



# **Case Studies on Agri-Food Value Chain Collaboration**

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## **1.0 Introduction**

Increasingly, collaboration among members of agri-food value chains is used as a means to develop differentiated products designed to respond to target markets. Collaborative agreements allow sometimes sharing the value added between the business partners of a value chain. In many cases, this has replaced marketing situations that had been characterized by antagonistic relationships between farmers and downstream buyers. The Quebec ministry of Agriculture, Food and Fisheries (MAPAQ) is interested in developing a better understanding of how farmers, processors, and distribution segment (retail, wholesaler and alternative retail distribution network such as meat shops, fruit and vegetables stores and restaurants) can work together to offer a new product that allow to maintain their position on the market or to develop new market.

### **1.1 Purpose and Objectives**

The purpose of this project is to develop four case studies that illustrate concepts in agri-food value chain collaboration. The objectives are:

- To develop a common framework in which to present case studies in market collaboration
- To observe four case studies of collaborative value chains in agri-food from elsewhere that are relevant to Quebec
- To compare, contrast and observe concepts from the case studies

### **1.2 Methods and Approach**

The following approach is employed. First, a common framework is developed with which to develop/present the case studies and to compare and contrast them. Secondly, four case studies of collaboration in agri-food value chains are developed and presented using the framework. Finally, the case studies are compared and contrasted, and key concepts observed. This will allow synthesizing the success or failure factors of each case as well as the value gained due to collaboration by each of the partners.

### **1.3 Methods and Approach**

The paper is laid out as follows. Section 2 below develops a framework with which to describe, compare, and evaluate case studies. Sections 3,4,5, and 6 present each of the four case studies. Section 7 provides a comparison of the cases and draws together their insights, and concludes the report.

## **2.0 Case Study Framework**

Case studies are developed to assist in developing and understanding concepts by making reference to actual situations that occurred. Using case studies, the situation, actions taken, and ultimate results are described, with sufficient detail on firms and the market provided that the extent to which the results can be generalized as a concept can be assessed. In order to ensure that the case studies provide information that can be used to formulate, compare, and test propositions, it is important that they are presented in a common format. The purpose of this section is to develop this common format, or framework.

### **2.1 Elements of Case Analysis**

The general purpose of case analysis is to establish the context that a business or industry found itself in, to describe how it decided to make a change, how those changes proceeded, and what the apparent results have been. For the purposes of this study, this basic purpose is used to guide the framework for case description and analysis.

Thus, at a broad level, the framework elements must address the following:

- The initial pricing/marketing conditions faced by the businesses/industry involved
- The changes made by the business/industry to collaborate in marketing
- Results of changes made in marketing

Given the introductory comments to this section, sufficient detail must be provided in addition to the above which will allow the reader to discern whether the results of a given case represent a general principle in collaborative market, rather than finding specific to the case itself.

### **2.2 Case Study Framework**

The following framework provides for sufficient detail on individual cases and allows for a broad discussion of factors relevant in collaborative marketing.

#### **1. Identification of Marketing Context:**

- Product
- Region
- Target market
- Firms/organizations involved
- Time period

#### **2. Initial Conditions:**

- Number of producers, production, relative profitability
- Number of processors, processed volume, relative profitability
- Nature of marketing relationships
- Industry trends

### **3. Motivation for Coordination**

#### **4. Development of Value Chain Collaboration:**

- Information sharing
- Coordination of operations
- Pricing
- Governance and conflict resolution

#### **5. Results of Value Chain Collaboration**

- Number of producers, production, relative profitability
- Number of processors, processed volume, relative profitability
- Nature of marketing relationships
- Industry trends

The above framework will be applied commonly across case examples to facilitate common discussion and to allow comparisons to be made.

### **3.0 The Ontario Processing Tomato Industry**

This section presents the case of the Ontario processing tomato industry.

#### **3.1 Marketing Context**

The processing tomato industry is focused in an area of extreme southern Ontario located between southern Lake Huron and western Lake Erie. Producers in this industry typically grow processing tomatoes, as well as other horticultural crops, in rotation with field crops such as corn, soybeans and wheat. Marketing representation of growers is facilitated by a provincially regulated marketing board, the Ontario Processing Vegetable Growers (OPVG). Producers also have access to crop insurance programs for processing tomatoes, and to federal-provincial safety net programs (Canadian Agricultural Income Stabilization (CAIS) program, and the former provincial companion program Self-Directed Risk Management).

Processors in the industry manufacture a range of tomato products including peeled tomatoes, diced tomatoes, tomato paste, tomato sauces, ketchup, tomato juice, frozen tomato products, and ready to eat products containing tomato ingredients. The market for these products is Canada and the central-northeastern US. The primary region of competition is California, which can serve the Canadian and northeastern US markets. Tomato procurement is facilitated via grower contracts negotiated on processors' behalf by the Ontario Food Processors' Association (OFPA).

The time period considered below is from the late 1980's to the present. In the late 1980's, the industry faced significant challenges due to the implementation of the Canada-US Trade Agreement (CUSTA). The evolution and adjustment that occurred in response to these challenges forms the basis for this case study.

