from Bataan province to the wholesale market in Manila, the Philippines. The sweet potato chain is relatively short, but rather complex due to various informal social relationships. The behaviour of the actors involved is largely determined by their position in the market system. Due to the lack of transparency in market prices, producers act suspiciously towards the prices offered by traders. It was observed that this suspicion is often unfounded and that traders are, for the most part, offering a realistic and fair farm-gate price. Organization of the marketing system is achieved through a combination of elements from three different coordination models namely markets, hierarchies and networks. The environment in which the actors operate is one of mutual benefits. The most important form of communication is trust and cooperation, which is the key that activates the interaction at all levels in the chain. The analysis also revealed the importance of wholesalers in the system. Through providing working capital to traders, wholesalers indirectly provide the capital and inputs to producers. Trust and respect, which form the basis of a network, were the cradle for an environment in which such a vital informal credit scheme could emerge. The existence of producer and wholesaler networks, which are linked through traders, enhanced the effectiveness and efficiency of the system. However, a different picture emerged when examining the inequity of the system. It can be concluded that there are some inequalities and that there is room for improvement.

Background

This paper is the result of a study that has been carried out as part of an M.Sc. thesis at Wageningen University and Research Centre, the Netherlands. The research was conducted in Bataan, Central Luzon, in the Philippines, with the aim of exploring the sweet potato marketing chain. The study was undertaken within the CIP-UPWARD research programme, which supports root crop development in Asia. CIP-UPWARD is a collaborative network between the International Potato Centre (CIP) and the Wageningen University and Research Centre (WUR).

The research objectives were to:

1. Describe and analyse the interrelationship between sweet potato producers and traders and identify coordinating mechanisms between the two.

2. Describe and analyse the interrelationship between sweet potato traders and wholesalers and identify coordinating mechanisms between the two.

3. Determine what type of market information exists, and in which way this information flows from the wholesaler to the producer.

Methodology and framework

This research was carried out using rapid reconnaissance techniques. A rapid reconnaissance assessment is used to obtain a broad and preliminary overview of the operation and performance of food systems or components thereof and designed to identify constraints and opportunities. The following features of the reconnaissance survey have been used:

- Interviews were unstructured and semi-directed;
- The researcher conducted the interviews with the assistance of interpreters;
- It had a largely informal character and purposive sampling was used rather than random sampling;
- Observations played an important role. Sweet potato roots were tracked down from the farm to the wholesale market. During this process, the interaction and communication between the various actors in the chain was observed.

To verify the data collected, two multi-stakeholder workshops were organised to discuss the research findings.

This qualitative field research was placed within the theoretical framework of the Structure - Conduct - Performance model (S-C-P). S-C-P analysis or market structure analysis is an approach that has often been used to evaluate food commodity marketing systems (Dijkstra *et al.*, 2001; Lutz and van Tilburg, 1997; Douma and Schreuder, 1998). The applied model consists of three theories: industrial organization theory, marketing theory and institutional economics theory. The approach was found to be particularly suitable because it links the total performance of the system to the interdependency between the actors in the chain within the dynamic context of marketing environment and power relations. It is a systems approach in the sense that all marketing links from producer to wholesaler are considered part of one system. In Figure 1 an overview of the applied model is presented.

Discussion of research findings

Quantifying the sweet potato trade

Some 4 300 tonnes of sweet potato roots, produced by 500 producers from Bataan, entered the market in 2002 (Keizer, 2003). The average yield was between 4.3 and 8.6 tonnes per hectare marketable roots. After harvest, the majority flowed immediately from the producers to traders (Figure 2).

Figure 1: Structure – Conduct – Performance model

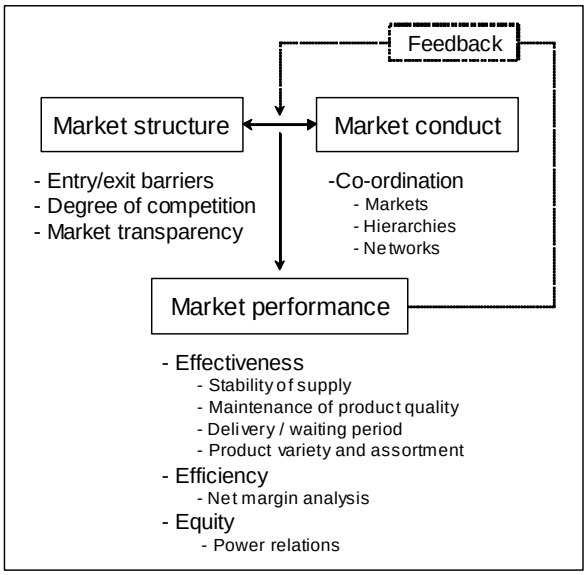
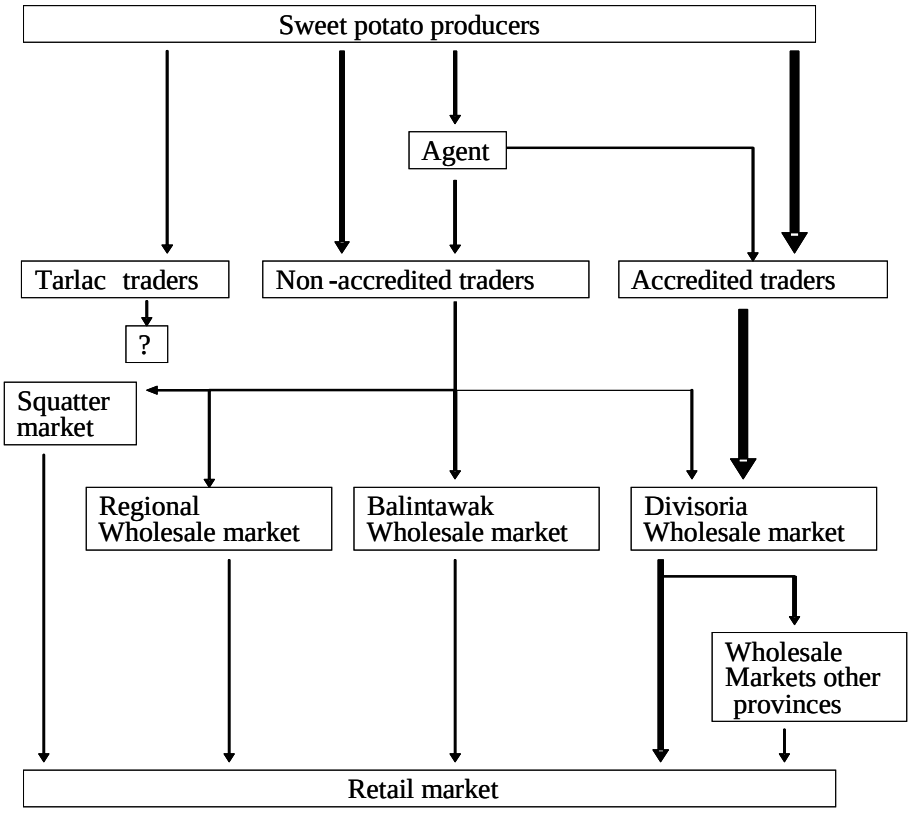


Figure 2: The distribution chain of fresh sweet potato in Bataan province 2001–2002



The role of the agents is limited, for they trade around 11 percent of the total volume of fresh roots. The five accredited traders handle roughly 65 percent of all the sweet potatoes produced in Bataan. The non-accredited traders are responsible for around 20 percent, with small traders from Tarlac handling whatever remains.

The Bataan traders have five main outlets for their product. The biggest part is sold at the Divisoria wholesale market in Metro Manila, which is served primarily by the accredited traders. From this market, the produce finds it way to smaller wholesale markets in other provinces and the retail market in Metro Manila. Non-accredited traders supply, besides the Divisoria market, numerous other markets. An important outlet is the Balintawak wholesale market in Metro Manila. This market is smaller than the Divisoria, but is more conveniently located. Three non-accredited traders have contacts with wholesalers in regional wholesale markets in neighbouring provinces. The final outlet a trader can supply is the squatter market. Retailers with no permanent stalls occupy this market.

Structure of the chain

Table 1 presents an overview of the elements, which were applied to analyse the market structure. It can be concluded that at the level of the trader and the wholesaler, the market can be regarded as an oligopsony. Both are characterized by few buyers and sellers and entry barriers protect the incumbent traders and wholesalers. Powell (1998: pp. 273) states: “By establishing enduring patterns of repeat trading, networks restrict access. Opportunities are thus foreclosed to newcomers, either intentionally or more subtly through such barriers as unwritten rules or informal codes of conduct”. Future developments in the sweet potato trade will tell if the current oligopsony position of the wholesalers will change into contestable competition through increasing pressure from the squatter market.

Producers find themselves in a market environment, which can be characterized as contestable competition. Entry barriers exist but these can be overcome. In general, the market is open to new entrants. The sweet potato system is fairly transparent.

Conduct in the chain: social relationships as the basis for coordination

The relationship between the wholesaler and trader forms a vital link in the sweet potato marketing system. Both actors realize that a good and strong relationship between them creates the foundation of the system. Wholesalers hold a dominant position in this interrelationship; they provide the traders with the necessary working capital to be redistributed to producers. They also control supply by placing more or fewer orders. In the event that the market becomes oversupplied, the wholesalers may completely stop ordering any sweet potato.

The socioeconomic relationship of patronage is referred to as *suki* in Tagalog. When one person has a *suki* relationship with another, it creates a bond. *Suki* is gained after many years of trading with the same person. During this period, trust and respect develops. It means that this person will always do a large part of their business with the same individuals. Even when prices are lower somewhere else, the person is obliged to do business with their *suki* trader, wholesaler or retailer.

Table 1: Overview of the sweet potato market system structure

Structure elements		Producer	Agent	Trader	Wholesaler
Degree of concentration	Buyers	Few	Few	Few	Many
	Sellers	Many	Few	Few	Few
Entry barriers	Capital	Important[1]	Not required	Important	Important
	Access to producer network	Less important	Essential	Essential	Not necessary
	Access to wholesale network	Not necessary	Not necessary	Essential	-
	Land	Essential	Not necessary	Not necessary	Not necessary
	Space in warehouse	-	-	-	Essential Limited space available
Exit barriers	Sunk costs	Negligible	Negligible	Limited	Limited
	Collect outstanding debts	-	-	After growing season (3–4 months)	After growing season in all production areas (one year)
Market transparency	Price information	Limited access with time lag	Less transparent	Transparent	Transparent
	Product information	Transparent for all actors			

[1] Social networks play an important role in this. When producers have to resort to traders to obtain capital, the importance of social networks becomes important. Through these networks, traders and agents verify if the borrower is creditworthy.

There is a strong interdependency between traders and producers in the chain. The producer depends on the trader for the marketing of his produce while the trader depends on the producer for a regular supply to secure his income. Besides this, traders play another vital role in the sweet potato production system; they are the ones who source the capital and inputs to provide to producers so that they are able to grow sweet potato. It was observed that the biggest trader in Bataan often visited neighbouring provinces for a couple of days to source credit from his contacts there. However, there are, of course, implications when credit is received. Usually the condition for acquiring a loan is that the producer is obliged to sell his or her product to the trader. Interestingly enough, traders and producers both deny that an interest rate is being charged. However, it was noticed that those producers who are tied to a specific trader through credit or input loans have little or no power when it comes to price negotiation. It can be concluded that credit-receiving producers pay a somewhat hidden interest charge, due to the lower prices they receive for their product. Non-credit producers mentioned that they often received a price premium of Ps 20 – 30 per bag for their product. They were able to receive this higher price due to their ability to "shop around" and look for a trader who suited them better. Sometimes higher prices were offered by the traders to producers as an incentive to deliver their produce to them. This was often done where the producer had a large area ready for harvest. Traders reportedly gave preference to larger producers over smaller producers, most likely because it would reduce their transaction costs, thus giving them higher margins. Creating economies of scale can therefore be an important marketing strategy for producers to obtain higher farmgate prices.

All these requirements and involvements make it seem that producers are not benefiting from this credit tie-up. Nevertheless, through this informal credit system, producers are able to acquire the necessary capital to grow sweet potato. Without the traders, they would have to resort to borrowing from the so called *Bombay* shop, a money lender, who, on average, charges at an interest rate of 10 percent per month with less flexible pay-back arrangements. Borrowing from relatives was not really favoured, since this might disturb social relations.

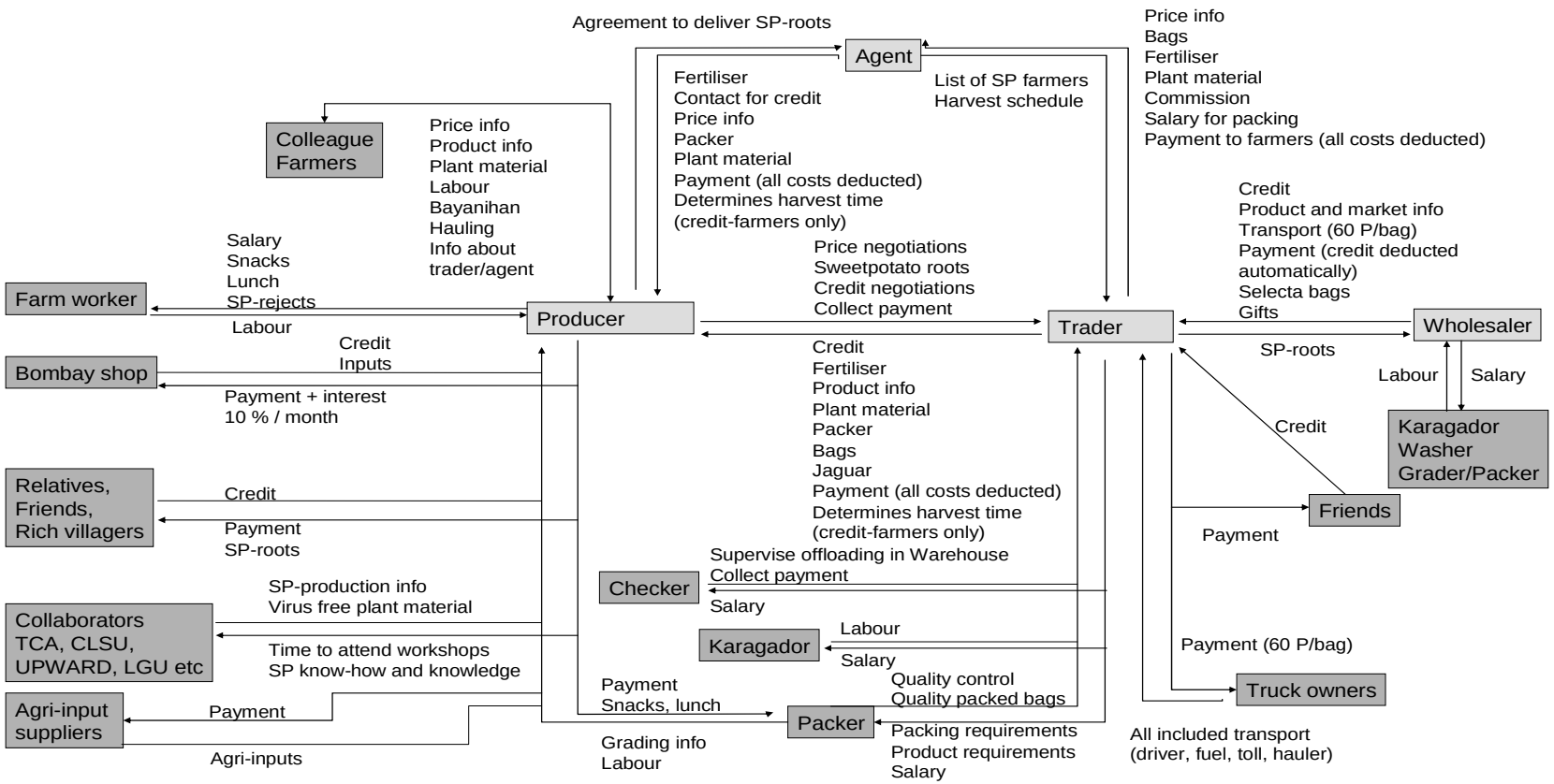
Figure 3 presents an overview of all interrelationships between the various actors in the chain. As can be observed from the figure, the sweet potato system not only consists of the four key players: producers, agents, traders and wholesalers; but is in reality much more complicated and includes actors such as packers, checkers and farm workers, and is often organized around a network of friendship and kinship relations. These social networks consisting of largely informal relationships with friends, neighbours, colleagues and relatives, are vital for the functioning of the total chain.

Performance of the market system

Four elements[8] were applied to analyse the effectiveness of the marketing system. In general, both traders and wholesalers are satisfied with the supply of sweet potato from producers during the harvesting season. During discussions held with wholesalers it was indicated that Bataan could occasionally not supply the market due to bad

[8] Stability of supply, maintenance of product quality, duration of delivery process, and product variety and assortment.

Figure 3: The sweet potato marketing chain unravelled



Source: Keizer (2003)

Note: A “Jaguar” is a sort of pick up truck that is completely run down. The term also refers to some sort of vehicle to bring produce from the farm over very steep and muddy roads to the market road where the produce is offloaded from the “Jaguar” and loaded onto normal trucks.

weather conditions, which make harvesting, packing and transport from the fields virtually impossible. However, this does not occur more than one or two days per season and wholesalers have sufficient stock to overcome this temporary lack in supply. To monitor the quality of the roots traders send packers to producers' fields. In this way, traders are assured that the required quality is provided. After packing and transporting the roots from the field to the trader, product quality is virtually guaranteed. Since Bataan is situated close to Metro Manila and an adequate road system is in place, roots are delivered to the wholesale market within hours after harvesting and product losses are negligible. Due to this effective system, transport has no effect on the quality of the harvested produce. To protect the quality during transport, roots are covered with plant material.

Bataan is near the wholesale market, trucks reach the warehouse within two to three hours. Ordering new supply for the next days is usually done during the night when traders deliver their products to the Divisoria wholesale market. The following day producers are instructed to harvest the required volume. The Divisoria is supplied within 16 hours after ordering.

Bataan producers supply the Divisoria with two varieties, mainly Super Bureau and to a lesser extend Taiwan. Other provinces supply different varieties, for example Ube and Bentong. The varieties are characterized by different taste, colour, texture and cooking qualities. During discussions held with wholesalers, it became clear that there is scope for new varieties to enter the market, although they indicated that the volume demanded for new varieties is still low. Currently, Super Bureau is the dominating variety in the market.

Taking the efficiency of the system into account, it can be concluded that producers make good margins if they are able to produce in the lean months (see Table 2). However, when comparing the producers' income to that of traders and wholesalers, it is substantially lower. In addition, producers put more effort into obtaining this income compared to traders and wholesalers. Nevertheless, the distribution of the marketing margin across the actors can be considered fair.

Examining the equity of the system showed there are some inequalities noticeable and that there is room for improvement. To improve equity in the chain it is often recommended that producers should organize themselves in marketing cooperatives. This would give producers more power. Evidence has been presented which shows that the relationship between traders and wholesalers is strong. To simply bypass this relationship is not possible. It may, however, be possible to organize producers to strengthen their bargaining power. Producers are currently not organized into producer groups. It was mentioned by traders that producers with large volumes (more than 500 bags) received a higher farmgate price. This may provide an incentive to producers to bulk their produce together and negotiate higher prices.

Table 2: Net margins lean season (September)

Expenditure	Costs / Price (Ps/kg fresh root)	Margin (Ps/kg)	Income (Ps/ day)
Production costs	2.51		
Marketing costs producer			
Packer	0.09		
Transport	0.35		
5 percent Contingency	0.02		
Farm gate price	8.82		
Margin producer		**5.85**	**1 490 = 37 300 in 25 working days**[9]
Marketing costs trader			
Purchasing price	8.82		
Tax *barangay*	0.01		
Transport	0.35		
Packer	0.18		
5 percent Contingency	0.03		
Wholesale price	10.59		
Margin trader		**1.20**	**5 000**
Marketing costs wholesaler			
Purchasing price	10.59		
Hauling	0.07		
Washing	0.11		
Water	0.02		
Packing	0.10		
Plastic bags	0.09		
Rent	0.13		
Tax	0.01		
5 percent Contingency	0.03		
Retail price	13.35		
Margin wholesaler		**2.20**	**8 800**

Source: Keizer 2003

Conclusions

The structure of the market at the trader and wholesale level can be viewed as an oligopsony and entry barriers protect incumbent traders and wholesalers. The demand side of the market is influenced by the limited number of traders, allowing less room for price negotiations between producers and traders.

Due to the lack of transparency in market prices, producers are acting suspiciously towards the prices offered by traders. It was found that this suspicion often is unfounded and that traders are most of the time offering realistic and fair farmgate prices. However, evidence was presented that occasionally traders and agents showed oligopsonistic behaviour.

The analysis also revealed the important role wholesalers play in the system. They are the main financiers of the system. Through providing working capital to traders, they indirectly provide capital and inputs to producers. Without this capital the sweet potato industry would not stand where it stands today. Through this system of credit provision, the importance of networks became evident. Trust and respect, which forms the basis of a network, was the cradle for an environment in which such a vital informal credit scheme could emerge. Through exploring this credit provision system in more detail, it became clear that wholesalers are the actors who have the largest control over the sweet potato system. By influencing the supply to the Divisoria, they also control the

[9] It is estimated that a producer works 25 days in order to grow one hectare of sweet potato.

behaviour of traders and producers. Fortunately, the power of wholesalers is not unlimited. The existence of the nearby informal squatter market puts pressure on them.

When examining the performance of the sweet potato system, it became clear that the effectiveness and efficiency of the marketing system was good. The existence of producer and wholesaler networks, which are linked through traders, enhances the effectiveness and efficiency of the system. However, a different picture emerged after examining the equity of the system. Dependency exists between producers and traders and between traders and wholesalers. This interdependency leads to a behaviour in which traders have more power than producers and wholesalers have more power than traders. The fact that entry barriers are high at the trader and wholesaler level, together with their oligopsonistic behaviour, contributes to unfavourable conditions for producers. This also stifles emerging traders and wholesalers.

The applied approach has allowed the author to describe the sweet potato marketing system in depth and analyse the system from a holistic point of view. While the Bataan sweet potato system consists of a relatively short chain, it is rather complex through various informal social relationships.

Acknowledgements

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The "Bali Fresh" Women Farmers' Partnership[10]

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Abstract

A network of women farmers' partnerships began several years ago with the formation of the "Bali Fresh" women farmers' partnership. A partnership between groups of poor women farmers, a supply company and a marketing company has managed to produce, process, pack and distribute and even export high-quality fresh vegetables for the Asian market. Each of the partners needs something: (1) the women farmers need money to invest, technical knowledge and a reliable market for their fresh produce; (2) the supply company needs a market for its high quality seeds, fertilizers, irrigation equipment, greenhouses; (3) the marketing company needs a reliable supply of quality fresh produce all year round and customers who are willing to pay for the products produced. This paper will discuss how this partnership got started, why it is still running and how much money the partners make. The key success factors include; (1) sustainability; (2) honesty and integrity; (3) community development; (4) fund raising; and (5) a revolving fund. The "Bali Fresh" women farmers' partnership has already been copied in other parts of Asia by the Ciawi Ornamental Women Farmers' Partnership in Java, the Mountain Fresh Women Farmers' Partnership in Chiang Mai, Thailand, and discussions are on-going with parties in Viet Nam.

Introduction

This is a partnership between a supply company PT Dura in Indonesia, a marketing company PT Dif Nusantara, and several women farmer groups. The women farmers' group in Bali started in 2004. We started with two female farmers, one in Karangasem and one in Kintamani, and now, after a couple of years, we have about 60 female farmers. The target is to reach 120 within a year from now. The women in Bali needed a stable income, the marketing company needed good quality produce in sufficient quantities, continuity of supply and if possible, a fair price. The supply company needed to sell fertilisers, seeds, irrigation equipment, greenhouses, etc.

The initial capital was invested by the partners. We made the initial investment, but once we had proved the concept, donor money from AusAID and HSP, a Dutch Government support programme, helped us to scale up. It was not that we started because we got money: we started because we thought we could make money and afterwards we were able to get some money from donors. Most often it is the other way round. People have a beautiful idea and then try to get money for it. If they get the money they start: if they don't get the money, they don't. This is why a lot of potentially good projects fail.

[10] The following paper is an edited transcript of a presentation delivered to the International Symposium on Fresh Produce Supply Chain Management

Community development and the establishment of a revolving fund was an important part of our success. This was organized by the supply company with some help from consultants.

While we invested the money to help the poor farmers, they have to pay the money back. As soon as they start producing, part of the money has to go back. As this money comes in, it's paid back into a revolving fund. We don't charge any interest. Part of the money that comes in has to go to meet the daily living expenses of the farmers, part of the money has to go to health insurance for the farmers, and part of the money has to go into a savings account. In Bali, we have a lot of ceremonies and every year you have to pay school fees for your children. We force the farmers to save so they will always have some money.

If you want to sell fresh produce, you have to have good quality and high production. We have introduced some new technologies including greenhouse production and hydroponics. To the maximum extent possible, we use local materials. There is little point importing everything you need from the Netherlands, the United States of America or wherever. For our greenhouses, everything including the plastic sheets, bamboo and concrete posts are made in Indonesia. Our drip irrigation systems were also installed using local technologies and installed by our staff.

We wanted to grow hydroponically but first we needed an artificial growing media. While we could buy that from the Netherlands, we chose to use burnt rice husk. Burnt rice husk is a waste product: burn it a little so that all the diseases are eliminated and you have a sterile growing medium, locally made at minimum cost.

When you start growing, you have to use the right seeds. You can use cheap local seeds. You can use anything, but make sure that what you grow is what the consumer wants.

We started with a desire to help the older ladies, but as the partnership grew, we began to work with the young ladies in the village who have little opportunity to make money anywhere else. Training was done inside the greenhouses. Most of the female farmers cannot read and write, so to train them you have to repeat, repeat and repeat again, using drawings wherever possible. We use Dutch or Indonesian trainers and Dutch or Thai technical advisors.

We started growing cucumbers in the first greenhouse in January. The first crop of cucumbers was a success. We have also started growing cherry tomatoes. There is a good demand for cherry tomatoes and the product realises a high price. Production is going well. In small greenhouses (200 m^2) we have 500 plants, and on average, each plant produces 4 kg.

We also do some outdoor growing. With assistance from AusAID, we are endeavouring to improve lettuce production through the introduction of pressed blocks. They gave us some money which made it possible for us to produce better seedlings. More recently, through the introduction of drip irrigation and netting, we have been able to move towards integrated pest management.

We are currently undertaking some research to identify which system of irrigation is better under plastic, outdoor, or in the net houses. Students are a huge opportunity to get cheap research done for you. More recently, we have constructed a modern greenhouse to be used as a practical training centre.

In Bali, international tourists don't want to eat vegetables with a lot of chemicals. Reduce the number of chemicals, improve the quality and you will improve your market share. To facilitate sales, we brought the hotel chefs to the farm to show them what we were doing.

As the product is harvested, it is brought to the marketing company. This is an integral part of the partnership. However, communication between the farms and the sales department is often problematic. People still manage to make mistakes.

We work with the packing material producers. We continue to invest to make sure that we can deliver what the consumer wants. Look around in supermarkets. Look at what other people do. See what is happening in the Netherlands or Thailand and then apply it in your own location.

Community development is important. Every now and then we make sure we gather with the whole group. We go swimming, we go picnicking and we invite the husbands – sometimes jealous husbands and sometimes the not-so-agreeable husbands – but we bring them in a group and we do things together to make sure that the farmer, who is a mother or a wife or a daughter or a grandmother, gets support from the whole group. Community development is an important part of our success. Do not underestimate the power of jealousy and all the strange things that can come from that.

Is it easy to copy the "Bali Fresh" Women Partnership? I think so. The Ciawi Ornamental Women Farmers' Partnership has started. This is a group of women farmers in West Java who collect, pot and grow a range of ornamental plants for a Dutch and Russian buyer. We grow them, we pack them and put them in a container and send them to Europe. Again, the women farmers needed a stable income. The buyer needed quantity, quality, continuity and a fair price. The supplier needed to sell fertilizer, pots, irrigation, etc.

Money has been invested by the partners: the farmers and the market company. The farmers, of course, cannot invest that much. Community development has been organized again by the supplier and the first container has been sent and received in good order. A new deal has been sealed for the next 12 months: two containers a month. Now that is a lot of money.

The "Bali Fresh" label

We first started with the name, PT Dif Nusantara. That was the name of the company at the time. Then we found out that there was another company called R Dif and people were mixing us up. A stupid mistake from the beginning, but that is what you do when you are a very small company and just starting. To change our company name was a bit difficult and rather expensive, so we thought that we would add on a brand name.

How did we come to “Bali Fresh”? No expensive consultants or research was involved; simply a group of friends checking out names in magazines. As we wanted to start a business in Bali, “Bali Fresh” emerged. It was as simple as that. We just copied something.

We adopted a very similar approach when we started with “Tasty Thai” in Thailand. “Tasty Thai” actually comes from “Tasty Tom” in the Netherlands. There is a company selling their tomatoes as “Tasty Tom”. “Tasty Thai” sounds nice. We have since sold “Tasty Thai”. “Take Me Home” is the new brand name we use in Thailand. Again, no market research was involved here either, but a fair amount of beer was consumed to inspire creativity.

“Bali Fresh” is a brand name. To build the brand, we put some words around it. We have heard these words during this seminar: quality, fresh, safe, reliable, innovative, sustainable, Fairtrade. The difficulty we have is making it clear to our potential buyer that we are sustainable and safe, that we are working with Fairtrade, we’re innovative, we have quality and that we are reliable and fresh.

You can put information in your label, but there is so much information to put in your label that it actually becomes rather confusing. We decided to put only “Bali Fresh” on the label. But then, how do you communicate good agricultural practice, HACCP, GLOBALGAP, organic, pesticide free, and all those things? If we look a little bit at what we see in the market, especially in Bali, there is so much information on the packaging from “Pesticide free, hygienic, healthy, organic, non-pesticide, non-chemical, no fertilizers, GMO-free, pesticide safe” or “Vine ripened, naturally pollinated, no preservatives”.

What does the consumer think about all this? Organic: some people know, some people don’t, but actually, I don’t like this organic thing. In a country of 275 million people like Indonesia, according to FAO reports, we eat only 45 percent of the required fresh vegetables for good health. That means that there are not enough vegetables to feed all the people in Indonesia. Besides that, golf courses, industrial parks and housing estates are taking away all the good quality land and every year we have about three to four million extra people in Indonesia. We have a small problem, like improving production, doubling production or maybe even tripling production. Yes. Organics is a nice idea, because there is an export market. I don’t want to blame people who make money exporting organic vegetables, but we have a major problem in Indonesia to feed 275 million people every day. If we start growing organic, that means that production will drop. Production has to rise.

Many promises are made: “organic, no pesticides, naturally pollinated, no GMO”, but how can we verify or prove these claims? We sell chemicals to organic factories and to organic farms, but they still put “organic” on their label. Our group, the “Bali Fresh” Female Farmers, are not organic, but we are trying to improve the situation by using the minimum amount of chemicals. We do not promise that we are organic, because we cannot produce enough. We don’t want to claim that on our label, because we would then have to implement a system of control to check that what we put on the label is really true. At the moment, that is not cost-effective in Indonesia.

For the "Bali Fresh" group, we are sustainable. We use a lot of waste to grow our vegetables. It is not organic, but it is hydroponic. We use rice husks, we use bamboo greenhouses, we teach and train our farmers. We try to make them independent, and if they so choose, they are free to leave the group.

Food safe. Yes, I think we are food-safe. We use local predators and imported predators to control aphids. We cannot talk about child labour, but after school, we pay the children Rp 50 to collect small beetles. We then let them loose in the small greenhouses to take care of the aphids. When and if the problem becomes bigger, then we spray. But first, we use glue traps to make sure that we have a problem. We know when we will start to harvest and therefore what chemicals we can use.

Innovative. Yes, I think we are innovative. We work together with the seed companies to choose varieties that are more resistant to diseases. If you use less chemicals, that can help catch the market. Having yellow, sweeter tomatoes and things like that also help us to capture a larger share of the market.

DELEGATE: Thank you very much. Could you give any figure about the cost or the net income that you get from outdoor and indoor cultivation?

MR SERHALAWAN: Investments were about US$2 000–3 000 per farmer on average. At the moment, the average income of a woman farmer in Bali is about Rp 900 000 to 1 million per month which is double the minimum wage, so their livelihood increased a lot.

The US$2 000–3 000 loan to the revolving fund is paid back in an average of two to two-and-one-half years. Because we have several farmers, when ten farmers or twenty farmers pay back a certain amount every month, it means that after two months, we can start with new farmers. That is why we suggest that we will have 120 members within a year, because the money is coming back.

DELEGATE: You mentioned about the acquisition of land. How did you do this, because in many cases the small farmers don't have land? My second point is that you use greenhouses. When you enter into larger-scale production, have you thought about the environmental aspects?

MR SERHALAWAN: In Bali, especially for women, it is difficult to own land. In their system, the men own the land, so if you are a single woman or a lonely grandma, it is difficult to own land. So, what do we do? We rent the land as a partnership. We set a sort of a standard that we will only pay Rp 880 per m^2 per year and we will pay that to everybody. There are no special deals. There is no turning back and there is no changing the price, and there is no kicking us out after time because we have become big. We work together with government, the local religious leaders and local youth groups.

Environment. Yes, we think that this is important. We use greenhouses and we use netting houses. We use fewer chemicals to control pests and diseases. We have done four years of research into growing vegetables with predators using integrated pest management. We have not been completely successful, but we have made some serious

steps, which is important. The environment is important because it provides us with a point of differentiation. The consumers want environmentally friendly products. Besides, it is in your own long-term best interest to show responsibility towards the environment, the consumers and the farmers. If you do not do that, you will lose the market in the end.