#### **3.2 Initial Conditions**

In the late 1980's, the Ontario processing tomato industry was characterized by the following:

- Predominance of hand harvesting technology for processing tomatoes
- Producer base of 533 growers supplying approximately 550,000 tons of product
- Tomato genetics imported from the southern US and uniformly adopted by Ontario growers
- Significant tariff protection for processed tomato products. Tariffs ranged from 19% to 30% on processed tomato products
- Antagonistic relationship between the growers' marketing board (the precursor to the OPVG) and the processors

The above factors resulted in Ontario processing tomato yields being well below that in California, and the prices paid by processors for processing tomatoes being significantly higher in Ontario.

Figure 3.1 presents Ontario processing tomato yields versus California for the period 1984-1992, in tons/acre. The figure shows that, through the early 1990's, Ontario processing tomato yields significantly lagged California. Ontario yields were ranged around 20 tons/acre, compared yields in excess of 30 tons/acre for California.

Figure 3.2 presents a comparison of processing tomato pricing between Ontario and California, in \$US/ton from the late 1980's to 2001. The figure shows that in the late 1980's and early 1990's, Ontario processing tomato prices were significantly higher than that in California. The figure shows that Ontario prices exceeded California by about \$US 30/ton. This is despite the fact that California prices are quoted basis the plant, while Ontario prices are quoted basis the field (so California prices are structurally higher than Ontario prices on a comparative basis. The differential is typically \$US8-10/ton).

### **3.3 Motivation For Coordination**

As a result of the above, when the Canada/US Trade Agreement was completed in 1989, the industry faced the loss of very considerable import protection on finished goods. Tariffs were to be phased out entirely by 1998. The industry faced the potential loss of processing plants, and therefore the need for farm production, if food manufacturers could source tomatoes cheaper in California, process there and move finished goods into Canada with no tariffs. In particular, the largest plant in the industry operated by HJ Heinz in Leamington, Ontario was slated for closure, with the volume accounted for by the Leamington plant made up by plants in California, and the US Midwest. Both producers and processors faced the imminent threat that the industry would be lost to imports from the US.

### **3.4 Development of Value Chain Collaboration**

Under the conditions described above, the producers' marketing board recognized that an antagonistic relationship with processors would lead to the demise of both parties. The producers sought to develop a collaborative marketing scheme that would have the effect of increasing processors' efficiency and cost competitiveness, which would then create the base for increased efficiency and profitability at the farm level. This initiative developed around a new pricing mechanism, information sharing with growers, and investment in plant genetics.

#### **3.4.1 Pricing and Genetics Investment**

To improve processor procurement cost competitiveness, a productivity pricing concept was negotiated. Under this concept, the parties negotiated a sliding scale of price that gave processors lower prices when growers contracted to them had higher yields than a predetermined level. As yields increased above the target, the price decreased according to the predetermined schedule.

**Figure 3.1 Ontario and California Processing Tomato Yields**

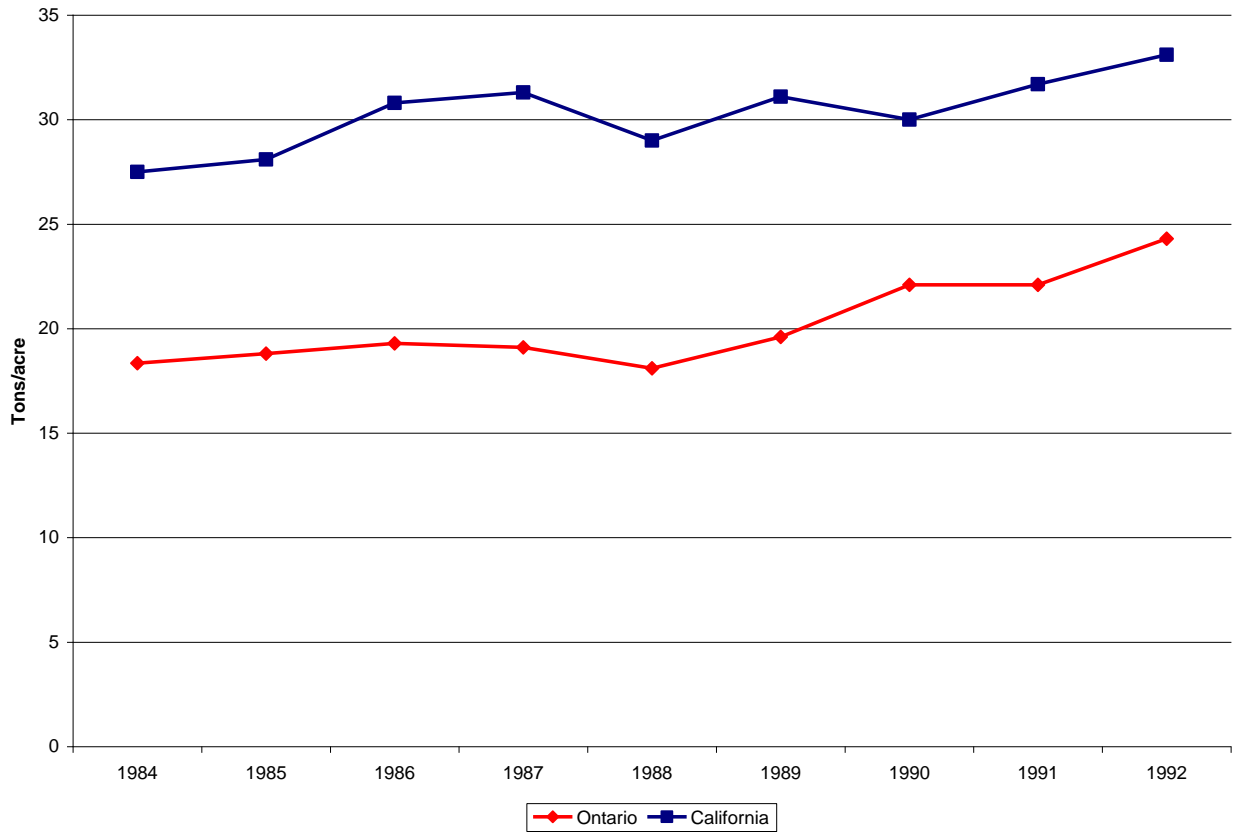
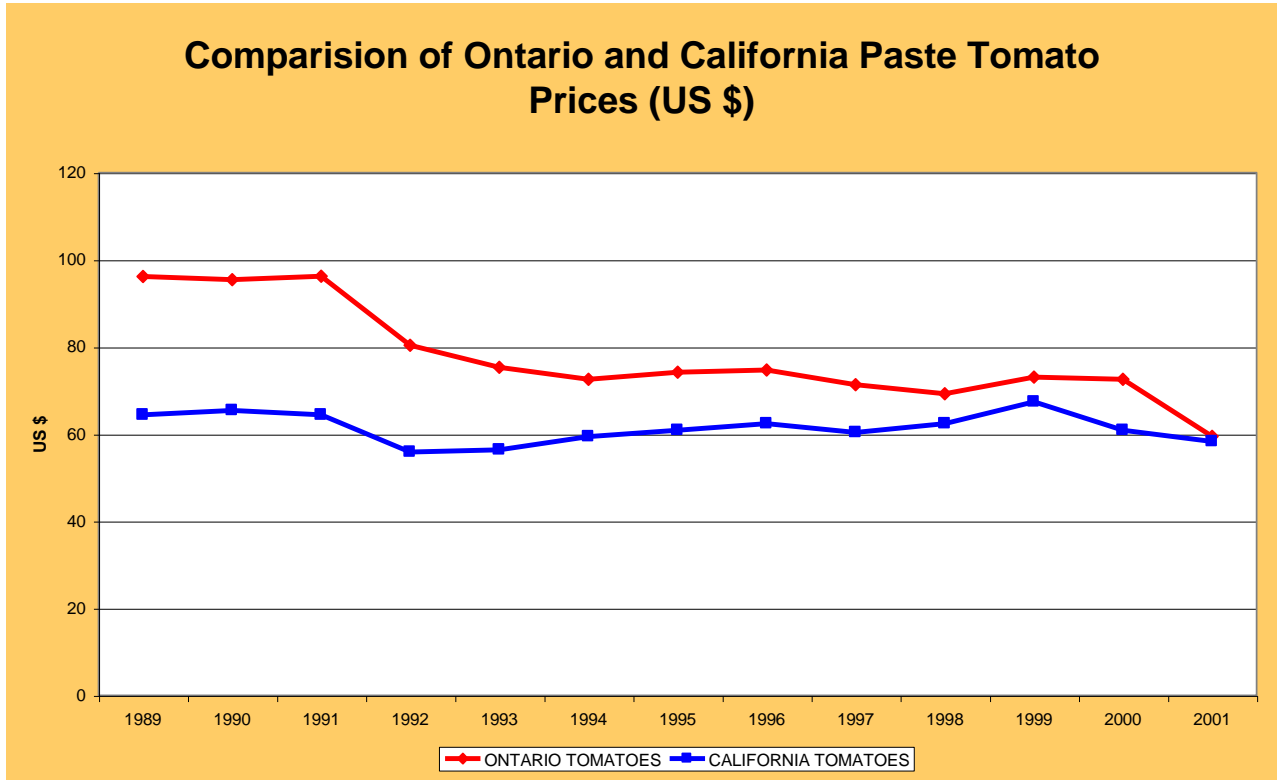


Figure 3.2





In return, processors agreed to develop and provide seed genetics suited to the Ontario climate and to processors' manufacturing needs. Since seed genetics play a major role in yield, the concept was to give processors the incentive to increase the quality of seed and, therefore, yield potential. From the producer's perspective, higher yields because of seed means lower cost per ton, especially with mechanical harvesting, because their costs are relatively fixed. The intent was to increase yields to be comparable to California's, and to increase the feasibility and use of mechanical harvesting.