Alternative vegetable supply chains in the Philippines

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Abstract

The Filipino vegetable industry is dualistic in nature. Traditional chains exist together with the more modern chains. Different institutional markets are involved in various marketing arrangements, each developing as a response to various external and internal factors. This paper will discuss the alternative vegetable chains which have been observed in the Philippines. The Philippine vegetable industry is restructuring, largely driven by demand factors such as increasing population and income and the changing lifestyles of urban consumers. This creates opportunities for modern chains to respond, particularly for supermarkets and fast food chains. Procurement systems also change to respond to these opportunities. The increasing demand for salads has prompted fast food chains to source processed instead of unprocessed vegetables. This has required changes in production protocols for farmers who supply to vegetable processors. Large supermarkets deal with preferred suppliers who also brand their vegetables. As large supermarkets continue to raise their standards, the volume of vegetables sold that are branded is expected to increase. This will result in larger consolidators who may also venture into vegetable processing, particularly cut vegetables and packed salad vegetables. Small farmers will have difficulty responding to these opportunities in the modern chains as these will require significant investment to produce quality vegetables.

Introduction

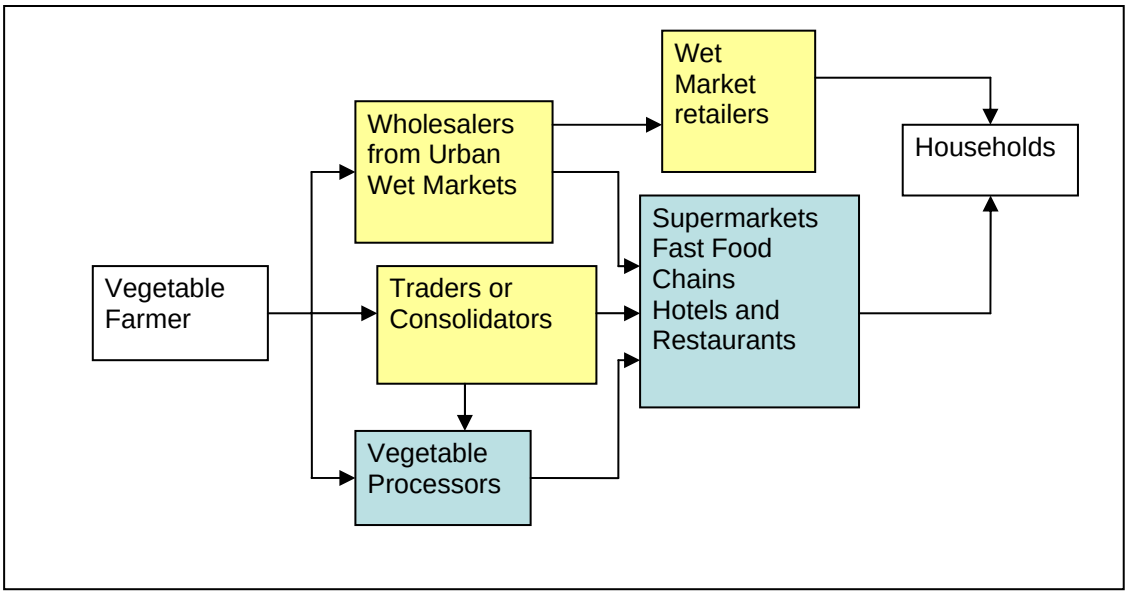
Dynamic changes are occurring in the competitive structure of the Filipino vegetable industry, leading to changes in supply chains. Consumers and customers are increasingly concerned with food safety and traceability, health, convenience and sustainability of production systems (Collins, 2006). In this paper, the traditional supply chain is described followed by a discussion of the emerging alternative supply chains observed in the Filipino vegetable industry during the past three to five years.

Dualistic vegetable supply chain

Vegetables in the Philippines are grown primarily by small farmers, planting an average of 2 500 square meters per cropping season (Rasco *et al*., 2004). In recent years however, large agribusiness firms, the main business of which is banana and pineapple exports have ventured into vegetable production.

The vegetable supply chain in the Philippines follows a traditional chain (Figure 1) where farmers sell their produce in the spot market to traders, consolidators, vegetable processors and wholesalers in the wet markets. Wholesalers usually sell their vegetables in the wet market while some traders sell to institutional markets such as supermarkets, fast food chains, hotels and restaurants.

Figure 1: The Filipino vegetable supply chain



Very few farmers supply directly to vegetable processors or institutional markets.

In a study conducted in Benguet, spot exchange is the most common marketing arrangement used by 58 percent of producers and traders in the La Trinidad Trading Post and Baguio City market (Milagrosa and Viane, 2002). The same practices prevail in the rest of the country. While spot market trading is highly risky for the farmers and even for the traders, it can also be highly profitable. Frequent transactions occurring in highly uncertain environments heighten the probability of conflict. While vertical integration may be an option, this is not always possible for small farmers because of immense financial and organizational requirements.

The retail market for vegetables is still dominated by the wet markets, for a number of reasons. Consumers generally buy fresh produce in wet markets for they offer a greater variety and assortment of vegetables at lower prices than supermarkets. In Mindanao, 90 percent of households prefer to buy from wet markets and *talipapas*[11], in smaller quantities, three times a week (Concepcion, 2005). Farmers, on the other hand, rely on traders in wet markets and consolidators for institutional buyers such as supermarkets, hotels and restaurants.

However, increasing income and the changing lifestyles of urban Filipinos have not only contributed to increased consumption of high value vegetables, but have also played a role in the proliferation of fast food outlets and one-stop shopping malls and supermarkets, as high income consumers demand convenience. These have triggered changes in the supply chain for vegetables in the Philippines.

Firstly, the number of consumers buying vegetables from supermarkets has increased, particularly those in the urban areas, consistent with the higher growth of vegetable

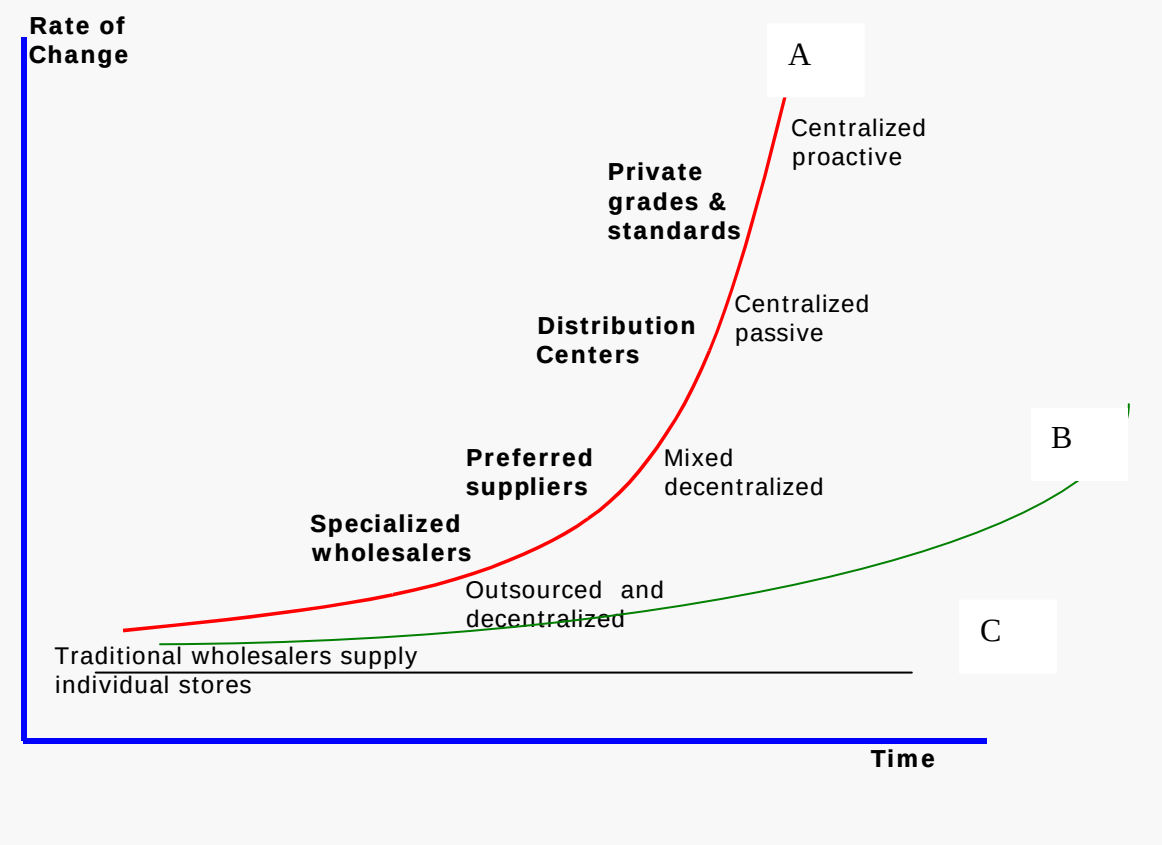
[11] A *Talipapa* is a small neighbourhood wet market which sources its produce from the central wet market and backyard gardens.

consumption in urban areas (Digal and Concepcion, 2004). This is an opportunity now being tapped by supermarkets and fast food outlets. An example of this is a large supermarket in Metro Manila which has expanded the number of shelves from two in 2001 to three counters in 2004. By 2006, many supermarkets had increased the floor space devoted to vegetables by at least 30 percent.

Secondly, with an increasing display area and assortment, supermarkets have decreased the number of suppliers and prefer to deal with consolidators and concessionaires. Thirdly, as they deal with higher-income consumers who are more quality-conscious, they have imposed higher quality standards.

In the Philippines, the differences between low- and high-income consumers create a wedge in the supply chain resulting in a dualistic vegetable supply chain: the traditional chain (wet market) and the modern chain (Figure 2).

Figure 2: Pillars of dynamic supply chains in the Filipino vegetable chain



Curve A represents the high-income segment served by modern downstream firms such as supermarkets and fast food outlets. Procurement systems in this segment are fast-changing, responding to consumer demand and competition (Berdegué *et al*., 2005). Curve A would be typical of most transitional economies.

Curve B is the traditional wet market typical in the Philippines, which basically serves the low-income consumers. Wholesalers in the wet markets supply the small retailers and some modern retailers. Many supermarkets in the Philippines continue to source produce from this traditional chain. Because of this dualistic nature, the rate of change in procurement systems may not be as fast as in many other countries, resulting in a flatter curve C (Digal *et al.*, 2006), instead of curve A.

To some extent, these chains B and C are substitutes and therefore they compete and affect one another. One large supermarket in the Philippines lowers price of vegetables to compete with the wet markets. These changes in procurement systems are reflected in the types of vegetable supply chains discussed below.

Around 75 to 85 percent of the vegetables sold in the Philippines pass through the traditional supply chain where the wet markets and vegetable traders play major roles. Farmers are generally price takers, accepting what the traders give them in the spot market.

Several alternative chain designs have emerged in the last three years. Key informant interviews with different players in vegetable supply chains from Benguet and Mountain Province on the island of Luzon and Southern Mindanao have yielded data which can be typified as alternative chains.

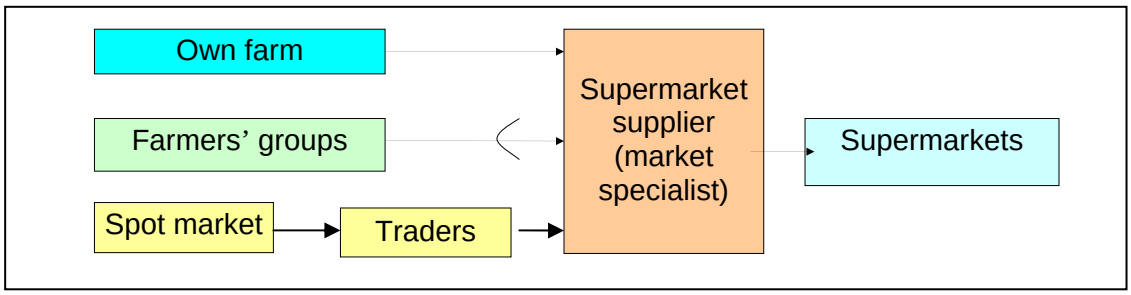
Market specialist chain

One arrangement recently observed in the Philippines is the market specialist chain where suppliers focus their strategies on providing the supermarkets with anything that they need. In the words of one of the respondents, “we will give them whatever they want”. This means that the market specialist provides a wide array of vegetables including minimally processed, precut and mixed, packed, coded and tagged produce and any other combination thereof. They brand their products, particularly their prepacked salads. The company name is visible on each pack of vegetables. The market specialist is given an assurance by the supermarket chain that they are the preferred supplier and that all fruit and vegetables will be sourced through them.

One of the bigger market specialists, Gomez Farms[12], has a strong relationship with the biggest supermarket chain in the Philippines. Gomez Farms are the chain’s category manager. Several supermarkets have designated Gomez Farms as their preferred supplier and give them priority when purchasing fruit and vegetables to the extent that they protect them from suppliers who want to have a greater share of the retail business. In this type of relationship, supermarkets benefit because their preferred supplier will get them anything they need with the frequency and quality they require. Gomez Farms get produce from their own farm and from multiple sources including other vegetable consolidators, domestic suppliers and importers, in order to satisfy the supermarkets. This supply chain is modeled in Figure 3. The ability to source whatever product the supermarket needs gives Gomez Farms the edge over competitors.

[12] Name disguised to protect the privacy of the company.

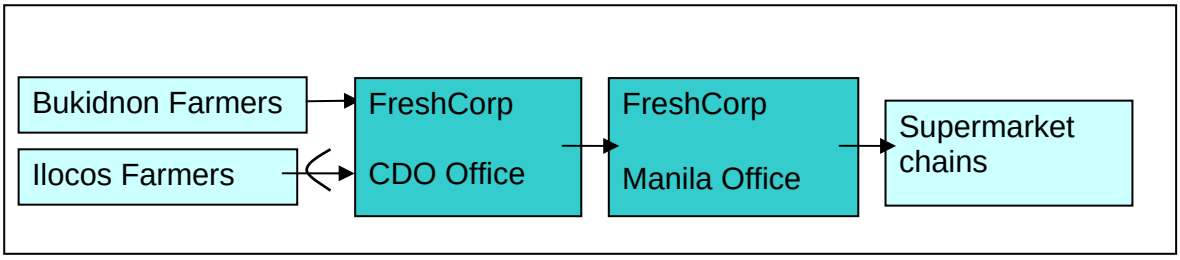
Figure 3: Sample market specialist chain



Product specialist chain

Apart from the traditional supply chain for vegetables, which used to be the main source of supply for the supermarkets, a specific chain has developed in response to the needs of this market segment (Figure 4). Tomatoes are grown in most parts of the Philippines, but more predominantly in the cooler regions like Bukidnon in Mindanao and Baguio in Northern Luzon. Tomato varieties suitable for the lowlands are also grown in lowland areas like Quezon Province, Ilocos Sur, Nueva Ecija and Batangas Provinces.

Figure 4: Sample product specialist chain



One such chain is managed by a large agribusiness corporation, FreshCorp[13]. FreshCorp has operations in Cagayan de Oro (CDO), Cebu City, Quezon City and Davao City. They source their tomatoes mostly from Bukidnon and Ilocos Norte farmers and control 15–20 percent of the supply of tomatoes in Metro Manila from July to December. They brand their tomatoes and all their other fresh produce. Their main markets are the supermarket chains in the Philippines. They sell upwards of 10 000 crates[14] of tomatoes per week during the peak season and 1 000 crates during the off season. They give assistance to farmers in terms of agronomic support, production advice and, in some instances, finance agricultural inputs. FreshCorp purchases from the spot market in Luzon and through marketing contracts with farmers in Mindanao. The seasonality of tomatoes is addressed by utilizing farmers from different regional areas. The Luzon farmers supply tomatoes from January to June, while the Mindanao farmers supply from July to November.

Tomato farmers in Mindanao who want to supply FreshCorp sign a marketing contract wherein the farmers commit to a specific weekly volume and a price ceiling. Such quantities are determined by the farmer himself. FreshCorp commits to sell for the

[13] Name disguised to protect the privacy of the company.
[14] A crate of tomatoes usually contains 23–25 kilos.

farmers the specified quantity and to a floor price. Deliveries and payments are weekly. Production scheduling is done by the farmers so that they are able to comply with the required regularity of delivery.

FreshCorp has around 20 farmers in Mindanao under this kind of contract. Each farmer cultivates 2–10 hectares of either owned or leased land. The high cost of transport from Mindanao necessitates the use of contracts. FreshCorp acts as the marketer for the produce and provides the farmers with the quality specifications of the supermarkets. Farmers pay FreshCorp a commission of 22.5 percent for their brokerage service.

Different supermarket chains have different purchasing arrangements with FreshCorp. With one supermarket chain, FreshCorp has a concession, and is responsible for filling the shelves with produce, cleaning, wrapping, replacing and bar coding. The supermarket earns its income from renting the shelf space as well as a percentage of sales. With other supermarket chains, FreshCorp has an outright purchase agreement where the buyer orders and pays after 7–15 days.

Because FreshCorp are able to control the supply of quality tomatoes to Metro Manila, they are reliable. Even competitors purchase tomatoes from them in periods of scarcity. They are able to maintain their relationship with the supermarket chains and to supply them with other items as well. Their ability to specialize in one product has opened the door and facilitated sales of other products.

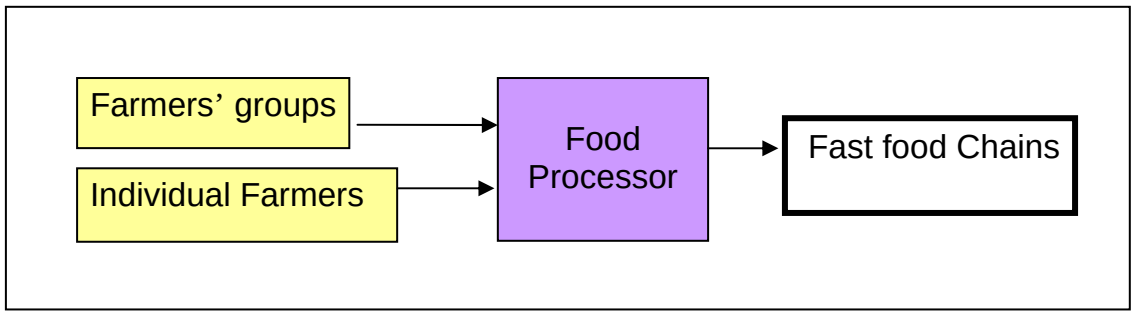
Chain managed by a food processor

The traditional vegetable chain has been the main source of supply for most restaurants and hotels in most parts of the country. In recent years, fast food chains have become the drivers for change. With the need to streamline their operations and cut costs, the fast food service operators no longer wanted to purchase unprocessed vegetables. Fast food companies increasingly turned to vegetable processors to supply their needs. They wanted to buy processed vegetables in the form of washed and cut salad vegetables and processed coleslaw. Their former suppliers, who used to be vegetable traders and consolidators, were therefore forced to adapt to meet their demands. Some of these traders went into vegetable processing. Suppliers who could not supply the required processed vegetables had to find processors who would become their new customers. In effect, farmers who used to consolidate and sell to the fast food chains, now find themselves excluded from the fast food market unless they can find a processor who will take their products. See Figure 5 below for a model of this supply chain.

An example of such a development is Great Taste Foods[15] (GTF), a food processor who supplies coleslaw to fast food chains. GTF sources their vegetables from Benguet farmers through the La Trinidad Trading Post. However, in order to secure a more reliable supply, GTF is now collaborating with several farmers' groups for the production of different varieties of lettuce for the fast food salads.

[15] Name disguised to protect the privacy of the company.

Figure 5: Sample food processor-managed chain



Development agency-assisted chain

In many provinces involved in vegetable farming, non-government organizations have been assisting small farmers to market their produce. Some have succeeded, but many have failed either for lack of market knowledge, lack of marketing skills, or lack of familiarity with business functions. In an effort to improve the offer of quality, many have attempted to encourage farmers to market their produce collaboratively. These attempts have been done under the structure of an agricultural cooperative. While Manalili (2000) talks about the high failure rates, she also posits that cooperatives "by virtue of their size, technology requirement, and proximity to and knowledge of the area of production – are still the better option to service the marketing needs of small rural producers". The key, however, "is effective management rather than the level of sophistication of the marketing system. Measures should therefore be geared towards enhancing cooperatives' organizational management and operational efficiencies. Strategies should capitalize on competency-enhancing linkages that enable cooperatives to acquire the competencies of their partners while at the same time 'learning the ropes' of the business."

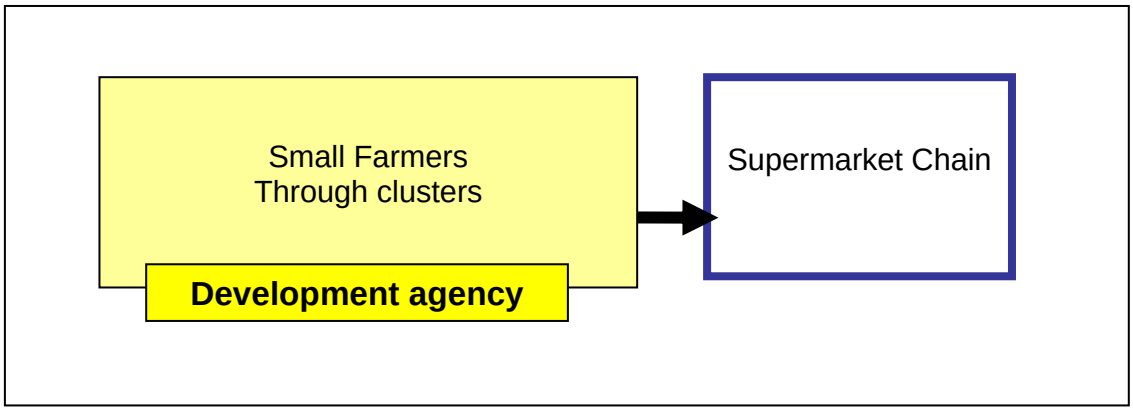
In a few vegetable chains observed, small subsistence farmers can only take an active role in the development of their farm as a business if the development agency assisting them empowers them to learn that farming should be viewed as a business, satisfying markets, taking financial risks, improving delivery systems and formulating enterprise plans. See Figure 6 below for a model of this supply chain.

One group of farmers in Maragusan has been assisted by the Catholic Relief Services (CRS) who have taught them the benefits of cluster farming. The development assistance strategy used by CRS was four-pronged, including agricultural extension, infrastructure, natural resource management and marketing assistance (Mendoza, 2006).

The marketing assistance was composed of basic marketing training, product selection, cluster formation, market visits, enterprise planning and trial deliveries. A cluster of five to ten farmers was formed in order to coordinate production, harvest and marketing activities. Consolidation gave them better access to markets and resource providers and lower transportation costs (Mendoza, 2006). The farmers themselves identified what products they were good at cultivating and how much volume they could commit to the cluster. If one farmer does not comply with the commitment, this farmer can be eliminated from the group by the other farmers in the cluster. A cluster leader with good

farming skills and the ability to lead is selected from among the members. Regular meetings are conducted to evaluate the lessons learned from each step the cluster makes.

Figure 6: Development agency-assisted chain

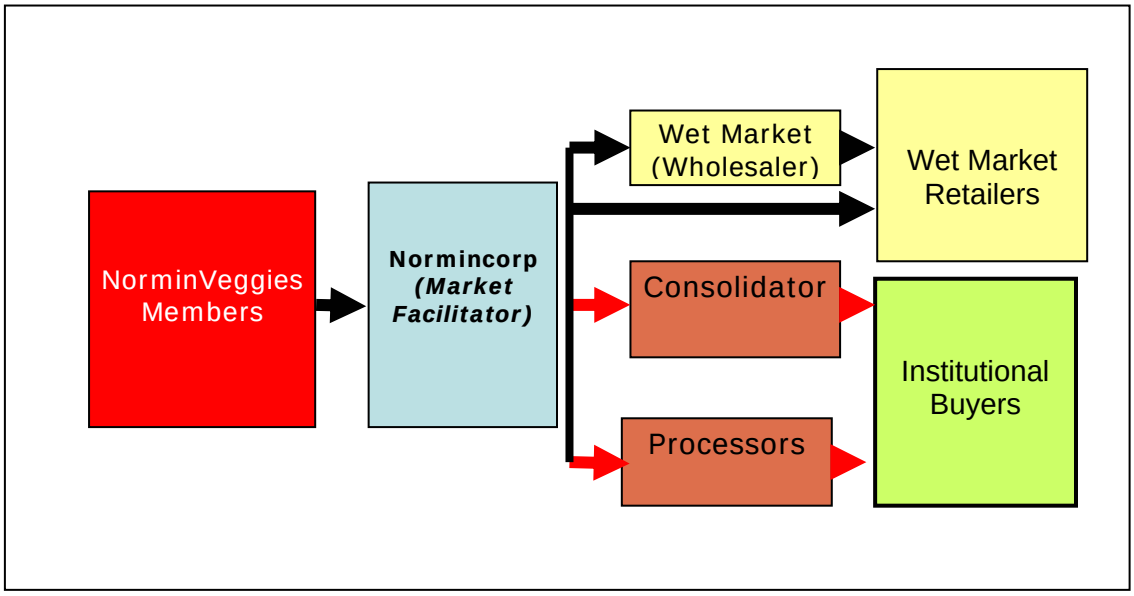


Producer-managed chain

In response to the challenge of accessing more stable markets, farmers from Northern Mindanao collaborated with each other to coordinate their production and marketing efforts. This group is called the Northern Mindanao Vegetable Producers Association, or NorminVeggies. As marketing clusters, they were able to achieve economies of scale in transporting produce, access development assistance from government and NGOs, share market intelligence, production and post-harvest technologies. The collective action did not stop at membership, but was implemented at different nodes of the supply chain from production, post-harvest, marketing and sales collections. They also established a private corporation (Normincorp) which acted as a marketing arm and charged a facilitation fee based on a percentage of sales. This marketing arrangement is very attractive to farmers because they retain ownership of their products right up to the end buyer or institutional market. They receive the revenue from the sale of their produce minus the facilitation fee (Concepcion *et al.*, 2006).

While most small farmers are unable to transform from being production-oriented to market-oriented, the members of NorminVeggies were able to do so. Many factors contributed to the success of this group. Firstly, their membership comprises of some large independent growers who are more educated, better trained and more financially independent than the typical Filipino small farmer. These independent growers took the initiative to lead the association, look for new markets and identify new ways of reaching these markets. Secondly, a non-government organization took care of the needs of the smaller farmers and assisted these farmers in making their decisions. Thirdly, NorminVeggies was able to access funds from development agencies because they were able to demonstrate that they had taken various initiatives to strengthen their organization and to develop their markets. See Figure 7 below for a model of the NorminVeggies supply chain.

Figure 7: Sample producer-managed chain



Fourthly, members of NorminVeggies set up a marketing arm for the association in the form of a corporation called Normincorp, managed as a business enterprise to service the marketing needs of NorminVeggies' members. Normincorp was able to sustain itself through the facilitation fees charged for produce sold. Finally, members of NorminVeggies consolidated their volume through a clustering strategy based on product and market fit. While membership in clusters is optional, farmers who are cluster members have an assured market and can command better prices because of the production protocols adhered to.

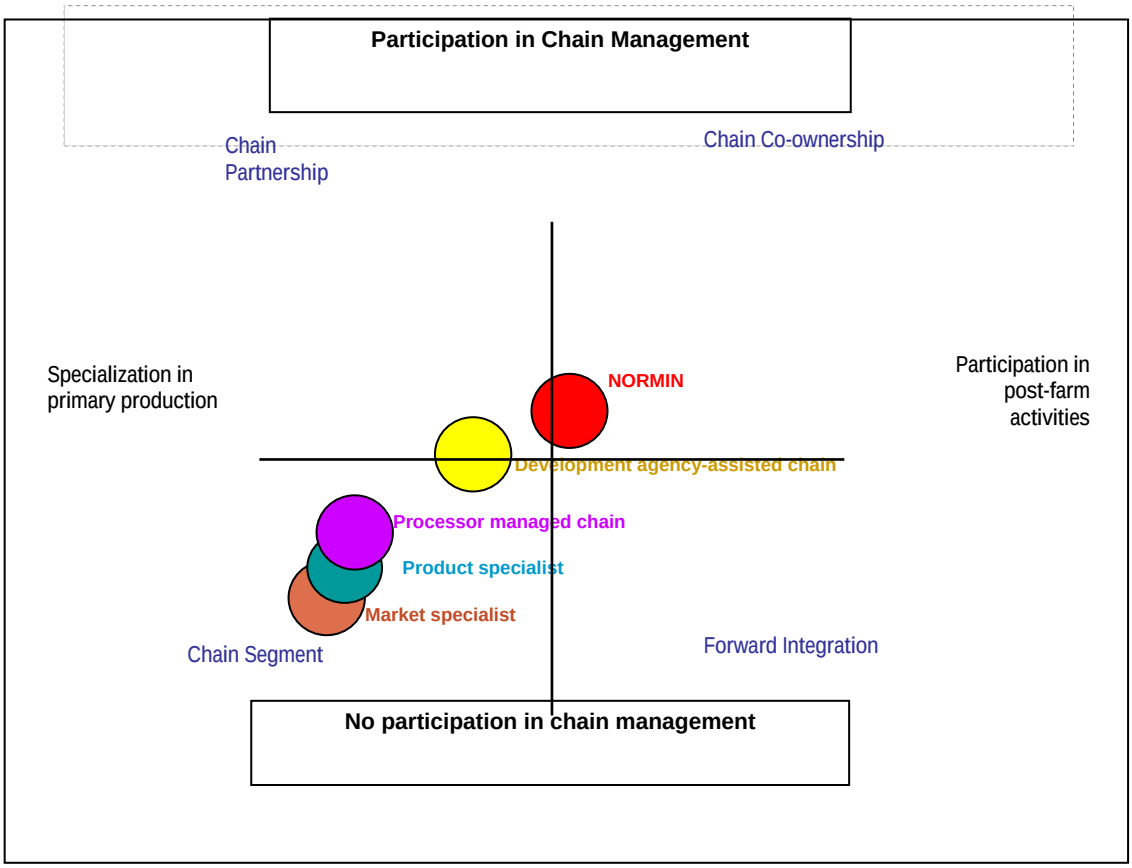
The clustering strategy enables small farmers to be active players in the supply chain, to meet the basic demands for volume and consistent quality, and to participate in dynamic markets like the fast food chains, processors and supermarkets. Members of each marketing cluster commit to certain agreements on volume and quality, follow production and harvest schedules, share techniques with each other, and regularly confer with each other on all supply chain issues.

Conclusions

Five emerging chains have been described above and each of them includes small farmers to varying degrees. The evaluation of each chain on the basis of the degree of participation of small farmers in chain management and the small farmers' role in the chain is shown in Figure 8, using the framework proposed by Berdegué *et al.* (2005).

The market specialist chain does not provide the small farmers with any opportunities for involvement in any other role except primary production. This is the same situation in the product specialist chain and the food processor-managed chain. While these three chains link the farmers to modern chains, the farmers' relationship with the buyers remains essentially the same.

Figure 8: Forms of inclusion



The product specialist chain, however, gives the farmers an assurance of market because of the contractual relationship with the product specialist. Trust can be developed in this case when the relationship becomes more long-term. In the food processor-managed chain, the farmers still play the primary production function only. However, the requirements of the food processor in terms of quality and volume are made known to the farmer, giving them more intimate market knowledge and a more involved role in chain management than the previous two chains.

In the development agency-assisted chain, the small farmers are empowered to learn and to make their own decisions. They conduct rapid market appraisals by visiting their intended markets and talking to the buyers in supermarkets. In the traditional chain, the farmers have no knowledge of the market beyond the traders who buy from them at the trading post.

In the producer-managed chain, like NorminVeggies, the farmers participate in making decisions on price, volume and quality, for each of the institutional markets they supply, be they supermarkets, food processors or restaurants. The farmers have a deep involvement in the management of the chain and in the delivery of the products close to the ultimate user.

While we have examined the farmers' inclusion in the chain and participation in postfarmgate activities, an even more critical issue is to calculate how much marginal income the farmers receive in each type of chain. Further research should ask the question of how much additional net profit the farmer earns from inclusion in modern chains. It is not enough just to include small farmers in modern chains, but it is essential that their inclusion gives the farmers higher marginal returns. It is hoped that greater participation in the chain will give farmers a better share of the value created in the chain.

Presumably, if farmers are able to take a more active role in their own supply chains, it should be possible to change their position as price takers. However, in order to do this, farmers need to be organized, not just as individuals belonging to a group, but as a group acting as one entity. For this to work, several critical factors must be in place. The benefits or incentives of organizing are clear. Members should share a core value of helping each other and of galvanizing their efforts towards strengthening the organization. While incentives exist to organize and access resources, the organization cannot be strengthened if core values are not shared. Considering the volatility and the dynamism in modern chains, it is important that the organization should be a learning organization which continuously adapts to the changes in the market. Another key factor that reinforces the ability of the learning organization to respond to the changes in the market is the presence of managerial and leadership competence. The quality of people making strategic decisions is essential.

Acknowledgements

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Supply chain innovations in the Ecuadorian cut flower industry

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Abstract

The Ecuadorian cut flower industry exports nearly 70 percent of its production to the United States of America. During the 1990s and in early 2000, the Ecuadorian export cut flower industry expanded rapidly by exploiting a unique financial arbitrage opportunity provided by the combination of an American dollar-denominated export market, a rapidly depreciating local currency and an inelastic labour market. Ultimately, this resulted in a highly inefficient and complacent industry that had few incentives for firms to operate differently. However, the unanticipated dollarization of the Ecuadorian economy removed this arbitrage and confronted producers with not only American dollar-denominated product markets, but also American dollar-denominated factor markets. The result was that many inefficient firms exited the industry while those that remained were forced to change their production practices and business models dramatically. Firms began evaluating how they could capture higher farmgate prices by extending their reach closer to the final consumer. One of the critical innovations was the establishment of a fully integrated cut flower supply chain for roses involving growers, a grower-owned brokerage firm and UPS. Drawing upon an extensive data base constructed from structured and semi-structured interviews and participant observation, this paper empirically evaluates the factors that contributed to the development of a fully integrated grower-owned supply chain for export cut flowers and the diffusion of its impact on the entire industry. Specifically, we look at how the chain was devised and identify the key actors and their critical roles.