The mechanics of productivity pricing are presented in Table 3.1 below. The basic model is that a base yield is negotiated with a price discount, applicable to all tons purchased, of .05% on each ton/acre produced above the base. In the table below the base yield is set at 30 tons/acre, with the schedule of discounts applying to yields above this level.

### **3.4.2 Information Sharing**

As described above, pricing under productivity pricing depends heavily on tomato yields. In order to objectively measure yields and avoid disputes, a third-party independent source is used to measure and verify planted acreage and net tons delivered. Net tons are measured as part of grading services; acreage is measured by global positioning system (GPS) in June of each year following planting.

Under the scheme negotiated between producers and processors, a master contract is negotiated between producers and processors. However, within the master contract, producers and processors had the flexibility for individual contracts for timing of delivery, agronomic practices, plant genetics, etc. Thus, the master contract provided market power leverage to producers but with the flexibility for sharing of information within meaningful individual arrangements between producers and processors.

### **3.4.3 Governance**

The governance within the marketing system is annual negotiations between the producers (represented by OPVG) and the processors (represented by OFPA) under the oversight of the Ontario Farm Products Marketing Commission. The nature of governance is strategically collaborative, but confrontational at a tactical level in negotiations.

The general process is as follows:

- Commodity committee of OPVG negotiates in February with one from OFPA (or, increasingly, one lead company negotiates their contract first, and then the others negotiate theirs after the precedent is set). Both parties bring their analysis of the current and expected market situation to the table.
- For each commodity and contract, prices and payment terms are established in the negotiations for the following year's crop.
- Processors provide seed to growers. So, the price of seed is also included in the negotiation.

- Part of the function of the negotiation is to develop grade differentials and delivery terms for quality factors.
- Negotiation process includes mediation and final offer arbitration when negotiations do not result in agreement.

Once a price has been established and quantities are contracted, the two remaining sources of risk are exchange rate and production (weather) risk. These are shared mutually by the parties to the negotiation.

**Table 3.1 Productivity Pricing Discount Schedule**

<b>Net tons/acre</b>	<b>Price per ton</b>
0-30	Negotiated Price x 1.00
30.1	Negotiated Price x .9995
30.2	Negotiated Price x .9990
30.3	Negotiated Price x .9985
30.4	Negotiated Price x .9980
30.5	Negotiated Price x .9975
31	Negotiated Price x .9950
31.1	Negotiated Price x .9945
31.2	Negotiated Price x .9940
32	Negotiated Price x .9900
33	Negotiated Price x .9850
40	Negotiated Price x .95
44	Negotiated Price x .93

### **3.5 Results of Value Chain Collaboration**

The collaborative negotiation process described above has been used to bring about considerable change in the industry. The overall result has been yields that are now comparable to California's, much greater adoption of mechanical harvesting technology, and increased investment in processing. Overall, the changes have created a much more efficient value chain in the Ontario industry.

Figure 3.3 below plots Ontario and California processing tomato yields since 1988. The figure shows that since the late 1980's, Ontario yields have more than doubled. In recent years, Ontario tomato yields are at or even exceed California yields at a range around 40 tons/acre.

Figure 3.4 presents processing tomato values in Ontario and California since 1994. The figure shows a convergence between Ontario prices and California prices. This was particularly the case in the years after 1998 when the tariff was phased out. In recent years the Ontario price has increased somewhat relative to California, but accounting for the \$US 8-10/ton differential for freight from field to plant, the Ontario price is within the range of California plus freight.