Introduction

In recent years, the increasing internationalization of agriculture involving the globalization of production and distribution through reduced trade barriers and eased restrictions on capital movement has created a highly competitive industry for producers. The cut flower industry is a case in point, specifically the American market which imports nearly 60 percent of the flowers consumed (ERS, 2004). For firms operating in this export market, their survival is based on whether or not they can successfully develop and adopt organizational structures that allow them to create and capture value continuously (Gow *et al*., 2002). The problem, however, is that many cut flower farms are still producing homogenous products and struggle to understand how to capture value within these new dynamic markets. Consequently, few firms have attempted to implement the necessary organizational changes that are required to confront these changes and to capture added value within the market.

The Ecuadorian cut flower industry is no exception. Ecuador exports nearly 70 percent of its cut flower exports to the United States of America annually. During the 1990s and in early 2000, the Ecuadorian export cut flower industry expanded rapidly by exploiting

a unique financial arbitrage opportunity provided by the combination of an American dollar-denominated export market, a rapidly depreciating local currency and an inelastic labour market. Exporters profitably exploited the increasing exchange rate spread between the American dollar and the Sucre. The Sucre was depreciating at more than 50 percent per annum by the late 1990s and Sucre-denominated input costs quickly became insignificant, especially labour. This resulted in a highly inefficient and complacent yet highly profitable industry that provided producers with few incentives to operate differently.

Facing a severe economic and financial crisis, in January 2001, the Ecuadorian government unexpectedly dollarized the economy. This removed the previous arbitrage that producers had exploited and confronted them with the harsh reality of American dollar-denominated factor markets. With labour accounting for nearly 50 percent of production costs, their business structures were no longer economically viable. An alternative business model was needed. Inefficient firms were forced to exit, while those who remained had to change their production practices in light of the dramatic change in input prices (Blumthal and Gow, 2005).

For those firms that remained, they could either pursue productivity gap or opportunity gap initiatives, or both (Prahalad, 1993; Gow *et al.*, 2002). Most farms focused internally on productivity gap initiatives by improving labour and input efficiency surrounding their core competency in flower production. A few firms however attempted to pursue opportunity gap initiatives by identifying and developing new export business models that provided sustainable competitive advantage. In particular, a group of rose export farms saw the opportunity to stretch their current business models into a new market by leveraging their core production competencies to fill an unmet demand for high quality roses in rural America.

Leveraging the recent innovations in international distribution and Ecuador's competitive advantage in producing the world's highest quality roses, these growers recognized that they could capture higher farmgate prices by providing rural American florists with a personalized selection of high quality, long-life roses, delivered directly from the farm. Located at the end of a long and complex chain of interlinked but independent spot markets, rural florists were viewed by traders and distributors as a residual market on which to dump unsold product. Consequently, these rural florists commonly faced a monopolist distributor offering an extremely random range of highly variable quality roses at extremely volatile prices. Due to their remote locations at the end of the chain they effectively had little choice to accept or refuse what was offered. Recognition of this opportunity gap that rural florists could not access a consistent range of high-quality roses led to the critical innovation related to the development of a fully integrated cut flower supply chain for roses involving growers, a grower-owned brokerage firm and UPS for the logistics and transportation to supply rural florists in the American market.

Drawing upon an extensive empirical data base constructed from structured and semi-structured interviews and participant observation over the summers of 2004 and 2005, we analyse and evaluate the critical factors and drivers that led to the establishment of this innovative grower-owned business model for exporting cut flowers. We then

evaluate the business model's key components, diffusion and impact. Finally, we describe and discuss the lessons learned.

Methodology

The responses of firms within the Ecuadorian export cut flower industry to dollarization has provided a unique case study (Stake, 2003) within a natural experimental design framework for analysing endogenous interorganizational firm innovations following idiosyncratic exogenous shocks. Recognizing the instrumental and exploratory nature of this research, we followed a grounded theory approach to problem identification and analysis (Eisenhardt, 1998; Straus and Corbin, 1994). This analysis draws upon approximately 60 unstructured and semi-structured interviews conducted with all of the relevant channel players from government officials, trade association and industry leaders, firm owners, growers, workers, exporters, distributors and other channel members. A translator accompanied every interview to ensure the interviewer or interviewee fully understood each question or response.

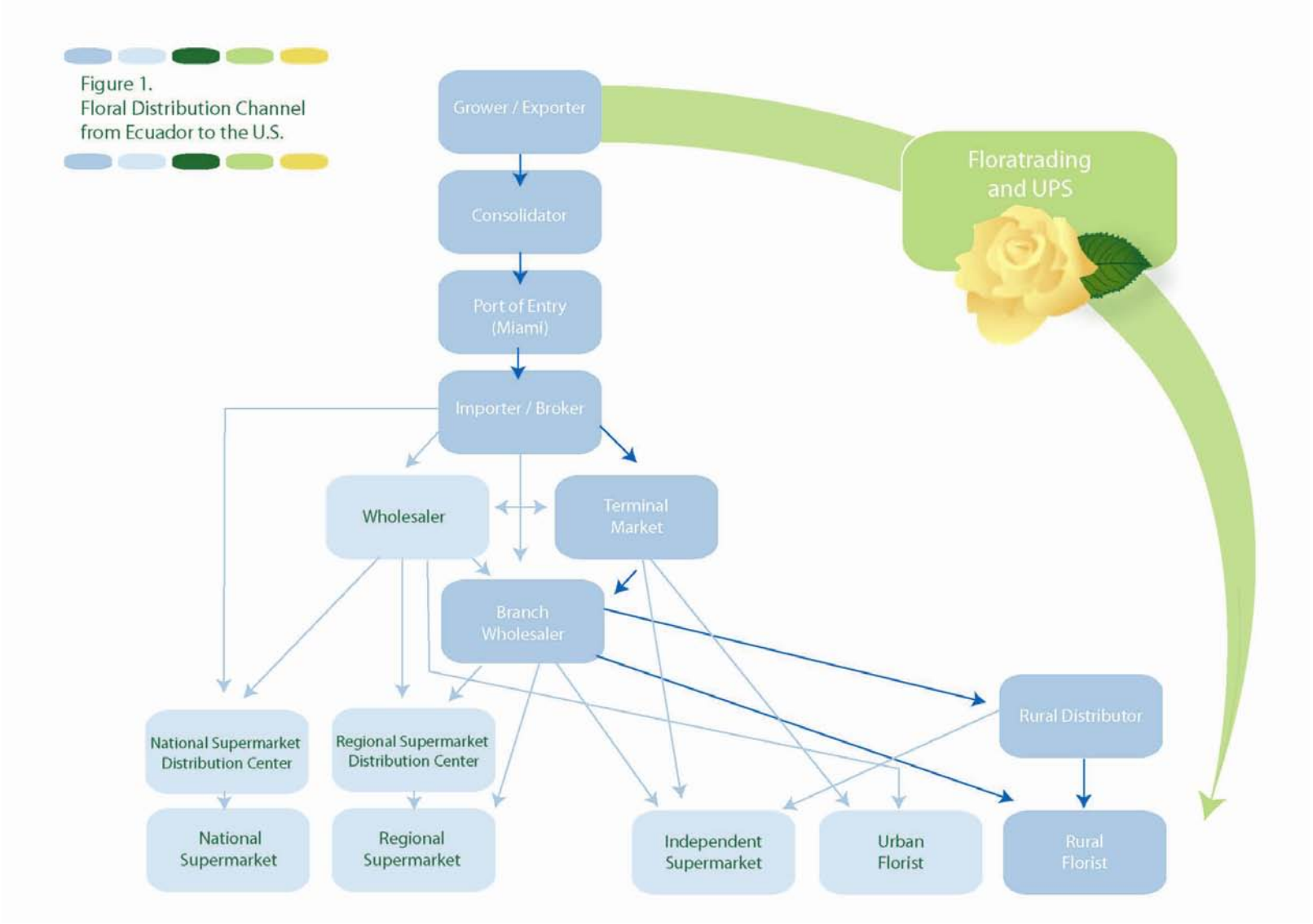
Distribution channel of Ecuadorian cut flower exports to the United States of America

The general structure of the marketing and procurement channels for floral products in the United States of America for both domestic and imported flowers is shown in Figure 1. The number of alternative distribution, marketing and retail channel structures has increased rapidly over the past decade as consumers' disposable income has increased and, with that, the year-round demand for cut flowers.

The traditional product flow sees growers selling to an exporter who then consolidates and sells to an importer in the target country. Miami is the main port of entry for cut flower imports into the United States of America, receiving and processing between 80 and 90 percent of all cut flowers imported into the United States of America each year (van den Broek *et al*., 2003). Other ports of entry include New York City and Los Angeles. These imported flowers are then sold: (1) via auction or spot market transaction at a main metropolitan centre terminal market; (2) purchased on consignment by a wholesaler; or (3) purchased on consignment or contract by larger retailers.

The wholesaler plays the role of the intermediary, consolidating both domestic production or purchases from importers and then providing an expanded offer to buyers. The wholesaler also communicates information regarding demand back to the growers. The wholesaler therefore occupies an important channel communications role: forwards to the retail florist and backwards to the importers and growers. Wholesalers may have several regional locations servicing major metropolitan areas and rural areas. For example, a large wholesale florist in Chicago may have a bonded import warehouse in Miami, a main warehouse in the city of Chicago, and several smaller branches in the suburbs.

Figure 1.
Floral Distribution Channel
from Ecuador to the U.S.



As cut flower sales increase at mass merchandisers and supermarkets, importers are beginning to fulfil the wholesalers' traditional role of aggregating overseas product by selling product directly to these retail outlets. These firms can buy directly from importers because they require large quantities all year round. This provides them with considerable buying power which translates into lower prices per stem. Additionally, because they already have established distribution channels, they don't need the service that a wholesaler provides.

Urban retail florists usually procure their flowers directly from one of many large metropolitan wholesalers as they provide a range of services including one-source procurement, lines of credit, technical support and just-in-time delivery for special varieties of flowers. The florists have to purchase from what is available, which may or may not be the freshest product. It is only those retail florists that are large enough and can afford to order and plan in advance that receive the best quality product.

Rural areas are serviced by the large- to medium-sized metropolitan wholesalers and other rural distributors of cut flowers. The distance of these rural retail floral outlets from the wholesaler means they pay substantial premiums for the additional transport and marginal costs associated with moving flowers through such a long channel. In addition, it is extremely difficult for these florists to take advantage of the same just-in-time ordering and delivery options offered to metropolitan florists. The distance, volume, transaction costs and premiums involved simply make it prohibitive.

Impact of distribution on cut flower quality and market structure

Cut flower quality is determined by a combination of the stem length, vase life and bloom appearance. Vase life is the longevity of the bloom in the consumer's home. This longevity is directly correlated to the quality of the flower at harvest and inversely correlated to the length of time that the cut flower spends in the distribution channel from grower to consumer.

Cut flowers can spend eight to ten days[16] in the wholesale chain before reaching the final consumer. During transit, almost all flowers are shipped via a cold chain however, numerous cold chain breaches may occur as ownership changes, thereby adversely affecting quality. Thus, as channel length and the number of channel linkages increase, flower quality decreases. Growers can ensure that the initial flower is of the highest quality through appropriate production practices, but traditionally neither the florist nor grower could control the channel length or number of linkages. This problem is particularly detrimental to vase life for florists and consumers at the end of long interlinked channels, especially rural florist and rural consumers.

The result is that urban retail florists in large metropolitan markets have greater sourcing, pricing and quality flexibility compared to their rural counterparts. Urban florists can source cut flowers from any combination of wholesalers, terminal markets or importers at a wide range of price–quality combinations that match their specific target market requirements. Urban markets have larger customer bases of both regular

[16] Data is from a national retail grocery store chain and is from their distribution channels.

and impulse consumers, as well as more high-end consumers and corporate customers who regularly purchase cut flowers for events or special occasions. The result is that the urban cut flower market is highly competitive and offers urban consumers numerous alternatives to meet each consumer's specific needs.

Conversely, rural florists, often at the end of an extended distribution channel, can only purchase what remains in the wholesaler's coolers at that specific time, usually a very limited selection of marginal quality flowers. Consequently, rural buyers demand has declined dramatically over the past decade, as the quality of the consumer experience has suffered from a limited assortment of standard arrangements produced from marginal quality flowers with a short vase life. The result has been the slow and painful death of the rural florist.

Recent innovative channel responses

Recent market innovations in the floral industry have focused on shortening the distribution channel while providing the final consumer with a broader and deeper offer. These innovations have generally been centred on two consumer retail interfaces: supermarkets and the internet.

Supermarkets and mass merchandisers over the past decade have leveraged their shorter and more efficient distribution channels and increased consolidated buying power to offer their customers a greater variety and quality of cut flowers. This development began with supermarkets offering just a basic assortment of loose flowers, bunches and potted plants. More recently however, urban supermarkets have begun competing directly with urban florists. Today, many urban supermarkets offer specialty in-store florists providing customers with both custom arrangements and a large assortment of cash-and-carry consumer bunches, thereby making the flower buying experience simple and convenient as well as more affordable.

Recognizing the opportunity to leverage their urban experiences, rural supermarkets have recently begun offering rural consumers both prearranged bunches of flowers at substantially cheaper prices or flowering potted plants. However, the long channel of distribution still causes some quality difficulties and in-store florists are still uncommon, but, as a result, rural florists are attempting to identify alternative distribution and procurement channels so that they can increase their assortment and the quality of their product offer.

The second innovation relates to the use of internet and rapid expansion of express parcel distribution services across the United States of America. Consumers can now browse through several web-based firms that sell floral arrangements over the internet and use FedEx or UPS as their distribution agents direct to the consumer's home. These web-based firms offer consumers convenience in urban areas and in rural areas they often offer better variety and quality than what the traditional retail florist can offer. The constraint with these internet-based firms is that they have a high minimum price, with most bouquets starting out at about US$40[17] plus shipping and handling charges, with

[17] Aggregate number based on current web-based offerings

not all delivery options available in rural areas. The other constraint is that the consumer is unable to observe the product prior to purchase.

The firms operating in the internet market space have differentiated themselves by targeting high-end consumers with a high-end product: domestically produced cut flowers in stylish arrangements and vases available at several different price levels. Other firms have targeted the mass market with a variety of internationally produced cut flower products with mid-range prices. Both of these groups of firms use the Internet to market pre-made and designed consumer bunches direct from the field via a distribution centre to the final consumer.

Market opportunity in rural America

The main challenge rural florists face compared to urban florists is high information costs and high transaction costs that are derived directly and indirectly from supply chain problems related to the demand uncertainty and high temporal specificity (perishability) of the product and geographic remoteness. Only holidays, weddings and funerals are certain for rural florists. Flowers are a highly perishable product that has already substantially deteriorated by the time it reaches the rural florist. A large shrinkage and short vase life makes holding cut flowers for any period of time difficult. Finally, long multiple-linked procurement chains reduce vase life, resulting in substantial premiums from double marginalization and force the imposition of long lead times and limited product offerings. Thus it becomes extremely difficult for rural florists to plan and maintain a broad, high-quality and price-effective product offering.

With recent channel innovations focusing on the end consumer, there is an opportunity gap related to the marketing channel to the rural florist. Though “jumping” from the grower to the end consumer offers better pricing and selection, few innovations have targeted the retail florist. The retail florist still plays an important role in designing stylized arrangements for consumers especially for special events, weddings and funerals in urban and rural areas. Online vendors do not service these events well because of delivery lag time and packaging. Supermarkets are unable to provide the customized arrangements. Furthermore, rural florists do not have consistent access to a quality supply of cut flowers. Therefore, an opportunity exists for an alternative business model for growers to target rural florists.

Retail florists present an interesting target market because their business is built on reputation. This reputation is based on perceived design quality, vase life and the variety of flowers offered. Individually, Ecuadorian flower producers cannot correct the rural retail florists’ quality, variety and vase life problems as they do not have enough variety and volume or a suitable distribution channel to service these retail florists effectively. However, if the farms could be coordinated and identify a suitable distribution channel they could solve the problem collectively.

Business model innovation: Enrique Hidrobo and Floratrading

This is exactly what one entrepreneurial farmer did: establish a collectively owned firm Floratrading to coordinate and manage the procurement, marketing and distribution of

Ecuadorian cut flowers to target rural retail florists in the United States of America. The concept was for Floratrading to offer rural American florists bundles of 200 stems of high-quality roses in a variety of sizes and a range of varieties and colours shipped direct to their door. Pricing would be competitive with the wholesale floral market prices however Floratrading would offer fixed year-round prices that included shipping and handling. Pricing would be determined by stem length. The one exception is Valentine's Day, where all prices increase for this holiday. The roses are delivered to the florist via the UPS fresh floral express service within 48 hours from the farms in Ecuador.

The key entrepreneurial individual behind this was Enrique Hidrobo, a medical doctor with a passion for agriculture. Over the years he had experimented with several domestic agricultural products, all of which failed to turn a profit. Only the export market was making profits and in the Ecuadorian highlands outside of Quito that meant only one thing: cut flowers and specifically roses. So in 1996, he began his first farm near Otavalo. He now operates two farms with some 15 hectares under production.

Rose farms in Ecuador produce high-quality long-stemmed roses. Individual farms produce around 30 to 40 different varieties. The market for cut roses however offers over 100 varieties to choose from so farms specialize in specific varieties.

The 2000 dollarization of the Ecuadorian economy hit the industry hard. Farms had to improve production efficiencies quickly or exit the market. Having already successfully exploited productivity increases in his markets, Enrique was closely watching the development of the American market, searching for new opportunities. Specifically, he had paid close attention to Calyx and Corolla and their success in shipping and selling flowers directly to the consumer via Federal Express. He was not interested in mimicking their innovative consumer-focused model as his farm only produced roses, however, the direct delivery freight system was intriguing and would only require minimal changes to his current practices if he could identify an opportunity gap. After scanning the environment, it was clear what would be successful: collective direct marketing of large bunches of roses to rural US retail florists.

The region outside of Quito produces high volumes of roses, lots of varieties, and high-quality roses. By collaborating, growers could easily provide sufficient product at the required quality to meet the anticipated demand. Additionally, there would be no changes to the product, production practices or packaging requirements to serve the retail florists, as they would offer the same standard 25 stems per bunch that they provide to wholesalers.

Coordination and market development would require a sales force and a variety of product offers to the florist. Essentially, growers would offer the same rose varieties and timeliness that wholesalers did, otherwise there would be no reason for florists to use them. This would be difficult alone, so he established Floratrading to coordinate the sales and distribution to American retail florists. Floratrading would provide the product faster than the traditional distribution channel by utilizing UPS as their sole distributor.

During Floratrading's inception, farmers were reluctant to accept the start-up risk, as dollarization had made them risk-averse. Furthermore, a collaborative industry culture was non-existent. Initially Enrique had to leverage his own farm to finance and supply the roses for the Floratrading venture. However, once Floratrading was established other farmers were no longer hesitant to invest in it. Today, Floratrading is privately owned by the growers who choose to participate. The main incentive is a higher farmgate price. Farmers pay a membership fee for entry that they will be able to recover from Floratrading once it shows a profit.

The roses are distributed to retail florists in the United States of America via UPS. Initially, UPS had no experience shipping flowers internationally and lacked the proper systems to ship fresh flowers. They were hesitant to develop such a service but were persuaded with the Calyx and Corolla business model and its success. Thus, they established the fresh floral express to act as the freight forwarder and distributor for Floratrading roses. The delivery service utilizes their 48-hour air freight services and delivers roses faster than the traditional chain. As a result of a shorter chain, fewer channel partners and less time in the chain, the roses have a substantially increased vase life for the consumer.

The next step was to establish a market interface. The increased consumer use of the internet coupled with Ecuador's inconsistent and expensive telephone service meant that a web-based customer interface was optimal. Customers could view the product offer and make purchases. Delivery of the product was based on the order date with one week as a required minimum for delivery time. Over the website customers could also contact sales representatives directly. Recently, Floratrading have implemented new technology that allows American customers to dial toll free numbers in the United States of America and be connected to the Ecuadorian sales representative's cellular phones. This technology has helped them overcome the telecommunications barrier.

Floratrading offers customers a set price all year round with the exception of Valentine's Day. For example, they have one price for 50 cm roses, and one price for 60 cm roses. They are able to offer this set price because they charge a toll fee as opposed to double marginalization that occurs in the traditional supply chain. This means they can increase farmgate prices up to the traditional wholesale price (minus the cost of transport) and still be competitive with wholesaler's prices.

Finally, in an effort to protect their new innovation, Floratrading began to brand their roses with the company's name on the shipping boxes to gain customer recognition.

Impact of the innovation

The Floratrading business model has provided substantial positive benefits to both growers and American retail florists. Floratrading has successfully established a niche market with lesser serviced areas, which allow the farms involved to receive higher farmgate prices. Alaska was a market in which they had initial success due to its remoteness from major metropolitan areas. Although UPS needs 72 hours rather than 48 to reach the Alaskan market, the quality of the product florists receive is superior to that from their traditional supply chains.

To date, only one Ecuadorian imitator has piggy-backed the UPS services to the United States of America. Even though Floratrading developed the initial service, its increased use only improves the distribution channel and allows Floratrading to bear less of a cargo burden. Furthermore, only individual farms are using the model and they do not offer the same variety of cut roses as Floratrading.

Retail florists benefit because there were effectively no switching costs associated with moving to Floratrading, while it provided a substantially higher quality product with greater variety. The difference with Floratrading is that florists do not have the option of just-in-time delivery and must plan ahead on a weekly basis. This however differs little from requesting specific colours and varieties of flowers from a wholesale florist. The only other restriction is that retail florists must order in pre-set quantities of 75–100 stems (based on stem length), but they are free to select different varieties to fill each box. Therefore, Floratrading offers a very similar product offer to retail florists at the same prices but with a substantially increased vase life. The added benefit of the reduced distribution chain means that, if necessary, retail florists can hold the roses longer before they must use them.

Lessons learned

An entrepreneurial business leader was necessary for this innovation. He provided the needed market and production coordination and saw the value in the opportunity when others could not. Additionally, he possessed the social capital and willingness to bear the burden of risk associated with the development of the distribution channel. However, in the end he wins, because his farm is a member of Floratrading and he receives increased profits as a result of higher farmgate prices.

A real and existing market opportunity. There was real money to be made and participating growers and florists have benefited from the innovation financially.

The offering is mutually beneficial to all parties. Florists receive a stable price and high quality product that is delivered faster than traditional supply channels. Growers receive a higher farmgate price and gain increased knowledge about their consumers. UPS wins because they have increased cargo business and can now compete with Federal Express.

The business practices stay the same for rose growers. There are no major hard asset changes or investments in joining Floratrading. The only change to the post-harvest process is the use of a different box. Depending on the grower, they may already be shipping their flowers in different boxes depending on their customers' needs.

Conclusions

This instrumental case study analyses and evaluates the critical factors that led to the establishment of this innovative grower-owned business model for exporting cut flowers. The case provides a comprehensive understanding of the reasoning behind why the firms initiated the organizational and institutional innovation and how it was implemented. The dollarization of the factor markets coupled with an American-dollar

denominated export market were critical to provide the appropriate business environment and firm incentives for this innovation to occur. The results and impact provide an in-depth understanding of the critical factors required for success. By no means is this firm the only example of a successful business model which offers a sustainable competitive advantage, but it is a legitimate example of the success experienced by firms as a result of exploring new market opportunities. The success of this model is based firstly on entrepreneur's risk taking, coupled with collaborative industry culture and mutual benefit for all parties. The success is further strengthened by the appropriateness of the target market and the production quality and the timeliness of delivery.

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Grower direct marketing of vegetables in the Philippines[18]

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Abstract

In the Philippines, the distribution of vegetables in the open market has been dominated by traders for some time. The traditional trading practice involves marketing intermediaries that are increasingly multilayered. It impacts negatively on both the grower and consumer. Many growers have become dependent on traders for capital. At the consumer end, the high price has made vegetables unaffordable to most low income households, compromising their health. In order to raise the income of growers and make essential food affordable to low-income consumers, the GTGF Food Corporation has embarked on an initiative to reduce the number of intermediaries between the grower and the consumer. In our current operations we process vegetables for our clients. Our company and the food service establishment constitute two intermediaries between the grower and consumer. To reduce the gap further, we will soon be marketing the growers' produce direct to households and consumer networks. We are helping to set up direct consumer markets. These will be comprised of establishments that cook food for their constituencies, like school canteens and hospitals. The initiative is integrated with campaigns for healthier lifestyle and increased consumption of vegetables among Filipinos. This will be good for growers, the food service industry and public health

What you will see in the next 20 minutes is our experience on how to improve a food chain by integrating new ideas into our own trading system. Vegetables from the highlands and the lowlands are brought to urban centres every day in great quantities. Supply is year round, varied, and in great abundance. You would think people would get rich from growing and selling vegetables. Well, traders do, and some big farmers who are also into trading, but the majority of small vegetable growers remain poor. For them vegetable growing is not a source of stable income. They survive and continue to farm out of necessity.

Let me tell a story from the Cordillera, an autonomous region where I come from and where most of the highland vegetables in the northern Philippines are grown. Two generations ago, the marketing of highland vegetables was very simple. A local Chinese trader would pick up a load of vegetables from the roadside, bring the produce to Manila, sell it at some central market, and then return to give the farmers a share from the sale and to pick up another load. Then urban-based Filipino traders began coming up to the highlands, buying from the growers and selling to the wholesalers in the city. Soon these traders arranged for consolidators at the farm site. So the supply chain

[18] The following paper is an edited transcript of a presentation delivered to the International Symposium on Fresh Produce Supply Chain Management

became extended and multilayered: first the grower, then the consolidator, the trader, the wholesaler, retailers, vendors, and finally the consumer. As a result, the system depressed the price at the grower end and raised it at the consumer end.

Another factor that puts the grower in a disadvantaged position is that the traders also provide finance to the farmers who often lack the capital necessary to fund production. These traders then do the marketing for the farmers to ensure that they recover their investment. This practice gives the trader absolute control over the price that the growers receive for their produce. When the prices in the open market dive, the grower is unable to recover the cost of production and goes into debt to the trader–financier. Many growers have been trapped in this situation. Let us take note of the three major impacts of this trading practice: (1) the grower is totally cut off from the market system depriving him of the ability to influence its workings; (2) the grower has little control over his farming, his income and capital, and because of his need to depend on the trader for credit, farmers fail to understand the complexities of financial management; and (3) the value of vegetables at the grower end is often very low while the price the consumer has to pay may be two to ten times higher at the point of sale. This is very demoralizing for the grower. Finding the solution to these three undesirables poses a challenge. This challenge became the foundation for a grower-processor partnership which I and a cluster of growers now share.

My company, GTGF, is into processing vegetables for the major food chains in Metro Manila. Since I need a reliable supply base, I set up a working relationship with growers willing and able to meet my requirements all year round. Moreover, the produce must meet the stringent quality specifications of my customers. As we were working on this, the concern for giving the farmer his or her due compensation was utmost in our minds. For starters, we agreed on a fixed price for each crop for the whole year, while ensuring a fair mark-up. My partner growers acknowledged the advantage of this arrangement because they knew what they would earn for the year in contrast to the price uncertainty in the open market. Still, the allure of the occasional high price (jackpot) at the trading post remains and has proven to be the greatest hurdle to overcome. In this regard, the outlook and attitude of the farmers needed to be transformed. Not unexpectedly, the sincerity among partners was put to the test.

The plan with my partner growers is four-pronged: (1) to improve the efficiency of their farming practices and comply with the highest standards of farming, production programming, post-harvest procedures, packaging, sanitation, and increasing technical competence; (2) to develop a sense of business in order to be able to appreciate risk, opportunities and threats, for farmers to manage their farming activities as a business, applying sound business practice; (3) to make the growers' earnings reflect all the possible benefits due to them, recovering the cost of soil rehabilitation, land preparation, inputs, adequate compensation for labour, a subsistence allowance during the waiting period, partial payment in cash upon delivery of harvest, social security and other benefits for family members; and (4) to nurture social values which must underlie the first three objectives and pass the test of sincerity which alone will hold the partnership intact. The need to nurture and develop values or character; while this may not look as important as the first three, it is the most important. The values or the character of the people involved will either make or break our business and our partnership.

In most businesses, this issue is often given very little priority or otherwise disregarded. Because of this, when conflicts arise, the business struggles to move forward, because those involved do not share the same values. We know this concern from a lot of experiences. Realizing this, we have incorporated a value formation programme into our operations. Our desire is to help every person involved in our project, to value their work by giving value to their relationship with God and others. In order to do this, we have done the following. We are developing our value formation programme within our processing company. As we learn from this, we hope to deploy the programme to all our partners in the next two years. You know, we use the Bible as a reference, because it contains powerful lessons and examples of people of character whose values we would like our people to have.

In our programme, we do not touch on people's religious affiliations. Instead, we focus on striving to have one mind and one heart by sharing the same values. We have had encouraging results from this programme. The people in my company are more responsible to their tasks and cheerfully cooperate with those in authority. We see less theft and much more positive behaviour. Our workers have developed a sense of ownership for their work. From here, we hope we can extend the programme to our partners in the community that we work with.

With the prospect of a reliable year-round supply, based on our grower–processor partnership, I was determined to lead my company and dream to become the biggest vegetable processor in the Philippines. To the growers I brought into the partnership, I was their sole direct market. However, my needs for the processing business could not possibly absorb all the output of those who joined the partnership, which we wanted to be open to other growers. We needed to have a much bigger market. This implied that our partnership should not be limited to meeting my needs as a processor. We needed to enter a wider market: households and institutional food servers. We also wanted to tap into the export market and work towards being able to meet the requirements of global trading.

However, this grand scheme ran up against a formidable obstacle before it could take off the ground. My processing business was in trouble because the growers failed to accomplish the programming schedules and could not yet meet the quality specifications. Many could not resist channelling their produce to the trading post whenever the price there was high. Crop damage due to bad weather aggravated the problem, but the main concern here is more of pole vaulting. To have full control over my supply requirements, I had no recourse but to accede to importing my raw materials, but, at the same time, I did not want to give up on my partner growers and the grand plan for a massive direct grower market. So, for me to solve the dilemma, I decided to run my operations along two tracks; first, secure my supply through a combination of importation and corporate farming; second, continue developing the partnership with growers for part of my supply, while supporting the establishment of the grower direct market.

As progress is made on the second track, the need to import will eventually diminish and supply will be restored to the growers. In light of this vision, the advantage of the grower direct market has become more urgent, and a grower-to-consumer market which

is more direct than grower to processor became the focal point. In trying to sell direct to consumers, we ran into an astounding insight: why treat consumers as mere buyers? After all, it is their purchases that keep this industry going, isn't it? So why not consider them as business partners, for indeed the consumer in the act of buying is interested in fulfilling an immediate need, being able to purchase at a convenient outlet and at a fair price. We are all consumers, but how many of us have a long-term interest in sustainability or in reliable supply? Should we not as consumers seriously consider the sustainability of our food supply? In much the same way, the grower is concerned about being able to dispose of his goods in a convenient way and at a reasonable profit. He is also concerned about sustaining production since farming is his lifetime occupation.

These parallel aims provide a fertile ground for a business relationship and the social reasons for partnering. Their parallel concerns and common expectations make them the best of partners. Here then is a model, an option; we believe God is inspiring us to undertake a direct grower-to-consumer market with no single intermediary trader. No trading profit is added to the price that the consumer pays and there is no reason to depress the price at the grower end. I am not saying trading is not an option, but the effort of the farmer should be compensated and considered.

We are starting with a network of school canteens and institutions or community-based consumer cooperatives. These networks take a proactive role in promoting healthful living and healthy eating habits which mean less meat and more vegetables, which is good for us and for the food industry. The consumer networks take care of synchronizing and consolidating their purchase orders, organizing the delivery and distribution system, and the grower clusters and the consumer networks jointly shoulder the cost of shared services such as the use of complete cold chain transport and appropriate information technology. Initially, we are consolidating these consumer networks across the entire metropolitan area of Metro Manila. With this setup we believe we have found the way to solve the three major destructive conditions cited at the beginning. Under this setup, growers will have direct influence in the marketing system. Growers will have control over the management of their farm, income and capital, and be able to compete in the export market. Consumers and growers will be paying the price of vegetables which we seek domestically to make them affordable to ordinary low-income households.

The resulting increase in vegetable consumption will improve the health of my fellow Filipinos, and beyond physical well-being, we count on the social goodwill generated by the partnering as an additional social dividend. With the add-on traders' profit taken away, the economies of scaling should benefit the grower, transporters and consumers. Part of the imputed savings will be treated as a collective rebate to be used for projects of social significance such as reduced rates in malnutrition, infant mortality, maternal mortality, and elementary school dropouts. In this way, those subscribing to the direct market system will be supporting the attainment of the UN Millennium Development Goals in their respective communities.

The social partnering impacts another dimension which is to improve the local economy and save our farming sectors. We refer to these as reclaiming. We want to reclaim this kind of vision, because this was the nature of fair-trade that our ancestors practiced

before the advent of colonization. Social partnering will revive our ancient social bonds in our future communities. The caring business ecosystem created will be our contribution to restrengthening our nation. The same caring business system will nurture our commerce with other nations. This vision and mission is dedicated to the highest purpose as indicated in the name of my company, GTGF, which means and seeks to give Glory to God Forever. I share this vision and experiment with my fellow Filipinos and I am honoured to have been asked to share this with you today.

DELEGATE: At the beginning of your presentation you mentioned that farmers needed capital to start growing vegetables. How did you overcome this problem? Are you also providing capital to them?

MR BANIQUED: When we started this partnership programme, the money came from our own pockets at first, but when we saw that it was expanding massively, there was an increased demand for resources. We have a lending institution involved in a tripartite arrangement. Whenever the farmer needs the inputs, it is this lending institution who lends to them and we guarantee the payment to them. So, the money will revolve efficiently and effectively.

DELEGATE: How did your own farmers react when you started importing vegetables?

MR BANIQUED: My grower partners could not provide all the raw materials that my processing operation required. We must have a consistent supply base, but then a lot of problems began to arise. Firstly, the bad weather; and sometimes with the variable supply and demand, there was overproduction in a season; then there would be no supply. We cannot accept this and I don’t want my company to fail just because of these things. I have to be more entrepreneurial and resourceful to maintain the relationship.

Agility in the Ghanaian international pineapple supply chain

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Abstract

In recent years, the rethinking of the fresh produce business for export in less developed countries has become necessary due to increasing structural changes forced by customer-driven demand. Demand from developed countries is increasingly more sophisticated and is driven by issues such as technology, healthiness, ethical processes and products, food quality and assurance legislation. This has required stakeholders in the horticulture supply chain to be agile enough to respond to consumer demand. However, this imposes major challenges for suppliers of horticultural produce from less developed countries that have to respond to change quickly. Agility of an enterprise can be defined as the ability of an organization to thrive in a continuously changing, unpredictable business environment. From the supplier countries' perspective, the manager's ability to respond efficiently serves as a constraint and acts as a drawback from further development of the supply chain. Nevertheless, little research exists explaining the relationship between organizational agility, strategies and performance. In this article it is argued that the integration of supply chain into design and management decisions is critical to the formulation of an all-encompassing responsive strategy. The Ghanaian pineapple supply chain was analysed using a conceptual agility model. A survey was carried out with key importers in the United Kingdom and exporters in Ghana to test the bottlenecks and agility gaps in the pineapple supply chain. Agility gap ratios calculated for Ghana were considered high (≥ 60 percent) implying most urgent change is needed.

Introduction

In the early 1980s, non-traditional food commodities appeared to offer sub-Saharan countries opportunities for export-led development, replacing the stagnation and decline in global market prices for traditional commodities. The world's increasing demand for exotic, out-of-season and semi-processed fruits and vegetables presented an opportunity for the production of tropical produce. This was the case of Ghana, a country located in West Africa whose economy highly depends on agricultural primary activities. In recent years, Ghana has developed its pineapple sector with a view to reaping the income generation opportunities in the export market seen in Ivory Coast and Costa Rica. Yet, Ghana is a small player in fresh pineapple fruit exports with 3.8 percent of the world market (FAO, 2004). The pineapple market is controlled by Costa Rica which accounts for 61 percent of the market, producing some 387 000 tonnes and is followed by Ivory Cost with 17 percent of the market share producing 183 000 tonnes.

Imports of pineapple to the European Union have grown at 4 percent rate per annum (FAO, 2004) with Germany, the United Kingdom and France being the top three

importers. This has been possible due to the strong British pound and the Euro exchange rates (CBI, 2005). Due to colonial links and geographical proximity African countries are important suppliers of fresh produce to the European market, but Ghana is a small player with 8 percent of the fresh pineapple export share, some €52.7 million.

Fresh Ghanaian pineapple is produced from relatively small and low technology farm holdings. Generally Ghanaian farmers are organized in producers' associations and channel their product to the export market via some sixty companies. Larger companies such as Jei River, Farmapine, Koranco and Prudent control over 50 percent of the export market (interview with GEPC, 2006). Fruit companies such as Farmapine usually source the fruit from a pool of up to five pineapple growing cooperatives, which in turn pass the fruit on to small and medium exporters. Conversely, the export of more value-added products such as fresh cut pineapple is carried out by the British-owned Blue Skies, the Dutch Tonggu Fruits and First Catering. These are specialist companies that supply to high quality retailers such as Sainsbury's and Marks & Spencer. Ghanaian farmers can also use export organizations such as the Sea Freight Pineapple Exporters Association of Ghana (SPEG) which coordinates sea exports or the Horticultural Association of Ghana (HAG) and Exotic Fruit Exporters Association (EFEG) that provide air freighting.

The Ghanaian competitors are characterized by three large transnational companies: Chiquita, Del Monte and Dole which control some 90 percent of the export market in Costa Rica. Moreover, the Ivory Coast situation is understood to be more similar to that in Ghana as it is typical of a large number of heterogeneous producers when considering farming unit size, the level of technology used and management practices. Nevertheless a couple of large operators such as Del Monte and Compagnie Fruitière also operate in that country. However, the main differentiating point in the Ivory Coast is the presence of Veritas, an independent certification body acting in the fruits terminal which inspects fresh produce for export on behalf of two major bodies: the *Organisation centrale des producteurs et exportateurs d'ananas et de bananes* (OCAB) and the *Societé de manutention des produits agricoles* (SIMPA).

Demand side: the United Kingdom case

Historically, the fresh produce industry in the United Kingdom has lagged behind that of the manufacturers of fast moving consumer goods (FMCG) in its approach to marketing and merchandizing. Fresh produce has seemingly been downgraded by traders to the status of commodity. However, the sector has experienced major changes over the years that have changed the structure, conduct and performance of major players in the sector (Bourlakis and Weightman, 2004). Some 50 percent of fresh produce by volume in the United Kingdom was sold through retail outlets and the remainder was commercialized through the wholesale trade and for processing. More recently, supermarkets have accounted for an increasing share of the sales of fresh fruit and vegetables. This is possible because some 80 percent of the total retail trade in the United Kingdom is sold through supermarkets (IGD, 2005).

The single largest horticultural imported item is banana followed by apples. Fresh produce is imported and distributed by major players such as Albert Fisher, Fyffes and Geest. Nevertheless, for the case of the pineapple, *Compagnie Fruitière* and Del Monte

are the major players followed by Wealmoor Ltd and Capespan International. These importers have in-house distribution networks and warehousing facilities that have responded to growing retail demand (CBI, 2005). Fruit importers supply and tailor to the needs of supermarkets such as Tesco, Sainsbury's, ASDA/Wall-Mart and Morrisons by usually offering prepackaging and convenience. Some smaller and independent retailers as well as catering and restaurant companies rely on the wholesale markets such as the New Covent Garden and the New Spitalfields Market in London for their supplies. Whilst the retail marketing channel seeks, in relative terms, more quality over price, the wholesale sector tends to be more price-conscious than the modern retail channel.

In recent years, the fresh fruit and vegetables sector has experienced some changes due to new drivers that have come into play impacting the international horticultural supply chain networks (Fearne and Hughes, 1999; Dolan *et al*., 1999). In the early 1990s Duke (1992) argued that continual and diverse changes in competitive strategies, consumer demand, environmental issues such as fossil energy, use of chemicals, fertilizers as well as labour and cultural values have contributed to significant structural changes in the United Kingdom fresh produce market. Following this, Fearne and Hughes (1999) proposed five key factors driving the transformation of the United Kingdom fresh produce sector as: supermarket strategies, food safety legislation, supply chain integrity, rationalization of the supply base and innovation. Bourlakis and Weightman (2004) have also confirmed the importance of the United Kingdom's market in promoting change that, according to Freidberg (2003) has been revolutionary on members of the fresh produce supply chain from sub-Saharan Africa.

On supermarket's strategies, Bourlakis and Weightman (2004) argue that the top three supermarket chains in the United Kingdom exercise such a dominating power that this has enabled them to demand from suppliers the kind of products that will bring the retailers high brand-name and high profits. Hence, high profits are achieved through increasingly new methods of marketing to consumers, realized by own-branding that ultimately enable the control of the supply networks. Thus, the growth strategies of the 1980s and mid 1990s, which had effects on product range and price competitiveness, have been replaced by strategies based on product differentiation.

In addition to that, the Food Safety Act of 1990 in the United Kingdom initiated a process of articulation and coordination in the supply chain. According to the Competition Commission (2000) retail buyers have taken extraordinary steps to ensure the safety of products they receive from upstream suppliers. The need to assure consumers has also redefined the boundaries of quality, from fit-for-purpose to include consumer values. This has brought the ethical dimension of production and consumption into perspective since attribute values such as care for the environment and labour welfare are now perceived as quality. Hence supermarkets look for greater increased coordination and control, but, yet, have no intention of extending ownership of the production activity (Dolan, 2000); retailer ownership starts from when the product arrives at their distribution centres. As a result, improved supply chain integrity and greater consistency coupled with the need to squeeze costs out of the supply chain has resulted in the rationalization of the supply base (Bourlakis and Weightman, 2004).

Retailers now seek to deal with fewer, larger, technically efficient and innovative suppliers.

The volume of fresh produce sold as raw product still accounts for the bulk of supermarket sales despite year-on-year growth in ready–prepared fruit and vegetables. Trienekens *et al.* (2003) observed that innovation in fresh fruit and vegetables is the major driver for value creation. As example, innovation in fresh produce sectors has taken place in the format of new varieties of sweeter, juicer, crispier and improved visual attributes, new formats of preprepared, mixed salads and stir–fry packs with extended life shelf, efficient production methods such as processing, storage, packaging, and the use of logistics. The use of innovation has been possible due to the substantial retail margins between raw and semi-prepared produce which is more attractive to retailers (Burt, 2000). However, the shortening of product life cycles and lead times for introducing new products using new technologies has reduced entry barriers and has triggered off a process of commoditization. Innovation is now the main commoditization driver which in effect keeps the fresh produce market growing (Bourlakis and Weightman, 2004).

The exporter's role in Africa has changed as a result of the changes in demand and as they attempt to meet the requirements set by retailers. Friedberg (2003) identified that African exporters had to work more closely with European importers so that changes in demand were transmitted to local growers in order to meet volume and quality requirements. Nevertheless, only a few large companies in Ghana succeed in providing enough rationalization. According to Simons (2000) what is needed is sufficient stability of products and practices for both buyers and sellers so that activities can be planned and decisions made rationally at prices which the markets clear. However, the use of formal contracts or fixed prices is not a common practice for Capespan International (interview with Capespan International, 2006), a feature also identified by Hughes (2001). African exporters despite having moved beyond the traditional trading role towards providing a broader range of services such as handling, expanding supply base and enabling compliance of assurance rules, are, as proposed by Gereffi and Korzeniewicz (1994), still characteristic of a buyer-driven global commodity chain linking sub-Saharan Africa to the United Kingdom. In order to understand better the limitations within the fresh pineapple supply chain in Ghana and to evaluate the actions needed to respond to changes in the market it is necessary to address the concept of agility.

The concept of agility

The concept of agile enterprise appeared in the literature based on the realization that the pace of change in the business environment was accelerating and already outpacing the abilities of many established organizations (Iacocca Institute, 1991). Since then, as argued by Burgess (1994), many organizations have gained competitive advantage from the agile philosophy. Hence, the current pace of change in the business environment in the fresh produce export supply chain makes it imperative to investigate the application of this concept.

Yusuf *et al.* (2004) urge that it is essential that in the current business environment organizations continuously re-examine how they compete. Thus agility serves as the

underlying paradigm to enable organizations to reinvent the content and processes of their competitive strategy. In agility, therefore, lies the capability to survive and prosper in a competitive environment of continuous and unpredictable chance by reacting quickly and effectively to changing markets. Van Oosterhout *et al.* (2004) argue that agility can be also defined as "the ability of an organization to thrive in a continuously changing, unpredictable business environment". Moreover, agility could also be understood to be a way of coping with changes that are unpredictable or uncertain. These changes can be from the external and internal environments of the organization or the supply chain. Hence, dealing with uncertainty is about evaluating the effects caused by certain events happening. In the case of the fresh produce supply chain, it is about what the organization's or supply chains' response will be.

Nevertheless, the concept of agility is not complete without two other conceptualizations: flexibility and leanness. De Groote (1994) defines flexibility as a hedge against the diversity of the environment. This notion is complemented by Upton (1994) who proposed flexibility as the ability to change "with little penalty in time effort, cost or performance", which takes place, according to Golden and Powell (2000), across four dimensions: temporal, range, intention and focus. In the quest for an all-encompassing concept of agility, Nilsson and Nordahl (1995), Sharafi and Zhang (2001), Towill and Christopher (2002), Wadhwa and Rao (2003) and Conboy and Fitzgerald (2004) observed that flexibility is a multi-dimensional and polymorphous concept whose simple, definition is "the ability to adapt to change".

Yet, leanness is about the "elimination of waste" (Naylor *et al.*, 1999) and "doing more with less" (Towill and Christopher, 2002) to the extent where its ability to respond to change is not hindered. Nevertheless, Conboy and Fitzgerald (2004) argue that agility exhibits similar traits to leanness in terms of simplicity and quality. In this sense, the relationship of agility with flexibility and leanness as a collective application of the principles throughout an organization or supply chain implies a perspective of reconfiguring of resources aiming at the optimization of performance. Therefore, supply chain agility is about being able to change business and processes swiftly beyond the normal level of flexibility to manage unpredictable external and internal changes effectively. As it stands, agility can therefore be said to be a strategy that can be pursued in different management scenarios.

In developing strategies for horticultural chains, Thoen (2004) observed that horticultural producers adopt various strategies in order to survive and develop. These strategies are based on three key innovation aspects such as organizational, production and product. The basic underpinning of these innovations constitute of: (i) international horticulture disposing of a minimum set of tools either basic or advanced, either available by nature, location or by investment as well as new technical innovations which provide only marginal advantages; (ii) supply chain management streamlining unnecessary activities or organizations; (iii) traditional farmers and cooperatives being phased out and mainly entrepreneurs or corporate farms surviving from the international market; and (iv) the opportunities for horticultural entrepreneurs being limited by a combination of either export or domestic market orientation as well as focus on advanced or basic production factors.

In most fresh produce chains, the Ghanaian not being an exception, the fundamental assumption to strategic approaches is that what is required from re-engineering processes is readily available and can be accomplished by simply building flexibility into production systems. Palmer and Hartley (2002) mention that both resources and processes have to support the capability of being flexible and successful in a constantly changing world. Yet, Wadha and Rao (2003) argue that the real competence for success in supply chains is the ability to produce new products quickly and efficiently using available competences and to develop new ones wherever required, which the authors call Innovate-to-Order (ITO). Moreover, Taylor and Fairchild (2000) observed that Innovate-to-Order is leading to a situation in the global fresh produce supply chain where new products are engineered to meet specific needs in the market place by modifying the existing product, by developing new varieties or new hybrids to different product presentations. This has been observed in the pineapple case since the introduction of the Extra Sweet Gold–MD2 variety by Del Monte (Frank, 2003) which has replaced more traditional ones such as Cayenne and Victoria.

Most models developed for strategic analysis of sources of competitive advantage such as the Product–Market Portfolio, the Growth Share Matrix and Porter's Value Chain do not measure the perceived gap existing between a supply chain and the market. Such a gap, understood as an agility gap, is calculated in terms of a ratio that works as an indicator depicting the urgency of the various change factors. Such an agility ratio is also a measure of the magnitude of the drivers. Nonetheless, it is necessary to elaborate upon agility metrics in any attempt to address and measure the difficulty or the extent of change related to the gap between the reality of the supply chain and what the market requires.

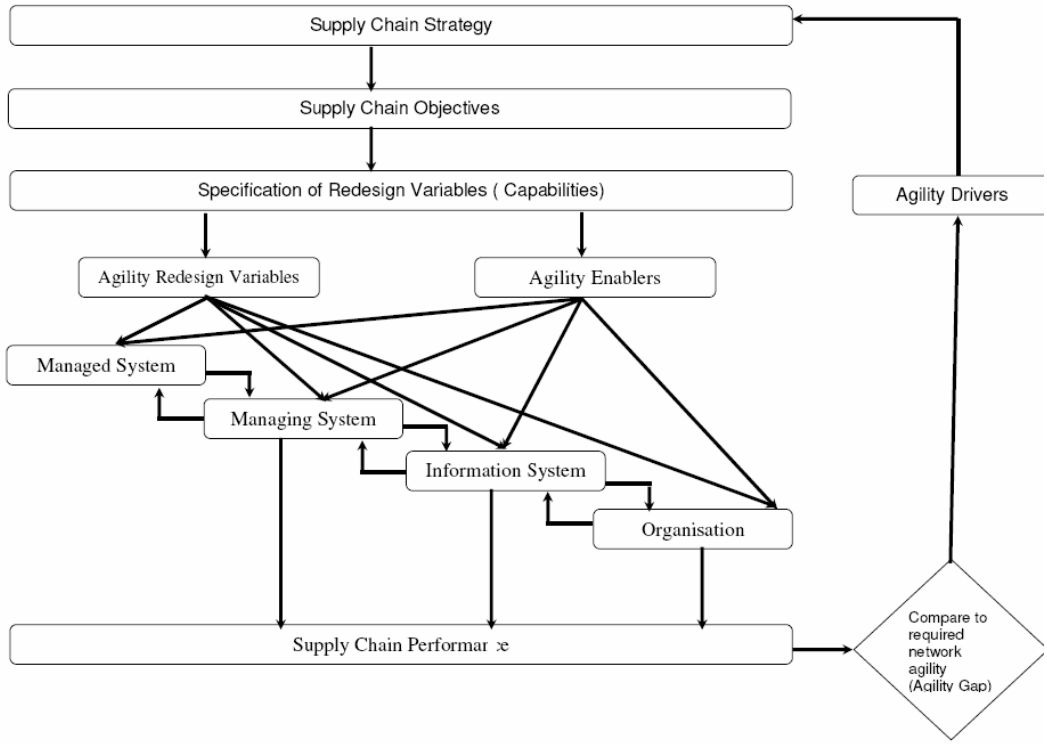
Agility metrics were derived as the responsiveness of an organization to factors of the business environment. It can be understood as the means through which an organization is proactively capturing the market and consumer needs and the extent it is taking advantage of unexpected opportunities. The responsiveness of a supply chain to these environment factors can be used as a measure of agility. Sharifi and Zhang (2001) proposed five business environment factor categories: social or legal; business network; competitive environment, customer needs, technology and internal changes. According to van Oosterhout *et al.* (2006) these are factors which require the whole supply chain to make adjustments. According to the authors other subfactors would affect only parts of a supply chain and at different levels and degrees.

Developing a conceptual framework for agile supply chain analysis

In order to analyse the performance of the Ghanaian pineapple industry, Figure 1 below takes into account the relationship of the drivers of agility to the various components of the supply chain as proposed by Palmer and Hartley (2002). The framework presents change factors relating to: (1) the managed system, understood as the set of participants with specified roles in the supply chain and required infrastructure; (2) the managing system consisting of plans, controls and coordinates aiming at realizing logistical objectives; (3) the information system that supports decision making; (4) the organization structure relating to the setting up of tasks and necessary coordination enabling the realization of objectives; (5) specification of redesign variables (capabilities) that are the essential capabilities that the company needs in order to

respond positively to and take advantage of the changes; (6) agility gaps arising from when a business has difficulty in meeting the required level of agility for changing from one state to another in a timely and cost effective manner; (7) agility drivers which are internal or external factors influencing the required level of business agility that, according to Sharifi and Zhang (2001), relate to changes and pressures forcing companies to find new ways of running their operations to maintain competitive advantage; (8) agility enablers which are the means for a business to enhance its business agility; (9) supply chain performance as being the degree to which a supply chain fulfils end user requirements concerning the relevant performance indicators at any point in time, and finally, (10) agility redesign variable as a management decision variable at strategic level which determines the setting of one of the descriptive elements of the managed, managing, information system or organization structures.

Figure 1: Conceptual framework for supply chain agility analysis



Source: Adapted from Sharafi and Zhang (2001)

Methodology

The aim of this study is to test the applicability of the concept of agility as a strategic option to supply chain management in horticulture. Agility is used in other business management functions, but with not widespread use in agrifood chains. It is expected that the application of agility should improve supply chain performance and competitiveness of the businesses in Ghana dealing with fresh pineapple for export. The framework used for measuring agility in the Ghanaian pineapple supply chain was

based on a model developed by Sharifi and Zhang (2001) who have identified general factors in analysing the need of an organization to be agile. Two surveys were conducted where questionnaires were designed to capture the elements of the conceptual framework. Using a Likert-5 scale, agility gaps were scored regarding the probability of substantial change of the agility driver. Corrections of bias of order effect and acquiescence were considered with the negative side of the scale placed on the left as well as two-stage questions to counter the bias of central tendency (Brace, 2004). For each agility gap the respondents were asked to elaborate on the bottleneck(s) and measures taken in respect of the agility gap. The questionnaire generated both quantitative data on the agility gaps as well as qualitative data on agility bottlenecks and enablers.

Survey One (S1) was aimed at the Ghanaian pineapple export side. It consisted of twelve questions divided into three sections referring to information on the company, external and internal change factors. S1 respondents were asked their opinion on 503 issues. A sample of 62 companies was selected from lists furnished by the Ghana Export Promotion Council (GEPEC), the Federation of Associations of Ghanaian Exporters (FAGE), SPEG and HAG. Some 100 questionnaires were sent electronically to different management staff of the selected companies. The criteria used for the selection of exporters were based on the number of years in the export business. A minimum of three years was considered adequate. A telephone call followed up the initial correspondence to ascertain the initial criteria. This has enabled the sample to be reduced to thirty-seven valid companies, of which only nineteen replied. Survey Two (S2) targeted importers and wholesalers of fresh pineapple in the United Kingdom. S2 followed the same questionnaire structure as S1, but consisted of nine questions testing some 146 issues. Ten companies were selected based on initial Ghanaian's exporter's contacts mainly in the London Spitalfield market. Prior to sending the questionnaires to importers, a telephone conversation attempted to ascertain whether the company selected was directly involved in the import business. Only four companies qualified of which two replied: *Compagnie Fruitière* (UK) Ltd and Wealmoor UK Ltd. Follow-up meetings with some key respondents and in-depth semi-structured interviews were carried out.

The questionnaires were analysed and the agility gap ratio calculated using model formulae proposed by van Oosterhout *et al.* (2006) to check the urgency of the various change factors and the magnitude of the drivers:

$$AgilityGap\ Ratio_i = \left[4 * \left\{ \frac{\sum_{j=1}^{m} \left(\frac{\sum_{k=1}^{l} p_{ijk}}{l} \right)}{m} \right\} . \left\{ \frac{\sum_{q=1}^{t} \left(\frac{\sum_{r=1}^{s} e_{iqr}}{s} \right)}{t} \right\} \right] \%$$

The parameters used refer to p_{ijk} as the probability of business change; e_{iqr} the difficulty to achieve business change; i the change factor requiring agility concerned; j the

company surveyed; k the individual respondent from company j; l the number of respondents from company j; m the number of responding companies; q the company of the respondent who responded to the survey with one or more individual respondent scoring p_{ijk} with a high score of 4 or 5; r the individual respondent from company q scoring p_{ijk} with a high score of 4 or 5; s the number of respondents from company q scoring p_{ijk} with a high score of 4 or 5, and t the number of responding companies with an individual respondent scoring p_{ijk} with a high score of 4 or 5.

The results were interpreted according to a scale developed by van Oosterhout *et al.* (2006). The agility gap ratio was scaled to a number between 0 percent (no gap at all) and 100 percent (largest gap possible). The higher the agility gap ratio percentage, the more urgent the agility gap. According to van Oosterhout *et al.* (2006), if businesses find it difficult to cope with major changes, which go beyond their normal level of flexibility, they are faced with an agility gap. Furthermore, change factors requiring agility that have a high probability (a score of 4 or 5), and indicate a high difficulty to cope (a score 4 or 5) create an agility gap. The gaps can be ranked, as follows:

- Most urgent gaps: ratio ≥ 60 percent (implies most urgent change needed);
- High urgency gaps: ratio > 50 percent and < 60 percent;
- Lower level of urgency: ratio > 40 percent and ≤ 50 percent.

Results

As seen in Table 1 below, the Ghanaian supply chain recorded 24 agility gaps spanning all the six change categories.

Table 1: The agility gap ratios for business change factors (percent)

Business Environment Change Factor Categories	Ghanaian Pineapple Supply Chain				Average agility ratio per change factor category
	Managed System (infrastructure)	Managing System (management)	Information System	Organization	
Technology	62.11	55.38	59.60	49.47	64.37
Customer Needs	66.78	65.81	64.92	62.23	64.94
Competitive Environment	65.62	65.33	66.85	63.87	64.63
Business Network	61.84	56.47	63.19	59.05	64.05
Social or Legal	64.40	60.37	58.57	55.22	55.65
Internal	66.12	68.31	63.47	63.44	64.52

The highest individual agility gap calculated relates to “management system requirement for certification schemes” with a ratio of 80 percent. Other change factors, also within the “most urgent” category, presented high ratios of 64 percent, these are:

- Technology – perceived as the increased need to improve connection to information systems and requirements for cold chain technology;

- Customer needs – characteristics of increased demand for customized products, customer's quality expectation, shifts in consumer tastes, sudden changes in quantity of orders and specification, increased need for quicker delivery time, increasing need for quicker response to importer's request, and increased customer demand for evidence of environmental friendliness;
- Competitive environment – typical of increased introduction of new varieties, shrinking margins, increased number of producers, increased cost of doing business as a result of compliance requirements in the supply chain, increased consolidation of competitors and the narrowing of the supply base by importers;
- Business network – is affected by changes in partnership arrangements in competing supply chains and increased influence of strong export companies on importers (imports category management);
- Social or legal – basically driven by ethical trade requirements.

Five other change factors presented agility levels characteristics of lower level of urgency with agility gap ratios of 48 percent. At this lower level of urgency could be identified change factors related to:

- Technology – new forms of transportation;
- Competitive environment – increased number of producers–exporters and use of economies of scales by competitors;
- Business network – cost and benefit compliance with network requirement;
- Social or legal – food assurance regulations and certifications.

Conversely, the Costa Rican pineapple supply chain revealed agility gaps in five factors spanning from three change factor categories. These are related to social or legal, business network and customer needs. Ethical trade requirements in the social or legal category presented an agility gap of 64 percent (most urgent). In the business network category, evolving marketing standards in importing markets requirement presented an agility gap of 48 percent (lower urgency). One of the respondents, *Compagnie Fuitière*, commented that this could be attributed to them already dealing with certified exporters as partners. Moreover, competition from multinational competitors resulted in a gap ratio of 64 percent (most urgent). Changes in requirements of importers or consolidators and sudden changes in order quantity as well as specifications were also identified as affecting the operation in the supply chain at 64 percent ratio. This indicates that businesses in Costa Rica are finding it very difficult to cope with immediate and major changes.

Moreover, the Ivory Coast supply chain recorded gaps in four factor categories: social or legal, business network, customer needs and internal organization. Ethical trade requirements and labour legislation create an agility gap ratio of 64 percent (most urgent) with food assurance regulations at 48 percent ratio. In addition, evolving market standards in importing markets, changes in requirements of importers or consolidators and competition spanning from multinational companies accounted for agility gaps of 64 percent. The increased need for a quicker response to importers' requests also showed a gap ratio of 64 percent.

Conclusions

Few studies on international fresh produce supply chains from developing countries have addressed issues of agility and the potential for supply chain strategic performance improvement. It is possible to conclude that agility is a relevant strategy to pursue in view of the continual developments due to environmental change factors in the Ghanaian horticulture export supply chain. Results of the survey (S1) in all the 61 change factors tested recorded agility gaps at varying levels of urgency. The results of survey (S2) corroborated with the findings from S1 that indicate the Ghanaian supply chain as the least agile of all the three competing chains in the study. Since the study considered the entire pineapple supply chain, the identified agility gaps provide invaluable resources for managers to act upon variables and enablers, thus redesigning entire processes or series of processes across functional areas. These integrated variables offer more control over the supply chain since key stakeholders have measures reflecting actions across a number of functional areas. Collective effort is the way forward to overcoming individual constraints.

Results from the two surveys show that the framework is a valuable tool to understand international supply chains such as the fresh pineapple export chains of Costa Rica, Ivory Coast and Ghana. The framework is also valid at company level such as the case of Compagnie Fruitière (UK) Ltd and Wealmoor UK Ltd. Such a framework to evaluate agility can be replicated in many other sectors and industries as it serves as guide for managers to identify agility gaps in order to improve competitiveness. It also works well as tool to address strategic issues such as the conditions of market access, market channel selection and diagnosis of current and future conditions in fresh produce supply chains. It is expected that the application of agility should improve supply chain performance and competitiveness of the businesses in Ghana dealing with fresh pineapple for export.

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Jointly managing cut flower–vegetable production systems in Benguet Province Northern Philippines

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Abstract

The Filipino cut flower industry is one of the country's sunshine industries. It is regarded as a good area in which to invest as cut flower production is less land-intensive and produces high value products. The Philippines' competitive advantage is attributed to an ideal climate for year-round cultivation, the availability of land and production technologies, competitive wage rates, proximity to major importing countries in Asia-Pacific and active floriculture associations and cooperatives. The cut flower industry in Benguet province, Northern Philippines, has undergone a remarkable transformation over the last seven years when production began to increase with the domestic demand. The growth of the domestic market was brought about by the increasing number of middle- and high-income classes, changing consumer preferences, and the expanding institutional demand driven by the growth of tourism. Consequently vegetable growers began to shift to cut flower production. Benguet is now the major producer of rose, chrysanthemum and gladiolus in the Philippines. This paper documents how organized cut flower growers jointly manage their cut flower–vegetable production systems. The case group is the Valley Cut Flower Growers' Association. This group, together with two others, was linked by the municipal government to a large multinational agribusiness for contract farming of vegetables, initially fancy lettuce and cherry tomatoes. It was driven by corporate social responsibility and the need to have a buffer crop in case something went wrong with their production programmes. Having stringent product quality requirements, the firm provides technical assistance for the producers in terms of good agricultural practices, aside from providing the seeds. The growers, on the other hand, are mostly cut flower producers who commit a portion of their greenhouse area to produce vegetables. Keen to fulfill their commitments to the firm, the growers have set up their own enabling mechanisms like regular meetings for production planning, information and technology sharing, problem solving and coordination. The challenges seen within this case include how the growers within the case association and among the two other groups work together to meet the volume and quality requirements of the buyers in order to maintain a lasting business relationship and how the local government unit provides the necessary policy support and business environment for both the producers and the buyers.

Introduction

The Filipino cut flower industry is one of the country's sunshine industries. It is regarded as a good area in which to invest since cut flower production is less land-intensive and produces high value products. The Philippines' competitive advantage is attributed to an ideal climate for year-round cultivation, the availability of land and

production technologies, competitive wage rates, proximity to major importing countries in the Asia-Pacific, and active floriculture associations and cooperatives (Philexport, no date).

Benguet province is situated in the southernmost part of the Cordillera Administrative Region, which is 250 km north of Manila. Ninety-six percent of the ecozones in Benguet are identified as cool highlands which are described as having various slopes with elevations of more than 500 meters above sea level and a temperature of 22.5^{o}C or less. Soil types include sand, loam, clay, sandy loam, clay loam and undifferentiated mountain soil. The diversified soils make it possible to grow a variety of agricultural and forestry crops in the province (Benguet PPDO, 2003).

The cut flower industry in Benguet Province has undergone a remarkable transformation over the last seven years when production began to increase in response to the domestic demand. The growth within the domestic market has been brought about by the increasing number of middle- and high-income classes, changing consumer preferences, and the expanding institutional demand driven by the growth of tourism (DA-BAR, 2004). Consequently, vegetable growers are shifting to cut flower production. Benguet is the major producer of rose, chrysanthemum and gladiolus with 56 percent, 59 percent and 84 percent respectively of the Philippines' cut flower production in 1999 (Benguet PPDO, 2003). There are some 350 ha devoted to cut flower production in Benguet Province. Of this area, 109 ha are under greenhouses. Almost two-thirds of the total production area or 259 ha is located in the municipality of La Trinidad, the capital town of Benguet (CARAT, 2006).

Chrysanthemum is the major cut flower grown in Benguet followed by rose, anthurium and calla lily. Minor cut flower crops include gladioli, aster, shasta daisy, gypsophila, carnation and gerbera. According to Hermano (2003), roses were grown earlier than chrysanthemums in Benguet, but the more rapid adoption of appropriate technologies and the introduction of improved chrysanthemum varieties by a large local flower grower and integrator in the late 1990s saw chrysanthemum overtake roses. In 2001 to 2003, however, overproduction of chrysanthemum has been observed, causing the prices to decline (CARAT, 2006; Hermano, 2003). Likewise, cut flower production technologies applied in the lowlands further flooded the market. As productivity increases across an entire industry, producers often find to their dismay that prices have declined (Batt, 2004).

Acknowledging the contribution that cut flower production makes to the economy, the government is actively supporting the cut flower industry. Aro (1999) reported that the industry was classified as a potential export winner in 1994. An interagency task force was organized and one of its significant outputs was to focus on policy advocacy for the government to implement relevant rules such as the free movement of planting materials and reduced tariffs for inputs. The Department of Trade and Industry, through the Bureau of Export and Trade Promotions and Center for International Exposition, supports marketing and promotion through trade fairs which include the cut flower sector. The Department of Agriculture and the local government units from the provincial to the *barangay* level also manage trade fairs and conduct seminars for

growers. The Department of Labor and Employment also funded a cool-store for one cut flower association in La Trinidad.

Meanwhile, the issues that need to be addressed include networking among producers, the establishment of plant propagation nurseries, strong financial support from the government and the private banking sector, the provision of an efficient transport system, the establishment of integrators or flower distribution centres and strong research and development networks (Aro, 1999).

The Valley Cut Flower Growers' Association

The Valley Cut Flower Growers' Association was organized in 2000 as an offshoot of a basic skills training course on cut flower production held at the Agricultural Training Institute at Benguet State University. This training course was conducted by cut flower production experts from Israel and the Philippines. There were 54 members at the start, but only 15 members are active at present. The founding president still holds the position in addition to other community work that he is doing. He is the chairperson of the Municipal Agriculture and Fishery Council, secretary of an irrigators' association, and vice-president of the La Trinidad Growers' Federation. He shares his farming techniques with other cut flower growers and serves as resource speaker in many seminars on cut flower production for which he received recognition as Magsasakang Siyentista (farmer scientist) and an Achiever Award by the Highland Agriculture and Resources Research and Development Consortium and the provincial government of Benguet, respectively.

The experiences of the Valley Cut Flower Growers' Association members are discussed in the succeeding portions of this paper. Two cut flower–vegetable growers in La Trinidad who are not members of the association were also interviewed as a benchmark. The paper illustrates the activities of the growers as part of an integrated cut flower chain and the relationships of the growers with other members of the supply chain.

Farm organization and management

All the cut flower farms in Benguet are jointly managed by the family with the husband as the main operator. For one grower, his wife manages the nursery. For the rest, their wives assist in all the farm activities including marketing. Two or three have hired regular workers who stay on the farm and are paid from PhP2 500–4 000 depending on their length of stay. During land preparation and harvesting, additional labourers are hired on a daily basis. The growers' children also help whenever they are free from school.