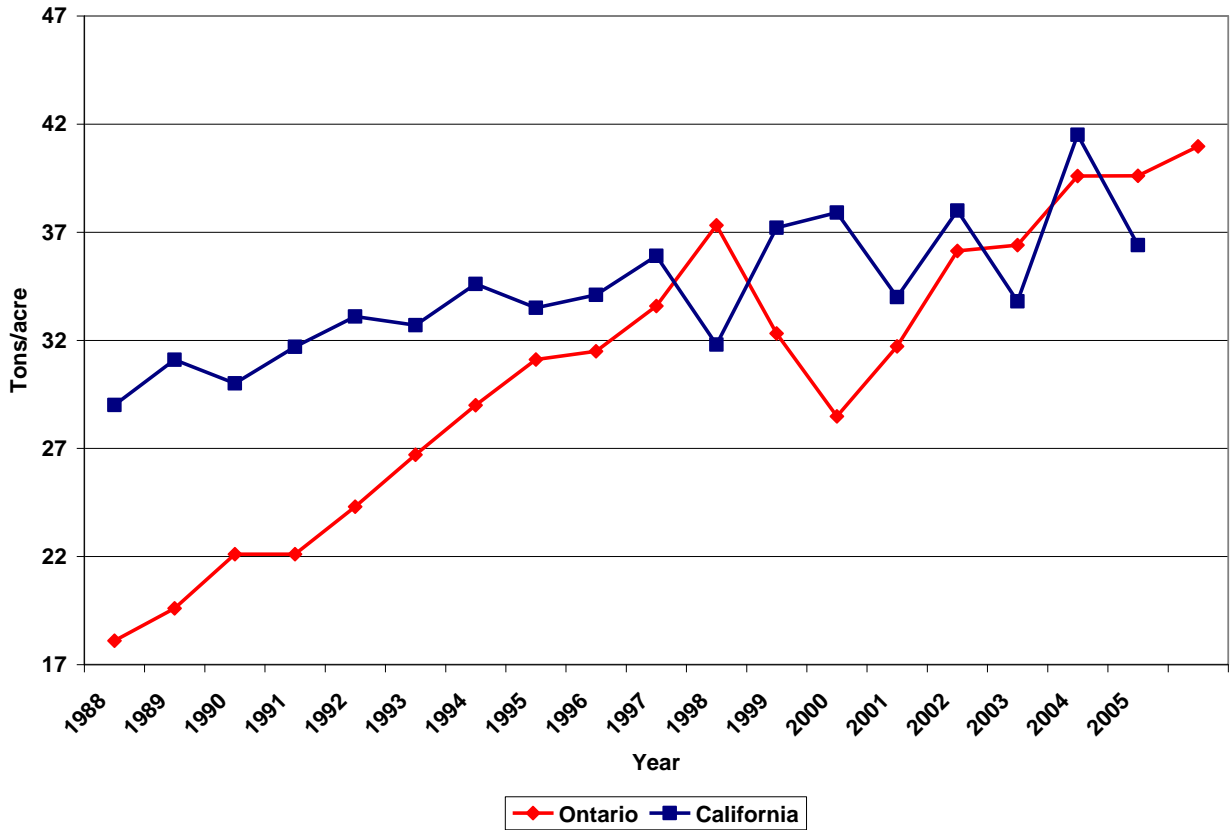
The net impact of the above is presented in Figure 3.5. The figure shows that, measured in Canadian dollars, processing tomato values/ton have decreased markedly since 1994. This is a benefit to tomato processors. However, because yields have increased, even with lower prices the revenue per acre has increased. This is a benefit to producers. The combination of these two factors has been to grow the market for Ontario processing tomatoes. This is shown in Figure 3.6. Ontario processing tomato production has recently been in excess of 600,000 tons. This increase in production has fueled growth in processor sales, which has occurred in both the domestic and export market.

Since the late 1980's, the number of contract growers has decreased from over 500 to a stable level of 160-175 growers. These growers produce a greater output than the 500 growers did in the late 1980's, so the use of productive capacity and overall efficiency has improved. As of 2007, there are 11 Ontario processors handling processing tomatoes.

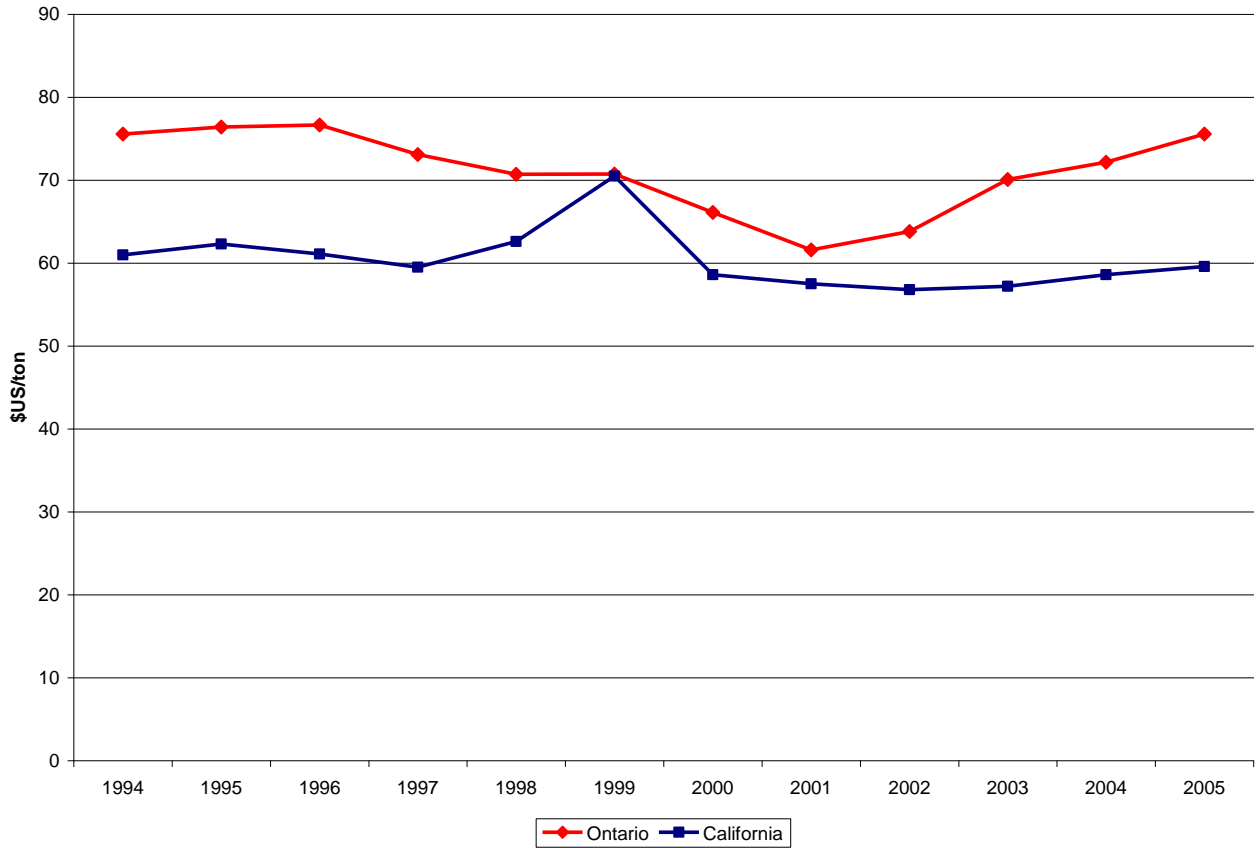
The magnitude of discount that has resulted has been significant. Table 3.2 provides some context, based on a single case of a tomato paste processor for the period 1989-2004. As yields have fluctuated, the extent of productivity discount has varied; in addition, the productivity discounts themselves have been renegotiated over time. However, the results in the table underscore the general result that processors have experienced significantly reduced procurement costs, and have generally purchased more product, since productivity pricing was introduced. Finally, as testament to the effectiveness of the value chain cooperation, HJ Heinz decided not to close its plant in Leamington. Instead, Heinz closed some of its US Midwest operations and shifted that volume to Leamington, which resulted in a doubling of plant capacity and significant new