Most of the growers have a college degree and most are former overseas contract workers. The growers claimed that reaching a higher level of education is important since one can easily learn technologies, experiment and keep farm records. Their savings from their earnings abroad were used as initial capital for their enterprise.

In terms of farm size, the growers are classified as large, having more than 1 000 m² of land area planted. A study by the Foundation for Resource Linkage and Development (FRLD) indicated that major growers, integrators and key informants interviewed in

different provinces in the Philippines suggested that farm size be measured according to the number of plants for orchids and anthuriums, and according to land area planted for roses, chrysanthemums, gladioli and heliconias (FRLD, 1993). Therefore, in the case of chrysanthemums: small farms are 500 m² and below, medium-sized farms are 501–1 000 m², and large farms are more than 1 000 m² in area. The growers view having a large farm area as advantageous for production programming and crop rotation.

Production management practices

The growers started their farm enterprises with rose, anthurium or carnation. All of them reported that they had good yields in the first five years of straight cut flower production and did not have any major pest and disease problems. However, after this initial period they noticed a decline in their yield because of deteriorating quality of planting material and greater occurrence of pest and diseases outbreaks. The latter is the main reason why the growers began to rotate cut flowers with vegetables. Vegetable crops rotated with chrysanthemum include lettuce, broccoli, celery, Chinese white cabbage, tomato and bell pepper. One grower, however, noted that tomato and bell pepper are not good for rotation since these are also prone to fusarium wilt. The FRLD (1993) reported that crop rotations are practiced by growers in Benguet for reasons such as: (a) it takes two to three months to prepare planting materials; (b) steady income; (c) soil fertility will improve; and (d) integrated pest management can be performed, which involves biological and cultural controls.

Later on, the growers discovered other advantages in cut flower–vegetable production. One grower said that the two crops complement each other in terms of providing income for the grower. For instance, if the cut flower production in one season does not yield enough profit, the vegetables may do so in the next crop. Another grower claimed that cut flower production is more profitable compared to vegetables thus, during lean months, his revenue from cut flowers can provide for his family's basic necessities and daily expenses. In addition, the growers also get income from selling chrysanthemum planting materials at PhP1–1.50 per piece. Generally, growers propagate their planting materials from mother plants. They also buy from other growers in case they fall short of the needed quantity of planting material.

A production programme is followed by the association member–growers. Each member maintains a planting and harvesting calendar in coordination with the other growers in order to meet the requirements of their buyers and to take advantage of bulk delivery.

The cultural management practices required by cut flowers and vegetables are closely followed by the growers who constantly update themselves with new technologies by attending workshops and by experimentation. For the contract growers, technicians of the contracting firm assist the growers from time to time.

Marketing

The association members sell their cut flowers directly to flower shops in Dimasalang, Metro Manila. These flower shops supply institutional buyers and consumers. A trucking firm delivers the cut flowers to the flower shops at a preferential freight cost. Dimasalang has grown in popularity as a flower market due to the presence of Dangwa

Transportation Company, for its bus station is located at Dimasalang Street. Buses from Benguet deliver fresh blooms on a daily basis (Vanzi, 2003).

One of the members delivers his cut flowers directly to the contractor's warehouse. He is paid after all the deliveries for the cropping season are completed, which is usually after a month's time. Otherwise, postdated checks are issued to him after every delivery. His reason for remaining as a contract grower is the assurance that his cut flowers will be bought and that he can plan ahead for the rest of his crops. This grower revealed that the contract growing arrangement in the past was far more profitable because the contractor used to provide good quality planting materials and required a greater volume of cut flowers.

For the non-members, their cut flowers are sold in the Dimasalang market or in Baguio City depending on the price. Communication technology and the presence of relatives who are traders in Metro Manila allow the growers to access price information.

The vegetables for all the growers are sold in the Baguio City Hangar market and the La Trinidad Vegetable Trading Post. Some sell to consolidators and food processors who supply institutional buyers in Metro Manila and nearby areas. One grower's wife is a vegetable wholesaler–retailer and thus handles the marketing of their produce. This scenario where growers are also vegetable or cut flower traders is common amongst Benguet farmers.

New vegetable contract growing arrangement

In August 2006, the Municipal Mayor of La Trinidad, invited a large multinational agribusiness firm to undertake contract farming with vegetable growers in Benguet. The firm is a major vegetable producer and consolidator with an established brand name. Driven perhaps by corporate social responsibility and the need to have a buffer crop in case something went wrong with their production programmes, the firm was enthusiastic in supporting a mixed cropping enterprise. Having stringent product quality requirements, the firm provides technical assistance for the growers in terms of good agricultural practices, aside from providing the seeds. The growers, on the other hand, commit portions of their greenhouse to produce the volumes of vegetables required. Keen to fulfill their commitments to the firm, the growers have set up their own enabling mechanisms like regular meetings for production planning, information and technology sharing, problem solving and coordination.

The contract prices for two vegetables, fancy lettuce and cherry tomatoes, were set after a series of consultations among the growers and the firm's representative. According to the growers, there is some difficulty in reaching an agreed price because the firm that is a large producer has the advantage of economies of scale compared to the small producers. Nevertheless, a pilot production programme was set up with several growers.

The pilot programme that ended in October 2006 was a combination of success and failure. While the growers tried their best to keep up with good agricultural practices related to farm hygiene, quality control and food safety, there were reports of problems in terms of water source, farm sanitation and pesticide residues, causing their produce to be rejected. Another unforeseen situation was the planting of a lettuce variety intended

for open fields in the green house. This resulted in a different outcome in terms of the desired colour.

Production constraints and chain management options to consider

The development of the industry is constrained by a number of factors: the lack of marketing facilities and infrastructure, access to good quality planting materials, limited diffusion of technology, pests and diseases, and the high cost of planting materials and farm chemicals (Bernardino, 2001).

Lack of marketing facilities and infrastructure

Most of the flowers in Benguet are sold and distributed through the three main market centres at Km 5, La Trinidad; Dimalanta Section, Baguio City market; and Dimasalang Street, Metro Manila.

CARAT (2006) vividly described the flower markets in Baguio City and Benguet as:

> The flower market in Km 5, La Trinidad, is located at the back of a three-storey wet and dry market. Flower vendors are housed in a shed with no walls and they make use of nets for divisions and to cover their plants. The market operates from 5.30 to 18.00. The flower market in Dimalanta section, Baguio City, is a traditional wholesale area for cut flower traders from nearby provinces and cities and local retailers. The area is in a dark crowded alley near the vegetable trading area. Buying and selling however, happens along Magsaysay Avenue, a main thoroughfare where growers park their trucks and unload their crops early in the morning from 3.30 to 6.00, just before the traffic builds up. Unsold cut flowers are brought inside the Dimalanta alley for local buyers, events organizers, caterers and tourists.

There are two cold storage facilities in La Trinidad that are used by the growers, especially during the peak season, to maximize their sales by keeping their harvest longer in the storage, in time for the big demand.

The need to establish a cut flower wholesale trading centre equipped with the necessary trading facilities in Benguet is being pushed by some individuals and farmer groups but, to date, this move has not been given priority attention. Perhaps, this need will be addressed if the growers and traders can cooperate and help government agencies concerned in dealing with the need.

Access to good quality planting materials

The growers propagate their own planting materials from mother plants. However, this practice is not sustainable as the yields deteriorate after time. The issue of intellectual property rights (IPR) is also a concern, because the majority of newly accessioned varieties are protected by IPR.

Limited diffusion of technology and pests and diseases

The growers' association can solve these constraints if the present practice of holding meetings for technology sharing among their members is strengthened. The result of

their own experiments can be shared or they can invite technologists from government offices and Benguet State University.

High cost of planting materials and farm chemicals

Batt (2005) explained that by consolidating the growers' needs for chemicals, fertilizers, and good quality seed, cooperatives should be able to purchase these inputs at a significantly lower cost. Consolidating the growers' input requirements should be included in the production planning and programming meetings of the association. As reported, individual growers have been able to establish preferred relationships with farm input suppliers. This provides a good starting place to bargain for better terms and conditions for the association as a whole.

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Coordinating a portfolio of international fresh fruit suppliers for British supermarkets[19]

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Abstract

As category managers and sole suppliers, British and Brazilian (B+B) work in a highly collaborative way with Waitrose supermarket. Quality is paramount in this relationship. British and Brazilian are responsible for the procurement of stone fruit, grapes and melons to Waitrose 365 days of the year. Product is sourced from over 20 different countries. Programmes are written detailing where and how the product will be purchased using air, sea and road transportation. Programmes depend upon product offer quality and varietal offerings, seasonality, the ability to meet packaging requirements, technical requirements including GLOBALGAP and price. These programmes are written in advance of the season and discussed with the Waitrose team and then presented to our growers so that they are aware of our requirements. British and Brazilian are responsible not only for the procurement of the desired product but also for setting prices within Waitrose. This includes achieving a twelve month target margin for Waitrose on top of the B+B margin. British and Brazilian are responsible for monitoring Waitrose's in-store wastage figures, customer complaints and product shelf life. All product arrives at the British and Brazilian pack house where it is labelled, checked and distributed to the Waitrose redistribution centres. A sample of all product is held at British and Brazilian for monitoring. A crucial part of what British and Brazilian do is to facilitate varietal development programmes globally. This includes linking growers with plant breeders to ensure our programmes deliver the best possible eating quality all year round.

Today, I'd like to share our experiences with category management and supply chain management in the United Kingdom. Hopefully, you might learn something new or take something away from what we do. Firstly, what I would like to do is to give you an overview; a background to British and Brazilian (B+B), who we are, what we do, and the supermarket that we supply in the United Kingdom (Waitrose). I'll give you an idea of the range of products that we supply, how we procure our fresh produce, our concept of category management, and talk a little bit about supplier collaboration and how we integrate on a global platform of procurement.

B+B, British and Brazilian, started in the 1930s as a partnership between a British man and a Brazilian man. They imported oranges into Covent Garden in London. Although things have changed a lot from the 1930s, we have kept the name. We are now specialists in the procurement of grapes, stone fruit and melons globally for Waitrose. I

[19] The following paper is an edited transcript of a presentation delivered to the International Symposium on Fresh Produce Supply Chain Management

work in the stone fruit team and I will be sharing our experiences with stone fruit procurement.

The current turnover for B+B is about £30 million. Waitrose has about 180 stores. Although Waitrose is only a relatively small retailer, it's the premium one in the United Kingdom. Waitrose is quite unusual in that it is a partnership. The workers actually own the business, so it is not listed on the stock exchange or anything like that. All up, there are about 64 000 staff members at Waitrose.

Waitrose is a food-only retailer, unlike Marks & Spencer, for example, who also does clothing and other bits and pieces. Waitrose is really focused at the high end of the retail market. People who are connoisseurs of food and want the very best ingredients come to Waitrose and expect the highest quality.

Just to give you a bit of a background to our range in stone fruit, we offer our basic range in punnets. The fruit is usually seafreighted from the southern hemisphere. As this is our basic line, we try and limit the costs in that line. These are the standard varieties. The next tier – the better tier we call it – is composed of slightly better varieties from which we expect a better eating quality. For our best offer line, we procure the fruit globally. We will fly that fruit from just about anywhere in the world to guarantee the eating quality. When we are trading in Europe, for example, we are buying from Spain, France and Italy. But if we think the eating quality is actually better in the United States of America, then we will look at flying the fruit over from there. So we go to great lengths to guarantee our customers a very good eating experience.

The specifications for all these different lines are set. The best line has a slightly higher specification to get a better eating quality. For our "perfectly ripe" line, we buy this fruit and then ripen it in our packing house in England. We ripen the fruit to a very low pressure. For these peaches and nectarines, quite literally, the fruit will dribble down your face. We ripen to about two to four pounds pressure with a high Brix level. It's quite a specialized job. Some varieties will take four days to ripen; some varieties will take a day and a half. So there is a lot of knowledge that goes into guaranteeing that this fruit is perfectly ripe.

"Perfectly ripe" is a premium range of fruit that fulfils the customer's highest expectations. It combines the best available varieties to produce fully ripened fruit of the optimum quality. It guarantees the customers an eating experience that will always delight them on the first day of purchase. This is what we are looking for, and we are challenged with providing that 365 days of the year.

Stone fruit comprise peaches, nectarines, plums, apricots, etc. It is a very unusual category. It is very complicated. We have different lines of peach. Within peach, we have white-fleshed lines, yellow-fleshed lines; for nectarines, we have white-fleshed lines, yellow-fleshed lines; a great diversity can also be found in plums and apricots.

Now, with most varieties of stone fruit, they will crop for about two weeks and then we must go onto the next variety. So in total, there are probably around 400 different varieties of stone fruit that we need to come to grips with. We need to understand which

varieties are the good eating varieties and which varieties are the poor eating varieties. We will actually give global programmes to our suppliers, based on the varieties we want: “We want these varieties, but I am sorry we don’t like these”.

I will give you an overview of how we work. Our procurement is based around latitudes. If you place the equator in the middle, when we come into the southern hemisphere the first place we start with is Zimbabwe, simply because this is the first place where the fruit ripens. Then we move up here to the north of South Africa in the Transvaal. Then we move to Australia and then eventually to Chile and Argentina as they come on line. So what we are doing is actually giving programmes to our different suppliers in different parts of the world and saying, “Look, these are the different lines we want to take from you. These are the varieties. This is when we want you to start. This is when we want you to finish. These are the quantities. This is the packaging we want you to put it into”. We try and do all of our packaging at source, because it is just so expensive to do it in England.

From these countries, we move over to New Zealand. I was visiting our growers there last week, talking about programmes and varietal development and visiting a breeding programme. This is the last source of apricots in the southern hemisphere. Then we have what we call a “bridging country” up here in Mexico. This is the first country in the northern hemisphere that comes on with peaches. We take airfreight volumes out of Mexico and then we move onto Israel, Morocco, into Tunisia, and Egypt. From here we move into Europe. The first place is Seville in Spain. Then we move over into the United States of America, France, Italy and Sicily. So it is quite a cycle that we follow. This is the path that I tread each year visiting our suppliers, our growers, acting as a conduit for communication, making sure they understand what we want over in the United Kingdom, and trying to understand what is happening at source.

Category management. Why are the supermarkets not doing what we are doing? Why don’t they do it themselves? There are a number of reasons. Small companies like B+B are nimbler on their feet and more efficient than a large bureaucracy which sometimes exists within a supermarket. We do pretty much what you would expect a supermarket to do in organizing the supply of the fruit. We sit down with them and talk about prices, packaging, and all that sort of thing.

The type of category management that we do is highly sophisticated and very specialized. We deal in only three products: stone fruit, grapes and melons. We can’t supply citrus, mangosteens, mangoes, or anything like that. It’s just these three products. It’s highly integrated and collaborative.

We are charged with supplying Waitrose stores for 12 months but we also must achieve the Waitrose margin. It is our responsibility to achieve the target margin for Waitrose as well as our own company. Our form of category management is somewhat different to the form that Marks & Spencer, Tesco and Sainsbury’s have chosen in that we are the only supplier to Waitrose. If we don’t have supply, then there is nobody else there to back us up. So it’s very collaborative. There is no fighting between multiple suppliers into the supermarket; there is only us.

With climate change and more extreme weather events, we are having to come up with supply contingencies. Climate change is really impacting upon our business. I would hope that people are taking that more and more seriously now. I can walk into any of the countries that I have just mentioned and they have all got their own stories to tell. Australia at the moment has the worst drought in a thousand years. It is really causing us problems. The lack of supply from Chile last year due to extreme climate there cost us hundreds of thousands of pounds.

What do we do with this idea of category management? We have to sit down and plan. Basically, it falls into a six-month period where we do a summer category plan and a winter category plan, just outlining again which countries we will take from, why we are going to take from those countries, air freight, sea freight and which growers we are going to work with. This is all planned out in advance.

We are also charged with looking at the different modified-atmosphere technologies that are available. We look at and are responsible for looking at these technologies and where appropriate, integrating them into our supply base.

Once the strategies are there and we have talked to our buyers at Waitrose, then we write the programmes and hand these out to our growers. Everything is then organized for the coming season.

Collaboration and trust. Trust is a huge part of our business. We are very open in the way we deal and very honest. We are happy for our growers to come over and to meet us in England. We show them around the pack house, introduce them to Waitrose, show them what we do in the United Kingdom, and how their part of the programme will work and integrate into our supply base.

We try and get our growers to share best practices. We will often introduce growers from France to our Spanish growers and get them to have a chat. I will talk a little bit in a second about our first global grower conference that we held in France in Perpignan, which was hugely successful.

With stone fruit, we have developed this idea of a rot box. It sounds a bit weird, but it is basically an accelerated shelf life tool that we use. It’s a critical part of our business and it really helps our growers out. With the three or four hundred varieties that we deal with, we have invested in this one guy in England who evaluates every consignment that comes to us of every new variety from every grower from everywhere in the world. It goes into this special room at 20ºC and we evaluate it over five days after which time we give it an eating quality score. This enables us to identify the good growers and our not-so-good growers. We can start to adjust our programmes accordingly, or try to help the not-so-good growers achieve the standard that we want. We can also score the different varieties: “This variety is no good; these varieties are very good”. We have given access to this database to our supply base globally, so they can look at how their product is performing. Within 24 hours of its arrival in the United Kingdom, information is uploaded onto the Internet. They can search the database to see what varieties we like and what varieties we don’t like.

Every line of fruit that we send out to Waitrose, we keep a record of it in our warehouse and evaluate it over the week. Just as our consumers are eating the fruit and looking at how it progresses over the week, we are observing how the fruit ages. If any problems arise, we are responsible to Waitrose.

Quality is a critical part about what we do. When we talk about offer quality, we need to make sure the quality is right. For us, that is a given. The quality has to be there and we have specifications that we give to our growers and they just have to meet them as a condition of supply. They must also have GLOBALGAP and now there is SEDEX: the suppliers' ethical database exchange which helps us track and ensure minimum wages and the non-employment of child labour.

Waitrose have really embraced the LEAF programme (Linking Environment and Farming). All of our suppliers in the United Kingdom have to be LEAF-accredited and we are looking at rolling that out globally over the next couple of years. The other thing that we have embarked upon is the Waitrose Foundation in South Africa. This is a fair-trade concept where B+B pays money back to the grower over and above what we normally would. Waitrose contributes and so does the exporter. This is a means of helping develop the local people. The money goes into hospitals, into education, into buying new computers and things like that. So Waitrose really is an ethically responsible supermarket.

Food safety. It is no different for us. We have to guarantee food safety, and if ever there was a chemical scare, it's front page news. We have a Waitrose scorecard which happens every 12 months where we are scored as a technical team on how well we have done over the year. There is also a commercial side to the business where Waitrose grades us and pushes us forward to achieve new targets each year. This is a very important part of the business. We spend a lot of time with our growers trying to develop the business with them upon which we are scored every 12 months.

I mentioned the worldwide growers' conference. This is the first one of its kind that we have held at B+B. We held it in Southern France. We had our growers from all over the world: South Africa, New Zealand, Australia, Israel, Egypt, and from across Europe. It really helped to foster a spirit of collaboration. It was just incredible to have everybody there. We had Australians talking to New Zealanders and South Africans and Chileans. It was amazing. We really try to make our growers feel that they are part of a family and that we help each other out. The topics we covered included the British market, varietal development and fruit tree management. Sharing thoughts and ideas from across the world really helps our growers to adopt the best practice.

A big part of what I do, as well as travelling around the world, is visiting the stone fruit breeders. There are a few in the United States of America, France, Spain, Australia, South Africa, New Zealand which I visit to understand what they have to offer. We look at all sorts of weird and wonderful things. We have red-fleshed apricots, yellow flesh with black skin, and also another deep red one with a black skin. We are very much interested in having new things to offer our customers. For us, varietal development is very important.

Sometimes the new products work; sometimes they don't. I was in Chile a couple of years ago and tried a variety of plum called Flavour Queen. It was fantastic! It had a green external colour and was very good eating. I got onto our commercial team back in England and requested that they buy a pallet of the stuff. So just for me, they flew the pallet over and we put it into "perfectly ripe" and we dumped about 40 percent. Not unexpectedly, the management team came up to me and said, "Well done Brett; you have just lost us five grand. Good work!"

Not only are we getting involved in developing our grower base, but we also look at the shipping side as well. We conduct work on modified atmosphere packaging and storage. We then share that information with our Chilean suppliers, our South African suppliers and our Australian suppliers. Again, collaboration is there.

DELEGATE: I want your views on packaging and recycling, especially in light of some retailers in the United Kingdom introducing biodegradable or environmentally friendly packaging. At what level are you guys working to achieve that?

MR HEATHER: Recycling is an important part of our business, and if any of you have ever visited Waitrose, a condition of supply is that we supply in IFCO crates which are green plastic crates that are reusable, returnable, and are available in most parts of the world. We are also looking at, particularly on the organic side of things, new types of packaging. We have used corn starch which is biodegradable, and we are currently trialling PLA (polylactic acid) plastic which again is compostable and made from maize starch. Waitrose is always pushing us for new ideas. In some of the countries we deal in, it can get up to 50ºC, so we find that some of these new wonderful new materials start to melt.

DELEGATE: I have a question about your "perfectly ripe" concept. How do you ensure that it doesn't become overripe too soon in the store? I can imagine that after two or three days, the stores will have to throw it away. How do you overcome that?

MR HEATHER: Excellent question. Retailing in the United Kingdom is very sophisticated, so what we have are chilled cabinets within Waitrose, because the pressures we are ripening to, 2–4 pounds pressure (it is about a kilogram) is very, very low. So all the product is date coded. We allow ourselves two days – it is three days from us, so two days in Waitrose. The product is chilled: the cabinets operate at 8ºC with a pulp temperature of 10ºC.

We need to ensure that we ripen it to the right stage. It is very easy to overripen the fruit which can be an absolute disaster. So the knowledge that we have accumulated as a company is hugely valuable. Everything is chilled throughout our chain. So once it is ripened, it is brought down to 2ºC. It goes through the pack house and is chilled again. It goes onto the lorries for delivery and chilled again at Waitrose.

Our supply chains are extremely quick. For example, apricots: they landed on Saturday, air freight from South Africa, so it would probably have been two days from when they were picked. They went out to Waitrose on the same day.

Every day, we have two waves of orders: a morning delivery and an afternoon delivery to top up our supermarket shelves.

DELEGATE: With your system of grower evaluation and the rot box, have you noticed any difference in the quality of the produce delivered from small growers versus larger growers? What would be the average size of the grower with whom you deal?

MR HEATHER: We know all of our suppliers. We visit all of our suppliers and we put these pictures up to celebrate the fact that we are working with growers that we know. To answer your question, we work with a whole spectrum of growers from very small growers in South Africa and New Zealand to some very large growers. We actually work with one of the largest cooperatives in France that pack something like 16 000 tonnes a year, but we know the growers within that cooperative. In terms of the eating quality, I don't think you can generalize. I think that some of the very small growers are fantastic, but a grower in Mexico who does our organic peaches is huge. They have some of the most fantastic peaches you eat all year around. The only comment I would make in terms of eating quality is that variety is hugely important. The new advances that they are making with the breeding programmes are just incredible: very good colour, very good eating quality. This is one of the most important things for us.

DELEGATE: Can you give some examples of how you are responding to climate change?

MR HEATHER: Climate change is a huge issue. We talked about air miles, a very big issue. I have a similar experience. My girlfriend often looks at the fruit that is airfreighted from Chile or Australia and says to herself, "Should we be indulging in that?" Modified atmosphere packaging and controlled atmosphere storage has enabled us to develop more seafreight lines, minimizing the amount of carbon that we are putting into the atmosphere, but unfortunately, the eating quality is still not as good as what it is coming off the aeroplanes. It is a very difficult subject at the moment, because there are few alternatives to airfreight at the moment.

There have been discussions about some of the new airships, the Zeppelins, from 40 or 50 years ago, which are very low-carbon technology. They were saying that for a jumbo jet to move from the docking onto the runway – one of these airships can run for a week on that same amount of energy. Certainly there is nothing there at the moment that we can use other than aeroplanes. In the future, I think more and more businesses will wake up to the fact that climate change is costing them hundreds of thousands of pounds and will start to do something. I think the world is slowly moving in the right direction, but I can't really offer anything. We don't have a silver bullet at the moment.

The case of NorminVeggies of Northern Mindanao, Philippines

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Abstract

This case discusses the strategies of a group of farmers called NorminVeggies who were able to market their products successfully using a business model not previously used in the Philippines vegetable industry. Their innovative organizational structure and marketing clusters have enabled the farmers to respond to a market that is constantly changing. With a corporation called Normincorp, NorminVeggies had the agility that they needed and yet, as an association, they were able to access development assistance. The association formed marketing clusters, based on farmers' capabilities, interest and capitalization. The corporation is paid a facilitation fee for the marketing services it provides which ensures its sustainability. Farmers follow a strict quality assurance plan for each product. Training is delivered on Good Agricultural Practices and designated lead farmers act as quality managers and coaches. Small farmers are clustered with independent farmers who help "jumpstart" production. Quality benefits are shared with all cluster members. Products are traceable to the farm that supplied each crate of produce. Farmers therefore maintain ownership of their product right up to the institutional market and therefore have a greater participation in the chain.

Introduction

This case study looks at the Northern Mindanao Vegetable Producers' Association Inc. (NorminVeggies), an association of vegetable farmers and stakeholders in the Philippines, who have successfully organized their own marketing group, the Northern Mindanao Vegetable Corporation (Normincorp). NorminVeggies and Normincorp have collectively improved the farmers' ability to access dynamic markets in the Philippines, particularly the fast food restaurants, supermarkets and vegetable processors.

The vegetable farmers have worked together to build their membership base, assisted each other in the production of quality vegetables, gained markets through marketing clusters, articulated their needs and interests, and accessed support from development agencies and non-governmental organizations (NGOs). By looking at the factors that help explain their success in these markets, insights and lessons can be gained in linking small farmers to markets.

For this case, data on NorminVeggies and its marketing group, Normincorp, were gathered using key informant interviews with NorminVeggies, Normincorp and stakeholders in the Philippine vegetable industry.

The organization

NorminVeggies was organized by small farmers and independent growers to address the common concerns of stakeholders in the vegetable industry in Northern Mindanao. It is a non-stock, non-profit organization, servicing its 85 members (Table 1).

Table 1: Members of NorminVeggies as of July 2006.

Farmers	**72**
Of which: Individual producers	52
Development foundations	2
Corporate farms	7
Farmers' associations	4
Farmer's cooperatives	7
Associate (Inputs/Service Providers)	**9**
Honorary (Institutional Partners)	**4**
Total	**85**

Source: NorminVeggies records

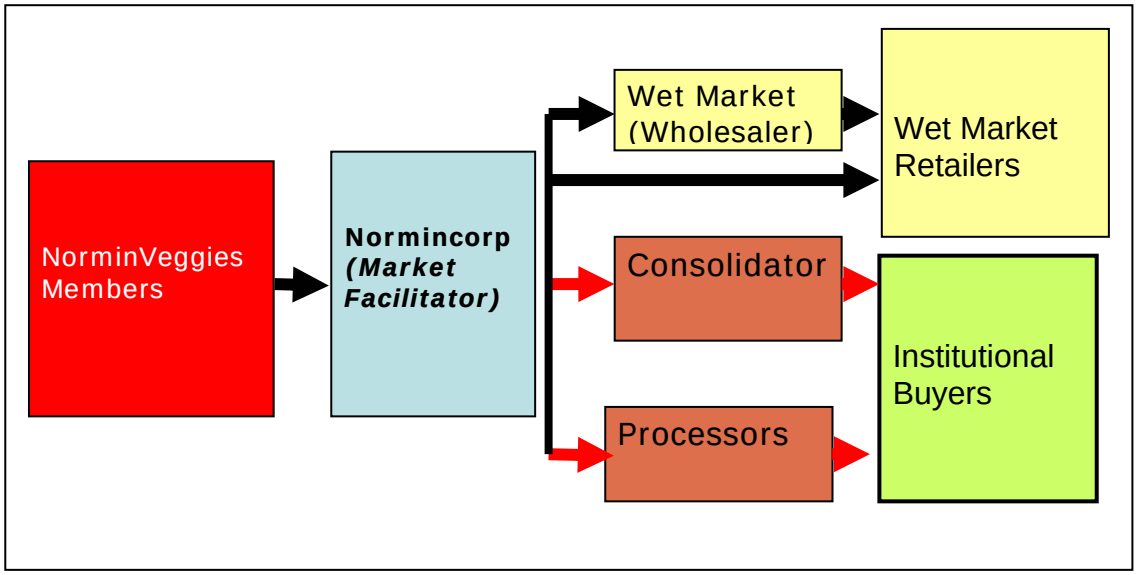
Independent growers are small farmers who are financially stronger and can independently pursue markets and adopt appropriate technology. Small farmers are those needing special interventions to undertake vegetable production and marketing. Generally, the smaller farmers are poorer and less well educated than the independent growers. Development foundations have assisted the small farmers.

Members classified as corporate farms have the ability to integrate their business operations vertically. Input and service providers include seed companies and other service organizations; local government unit members are those departments servicing vegetable farmers directly.

NorminVeggies, through the independent growers, is aware of the dualism in the vegetable supply chain in the Philippines described in the paper by Concepcion and Digal in these Proceedings. They see the difference between the needs of the traditional markets and those of the modern chains. They want to tap into both markets, delivering high quality produce to the modern chains, which may give a better price while also supplying the rest to the traditional market (Figure 1).

NorminVeggies has conducted several activities towards establishing a presence in the Metro Manila and Visayan markets. They have undertaken trial shipments using reefer vans, conducted trial plantings and identified key crops where Northern Mindanao will be most competitive in the market, and prioritized the development of these crops. They then conducted trainings on production technologies, post-harvest handling and marketing for their members. Successful production protocols were freely shared with the members. They have printed and distributed booklets on production technologies for selected vegetables.

Figure 1: Supply chain map of NorminVeggies



To achieve the required volume that will satisfy their target institutional markets, NorminVeggies farmers developed clusters among themselves. A cluster is an informal group of five to ten small-scale farmers and independent growers who commit to undertake a common marketing plan for a particular product (or set of products) for an identified market. NorminVeggies began with a lettuce cluster and when that proved successful in penetrating the market, continued to develop a broccoli, strawberry, carrot, sweet pea, bell pepper and tomato cluster.

Normincorp is the marketing group, incorporated by five core independent growers and the lead farmers for various crops. It services the marketing needs of ten independent growers and a core of 50 small farmers growing mainly cabbage, carrots and bell pepper and tropical vegetables like bitter gourd and eggplant. This core of 50 small farmers is being assisted by the Kaanib Foundation Inc. (a NorminVeggies member) in partnership with its development resource organization, Lutheran World Relief Services (LWR) and Catholic Relief Services (CRS). In 2006, Normincorp provided marketing support for a CRS-assisted project and its partner, the Kasilak Foundation, involving farmers growing squash, chayote and bell pepper in the Campostela Valley in Southern Mindanao.

Participation in chain management

NorminVeggies in partnership with Normincorp has successfully addressed the various obstacles in tapping dynamic institutional markets, each time adjusting to the trends and demands of the vegetable industry. They have become preferred suppliers due to their ability to respond to changes in market requirements and have recently ventured into forward integration by setting up their own wholesale and retail outlet at the Agora Wholesale Market in Cagayan de Oro.

Using the framework proposed by Berdegué *et al*. (2006), this section discusses the evolution of NorminVeggies from their beginnings as farmers selling in the spot market until the time they began to integrate marketing.

Traditional (spot) market
Before the concept of marketing clusters, individual farmers sold their produce to the wet market in Agora Wholesale Market in Cagayan de Oro. Farmers harvested their produce without a ready buyer and were compelled to receive the price given on the day by the traders. Often their produce was sold the following day at heavily reduced prices. They were subject to market distortions, as buyers often waited until the next day to take advantage of the lower price, ignoring the depreciation in quality.

Specialized wholesalers
The first marketing cluster was the lettuce cluster formed in 2001 in response to the needs of a specialized wholesaler serving the fast food industry. Blue Dairy Corporation (BDC) was the main driver for the lettuce cluster chain. The farmers were asked to use a refrigeration system when shipping the goods in order to preserve the quality and to compete with imported lettuce from Australia.

The three-tonne weekly supply from the NorminVeggies lettuce cluster met 40 percent of the requirement of BDC: the other 60 percent was sourced from the farmers in Benguet Province. The cluster grew to eight farmers, and the weekly supply of refrigerated lettuce to BDC continued for the next two years. In 2004, NorminVeggies through Normincorp supplied another fast food company, KFC. They supplied KFC directly for the first six months, then through KFC's processor in the succeeding months.

During this time, the lettuce requirement shifted from the iceberg type grown in the open field to the romaine and leafy lettuces that needed greenhouses or rain shelters for production. Rain shelters provided a greater harvest recovery rate at lower cost and as less agrochemicals were employed, a safer higher quality product. However, the fast food market in Manila ordered only during July to December and treated NorminVeggies as an off-season supplier to the supply from Benguet.

Preferred suppliers
Having built a track record for quality and reliable delivery, other buyers in Manila contacted NorminVeggies through Normincorp, as early as 2003, not only for lettuce, but for other vegetables as well. This was the beginning of their expansion. New growers joined NorminVeggies and the marketing clusters for broccoli and strawberry were formed.

NorminVeggies farmers produced excellent quality lettuce, broccoli and strawberry, which were very difficult to procure in Manila. The marketing strategy was to build a name for quality in the institutional markets, to change the image of small farmers as unreliable suppliers through the clustering strategy, and to assure markets that typhoon-free Mindanao was in a unique position to address their needs during the typhoon season in Luzon from July to November. This strategy worked as NorminVeggies

products developed a brand image in the market, and were identified as coming from "Normin" (Northern Mindanao) in contrast to those from Benguet.

With lettuce, broccoli and strawberry, Normincorp was able to service other types of buyers in July 2004. These buyers included distributors who serviced the supermarkets, hotels and restaurants. When necessary, commercial cold storage space was rented to hold at least one tonne of lettuce to meet any unforeseen demand. Broccoli and strawberry were packed in ice in styrofoam boxes (the way Australian produce is packed coming into the country) and air freighted to Manila three times weekly at a consolidated volume of one tonne.