investment. The OPVG is currently encouraging further new investment in tomato processing capacity in Ontario.

**Figure 3.3 Ontario Versus California Processing Tomato Yields**

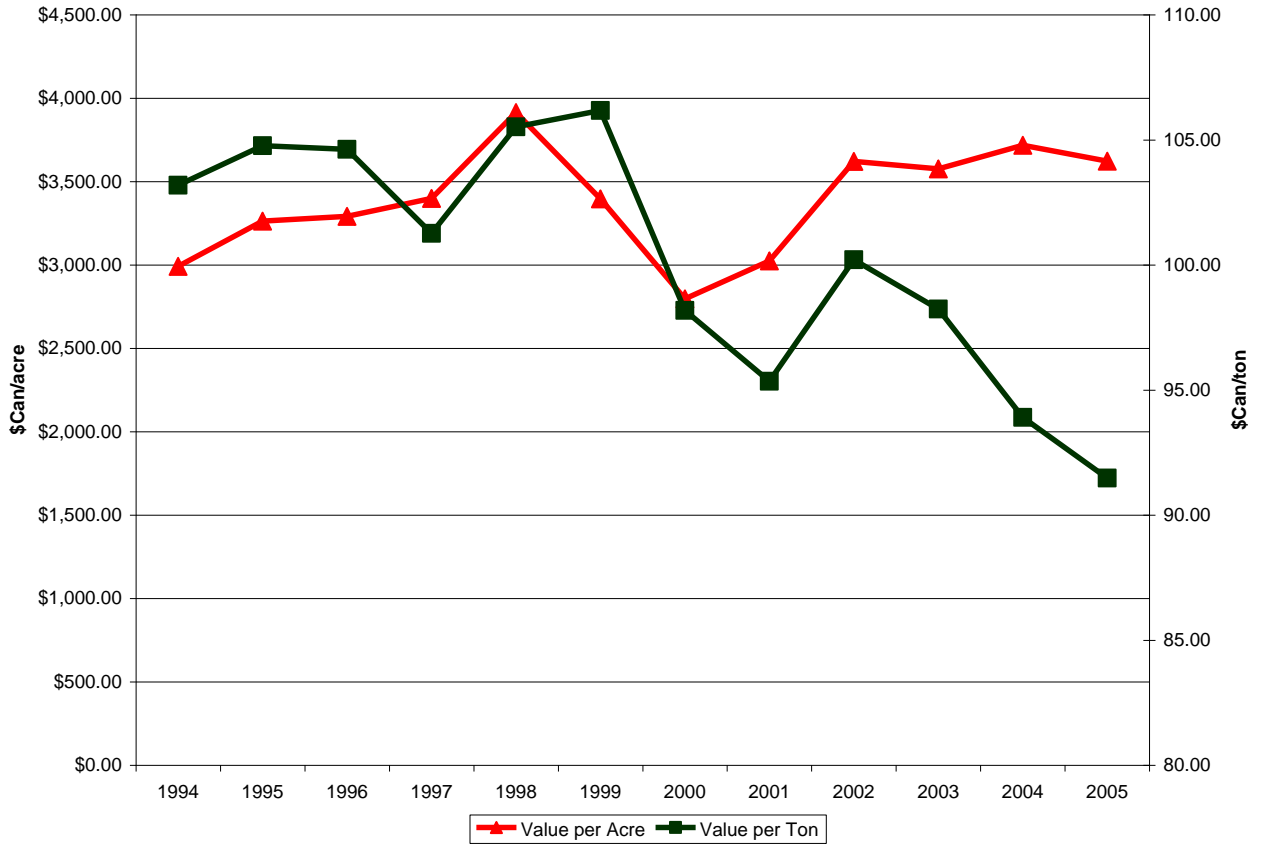


**Figure 3.4 Ontario Versus California Value/ton, 1994-2005**

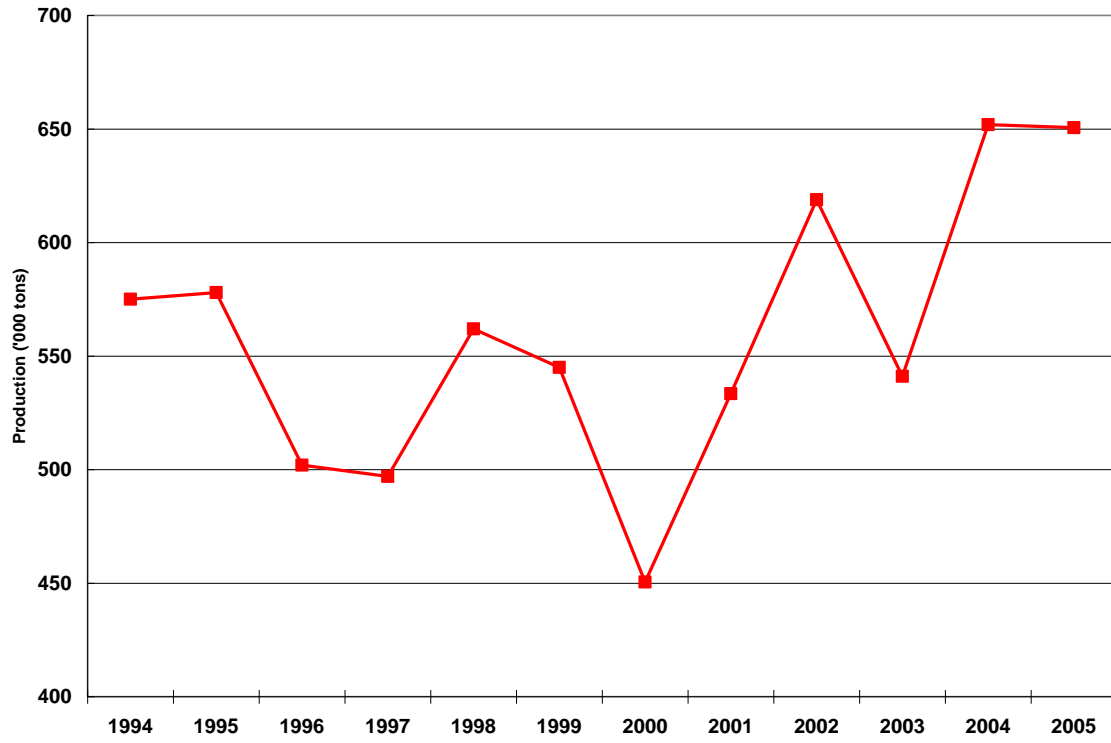


Source: Ontario- gross farm value/tonnage harvested  
California- USDA price data, FOB Plant

**Figure 3.5 Ontario Processing Tomato Price per Ton and Value per Acre, \$Can**



**Figure 3.6 Ontario Processing Tomato Production**



**Table 3.2 Productivity Pricing Discounts; Sample Tomato Paste Plant, 1989-2004**

	<b>Contract Price</b>	<b>Yield/Acre</b>	<b>Productivity Discount</b>	<b>Price Paid, Paste Tomatoes, fob Plant</b>
1989	119.43	19.6	0	119.43
1990	111.35	24.4	4.40%	106.45
1991	110.35	23.2	2.50%	107.59
1992	97.18	28.7	5%	92.32
1993	97.18	29.1	5%	92.32
1994	99.12	30.8	5%	94.16
1995	101.85	33.8	7.75%	93.96
1996	101.85	33.6	7.15%	94.57
1997	98.79	37.6	9.10%	89.80
1998	102.74	39.2	9.60%	92.88
1999	103.46	35.1	2.55%	100.82
2000	96.22	32.3	1.15%	95.11
2001	92.37	32.4	1.20%	91.26
2002	97	38.7	4.35%	92.78
2003	94.57	39.2	4.60%	90.22
2004	89.84	42.1	6.05%	84.40

Source: Ontario Processing Vegetable Growers



**Table 3.3 Processing Tomato Case Summary**

	<b>ON Processing Tomatoes</b>
<b>Marketing Context</b>	<ul style="list-style-type: none"> <li>• Commodity product</li> <li>• Used in manufacturing</li> </ul>
<b>Initial Conditions</b>	<ul style="list-style-type: none"> <li>• Market protected by tariffs</li> <li>• Productivity in farm product lagging</li> <li>• Antagonistic relationship between producers and processors</li> </ul>
<b>Value Chain Collaboration</b>	<ul style="list-style-type: none"> <li>• Initiative to improve processor profitability- initiated by producers</li> <li>• Pricing contingent on yield; discount schedule</li> <li>• Processor development of genetics</li> <li>• Annual negotiation of prices, terms</li> </ul>
<b>Results</b>	<ul style="list-style-type: none"> <li>• Increased tomato yields</li> <li>• Decreased tomato prices</li> <li>• Increasing producer revenue</li> <li>• Increased investment in processing</li> </ul>