When the Department of Agriculture helped NorminVeggies gain access to a refrigerated van in Metromart, Metro Manila, as a storage facility, NorminVeggies ventured to supply the high-end restaurants in Ortigas and Makati directly; these are the two major business centres in the Metro Manila area. They rented a refrigerated truck for this purpose.

These new markets taught Normincorp the dynamics of seasonal production. While the fast food market arrangement was all year round, they found that the Manila-based supermarkets, hotels and restaurants could only be serviced economically during the typhoon months of July to November, when the freight costs to move these products from Bukidnon to Manila could be adequately covered. As a result, they chose to supply Manila only for these months. Although Normincorp could supply for only half of the year, volumes doubled and other vegetables were included, like cooking tomato, sweet pea and squash.

By March 2005, the supply to KFC's processor stopped because the demand changed significantly. Unless Normincorp was to undertake their own vegetable processing, they would not have the market strength necessary to deal directly with the end user. At this time, the corporate farms in Luzon supplying the fast food markets had forward-integrated their production with processing to take advantage of the emerging trend to serve salad greens.

By the middle of 2005, Normincorp thus had to stop supplying the fast food market in Manila, which meant stopping all shipments to Manila as the volume became insufficient to cover the shipping costs.

Meanwhile, several lettuce farmers in NorminVeggies had invested in indigenous greenhouses and started to grow the romaine type of lettuce. NorminVeggies became a beneficiary of support from the Food and Agriculture Organization (FAO) for technology development through a demonstration project to establish three indigenous rain shelters. By the last quarter of 2005, Normincorp had the potential to re-enter the metro Manila market and other dynamic institutional markets.

Forward integration

Normincorp then decided to build up its market in the Visayas (Iloilo, Bohol and Cebu), which they can supply all year round. As part of the response to the challenge of bulk consolidation, NorminVeggies have entered into partnership with DA and GEM-

USAID to establish a NorminVeggies Consolidation Center (NVCC) in the Agora Wholesale Market in early 2006. NVCC started operation in May 2006, with NorminVeggies providing the warehousing services and Normincorp the marketing services.

The Agora Wholesale Market is near the port of Cagayan de Oro and the integrated bus terminal. It is the largest consolidation area and wholesale marketplace for vegetable products in Northern Mindanao, with close to 100 stalls. The daily volume handled is an average of 150 tonnes. It is the main supply source for other areas in Mindanao (Zamboanga, Lanao, Surigao, Agusan), the neighbouring islands in the Visayas and Luzon (during the typhoon season).

However, transactions at the Agora Wholesale Market are spot relationships, and the farmers have no say on the vegetable handling and storage conditions. While NorminVeggies producers have very good quality at the farm and after harvest, poor handling at Agora has adverse effects on quality. Farmers became price takers with no access to the buyers because the traders restrict the flow of information. Post-harvest losses and wastage is high.

NorminVeggies decided to institute change in post-harvest handling, transport, packaging and storage at the Agora Wholesale Market. NVCC provided whatever services the buyers wanted, such as packaging, volume and quality specifications. They gave the farmer members services in the form of storage, order taking, sorting, washing, packing, shipping facilitation, billing and collection from buyers and remitted payment to the growers. Growers pay fees to use these services.

Through the NVCC, NorminVeggies was able to establish a track record as a supplier to Cebu, Bohol and Iloilo supermarkets and fast food sector distributors, as well as the buyers in other Mindanao provinces. The growers have maintained consistency of supply and quality. Each cluster has a target volume to deliver every week and the farmers bring their produce to the Cagayan de Oro pier through NVCC where the produce is consolidated and shipped.

The buyers in the Visayas determine the proportion of acceptable goods upon receipt at their end and pay the corresponding amount to Normincorp. Normincorp gets a percentage facilitation fee from the face value of the sale, and the balance is remitted to the grower. After a month of operation, Normincorp used its bargaining power to negotiate better payment arrangements. Some buyers agreed to send their consolidators to NVCC who pay cash as soon as the vegetables are withdrawn instead of waiting until the produce is received in the Visayas. This eliminated the losses due to trimmings in transit and the waiting time for payment.

Shipments to the Visayas and the neighbouring Mindanao provinces are done every week. The buyers in these markets pay for the shipping costs and transact in cash. Normincorp with its reputation for quality and reliability has become their preferred supplier. The advantages offered by Normincorp make it convenient for the buyers to move fast in a very narrow window of time and to cut transport time.

Non-cluster member farmers, whether members of NorminVeggies or not, bring their produce without any prearrangements. Normincorp also services them. Their produce will be supplied to those buyers who want to purchase from the spot market. At the consolidation centre, farmers are able to get exposure to market buyers and Normincorp is able to get them acquainted with the quality desired by the market. These farmers gradually realize that they can get better prices if they have better quality and are part of a cluster. Since the Agora NorminVeggies consolidation stall was opened, more farmers have joined the marketing clusters. In terms of market opportunities, ten more traders have nominated NorminVeggies as their preferred supplier.

Based on the financial reports of NVCC, the difference in the costs and benefits between cluster members and non-cluster members is significant because the latter do not have access to a better market. For example: sweet pea in the Impasugong market in Bukidnon, where the small farmers in the cluster are located, are selling at Ps80/kg while Normincorp sells the same items at Ps120/kg. Even after the packaging, transport, storage and marketing fees are deducted, the net price is still higher by at least 10 percent than the Impasugong price. Table 2 shows the financial report for NVCC for the first three months of operation.

The evolution of NorminVeggies' supply chain and its participation in chain management is mapped in Figure 2 (based on Berdegué *et al*., 2006).

Figure 2: Participation of NorminVeggies in chain management

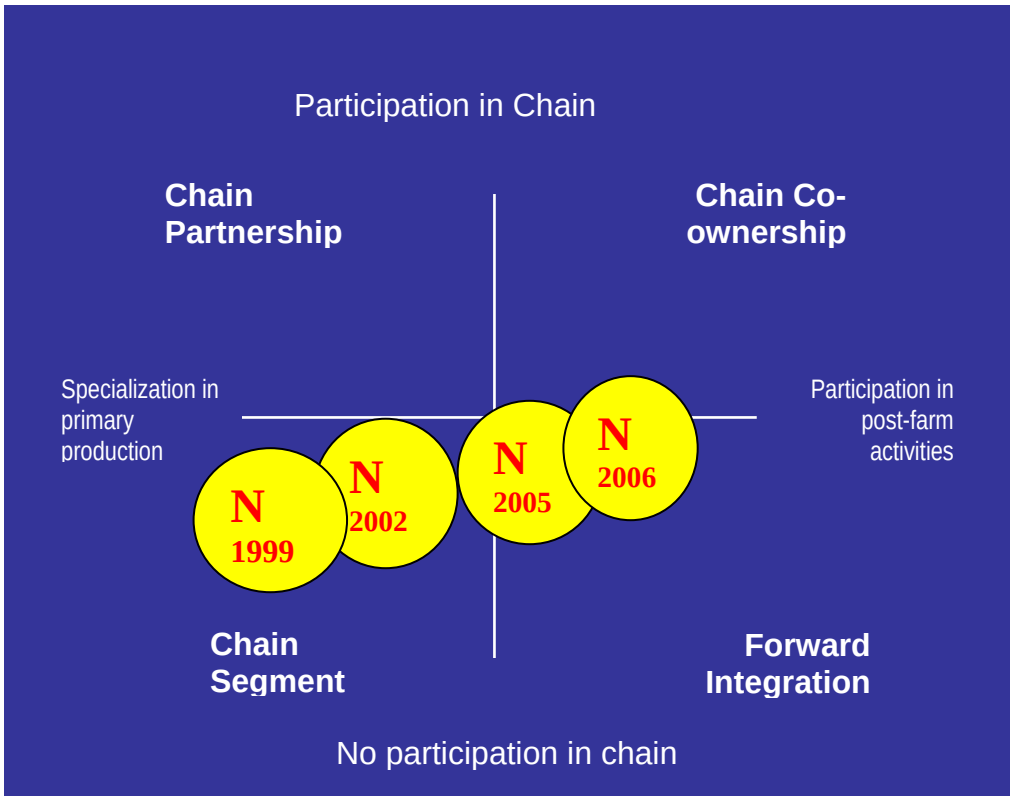


Table 2: NorminVeggies consolidation centre income statement in Pesos (US$1 = Ps53), May to July 2006[20]

Item	May	June	July	August	Total
Income					
Storage fee	25 786	30 248	36 418	53 447	145 899
Packaging	316	981	1 577	2 345	5 219
Marketing premium	2 559	2 988	3 618	4 880	14 045
Total Income	28 661	34 217	41 613	60 672	165 163
Expenses					
Salaries	12 075	11 075	11 250	11 050	45 450
Benefit contributions	569	569	569	569	2 276
Daily wages (labour)	1 800	3 050	3 780	3 750	12 380
Rent	10 000	10 000	10 000	10 000	40 000
Transport	378	122	36	91	627
Light and water	1 633	1 033	1 333	1 432	5 431
Office supplies	2 392	59	134	318	2 903
Miscellaneous	127	63	366	458	1 014
Pre-Operating Expense	2 266	2 266	2 266	2 266	9 064
Total Expenses	31 239	28 237	29 734	29 934	119 144
Net Income	-2 578	5 980	11 879	30 738	46 019

[20] Based on agreement, NorminVeggies is 20 percent owner of Normincorp. The marketing premium is Normincorp's contribution to NorminVeggies. To simplify computations, 10 percent of Normincorp's facilitation fee at the NVCC is NorminVeggies' share and recorded as marketing premium. The item for salaries is for the consolidation in-charge and a night guard. Daily wages are the hired labour to unload vegetables from the vehicle at the consolidation centre and for general maintenance. Rent covers the rent for the land. The building, valued at Ps475 000, was constructed by the Department of Agriculture as support for vegetable industry development through NorminVeggies. The agreement is for free use. Even if members contribute, pre-operating costs are computed and amortized for a period of five years.

Critical success factors

NorminVeggies operates as an association which aims to benefit its members. One of the critical success factors of NorminVeggies is that it is able to tap a support system which gives members access to resources available only to groups and not to individual farmers like training, technical upgrading and market assistance. Benefits include the following:

- Production protocols are available to members so that they do not have to resort to trial and error. Farms are open to each other for sharing experiences;
- assistance from NGOs and development agencies like FAO, which gave them marketing training and technical demonstrations on rain shelters;
- assistance from Growth Equity in Mindanao (GEM) which provided institutional strengthening. GEM also provides 80 percent of the funds for administrative staff and support for events like the annual vegetable congress;
- assistance from the Department of Agriculture on technology- and production-related trainings, access to a cold chain, a refrigerated truck and other new technologies;
- assistance from the Kaanib Foundation for small farmers who need special attention and a voice in the policy being formulated that affects the vegetable industry.

Moreover, any market developed belongs to all the members of NorminVeggies. Members have better bargaining power in the market because of the quality, volume, variety and continuity of supply provided by the supply base. An improved supply base gave them access to more diversified and predictable markets. The members receive a higher price, they have reduced post-harvest losses, achieved higher recovery rates and higher net incomes.

Second, NorminVeggies evolved a new business model with Normincorp as the market facilitator, which is run professionally as a separate business entity. Transparency in all sales transactions facilitated through Normincorp was due to the use of a facilitation fee for the payment of services. All the proceeds from the sale of produce are returned to the farmers, less a facilitation fee to Normincorp and storage fee to NorminVeggies. The transparency in transactions has reinforced trust among the members of NorminVeggies. The relationship among the growers has become stronger.

Third, through the clustering strategy, the core value of sharing is being emphasized among all the producers including the small farmers. It is understood that when a farmer is taken into a cluster, he or she is under a strong obligation to work with the group including the protection of its reputation as a producer and a marketer. This core value is given much importance and failure to meet this expectation can result in the grower being removed from the cluster. The unity of the group is severely tested when growers are tempted to sell to other buyers in the spot market for immediate price benefits, while contracted buyers may be left with insufficient produce. Produce consolidation through the clusters is one of NorminVeggies competitive strengths.

NorminVeggies members share the core values of interdependence, responsibility, commitment and trust. Working together through the daily challenges of a dynamic market has made the members of the group realize that these core values hold them together. They also seek to provide each other with an opportunity to improve production technology, quality awareness, packaging and other competencies needed to access markets. The members who are more financially independent are acutely aware that much of the assistance they tap as an association is because of the small farmers. Therefore, small farmers are assigned products that only they can market. These are products which are labour-intensive, low-risk and have lower costs of production such as sweet peas, cabbage and carrots. The more financially-independent growers, on the other hand, provide the back-up system for the small farmers in case there is a crop failure. Independent growers altogether plant to provide a 25 percent backup in the volume required by the market from the small farmers.

NorminVeggies is a learning organization, flexible and adaptive to the changes in the industry. NorminVeggies is able to respond because the communication among the members of the Board is open and transparent. When the lettuce cluster and the other products started to pick up in volume, the Board decided that a corporation needed to be formed to run like a professional business. Decisions needed to be made swiftly. The marketing activities of the association, including market information, market development, shipping, negotiation and other market-related activities were assigned to Normincorp. Normincorp actively seeks high value markets and constantly analyses the changes in the markets; this analysis is openly communicated to NorminVeggies members.

Finally, NorminVeggies is comprised of people who have either been involved in the vegetable industry for a long time, have been business executives in other industries, are graduates of agriculture and its related fields, or have the passion for the industry and the small farmers. The individual group members are responsive to the markets and believe that any market developed belongs to all the members of NorminVeggies.

It cannot be denied that the strategies employed by the group such as marketing clusters, forming a marketing group (Normincorp), forward integration, quality and supply chain management, and developing the discipline required in business within farmers, have been realized because of the presence of people who have managerial, entrepreneurial and leadership skills, as well as a genuine desire to help very small farmers.

Conclusions and recommendations

The organizational innovation of NorminVeggies has several elements: product consolidation through clustering; a new business model through Normincorp; supply chain management; networking; and linkage and development intervention for the greater inclusion of small farmers.

The clustering strategy enables small farmers to be active players in the supply chain, to meet the basic demands for volume and consistent quality, and cater for dynamic markets like the fast food chains, processors and supermarkets.

It takes time to develop a functioning cluster. It starts with a random group of farmers producing as individuals. Over time, those who can work in the cluster (particularly in sharing best practices, the commitment to quality and reliable delivery, and the willingness to pay the costs of management) will become evident. Those who cannot will leave as willingly as they came in. When growers understand and experience the benefits of cooperation, only then can there be cohesion in the cluster.

The cluster is not an ordinary grouping. Rather, it is one that has marketing goals and management systems. A business organization taking bold steps as a social enterprise is needed to realize the goals that benefit a wide base of growers. A core group of enterprising and agribusiness-oriented farmers is necessary to provide the internal strength for the organization to pull the small farmers along.

Small farmers have the productive potential because of their number and spread. However, infrastructure gaps, low productivity, attitudinal problems and other constraints mean that they need development interventions from private development resource organizations and government to address their limitations. There is also a slow maturation period required as small farmers are gradually trained, learn new values and skills, and are primed for business-like operations.

The key to successful marketing is effective management rather than the level of sophistication of the marketing system. This implies that what counts is organizational management (or how farmers can get their act together) and operational efficiency (a high level of coordination in the sequence of activities that move products cheaply from the growers to the buyers).

The ability to maintain market position is a result of how fast growers can keep up with the changes in an evolving supply chain. Competition from vertically-integrated suppliers like corporate groups can exclude small farmers from the market. There is a need to invest constantly in new technology, market research, communication and good financial management.

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Contract farming[21]

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Abstract

Contract farming is a business development concept that brings the CP Group back to the basics of agricultural business. CP has always realized that farmers are our lifetime partners so we do business for their development. CP projects have the objective of ensuring farmers get a sustainable income and better quality of life so that the whole country may develop. When operating an agribusiness, CP begins by analysing the market potential, i.e. global and domestic market conditions, production volume, export and import conditions, pricing, knowledge capacity, production potential, human resource potential, and food safety and environmental concerns. Contract farming finds its place in this method through CP's "Complete package programme", which also includes building links between farmers and financial institutions. Farms involved in the complete package programme benefit from cost reduction, risk reduction, increasing yield and income. CP also provides any new technologies needed for the business development of its contracted farmers. On fresh produce, CP is focusing on tropical fruit and flowers. The goal of the group is to produce fruit to the higher quality standards demanded in Japan, Australia, Europe, the People's Republic of China and other Asian countries. The development of adequate technologies for managing quality during pre- and post-harvesting is one of the group's priorities. In the flower business, CP fully meets the standard on producing seedlings and young plants that are free of any diseases. CP Flower products have been launched both in domestic and overseas markets such as Japan, the Netherlands, Denmark, Germany and North America.

Introduction

First of all, I would like to thank FAO for inviting the CP Group to make a presentation today. CP is a big group that has many business interests worldwide. In 2003, the CP Group had a turnover exceeding US$13 billion and we are very proud to be a Thai company. Next year we will celebrate our 85th anniversary.

Our main business is agriculture, but as agriculture is not so profitable, we have diversified into many other businesses. The group is divided into ten main businesses. Every group has a president which shares the same mission: how to develop the market, how to develop the business, and how to develop the customer.

In Thailand we have around 3 700 7-Eleven stores and around 80 stores in China. It is our retail business that provides the opportunity for CP to link the farmers to the market.

[21] The following paper is an edited transcript of a presentation delivered to the International Symposium on Fresh Produce Supply Chain Management

Fresh produce is a relatively new business for the CP Group, but we have taken a long-term view. We believe that the farmer is our lifetime partner, so we need to help them. We develop the market and link it with the technology that we have and the expertise we acquire from our partners.

We focus only on high-quality product. As the market for fresh produce is very price-competitive, the farmer is always thinking about the price. To compete, we need to find a way to help them understand the market if we are to bring to them a better profit.

If we want to secure the farmers' product, we need to show them how to produce it. While we seldom have a written contract, we always use written product specifications to make sure that we all understand the same thing. What we say, the farmer believes, so we must do what we say. If you don't, you will lose the farmer.

Our guiding principles

I want to start with teamwork. When we watch football, everyone in the team – whether it's the defensive team or the offensive team – is a part of the team and when everyone works together, the team wins. When we talk about our team, the farmer is the most important person in the team.

Who is the team? We cannot do it alone. We gather together a number of other organizations that have similar objectives. The BAAC is a Thai bank, a government bank that has a problem. When the bank gives a loan to the farmer, sometimes the farmer cannot pay back the loan, because the farmer does not have a market. We cooperate with the bank. We cooperate with the Department of Agriculture. We provide the market and we provide the technology.

The project that we propose is often described as a complete package. It's in our name: CP. C is "complete" and P is the "package". In this package, farmers try to grow the best product, but we are in charge of the market. We try to get the best prices, reduce the costs and minimize the risks.

Our target is to provide a higher income for the farmer and to ensure that it is sustainable. We begin by clearly discussing with the farmer what we need to do. The main objective is for the farmer to learn how to produce the product and to aim for the best quality. However, of the produce that is grown in Thailand, only ten percent will meet the standards we require. The rest will find its way onto the local market.

Every year we have a problem with price. This is a headache for government. We let the farmers do what they are good at. We let the bank do what they are good at. Then we cooperate with the government to bring it all together.

We need to guarantee some things. If not, the farmers will not follow us. We will not say that we will secure the best price for them, but what we will provide is a guaranteed price. The guaranteed price comes from calculating the cost. The farmer must have 25 percent of the profit from the cost of production. This is the ideal, but, as you know,

seldom achievable. In agriculture, many things are uncontrollable and we need to let the farmer know that.

Our first strategy is to increase the yield. The best produce comes from the best seed, the best management, and the interaction of both with the environment. This is the main thing that we need to teach the farmer and this is why some farmers have been working with us for more than 20 years.

Our second strategy is to produce the best quality product. Quality describes not only the physical characteristics of the product but also the quantity of the product potentially available. In the first instance, most of the farms in Thailand are small scale; often less than 10 hectares. So, if we want to produce a lot of product, we need to have many farmers.

In our company we say that quality is our life and the integrity of our brand comes from quality. Sometimes the farmers make mistakes, but first and foremost we require one thing from them. They must commit. They must try to do their best.

For us to succeed, the team must have one thing in mind: we want to achieve. To achieve, it means that the farmer must have a target. The bank has a target. The government has a target. CP and I have a target. We work together and we try to bring one thing, a sense of belonging and partnership, because the project is not short-term. Every project is long-term. Some people are willing to work with us, others are not, and we need to clarify this from the outset.

At CP we also invest in our own farms. All together, we have six fruit farms in Thailand. We select the best location to produce the best quality fruit. The fruit we cultivate include pomelo, mango, mangosteen and longan. This is the produce that Thailand has a lot of. Then we set the calendar: when we will have the best product and from where will we source it. Then we develop a relationship with the market.

One thing that we are doing continuously with the government is trying to promote the best product. In the People's Republic of China, you can buy Thai produce anywhere, but the customers always complain, "Why is the durian like that? Why is the mangosteen like that?" This is mainly because of the logistics. We guarantee our product and we work continuously to improve our quality.

Food safety is another issue we need to think about. Not only must the produce be of good quality, but it must be safe for the consumers. Let me now introduce some techniques which we employ so that people can rely on us. In our warehouses and packing sheds, we operate under good agricultural practices (GAP). In addition, some of our greenhouse farmers need to adopt practices that reduce the use of chemicals. In Thailand, the government has done a really good job introducing GAP to the farmers. These are the type of farmers that are introduced to our team.

In some instances, we have developed pesticides that are not chemicals. We call these biopesticides. We have our own research and we make our own products available to our contract farmers. This way we can guarantee food safety.

In Thailand, we have a big problem with labour. The cost of labour is increasing every year, but now it has gone so high as to threaten our competitive advantage. To overcome this problem, we need to introduce some technology, but this technology is not only our own. For example, CP has good cooperation with Australia, particularly with Queensland, because the growing conditions there are very similar to those in Thailand. They can grow durian there, longan and mangosteen. Also, the Australian Government is cooperating with the Thai Government. We also have a joint venture with a Japanese company. Although they don't import much from Thailand, they are a really high-value market, especially for mango and mangosteen.

On our farms, we focus on products like pomelo that we think will be good for Thailand in the long term. However, if we are to be successful, we must clarify what we expect from the farmer. To ensure that our farmers understand what we say, we have introduced a harvesting manual that we borrowed from Australia. Once the farmer understands this, we need to give them some idea about what price they can get. Sometimes we bring the farmers to see the market together.

Longan is also another good product from Thailand, but we experience problems every day in our export markets. Thanks to some new technology, we can export: even if it goes by ocean and takes about 20 days. The quality on arrival is still acceptable in the market.

Mango is the main product that we export, because, in Thailand, we have many mangoes. Mango is also the main product that Japan imports. After ten years of research and development, we know what variety we need to grow and the techniques that we need to employ to improve the quality of fresh fruit exports. Today, we have many varieties on our farms that are grown to meet the specifications of each market. Every mango farm that wants to export must be GAP-certified, especially if the product is going to Japan where there is a list of 714 chemicals that they cannot use. This is something that we need to make sure that the farmer understands.

If we are to export, we need high-quality product, but we also need to give the farmer a high price. This brings us to our third strategy: how to reduce the costs.

We can now say that Thailand is the leader in the Japanese market for mangosteen. However, this is one of the most difficult crops to export, for although it looks nice on the outside, inside there are many problems. For some farmers, their trees are more than 100 years old. Now, in a joint venture with Diamond Star from Japan, we have new equipment that guarantees that the fruit we export will be good inside. We need to do this with every piece of fruit we export because Japanese quarantine is very strict and often, under the skin, they will find some insects.

Another problem is sweet corn. In the past, we had to import the seed, but now CP produces its own. Baby corn is a crop of only 45 days duration: the farmer gets his money really quick and this is a very good product. However, we need to train them how to grow it. In particular, we need to show them how to reduce the chemicals and to ensure that the product is handled appropriately after harvest to make sure that our customers will be happy.

The last thing is flowers. Flowers are also a new business for me, but now we have a good relationship with a Japanese customer. This is a big market. We need to develop some tropical flowers which the market needs and develop some special varieties. We will do this under contract. We use our own network to distribute both internally and also to the export market. The two crops we will concentrate on are Anthurium and Phalenopsis.

To conclude, to be successful in contract farming, you need to have a good market and good team work. We need to have a production team that can produce good-quality product which the market can accept, the ability to deal with many small farmers, and the ability to transfer technology to them. If I had a choice, I would not enter into a contract, but a contract offers a position that is win, win, win. The farmer wins, we win and the customer wins. Because we have a good team, we can produce good-quality product at a lower cost than if we were to do it ourselves.

The farmer finds it difficult to trust us, so that is why I said that even sometimes when we don't have a written contract, when we say, the farmer believes. We must be aware of that and not disappoint the farmer. But not all the farmers are good. Because there are so many small-scale farmers, it means that there are many bad farmers. We need to select the good ones. From the start, we establish a production plan and determine up-front what prices the farmer will get. We offer quality incentives to encourage the production of superior-quality produce and CP will cooperate with the bank to provide the finance the farmer so often needs.

DELEGATE: Thank you. In this presentation as in Jenny Mercer's presentation, we see that quality is the most important issue. You have shown the quality charts for mango and mangosteen, but how do you renumerate the farmer for producing superior quality? How do you guarantee that the farmer who has produced higher quality is paid for this?

MR POONPIRIYASUP: In the first instance, we try to identify the farmers who have experience. For the first three years, there are many problems, but the farmer is growing a crop that will last for at least ten years. The proposition that we bring to them is that our company is 85 years old. Over the next ten years, your orchard will produce fruit, so why don't we join together?

Because the farmer does not always understand, we need to communicate using the farmer's language. We need to make sure that the farmer believes in us. If we set a minimum price it means, for example, "this is grade B; we will sell this to the local market", but for grade A, the farmer needs to give more attention and incur more costs in taking care of the produce. We need to encourage them. Like I said, a 25 percent margin is the guaranteed price that we set as the target. The farmer must grade, but sometimes the farmer cannot do it. Our team needs to help them. After three years, the farmer will have the appropriate technology on-farm and then we can manage them easier. Sometimes I am fighting with the Accounting Department, because Accounts just wants to see the profits, but I must take care of my investments.

DELEGATE: You said that you do not always make the written contract with the farmers and furthermore not all the farmers are good. So, how do you manage the farmers, the production and the quality without the written contract?

MR POONPIRIYASUP: As I said, we collaborate with at least four organizations. With this information, we know who the more advanced farmers are. When we form farmers' groups, only the good farmers will be approved. If a farmer is not selected, more often than not, this is not a problem. Even for farmers in a group already, we need to check them out; to identify what they know and what they don't know.

Training is the most important thing. Because we provide the training and we have the technology, the farmers need to buy the seed, the fertilizer and the chemicals. To train our farmers, we cooperate with the government. The government also understands what we are doing it for.

DELEGATE: Are you concerned about sustainability?

MR POONPIRIYASUP: Yes, sustainability is very important. Because we want to extend our market, our total offer's quality is very important. Every farmer needs benefits. We bring something to facilitate development in the community. When we cooperate with a farmer, the farmer wants to sell us more and more and other products, so we must have the market. When the market price fluctuates, we will face difficulties, but through the contract, we guarantee that the price will not be lower than the minimum guaranteed price.

Contract farming and cut flowers: an Ecuadorian export cut flower firm's response to dollarization

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Abstract

The international development community has made a significant strategic policy shift towards the use of high value-added market-driven development initiatives, with contract farming as a mechanism to assist small impoverished farmers to link themselves with international markets. Although contract farming has been in existence for many years as a means of organizing commercial agricultural production of both large-scale and small-scale farmers, its use is still highly debated in the development literature. Recent empirical evidence suggests that contract farming can produce substantial positive direct and indirect economic benefits and horizontal and vertical spillovers when a stable macroeconomic and legal environment is established and coupled with positive foreign direct investment (FDI). Researchers, however, have been unable to determine the relative importance of FDI versus a stable international market linkage as the catalyst for these contractual innovations. During the 1990s, the Ecuadorian export cut flower industry expanded rapidly by exploiting a unique financial arbitrage opportunity provided by the combination of an American dollar-denominated export market, a rapidly depreciating local currency and an inelastic labour market. Exporters profitably exploited the increasing exchange rate between the American dollar and the Sucre. Recognizing that the Sucre was depreciating at a rate of approximately 50 percent per annum, by the end of the 1990s, labour costs quickly became insignificant and most of the industry was highly inefficient. However, the unanticipated dollarization in January 2000 removed this arbitrage and confronted producers with not only American dollar-denominated product markets, but also American dollar-denominated factor markets. Firms were forced to change their production practices and business models in light of the dramatic change in input prices, or exit. The result was a substantial organizational and institutional innovation as firms attempted to identify and develop more efficient business models that provided sustainable competitive advantage within a high labour-cost environment. One of the critical innovations related to the establishment and diffusion of a cut-flower production contract between a medium-sized cut flower producer–exporter and the surrounding small-scale vegetable farmers. This paper evaluates the factors that contributed to the introduction, diffusion and impact of this contract production model.

Introduction

During the 1990s, the Ecuadorian export cut flower industry expanded rapidly by exploiting a unique financial arbitrage opportunity created by the increasing exchange rate spread between the American dollar-denominated export market and rapidly depreciating Sucre-denominated input market. Hyperinflation was causing the Sucre to depreciate at more than 50 percent per annum by the late 1990s. As a result, Sucre-

denominated input costs quickly became insignificant, especially labour costs. The result was a highly inefficient, low-skilled, low wage, high labour use industry, as there were few incentives for firms to operate differently. However, the unanticipated dollarization of the Ecuadorian economy in January 2000 removed the arbitrage and dramatically changed the incentive structure. Producers were now confronted with not only American dollar-denominated product markets but also American dollar-denominated factor markets. Whereas labour inefficiencies were previously of no concern, suddenly they became an extremely costly constraint. This forced inefficient firms to exit while those who remained had little choice but to change their production and business practices in light of the dramatic change in factor prices. The result was a period of substantial innovation as firms attempted to identify, develop and implement more efficient business models that provided sustainable international competitive advantage within a high labour-cost environment.

One of the critical innovations was the establishment and diffusion of contract cut flower production. Using an instrumental case study of contract production within the Ecuadorian export cut flower industry, we empirically evaluate the critical factors that contributed to the adoption, diffusion and impact of a contract production model implemented by a medium-sized cut flower grower–exporter with small vegetable farmers in Ecuador. The specific contractual innovation analysed relates to a particular cut flower species that is highly demanded in the American market, but dollarization induced labour and chemical cost increases made the traditional high labour–low wage business model unprofitable. Hence a new business model was required. Drawing upon numerous unstructured and semi-structured interviews and participant observation conducted over the summers of 2004 and 2005, the paper analyses and evaluates the structure of the contractual innovation and the impact of the diffusion. We ascertain that the effects of the increased real labour costs and effective market stabilization brought about by dollarization caused various levels of innovation: the provision of technology, agronomic and management support, seeds, transplants and credit. These innovations have had a substantial positive benefit on small local producers who were otherwise excluded from international markets or faced substantial barriers in participating in them. We also discuss a number of the important vertical and horizontal spillovers observed.

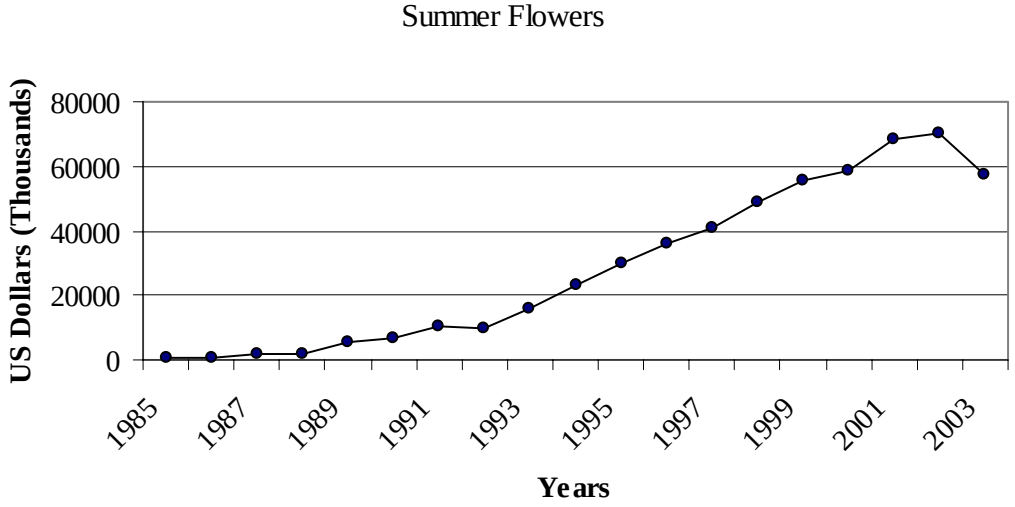
The Ecuadorian export cut flower industry

The Ecuadorian export cut flower industry is Ecuador's third largest export industry. It is primarily centred outside the capital Quito, but additional production is now found in Cotopaxi, Ambato and Cuenca. There are two subsectors: roses and summer flowers. Roses are the larger subsector and are generally cultivated at higher elevations in greenhouses, whereas summer flowers are generally grown at lower elevations in open fields. The majority of flower exports are destined for the North American market, as the European market is dominated by cheaper African production.

A convergence of factors drove the rapid growth of the Ecuadorian export cut flower industry during the 1980s and 1990s. These factors included: Ecuador's ideal climate; an abundance of cheap labour; relative proximity to export markets; favourable exchange rates; and low tariff rates (Blumthal and Gow, 2005). During the 1980s,

growth was fuelled by high Russian flower prices and Ecuador's proximity to the American market. The passage of the Andean Trade Preference Act provided further impetus with duty free access to the American market. Finally, the Ecuadorian export cut flower industry boomed during the late 1990s as exporters exploited a unique financial arbitrage opportunity provided by the combination of an American dollar-denominated export market, a rapidly depreciating Sucre and an inelastic domestic labour market (Figure 1).

Figure 1: Growth of Ecuadorian export summer flowers based on American Dollar value free on board (FOB)



Source: Expflores unpublished data

This unique combination of financial market factors provided exporters with the opportunity to delay, without cost, the collection of accounts receivable in the international flower market by extending terms of credit by up to 90 days or more to American buyers, while concurrently paying employees at fixed wage rates above the annual government-determined Sucre-denominated minimum wage rates. Labour is the largest factor cost of production and usually accounts for 50 percent or more of the total costs of production under stable input and output price conditions. However, with near hyperinflationary conditions in the late 1990s, cost inefficiencies that resulted from the slightly higher wages quickly became insignificant to producers: the government minimum wage rate was only adjusted one time per year, in January, and then by a factor far less than the prevailing inflation rate. Consequently, exporters profitably exploited the increasing exchange rate spread between American dollar-denominated sales and rapidly depreciating Sucre-denominated factor costs (Blumthal and Gow, 2005).

In January 2000 the Ecuadorian government unexpectedly dollarized the country's economy to avert the ensuing financial and political crisis. This immediately threw the export cut flower industry into turmoil as it dramatically changed the industry's underlying cost structure (Blumthal and Gow, 2005). Many firms were forced into bankruptcy. Only those firms who recognized that labour factor costs were now fixed

rather than depreciating and were willing and able to respond survived. To do so, these firms were forced to change their production and business practices dramatically. The result was a period of substantial organizational and institutional innovation as firms attempted to identify and develop more appropriate business models within this new high labour cost environment.

Overview of Ecuadorian cut flower producer–exporter

The firm of interest is a summer flower producer and exporter located on 26 hectares in a valley near Ambato, in the Tungaragua province.[22] Ambato is a commercial centre of about 250 000 residents that supports the nearby rural areas that have traditionally produced a range of fruits and vegetables for domestic consumption. The farm has been operating since 1996 and employs 126 people. The farm produces 19 varieties of summer flowers primarily for the American export market, of which *Solidago* (golden rod), *Consolida* (larkspur) and *Delphinium* (Delphinium) are their main crops.

Target market

Approximately 80 percent of production is sold in the American market to importers and wholesalers who primarily supply supermarkets. The remainder is sold in Canada and Europe. The firm's business model specifically targeted the American mass market for cut summer flowers. This is a highly price-sensitive commodity market with extremely narrow per-unit margins. Thus profits are derived from being a large volume cost-effective producer that consistently meets the American mass market specifications in a timely manner at competitive prices. Recognizing this, the firm continuously evaluates opportunities to increase productivity and reduce costs. The owner has identified five components that directly affect his profitability in the American mass summer flower market: suitable marketing channels; labour costs; pest and disease control; access to inputs; and production of appropriate crops.

Marketing channels

Traditionally, the firm sold its product through an Ecuadorian export flower broker as direct marketing to American customers was too difficult. Since dollarization, the firm has begun establishing exclusive marketing relationships with various key account customers in an attempt to gain higher farmgate prices. By eliminating the broker and selling flowers directly to clients, the firm has reduced market uncertainty, gained greater knowledge of its market, client and customer product requirements, and established appropriate ownership and feedback loops, thereby allowing it to provide better service and capture increased margins. To do this, it recently developed a website. This new interface has also increased its ownership of the final market interface and provided it with greater control over the market relationship and customer interface.

Labour costs

Cut flower production is extremely labour intensive. Labour usually accounts for about 50 percent of the total costs of production. In Ecuador, planting, harvesting and chemical applications all require manual labour. Traditionally, 11 to 12 people are

[22] We are unable to provide the name of the export firm due to commercial reasons.

employed per hectare on an average farm size around 15 to 20 hectares. Therefore, the labour and associated monitoring costs can be high.

Pests and diseases
Cut flower production requires diligent management of pest and disease problems. For the firm's larkspur crop, the biggest problem is soil-borne diseases which develop as a result of monoculture production. To combat these disease problems, the standard method of control has been field fumigation with methyl bromide in between every crop. This means the soil is sterilized every 22 weeks. The only other method to combat this disease buildup is crop rotation. However, for this particular farm, a rotation system is not viable because of the scheduling complexity required to produce multiple export flower varieties simultaneously.

Ownership of inputs
The farm currently produces 60 percent of its input plant materials using seeds and vegetative cuttings. They began this practice after a supplier failed to meet their input demands for Mother's Day sales in the United States of America, the second largest holiday for cut flower sales. The firm decided that they could no longer rely on an outside supplier, so they established their own propagation facilities to control the quality and delivery of planting materials. This innovation increased plant quality control, reduced losses and decreased pest and disease problems, thereby decreasing labour and production costs, reducing supply chain risk and increasing management control.

Larkspur - the crop of interest
The American cut flower market demands a consistent year-round supply of quality larkspur (Gill *et al.*, 1997). However, the production of larkspur presents various production complications due to its susceptibility to soil-borne diseases. The traditional field production control methods used to control this require intensive and frequent application of methyl bromide for soil sterilization (Gill *et al.*, 1997). This is not only costly and dangerous, but there is the threat of increased environmental regulation due to its potentially harmful environmental effects. Consequently, commercial larkspur production is becoming more complex and costly.

Dollarization as a driver of business model innovation

Dollarization fundamentally changed the underlying cost structure for export cut flower production by simultaneously removing the exchange rate arbitrage opportunity and fixing labour costs. This forced the firm to review and restructure its fundamental business models and practices for all cut flower production including larkspur. To remain internationally competitive in their target market, the firm needed to make labour cost efficiency their number one priority. To achieve this, they needed to decrease the labour force per hectare, increase productivity per person and increase planting densities.

Strategically, three factors would allow them to increase planting densities without adversely affecting their ability to meet the American quality standards; (1) their target market had relatively lower quality requirements than other market segments; (2) they

had complete ownership and control of input and seed stock quality through their nursery; and (3) their highly qualified staff could actively control and monitor production management practices.

On evaluating larkspur production, it was obvious that their current production model was unprofitable under the new market realities. The post-dollarization labour costs associated with frequent methyl bromide application had become too high. They also realized that crop rotation was not a commercially viable management alternative due to conflicting flower production requirements. Thus, an alternative production model was required if they wanted to remain a cost-effective larkspur supplier to the American mass market.

An observant technician identified that local vegetable growers produced very high quality vegetable products (mainly broccoli, cauliflower, tomatoes, and potatoes) using various rotational production methods for the domestic market. After some serious reflection, the flower farm realized it could develop a rotational contract farming model that leveraged its technical and marketing skills against the technical production properties of larkspur and the local farm management practices of the surrounding small-scale vegetable growers.

Larkspur has a relatively short cropping cycle of 18 to 22 weeks, depending on temperature, and requires low tacit knowledge and technology for production, but high tacit knowledge for event control such as pesticide timing and harvesting. Additionally, the short cropping cycle provided these farmers with the opportunity to adjust production to match the flower farm's sales forecasts rapidly. The flower farm's highly trained technicians possessed the appropriate technical skills to manage an outsourced contract production system effectively.

The contract production model with small scale vegetable growers

Over a four-month period, the flower farm initiated an informal contract production model with twenty small vegetable growers (< 800 m^2) producing a total of five hectares of larkspur. The contract was seasonal with farmers rotating larkspur production into their standard vegetable crop rotation. The only restriction was that larkspur could not be planted on the same plot of land until at least five other crops had been cultivated. This prevents soil-borne diseases. It also allows larkspur production to fit seamlessly within current low-technology rotational vegetable production methods. This reduces farmers' adoption and switching costs.

The flower farm provides each contract farmer with the required plant inputs on credit which are discounted from the final product payments. However, the farmers are responsible for purchasing any fertilizer and pesticides. This is because the farm has no way to enforce the use of fertilizers or chemicals.[23] Contract farmers must meet a strict set of quality standards in order to meet export standards. The flower farm's technician assists farmers in adopting the best practices. The technician visits each contract farmer twice a week to monitor plant growth, management practices and inspect for insects and disease, as well as making management recommendations on fertilizer and pesticide

[23] See Gow *et al.* (2000) and Gow and Swinnen (2001) for an extensive discussion of these enforcement issues.

application and harvest. The contract farmers are responsible for transporting their larkspur to the flower farm.

Farmers have the option of delivering the larkspur with or without the foliage removed from the stem. The pricing structure is set up to encourage farmers to remove foliage, as that reduces post-harvest labour requirements for the exporting firm (Table 1).

Table 1: Prices paid to vegetable growers per larkspur stem (US$)

Stem length	Foliage removed	Prices
70–100 cm	**yes**	0.105
70–100 cm	**no**	0.09
60 cm	**yes**	0.05
60 cm	**no**	0

To provide farmers with appropriate production management and quality control incentives, the farm has instituted a transparent quality assurance system that links the end users' quality assessment of each bunch of flowers directly to the payment that farmers receive. Each farmer is assigned an individual number that allows the larkspur to be tracked from the field to the American customer. The contract farmers receive their payments 30 days after the larkspur is exported with a deduction being charged against the contract payment for any damaged or inferior flowers received in the market. This payment structure allows for direct feedback from American customers and provides the opportunity for the exporter, technician and contract farmer to collaborate in identifying causes and developing solutions to the problem.

Once the larkspur is delivered to the exporting flower farm, they perform the post harvest tasks of grading the stems for length, bunching and packaging for shipment. Flowers are exported daily from the Quito airport. The post-harvest costs and technician salary add US$0.06 per stem to the total cost of production for larkspur (Table 2).

Table 2: Flower farm costs in US$ per larkspur stem

Larkspur Production Costs	
Larkspur stem	0.105
Post-harvest	0.060
Total Cost	**0.165**

Impact of contract farming

Contract farming has provided many benefits for those who have chosen to pursue it (Eaton and Shepherd, 2001). The following section presents the key challenges and impacts of the implemented contract farming model for both the flower farm and the contract growers.

The challenge of farmer participation

Farmers were initially reluctant to become contract growers because they had no experience producing cut flowers, let alone for an export market with stricter quality standards. It was only when the technician successfully secured Pablo Nachez[24], a very well-known and respected farmer, as the first contract producer that other farmers became interested in the program. Mr Nachez was the key to getting collective farmer participation as he served as the business leader who freely communicated his business and financial success with contract larkspur production with the other farmers.

Profitability per hectare

Larkspur production is highly profitable relative to farmers' alternative cash crops. First, larkspur prices are established on a pricing schedule based upon set quality measures that are provided to farmers prior to planting. This reduces price uncertainty for farmers. Local vegetable prices are traditionally highly volatile.

Second, the higher quality inputs, greater planting densities, and reduced pest and disease management costs ensured that contract producers achieved higher yields and returns per hectare with larkspur than alternative vegetable crops. Even if farmers can only successfully harvest 50 percent of their larkspur, they will still break even.

Third, farmers become more efficient reducing their costs of production (Table 3).

Table 3: Vegetable Farmer Costs per larkspur stem (US$)

Larkspur Production Costs	
Transplant	0.015
Labour and chemicals	0.065
Total Cost	0.080

Farmers noted that immediate access to market information and technical support allowed them to become more efficient and responsive to changing market needs and requirements, which minimized their losses and maximized profits.

Finally, integrating larkspur to the rotation schedule caused minimal disruption to the farmers' current production practices: no new investments were required and the same fertilizers and chemicals could be applied to both larkspur and other vegetables using the same application systems. Consequently, as one farmer noted, "the amount of money earned for larkspur, when compared to the same size area planted in another vegetable crop, earns three times more money". Thus, larkspur offered vegetable farmers a profitable alternative within their current rotational cropping systems. It was so profitable that some farmers were willing to rent extra land to increase their larkspur production.

For the export flower farm, profits have increased on larkspur sales while their costs have decreased. The flower farm only contracts out the necessary land area to produce the required amount of larkspur to meet their expected market demand. By producing

[24] Names have been changed to protect the farmer's identity.

larkspur off the farm, they no longer incur the production costs: just the post-harvest costs and technician's salary. Additionally, as the contract farmers' quality increases, so do their margins (Table 4).

Table 4: Market prices and flower farm revenues for larkspur (US$ per stem)

Stem Length	Market Prices	Flower Farm Costs	Revenue
60 cm	0.18	0.0165	0.015
70 cm	0.20	0.0165	0.035
80 cm	0.22	0.0165	0.055
90–100 cm	0.24	0.0165	0.075

Knowledge transfer and technology spillovers

The export flower farm provides contract producers with free technical support. The technician provides a critical knowledge transfer and monitoring role for both the contract farmers and the exporting farm. He meets twice a week with each farmer. During these meetings he provides the latest best practice knowledge on production, disease and pest management, and specific recommendations for any observable or anticipated problems. He also offers free assistance on any problems related to other crops that may directly affect the larkspur quality.

Self-enforcing contracts

The contractual agreement is based upon a self-enforcing verbal agreement[25]: prices are transparent; contractual requirements and payment structures are known in advance; critical monitoring and feedback loops are included; and technical assistance is provided to ensure success.

For the contracted vegetable grower, profitability increases with increased quality, quantity and efficiency. The number of high-quality stems per hectare is solely determined by the farmers' management systems. The free technical assistance not only ensures success, but also provides large positive spillovers for a farmer's other vegetable crops. These large spillovers help enforce the contractual arrangement. Additionally, the contract farmers purchase the plant inputs, grown by the farm for larkspur from the flower farm on credit, further securing the contractual agreement.

The flower farm possesses an effective monopsony purchasing position. Thus there is little risk of the contract farmers shirking. Additionally, the firm directly benefits from farmers' higher-quality larkspur. Therefore the incentive structure is properly aligned to ensure self-enforcement.

Market access

Contract farming allows the small farmers to overcome the capital, technological, organizational and coordination barriers that often exclude similar-sized producers from participating in high-value export markets (Eaton and Shepherd, 2001).

[25] See Gow *et al.* (2000) and Gow and Swinnen (1998) for a discussion of self-enforcing contracts.

Supply assurance and production flexibility
The market demand for larkspur in the American market is steady all year round except for seasonal highs at Valentine's Day and Mother's Day. By contracting, the export flower farm is no longer required to own or rent land: instead, contracting allows great flexibility in matching land use to seasonal demand fluctuations. Contract farmers are happy to produce larkspur as it is highly profitable and fits easily within their current rotational systems. Contracting also provides a natural screening and selection mechanism for identifying the best and most reliable contract farmers: only the best growers are offered year round contracts, whereas newer or less reliable farmers are only contracted to meet peak demand periods. The model has now become so popular that even if someone was to drop out there would be another farmer ready to join.

Labour flexibility
The contract incentive structure has allowed the flower farm to reduce labour, supervision and management costs substantially, while simultaneously increasing product quality and flexibility. Today, the export flower farm only employs the technician to support contract growers and some post-harvest labour for final packaging and shipping.

Secondary spillover effects
Larkspur requires more labour and inputs than traditional crops. Thus contract farmers typically hire more labourers. This translates into increased on-farm opportunities for people in the area which leads to additional spillovers and linkages within the local economy. Most farmers do not own trucks or tractors, therefore, a local transport industry has developed to ship larkspur to the export farm.

Discussion

Contract farming has long been used as a form of market organization within developing countries. However, differing levels of success have resulted in substantial debate and conflict about its appropriateness (Watts and Little, 1984). Eaton and Shepherd (2001) point out that the key to successful contract farming is the development of the necessary forward and backward linkages. These linkages provide both reliable and cost-efficient inputs such as extension advice, mechanization services, seeds, fertilizers and credit, and guaranteed and profitable markets for the output. We now identify the linkages and components that are critical to the success of this case study to ensure mutual commitment on both sides.

Dollarization provided a stable business environment: Compared to the standard FDI-induced contract farming literature where the foreign firm provides quasi-market stability (Gow and Swinnen, 1998; 2001; Gow *et al*., 2005), this case study shows that dollarization can provide a stable business environmental suitable for domestic firms to produce substantial economic benefits when combined with an American dollar-denominated export market.

Contract farming was a commercial decision: Contracting was a mutual beneficial response by both parties to specific economical and financial needs.

Extension and technology assistance reinforced the mutual commitment.

Larkspur's low production risk, location specificity and rotation requirements provided low entry barriers for new farmers.

Cost and price transparency properly aligned incentives on both sides.

The business leader, Mr Nachez, was critical to the projects' success, as he not only understood the value proposition and could communicate it, but he also possessed substantial social capital and reputation within the farmer community.

Technological spillovers from the agronomical support not only supported larkspur production but assisted farmers increase profitability for all of their crops.

Conclusions

This case study analyses and evaluates the critical factors that contributed to the adoption, diffusion and success of a contract production model implemented by a medium-sized Ecuadorian cut flower grower–export with small local vegetable producers. The case provides a comprehensive understanding of the reasoning behind why the firm initiated the organizational and institutional innovation and how it was implemented. The dollarization of the factor markets coupled with an American dollar-denominated export market were critical in providing the appropriate business environment and incentives for this innovation to occur.

The results and impact provide an in-depth understanding of the critical factors required for success. This firm is by no means the only example of a successful development of a business model which offers a sustainable competitive advantage, but it is a legitimate example of the success experienced by a firm as a result of developing solutions outside the firm. The success of this model is based on the mutually reinforcing incentive structures for both parties. Success is further strengthened by the appropriateness of the crop and the production knowledge of the firm, based on years of its own experiences producing larkspur.

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Participation of a small-scale women processing group in the dynamic potato market in Thailand

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Abstract

Potato was introduced to highland farmers in the 1960s; however it only became an important cash crop in the 1990s. The main potato planting areas are in the north of Thailand. Two types of potatoes are cultivated: processing potatoes (Atlantic), which accounts for 90 percent of total production, and table potatoes (Spunta). The domestic demand for processing potato has been increasing due to the popularity of potato chips and potato crackers. The main potato production area is in the North region, especially Chiang Mai Province. Potato growers in this district take advantage of the preferred soil and temperature as well as the technology and knowledge provided by government and non-government agencies to produce good-quality potato. In 2005, processing potato production from Chiang Mai accounted for 53 percent of total production (51 216 tonnes). Ninety percent of processing potatoes is absorbed and produced into potato chips by two large firms, while 10 percent of production is of substandard potatoes. The study found a housewives' group in San Sai District of Chiang Mai which has been able to generate additional alternative family income from the substandard potatoes as well as to be a small enterprise participating in the potato supply chain. A farmer housewives' group called Chedi Mae Kreow (CMK) was established to make use of poor quality potatoes. The CMK is most successful and thus is selected to illustrate a business model for a community enterprise. The keys to the success of the group are ability in business management and product development as well as the continuous support from the government. CMK turned the product previously sold as animal feed (at 1–2 baht per kilogram) into material worth 2–5 baht per kilogram. CMK supplies potato chips and snacks mostly to schools and local retail shops. Although the CMK delivers some of its products to stores in the city and modern supermarkets, this channel is not the most profitable, as the economies of scale are a significant factor in determining the costs of marketing. However, the CMK group still participates in the modern chain by producing products under the supermarket's own brand name. In 2006, CMK utilized 200 tonnes of defective potatoes, which is expected to increase by 50 percent in 2007.

Introduction

Potato is an exotic crop to Thailand, introduced as a cash crop to highland farmers in the northern region in the 1960s. There are two main types of potatoes available in the country; table and processing types. The main variety of table type is Spunta and the processing type is Atlantic. Most potato grown in Thailand is of Atlantic variety, which accounts for 90 percent of total production. Potato is one of the few crops on which the Thai Government has imposed supply control.. Since quality tuber seeds need to be imported, the annual extent of imported table type seeds has been determined by the

National Sub-committee on Production and Marketing Management for Garlic, Shallot, Onion, and Potato. In 2006, the Government permitted 302 tonnes of Spunta seed to be imported with tariff exemption, to prevent undesirable farm prices. The processing potato has been planted partly by firms and mostly by contracted farmers just like the case of other industrial crops. Therefore the quantity of seeds imported is allowed based on the requirements of the processing firms. Potato became an important cash crop in the 1990s due to increase in domestic demand for potato chips and demand for western food restaurants associated with greater popularity of tourism to Thailand.

Demand for potato

Thai people consume potatoes mainly in two food categories, i.e. snacks (crisps, crackers, etc.) and cooked table potato in soup and curry. With the change in their consumption style, demand for potato snacks and for western fast food has increased rapidly. The growth of consumption of French fries and potato crisps was estimated at 30–50 percent per year from 1992 to 1995. Furthermore, the demand for potato from the processing industry increased from 118 000 tonnes in 1997/1998 to 165 390 tonnes in 2005 (this includes all forms of potato materials such as fresh chilled, frozen, flour, meal and powder, flakes, starch). The highest demand was 171 500 tonnes in 2003 (see Table 1).

Table 1: Demand of potato in Thailand and imports

	Domestic production	Imports	Total demand	Percentage of domestic production to total demand	Percentage of imported potato to total demand
1996	65.14	25.39	90.53	71.95	28.05
1997	89.55	28.45	118	75.89	24.11
1998	93.78	29.81	123.59	75.88	24.12
1999	90.38	35.4	125.78	71.86	28.14
2000	100.12	48.39	148.51	67.42	32.58
2001	90.94	43.13	134.07	67.83	32.17
2002	97.37	43.28	140.65	69.23	30.77
2003	86.73	84.77	171.5	50.57	49.43
2004	99.81	63.38	163.19	61.16	38.84
2005	97.41	67.98	165.39	58.90	41.10

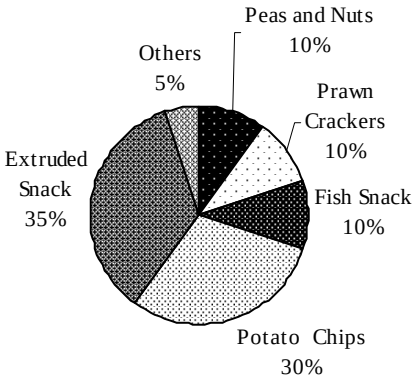
Source: Department of Customs, 2006

Although potato snacks are not authentic to Thais, the consumption and demand for potato in Thailand is far beyond domestic production (USDA, 2004). For example, in 2005 the total output was about 97 410 tonnes, with the demand at 165 000 tonnes in total (Office of Agricultural Economics, 2006; Department of Customs, 2006). Thus imports satisfied 41 percent of the total demand.

Thailand is known as one of the largest markets for snacks in Asia and the Pacific. In 2003, the value of snack consumption reached US$280 million (USDA, 2004). There were 2 000 brands available on the shelves. In 2002, snacks made of potato flour and granules gained the highest share (35 percent) in the snacks market followed by crisps

(30 percent). Other main snacks included peas or nuts, shrimp crackers and fish snacks with 10 percent market share each (see Figure 1).

Figure 1: Market shares of snacks in Thailand (2002)



Source: USDA (2004)

For crisps alone, the figure in 2005 indicated its value as high as Bt 308 billion. The processing firms forecast that the market for this particular product would have at least 10 percent increase annually for 2006 and 2007. Despite this attractive figure of growth, consumption per head on the average is only 1 kg per year, which is 50 percent less than the average in the Republic of Korea or Japan (USDA, 2004; Siamturakij, 2006).

Supply

The expansion of potato production in the past 15 years was due mainly to market certainty and large absorption by the processing industry. At the initial stage, potato production expanded slowly as its production was absorbed by the fresh food market and slow growth in demand for processed potato. In 2005, the total production area was 4 950 ha and about 95 percent of the planted land was in the North. The national production reached 97 411 tonnes in 2005. Presently, potato is ranked as a major crop of the North, especially for Chiang Mai, Tak and Chiang Rai provinces (OAE, 2006). Table 2 shows the potato production by the different provinces of Thailand.

Area planted under potato is scattered in eight provinces in the northern and northeastern regions. Chiang Mai, one of the provinces in the North region, is the main potato producing area, which accounted for 53 percent of total production in 2005. Potato growers in this province take advantage of the favourable soil and climate conditions as well as the technology and knowledge provided by government and non-government agencies to produce good-quality potato.

Potato is one of the crops having short distribution channels. About 90 percent of the high-quality table potatoes are supplied via wholesalers to restaurants, hotels and supermarkets. As 90 percent of processing potatoes are absorbed and produced into potato chips by two large firms and distributed to middle- and high-income markets, it is rather difficult for the small farmers to be included in the industrial crops supply chain. However, this study found that a housewives' group in San Sai District of Chiang

Mai has been able to generate additional alternative family income from the substandard potatoes as well as to be a small enterprise participating in the potato supply chain.

Table 2: Potato production by province in 2003–2005

		Area (rai)			Total Production (tonne)			Yield (kg/rai)		
		2003	2004	2005	2003	2004	2005	2003	2004	2005
	Whole country	42 184	43 890	42 817	86 732	99 813	97 411	2 081	2 291	2 288
North	Chiang Rai	2 173	2 834	2 818	3 392	5 750	5 743	1 592	2 068	2 053
	Lampang	875	2 241	2 180	1 289	3 169	3 087	1 494	1 422	1 422
	Lamphun	1 299	1 723	1 688	1 786	2 843	2 802	1 703	1 738	1 695
	Chiang Mai	23 043	1 833	21 080	44 237	52 785	51 216	1 930	2 438	2 444
	Tak	12 279	13 192	13 042	30 054	29 613	29 211	2 461	2 245	2 247
Northeast	Loey	292	400	382	825	1 481	1 404	2 825	3 703	3 724
	Nongkai	1 301	700	695	3 099	1 960	1 888	2 382	2 800	2 744
	Sakhonakorn	922	967	932	2 050	2 212	2 060	2 223	2 287	2 222

Source: Office of Agricultural Economics, 2006
Note: 1 rai = 166 m²

Local small scale processing group: the Farmers' Housewives group in Chiang Mai

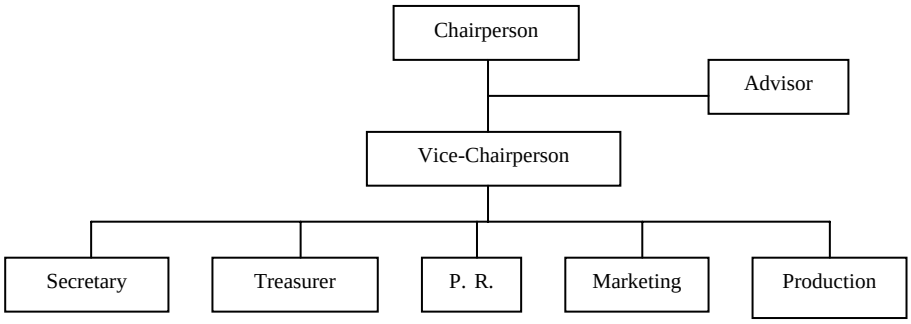
After the economic crisis in 1997, many policy measures were launched to accelerate the establishment of local groups to create local employment and income .The Housewives' Group of Chedi-Mae Krew)CMK (is a community enterprise in San Sai District which was formed with the support from the District Office of Agriculture to produce potato chips by using substandard potatoes, of which the quantity has increased, along with the expansion of total production. The group provides an alternative to potato growers to gain higher income from selling defective produce. Substandard potatoes were sold to the group at Bt 2–5/kg instead of Bt 1–2 purchased by dairy farms.

At the beginning the group included 40 (later 42) members; each holds at least one share of Bt 100. The initial capital of the group, worth Bt 71 100, enabled the group to invest in production equipment and raw materials (Wiboonpongse *et al.*, 2005). The CMK expanded its function to provide saving and credit activities. This, in turn, allowed the CMK to absorb more defective potato. The keys to the success of the group are its ability in business management and product development as well as the continuous support from the government.

Management

The ability in management of the leader and committee members was the important strength leading to the success of the group. As a registered group under a policy aimed at accelerating income to strengthen the local community, the CMK was required to have a clear organizational structure. The Board or Committee comprises a chairperson and relevant committee members, as illustrated in Figure 2.

Figure 2: Organizational structure of the CMK



Source: Wiboonpongse *et al.*, 2005

Unlike most other housewives' groups, the CMK's committee members were able to handle each of their responsibilities rather well. The leader's particular responsibility to the CMK group has been the overall planning and monitoring work plan, coordinating with government agencies and attending local meetings.

The leader and advisor are the key persons to the success of the group. The chairperson, Mrs Boukham Wipasa, completed only 4 years of formal education .Her major occupation is farming .However, with her personnel ability and nature she has played several roles in the community .The advisor of the group is the chairperson's husband who has played significant roles in marketing and advising .His background on cooperative management provides business-oriented attitudes, concepts and a progressive approach to the group management. The committee members have had 4–13 years of formal education; however, they have had the chance to gain knowledge from the government agencies frequently which enhances their ability to handle each of their responsibilities rather well. Furthermore the group frequently seeks technical advice from the local universities and government agencies on processing, product development as well as marketing to increase the efficiency on product development and marketing management.

Production

The key point of the CMK to produce good quality potato chips from rejected potatoes is the continuous product development by the group as well as knowledge and technology support from the government .The group has received support mostly in terms of production equipment and packaging machinery (approximately Bt 1.1 million in cash and loan). The CMK invested out of its own pocket about Bt 0.28 million which accounted for only 19 percent of the total investment (Wiboonpongse *et al.*, 2005). The main sources of support were:

1. The District Office of Agricultural provided cleaning and small slicing machinery as well as the fund for purchasing raw material.
2. The Department of Cooperatives Promotion provided aluminum foil packages and related equipment, and knowledge on group management.

3. Chiang Mai University provided the knowledge to run a business and longan-drying oven for grease reduction in fried chips.

It should be noted that the good access to government agencies is due to the social and business network of Mrs Baukham's husband.

Product

The group processed potato chips in a simple processing plant; however, its products are accepted as having good quality by consumers .In 1997, the CMK began with only two products: dried potato called "Mankalaya" and crackers produced from Spunta variety. The production season was limited to three to four months during the hot season since potatoes needed sun drying. In the following year, with the support from the District Office of Agriculture, the same product form as produced by large firms was processed into chips from the substandard potatoes.

At the initial stage, the group sold chips contained in simple plastic bags in bulk (0.5–5 kg/bag) without brand for local markets within the district. After joining the exhibition and fairs organized by government agencies in Bangkok and other provinces, the CMK realized its market potentials and observed and learned from other advanced groups' products. The CMK reduced packaging to serving sizes with a sticker of the group's name as its brand name. Apart from price, taste of potato chips is very important to satisfy consumer preference in the market. Therefore, the group tried to purchase flavouring powder from the same source as the large potato processing firms. In 1999, the CMK's crisp chips became popular at the district level and the original chip was followed by other flavours to match changes in consumers' preference as influenced by large firms. During the past five years, the group has improved its products and packaging substantially. Efforts on packaging were recognized as being distinguished as compared to other groups of the same kind. Products and packages are diversified so as to serve different target consumers. Presently, the group produces a variety of flavours and packages of its products to serve different markets (Table 3).

Table 3: Products and the target markets

Type of packaging	Weight	Market
simple plastic bags	0.5–5 kg	wholesale in village and other provinces (30 percent)
simple plastic bags with its brand	60 g, 40 g, 20 g	wholesale and retail in village and other provinces (30 percent)
aluminum foil with colourful bags	40 g, 20 g	cooperative shops in universities and supermarkets (20 percent)
simple plastic bags with its brand	Packed to order	wholesale in village and other provinces (20 percent)

Raw material

The CMK purchased substandard potatoes rejected by the firms from members, brokers and the processing firms to use as raw material. Most unsold potatoes were rejected due to abnormal shape or poor harvest handling; they were usually wounded and unstorable for seed. Therefore the characteristics related to fried-chip quality such as sugar and

flour contents were rather suitable to process potato chips. The group takes advantage from being located in the neighbourhood of the cultivation areas and processing plants.

The group has enabled potato growers to sell the defective outputs as useful raw materials for snack processing at Bt 2–5/kg instead of their selling as animal feed at Bt 1–2/kg. In 2004 the group brought 50 tonnes of substandard potatoes, but half of all purchased potatoes were lost because of improper storage. The group tried to solve this problem by conducting experiments to preserve potatoes under 25°C in cool rooms; this helped prolong storage life of the raw material. In 2006 the CMK absorbed 200 tonnes of substandard produce, which accounted for 35 percent of total substandard potatoes in Chiang Mai province. The value added to defective potatoes in 2006 was about Bt 600 000 and it is expected to increase by 50 percent in 2007.

Employment

The group employed its members to work in the processing plant. The employees earn salary as well as other welfare benefits from the group. In 2004, 13 members were employed at Bt 120 per day to work once a week. After the market expansion in 2006, the CMK hired five permanent employees working five days a week and increased the wage rate to Bt 150 per day. Thus the worth of income distributed to members increased from Bt 74 880 in 2003 to Bt 195 000 in 2006.

Marketing

Pricing and niche marketing are the key strategies to expand one's market. At the initial stage, the target customers were students and local people in the community. While other groups aimed only at local markets (within the district), the CMK improved its packaging and extended its market boundary. By joining the exhibitions and fairs organized by the government agencies in other provinces, the group could expand its market to other provinces, especially Bangkok.

Market channels of the group have changed since 1997. The group could expand its market to other provinces as well as increase its total sales dramatically. The share of total sales to other provinces increased from 10 percent in 1997 to 55 percent in 2006. The value of total sales increased from Bt 317 380 in 2003 to Bt 1 080 000 in 2006.

The CMK had experience in participating in modern supply chains. In 2004, the group supplied potato chips in aluminum foil packages to supermarkets; however, this channel was not successful. The problems causing the group to give up this channel were:

1. The credit term (45 days) is too long, causing cash flow problems.
2. The commission rate is too high.
3. The group's products are not well known compared to other famous brand names, thus low rate of turnover.
4. Expired products add to high unit marketing cost.
5. Being a small brand, the products are placed in non-attractive shelf positions.

The CMK takes an advantage from the increase in demand for potato chips influenced by the advertisement of large firms. Thus, the group produces similar products to catch up with the demand led by famous brand names.

The present market strategies of the CMK are:

1. Target customers are middle- and local-market segments to avoid high competition in upper market.
    - School children and teenagers are major consumers.
    - Cooperative shops in universities.
2. The CMK has maintained its opportunity to supply products to the upper-end customer as it has access to a special corner assigned for community products in supermarkets to get wider customers' attention.
3. The prices of the group's products were set slightly lower than those of the famous brands while net weights were greater to compete with the famous brand names.
4. For production expansion, in the near future some products will be made-to-order and marketed by modern supermarkets under their own brand names.

Along with production expansion, the CMK also plans to improve its marketing management by hiring marketing personnel and adopt more aggressive marketing strategies.

The CMK as an alternative for the farmers' participation in the supply chain

The CMK is a group of potato growers' housewives which was set up to be an alternative for small growers to increase income from substandard potatoes as well as to be a small enterprise participating in the potato supply chain. The group could provide benefits to potato growers as well as an opportunity to participate in the potato supply chain.

Benefit to the growers

- Financial gain received by the members from selling damaged or defective and unacceptable potatoes both Atlantic and Spunta varieties (at Bt 2–5/kg).
- The incremental value of Bt 600 000 to the price of defective potatoes as animal feed, means a significant contribution of the CMK to the income of growers, both CMK members and non-members'.

Inclusion of the CMK in market dynamic

- Despite 90 percent of market share for potato chip in Thailand held by two large firms which grew 25–30 percent annually, the CMK could increase its sales value from Bt 0.3 million to Bt 1.08 million in the recent years.

- Even though the CMK originally had local and lower markets as target groups, it managed to get involved in the market dynamic by supplying products to the same target groups as the large firms.

Analysis :lesson learned for the success of small local processor

- Beside government support in general, the success of the group was attributed to the leader's ability to have better access to support and by personal performance in management and marketing.
- The CMK could promote and expand its market by joining the meeting, fairs and exhibition organized by the government agencies in Bangkok and other provinces .
- The group realized its market potential as well as observed and learned from other advanced groups' products.The group chose the right market segments . Niche marketing is an appropriate concept as long as the group could catch up with trends influenced by large firms.
- The modern supply chain does not have much room for small-scale producers due to economies of scale in marketing activities especially placing and advertizing .
- As an alternative, the small producers can participate in the modern chain by (partly) producing products under a supermarket's brand name.

Recommendation

To participate in the market dynamic as demand for potato chips increases, a housewives' group with adequate support can process its farm produce for the local market segment before moving to the upper end segment .This is aimed for market certainty at manageable cost.

With growing concentration in the processing and retail sectors, public policies are required to strengthen marketing and processing knowledge of housewives' groups .This will enable small-scale producers to have alternatives for market participation.

Continuation of public sector's support up to optimal time or level is necessary to help build strong foundation for a community group to proceed at its own pace.

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Kentish Garden Growers: a case study of a British farmer cooperative operating in the fresh produce industry

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Abstract

KG Fruits Ltd is a cooperative of 80 farmers who all produce berries. The farms are located in England, Wales and Scotland in order to extend the supply season for the company. KG Fruits holds a 45 percent share of the United Kingdom berry market during the local season and supplies all the major retailers. Over 90 percent of the cooperative's produce is sold to supermarkets. Given its importance as a local supplier, KG Fruits is in a strong bargaining position when dealing with its very demanding customers. The staff members of the cooperative are employed by the farmer–owners to provide services in administration and finance, sales and marketing, and technical support and quality assurance. The role of the staff members is to make sure that the growers send the best quality produce possible to the cooperative in order to avoid rejects and delisting from supermarket supply lists, which could lead to the farmers going bankrupt. The cooperative staff members also organize training in the latest techniques and help farmers to compare their performance through a benchmarking scheme. It also holds preferential rights to the production of new berry varieties developed by a partner breeder. KG Fruits is a model of a successful farmer cooperative with a strong focus on product innovation and quality assurance so as to satisfy its customers.

Introduction

Kentish Garden Growers Limited and its marketing company Kentish Garden Fruits Limited, known commercially as KGG and KGF respectively, are farmer-owned companies that are in the business of marketing strawberries, raspberries, blueberries, blackberries and related specialty fruit (e.g. gooseberries, red currants). All these fruits are produced by the companies' owners: the farmers. The company also markets similar fruits imported from overseas sources. KGG was established under the United Kingdom Industrial and Provident Society Act and owns 100 percent of the shares of KGF. The cooperative has been in business for 35 years and is the single largest supplier in the British fresh berry market. In this case study, the structure, history, commercial track record and future plans of the cooperative are examined. Conclusions are drawn as to the contribution that KGG has made to the commercial welfare of its grower owners, and its appropriateness as a model for other grower groups in developed and developing countries.

Commercial context – the fresh berry market in the United Kingdom

The British market for fresh fruits and vegetables (indeed, for food products in general) is dominated by the supermarkets. Specifically, 90 percent of retail sales of fresh produce are via supermarkets (the "modern" retail trade), with seven companies accounting for the majority of this total, viz. Tesco, Asda/WalMart, J Sainsbury, Morrison's, Somerfield, Waitrose and Marks & Spencer (TNS 2006). These supermarkets source produce directly from suppliers and do not use the services of wholesale markets. Approximately, 10 percent of fresh produce reaches final customers via a network of wholesale markets across the United Kingdom. Such markets service independent, small-scale ("mom and pop") retailers and the food service trade. Over the past 30 years, supermarkets have grown their share of the retail trade in fresh produce from 40 percent to the current figure of 90 percent, and the wholesale markets continue to lose market share.

The proportion of the average British households' disposable income spent on food is around 16 percent. Approximately two-thirds of this is spent on "food at home", i.e. food purchased by shoppers from retail establishments for consumption at home; and one-third on "food away from home", i.e. food bought from restaurants, fast food outlets, etc. However, for fresh fruit and vegetables, even more are purchased for "at home" use, i.e. 80 percent of the total.

Over the past decade, market conditions for many fresh produce items have been challenging. Unit values have been under pressure and per capita consumption has been flat (e.g. fresh potatoes, apples, oranges). However, the market for berries is far from being mature; fresh berries have seen significant growth and continue to see year-on-year increases in total volume and total value (Figures 1 and 2).

Figure 1: Development of the strawberry and raspberry markets in the United Kingdom, 1992-2005, £ million

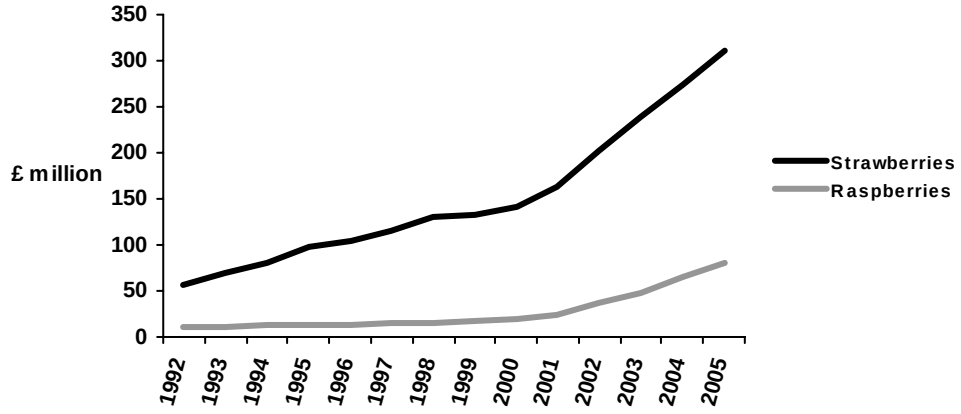
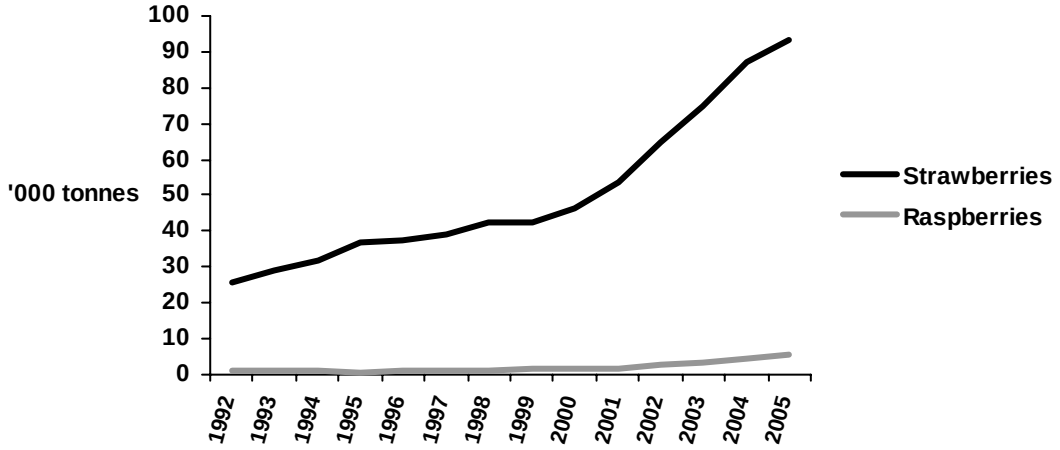


Figure 2: Development of the British strawberry and raspberry markets, 1992-2005, thousand tonnes



However, for both strawberries and raspberries, unit values have been under pressure (e.g. strawberry prices to growers from supermarket customers have remained at close to £3/kg over the period 2004–2006). Yet, household penetration (the proportion of households in the United Kingdom buying berries at any time during the year) is still relatively low, particularly for raspberries where only one-quarter of families bought them in 2005, indicating that there is still substantial potential for this crop (Table 1).

Table 1: Household penetration of berry sales in the United Kingdom (percentage of households buying berries)

	Proportion of households buying (percent)	Purchases per year for those buying
Strawberries	73	9
Raspberries	24	5
Blueberries	10	4
Blackberries	4	2

Source: TNS (2005)

In the main berry "season", the period between May and October when British fresh berries are the principal source of supply in the market, KGG berries account for over 40 percent of total domestic supplies. There are three other principal British suppliers during this period (Berry World, Angus Soft Fruits, and S&A Davies). During the minor season (November to April), imports dominate the market, with Spanish-sourced produce being available in March–May and October or early-November, and Egypt and Israel being the main suppliers for strawberries during late-November through to February. Blueberries are imported all year, as there is only a fledgling grower base in the United Kingdom for this product. Raspberries are also a significant import item – from Spain, Mexico, the United States of America and South Africa, although British supplies in the summer season are expanding rapidly.

KGG: the genesis and development of the cooperative

In 1971 seven strawberry growers from the English county of Kent decided that there could be mutual benefit if they pooled resources to hire a truck to transport their berries from their respective farms to regional wholesale markets in England. Previously, the growers had been "booking space" with transport companies to move individual pallets of fruit from their farms to, say, Liverpool wholesale market. They determined that better transport prices could be negotiated if they acted in concert. Often, the produce was destined for the same wholesale buyer and, as a result, the growers quickly took the view that it would be even more in their interests if they combined their sales and offered a greater critical mass of produce. In 1972, the seven growers established Kentish Garden Growers Cooperative, under the Industrial and Provident Society Act. This was a period when the Ministry of Agriculture, Food and Fisheries (MAFF) was actively encouraging individual farmers to act collectively in marketing their produce and purchasing farm inputs. KGG received a MAFF grant to undertake a feasibility study to establish KGG and, subsequently, to provide technical assistance to set up the organization.

The seven KGG members took an early view that they were best at producing fruit and a third party marketing firm (AFI Limited) could most efficiently find sales and market the growers' fruit. Additionally, AFI undertook to handle all sales administration, logistics and quality assurance on a commission basis. Over the following 23 years, the cooperative expanded from its original membership to 55 growers and sales climbed to £15 million per annum. KGG and AFI became a national supplier to all wholesale markets and increasingly, the principal supplier to the burgeoning supermarket sector. In doing so, the original grower membership came to terms with the fact that berry growers in adjacent counties (e.g. Sussex, Herefordshire) and, further north, in Scotland were not competitors but strategic partners in expanding the geographic coverage and sales volumes to emerging large-scale customers. Moreover, KGG tasked AFI with a further function to purchase major inputs in bulk on behalf of the KGG members (e.g. berry plants, fertilizer).

In 1995, the KGG members took the decision that they needed to "take ownership" of the sales and marketing of their berries. This came about because it became increasingly evident that the value of KGG as a business was largely dependent upon the trading relationships it was developing with the principal supermarkets. Heretofore, this relationship was owned by the third party marketing agent, AFI. As a result, KGG hired a sales-and-marketing team, with full administrative support, plus quality assurance (QA) and set up in business under the KGF banner. Kentish Garden Fruits became the wholly-owned marketing arm of the cooperative. This was a brave and far-sighted move and one which other cooperatives in history have taken and, subsequently, regretted. Perhaps, the most perspicacious decision was taken by the cooperative's Board of Directors in the selection of a managing director for KGF. The directors looked to the future and "dreamt" of the type and size of organization they wished to see in place by 2005 (10 years on). The "dream" was to have KGF as the leading berry marketing firm in the United Kingdom, with a turnover of £100 million or more. With this in mind, the growers hired a managing director whom they believed had the qualities to turn a £15 million business into a £100+ million business, whilst still retaining the confidence of

the grower–owners. The progress made by KGG and KGF from inception and, particularly over the period 1995 to 2006, is presented in Figures 3 and 4.

Figure 3: KGG grower members 1972–2006

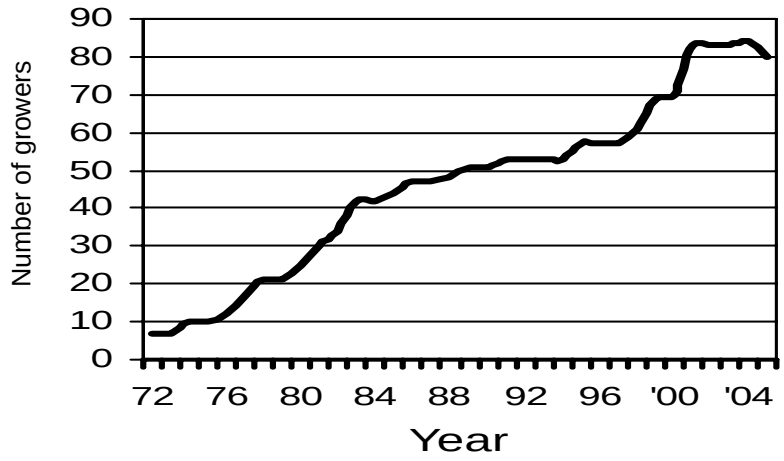
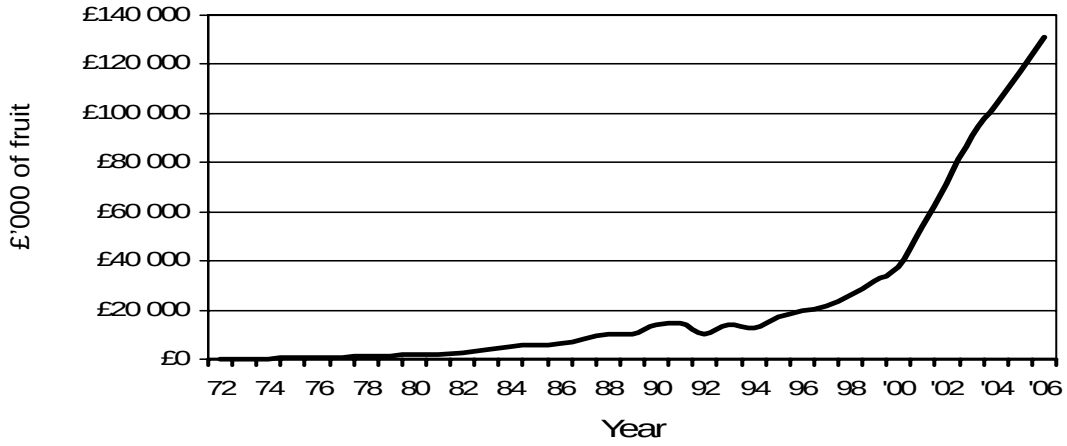


Figure 4: KGG total sales 1972–2006



Over the past ten years, KGF has seen turnover increase from £24 million to £131 million, with fruit grown in the United Kingdom representing £91 million. A substantial import business has been developed (£33 million in 2006) and requisites (inputs bought on behalf of members) reach a modest £7 million (Table 2).

Table 2: KGG sales, 1997 to 2006

£'000	1997	2000	2003	2004	2005	2006
UK fruit	19.0	31.2	63.0	68.0	80.6	91.5
Imports	2.4	3.5	23.0	29.0	29.3	32.5
Requisites	2.7	3.1	4.9	6.8	7.2	7.4
Group turnover	24.1	37.8	90.9	103.8	117.1	31.4

In 2006, KGG had reserves of £5.5 million. Its customer portfolio included all the principal supermarket businesses in the United Kingdom: Waitrose, Tesco, Marks & Spencer, Costco, Sainsbury's, Asda, Morrisons and Coop. The importance of KGG/KGF in total domestic supply of strawberries and raspberries during the British domestic season for 2006 is shown in Figures 5 and 6.

Figure 5: British strawberry sales 2006 vs. KGG strawberry supply

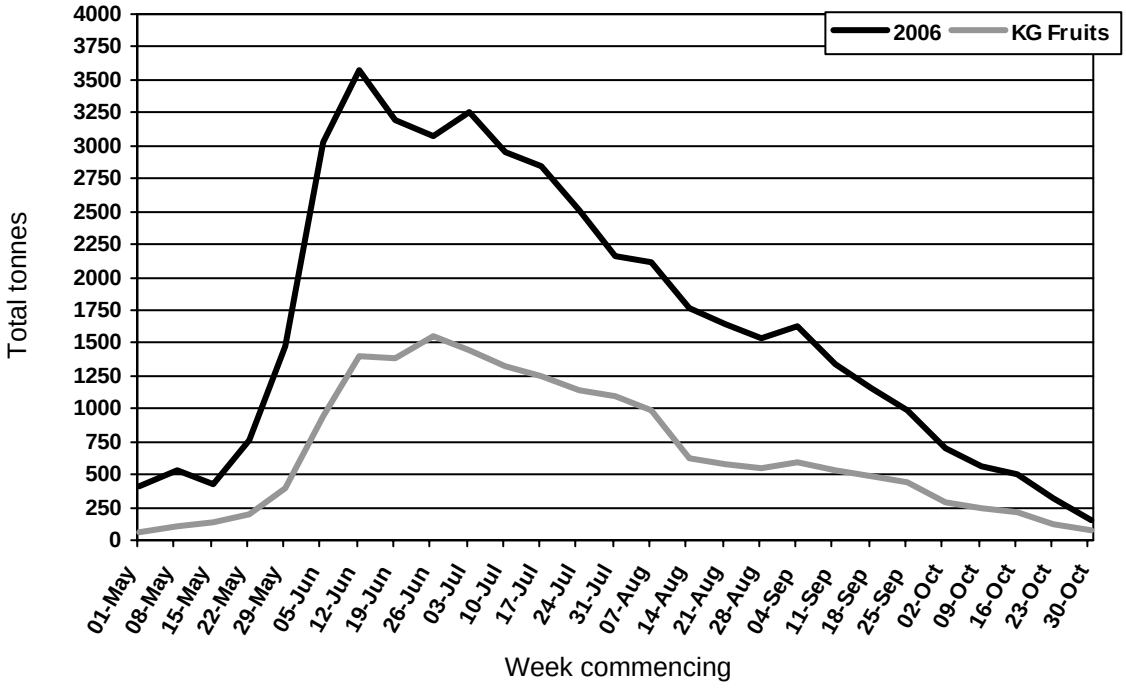
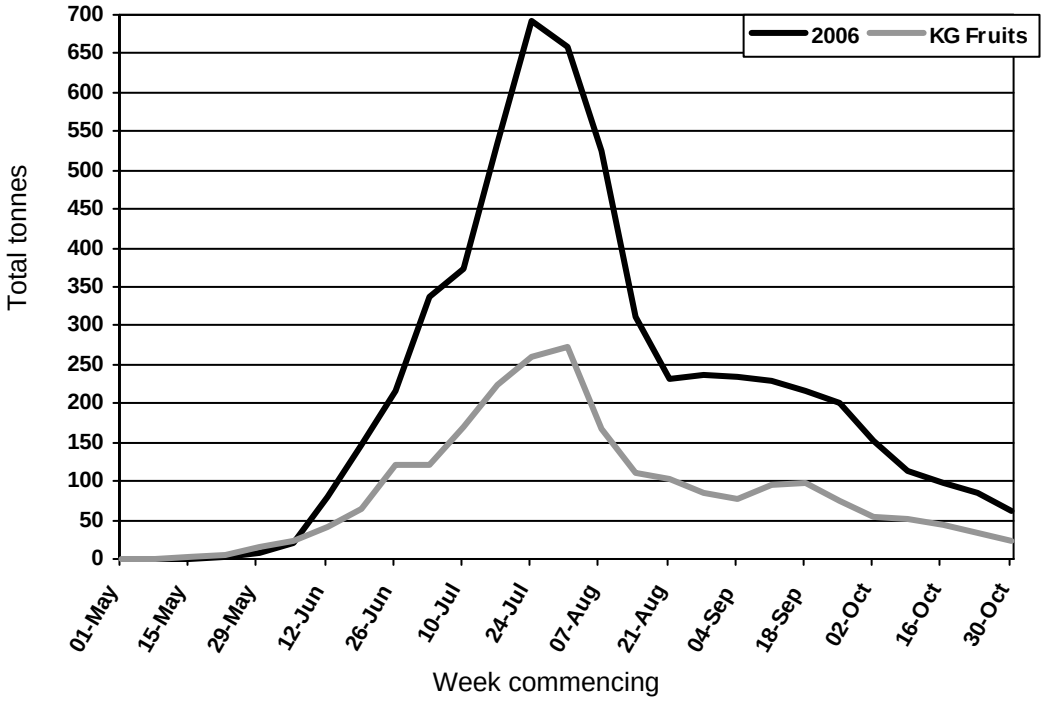


Figure 6: United Kingdom raspberry sales 2006 vs. KGG raspberry supply



KGG and KGF: ethos and cooperative organization

Farmers are small-scale business people and, like independent businesses in other industries, cooperating with other similar businesses in their sector does not come easily. Many cooperatives fail for a variety of reasons, but not least, the lack of trust between members. KGG identified "lack of trust" as being its biggest risk constraining the evolution of the overall business; whether lack of trust between members ("he's being treated better than me by the sales team"), or between grower members and the employees of KGF who were and still are responsible for selling the grower members' fruit ("you didn't get me the best price"). The cooperative does not pool fruit, i.e. each member's fruit is sold to a specific buyer (usually a supermarket), and the grower receives the return that the sales team can extract from each buyer. As a result, growers receive different prices from each other, depending on which customer they are serving[26].

Through time KGG has developed a set of cooperative organization values that remind its owners, employees, customers and other stakeholders what KGG stands for (Box 1). These are much more than fine words and, whenever difficult decisions are being made, the values provide a reference point to remind the Board of how it should act and behave. The mission statement of KGG and KGF is also shown in Box 1. The cooperative aims to be the biggest business in the British berry market. Size is important not just for aggrandizement, but to ensure that the cooperative can have a degree of countervailing power *vis-à-vis* the very powerful supermarket companies and, just as importantly, to generate funds that can be reinvested to improve the future competitiveness of the cooperative and its grower owners. Indeed, KGG has a clear idea of the preferred characteristics of a twenty-first century fresh produce business.

KGG is governed by a Board of Directors which comprises nine growers (chairman and vice-chairman, plus seven grower members), two non-executive directors (completely independent of the business and the sector), and a company secretary (the finance director [FD] of KGF). Routinely, the managing director (MD), sales and marketing director (SMD), and technical director (TD) – all employees of KGF – are invited and the Board meets four times a year.

The KGF Board oversees the commercial business of the cooperative and meets monthly. The KGF Board comprises four grower–directors (the chair and vice-chair of KGG, plus two grower–directors who are also KGG directors), the two non-executive directors of KGG, and the MD, SMD, TD, and FD of KGF. Technically, the grower–directors on the KGF Board can be outvoted by a combination of KGF executives and the non-executives, but this is never an issue because the decisions of the KGF Board are reviewed by the grower-majority KGG Board. What is more, the KGF Board operates on a consensus basis for all decisions anyway!

[26] Most British supermarket firms wish to procure fruit from a known grower base; e.g. Marks & Spencer (M&S) buy fruit from KGF, but on the understanding that the fruit is from approved growers. Indeed, in most cases, the fruit is transported direct from the M&S-approved farm to the M&S regional distribution depot for onward delivery to individual M&S retail stores.

Box 1: KGG company values, mission statement and vision

KGG company values

At KG, we seek to be a world-class fresh produce business that gains its strength and reputation from:

- A notable spirit of trustworthiness, honesty, and openness within our organization – between growers and staff – and a passion for self-improvement from grower base to point of final consumer satisfaction;
- Being clear leaders in our world of berries – through scale, technological know-how, supply chain management, and customer understanding;
- Being respected by our customers and competitors for our integrity, professionalism, commercial strength, market knowledge and industry leadership;
- Celebrate and accentuate one great point of difference – grower ownership – to the benefit of all our stakeholders from growers through to consumers.

KGG mission statement

"To be the **largest and most well regarded** soft and stone fruit marketing organisation in the United Kindgom. **To outserve all competition** in the view of producers and customers by being **most cost effective**, by striving to increase KG growers returns, and by investing in the **development of better eating quality products**, which may differentiate us from the competition in terms of product offer and grower profitability."

KGG vision: principal characteristics of the 21st century fresh produce firm

- A five-year vision and strategy for getting there;
- Staff share the vision;
- A food company, not a produce trading company;
- Volume and value growth underpin investment and staff professional development;
- Operational excellence with effective performance measurement systems;
- Outstanding supplier and customer relationship management;
- Innovation in everything – products, services, business systems;
- Continuous investment, despite increasingly tight margins.

Membership of KGG is not open, i.e. new members must apply and be approved by the KGG Board on behalf of all its grower–members. Grower–Directors, in particular, are tasked with ensuring its 80-or-so fellow members are up-to-date and supportive of developments within the cooperative and the companies it owns. Grower politics do exist within KGG, of course, but ensuring constant communications between growers and the executive is an essential element in ensuring that politics are not dominant and that building a better business and future for grower-owners is the paramount *raison d'être* for the Board. Discussion of grower politics at Board meetings has been minimal while over 90 percent of the time has been used to monitor commercial and executive performance and to set strategy for the future of the organization.

Currently, KGG has no employees, as all paid staff is contracted to KGF (with a staff complement of approximately 70). KGF has a head office based near Paddock Wood, Kent (its historical home), and a central pack house in Linton in the south of England which is used to handle imported fruit, and the produce of some of the smaller-scale growers. KGF does have a minor line of premium frozen Scottish raspberries, but freezer facilities are leased from a grower–member.

Larger-scale members pack their own fruit and send direct to supermarket customers, also packing fruit for adjacent smaller-scale growers without their own packing facilities. Growers are charged a commission on fruit sold by KGF, the level of commission reflecting the size of sale (i.e. lower commission rates for larger orders).

KGF has three principal divisions:

1. Sales and marketing which interacts with supermarkets (90 percent of sales) and the wholesale markets (10 percent of sales);
2. The technical division which includes a significant quality assurance resource, plus agronomic technical support for growers, a benchmarking office (an emerging facility which encourages growers to share production cost information with each other to their mutual benefit), and research and development staff focusing on productivity improvements and varietal developments;
3. The finance and administration division, handling invoicing, payments to growers, purchase of shared inputs, etc.

Although KGG is still a farmer cooperative registered under the Industrial and Provident Societies Act, there have been a few significant organizational changes undertaken by the cooperative over its 35 year history, most significantly to move away from the classic cooperative model, viz. one member one vote. Firstly, and as discussed earlier, from 1972 to 1995, KGG hired the services of a third-party sales and marketing company to handle the sales of its berry farmer–members. In 1995 KGG elected to take control of this function itself, forming its own sales and marketing company: KGF. The Grower Board members believed that as sales escalated through the emerging supermarket sector, the relationships being developed between the marketing agency and its supermarket customers were bringing significant value to the “owner” of such relationships. So, it was appropriate that the grower–owners of KGG should be the direct beneficiaries of such, and not a third-party marketing agent.

Second, KGG rules were changed to reflect the growing importance that larger-scale growers had to the present and future success of the organization. Thus, the one-member-one-vote rule was amended to allow larger-scale growers to have a proportionately greater say and ownership in the company. However, the maximum ownership of the organization held by one grower was capped at 10 percent – a figure agreed unanimously by all grower–members.

Thirdly, as the cooperative invested in research and development and marketing over time, it was increasingly recognized that such investments were building significant value in KGG and that the level of investment reflected, to a great extent, the

contribution that individual growers made to the overall profitability of KGG. As such, it was decided that larger-scale growers should have a proportionately higher share of any profits earned by the cooperative over time. As of 2005 a proportion of profits earned by KGG are placed in reserves (worth £5.5 million in 2006): a general reserve account owned by all members and individual account reserves identified with specific members. Now, should a grower member elect to leave KGG (e.g. to retire from the business), the grower can take the reserves from his or her individual account, in effect as a retirement payment.

Thus, with complete agreement across the cooperative membership, ownership and profits are now linked to the value of the member's fruit throughput in the business. This departs from the traditional cooperative model of simply passing all profits back to the grower without leaving any finance for reinvestment in business-building for the future (a problem with many traditional cooperatives around the world).

Since 2000, KGG-KGF has developed close relationships with two strategic partners:

1. Driscoll's, the major global player in the berry world, based in Watsonville, California. KGG has the exclusive right to market Driscoll premium variety berries in the United Kingdom – berries which are grown in the United Kingdom using Driscoll planting material, and Driscoll berries *per se* which are imported from Driscoll production sites around the world (largely, Mexico and the United States of America);
2. Alconeras – a family-owned berry company from Spain which is a major exporter of berries to the United Kingdom and other European countries during the "shoulder seasons" (viz. March–April and October–November).

These strategic partnerships have provided KGG with increased presence and power in the market during the out-of-domestic-season period when the cooperative was historically weak, and with an exclusive source of premium berries for the British market. The latter is particularly important as British retailers are moving towards a "Good, Better, Best" tiered model of fresh produce retailing. The "Good" category is retail code for cheapest, "Better" is regular quality, and "Best" is for premium fruits and vegetables. The KGG view of the commercial world is that British growers will struggle to be the lowest cost producers as competition from Eastern European growers rises – Tesco *et al.* will seek to furnish berries from this source for their "Good" range.

If KGG and its grower base is to secure access to the premium market, then, a secure and exclusive supply of premium genetics is fundamental; thus, the linkage with Driscoll's. Currently, the Driscoll Jubilee variety of strawberry is being grown by KGG members in ever increasing volumes to furnish the requirements of Tesco for its "Finest" (premium) range, and for the premium ranges of other large supermarket chains.

KGG developments in 2007

As of 7 February 2007, the strategic partnership between KGG, Driscoll's and Alconeras has moved on. KGF and the two other companies have merged their

businesses to form a European berry company named BerryGardens. The intent is for the new entity to be the clear leader in the European berry sector within five years, with sales expected to exceed £200 million by end of 2007. The merger rolls into one the commercial sales of berries of the three companies in Europe, plus the R&D initiatives of each partner in their respective countries. This merger is seen to benefit consumers, producers and the berry growers.

As far as consumers are concerned, BerryGardens will be in a position to fulfil the demand of consumers for healthful, flavourful, and good-tasting berries all year-round. By encouraging increased production during periods of low volume, BerryGardens will make additional offerings available for consumers to purchase at better value. Furthermore, one of the goals of the new company's breeding programme is to improve the quality, taste, appearance and eating experience of the berry category. Moreover, with BerryGardens' combined resources, knowledge and experience with the trade, the new company will be in a position to meet the demands of the customer which may include category management, automatic order replenishment, customized labelling, and other ever-increasing duties and services demanded by customers. The new company's year-round berry offer will include or exceed all customers' food safety requirements. Finally, BerryGardens will be able to assist customers in developing their annual berry programme to allow them to maximize their offerings and increase their velocity in the berry category.

For the producers and berry growers who own BerryGardens, the new company will offer growers exclusive berry varieties, the best plant material available and the best overall return for their crop. By working with growers in the production planning by berry type, growers and BerryGardens can develop an orderly marketing plan for the crop, which meets the expectations of both the market and the grower. BerryGardens will work with growers to develop berry varieties that are disease resistant, allow for profitable grower yields, and are welcomed in the market by both the customer and the consumer. Growers will also be aligned with a strong marketing organization. KGG owners will receive dividends from BerryGardens, should this company make a profit. Finally, BerryGardens and its growers will be able to share technical data and techniques related to cultural practices that can drive production, improve quality or lower costs.

Conclusion

To date KGG has delivered outstanding services to its owners, the 70 or so berry farmers from the United Kingdom. Indeed, it has provided its grower–owners with preferred access to the supermarket customers, who are tough to deal with for an individual grower but essential for British growers who wish to have a future in their national market. KGG views that it delivers collective strength in the market to its owners.

Markets move on and across Europe, concentration continues in supermarket retailing. Soon, Tesco and Carrefour will seek to develop commercial partnerships with companies that can supply across several European countries and with a range of qualities (from "Good" to "Best"). KGG and its owners are endeavouring to structure

their business and to take initiatives now that will allow them to shape their own future and not, simply, to be shaped by others who may not have the interests of growers at the front of their minds.

KGG is thus a successful example of a farmers' cooperative operating in a very successful way within a mature produce retail market while also providing clear benefits to its farmer–owners. This success story may be characterized by three essential factors:

1. The company is farmer-owned and committed to the commercial well-being of its members;
2. The market share built up by KGG gives it a countervailing power in the market;
3. The company commits sufficient resources to invest in:
    - the best professional staff in the business;
    - customer and consumer understanding;
    - R&D with world class partners (renovation and innovation);
    - grower development to improve on-farm performance (e.g. benchmarking, best practice training);
    - best supply partners in the European market.

These characteristics are worth studying so as to adapt them to other specific contexts where farmers are trying to group their activities for input supplies, output marketing and other services to group members. The KGG case study should also be a reminder to policy makers that ***not*** all cooperatives are doomed to fail. Farmer ownership of a marketing company can work out. The characteristics of KGG's success listed above should be disseminated to stakeholders involved in farm business development.

In summary, the cooperative model is not dead. An injection of business values, relationship marketing, product development, a mission statement and a vision for the future could help moribund models of farmers' cooperative worldwide get a new kick out of life.

References

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