## **4.0 Warburtons**

The Warburtons value chain benefits the members through ensuring wheat quality precisely reflects end-market demands. From seed production through to milling and bread making, each member of the chain focuses squarely on providing consumers with a consistent superior eating experience. A constant two-way flow of information enables the entire chain to be coordinated in a manner which ensures operations are performed in the manner necessary to protect quality (and therefore create and capture value) along the entire chain. This achieved through enabling everyone along the chain to make informed and timely management decisions, leading to more efficient operations, and the appropriate investment of resources. Ultimately, this approach has lessened business risk for everyone – producers through to Warburtons - and led to the building of strong interdependent relationships.

By working in the Warbutons system, producers are able to reduce costs by understanding their operations more intimately and capturing added value more effectively than was previously possible. Warburtons benefit from the ability to innovate and expand production, and maintain exceptional quality standards. In 1998, following the success of the value chain sourcing Canadian wheat, Warburtons trialed a similar arrangement with Centaur Grain, the UK's largest dedicated wheat marketing company. Having the two sourcing arrangements in place has enabled UK and Canadian wheat to be combined to produce flour that precisely meets Warburtons' baking requirements.

### **4.1 Marketing Context**

Established in 1876 and headquartered in Bolton, England, Warburtons is the UK's largest independent manufacturer of bakery products. Its core philosophy is to deliver fresh, great tasting, quality products through continually improving operations and processes along the entire value chain. Even though its loaves can sell for five-times that of the 'value-based' alternatives, often retailed under private label brands, attention to detail has enabled Warburtons to capture a sizeable share in the UK bakery market. Through its twelve bakeries located around the UK, Warburtons continues to expand its share of the UK bakery market with each passing year: 18.5 percent in 2006 alone. Its total annual sales for 2006 reached CAD\$851 million, making it the UK's fifth most valuable brand.

Through the early 1990's, Canadian wheat, procured through the Canadian Wheat Board (CWB) formed a very important source of supply to Warburtons. As described below, by the early 1990's wheat purchased from the CWB had developed significant quality problems, and a more collaborative relationship with Canadian wheat growers was initiated as a result.

## **4.2 Initial Conditions**

From Warburtons' perspective, consumers are the target at which they aim their value chain activities. The development of a value chain did not rely on retailers buying into the concept. It was led by Warburtons to satisfy consumers better than their competitors, who continue to operate in a commercial environment typified by variations in the quality of ingredients and, consequently, end products and production costs. Warburtons continually research consumer demands for bread and other bakery products, such as bread and English muffins, then proactively manage relationships to leverage the expertise of their partners located along the value-chain to achieve outcomes that their partners cannot.

The initial value chain, which today exports over 200,000 tonnes of IP Canadian Western Red Spring (CWRS) wheat, commenced after Warburtons noticed a steady reduction in quality. That erosion of quality reached such a degree that, in 1992, Warburtons were unable to use any Canadian wheat from that year's harvest. They only managed to bridge the gap by sourcing wheat remaining in inventory from the previous year's harvest.

For Warburtons, the increasing variability in quality had brought enormous challenges and risked undermining their brand. Prior to establishing its chain, it was common that production lines needed to be shut down or cleaned out because of a change in wheat quality. This resulted in unsaleable loaves or equipment failure. Consequently, wheat was sourced at its cheapest cost in order to help mitigate costs associated with having to change recipes to suit changing flour quality, or having to source new supplies after rejecting deliveries sourced from thousands of miles away.

## **4.3 Motivation for Developing a Collaborative Value Chain**

### **4.3.1 Pricing**

Sustainable price discovery models can only be developed through first assessing how the end market values an end product, then identify how the pricing of inputs can be used as an incentive to encourage businesses to make decisions that enable the players to benefit by working together to meet market requirements better and more cost effectively than would otherwise be possible. Poorly designed pricing systems lead to poor coordination along the chain. This adds unnecessary costs to the system through the waste created by each of the partners operating without sufficient consideration to the chain's overall effectiveness. To be successful, a pricing system needs to take those factors into account of all these factors, as well as production costs. It also needs to possess a penalty system that is sufficiently strong to be both weed out unsuitable members and (by having sufficient differential to potential premiums) encourage members of the chain to implement management decisions that meet the needs of the overall alliance.

The initial pricing system followed an extensive process called ‘chain mapping’. Warburtons needed to map the chain to gain an intimate understanding of the role that activities occurring along the chain played in influencing quality. Once they knew from where in the chain poor quality resulted, they could then work to find the precise causes of poor quality and, finally, develop systems to address those issues. The eventual pricing system was developed as a mechanism to incentivise everyone along the chain to follow procedures that would result in improved and highly consistent quality.

How the pricing system works in practice is that producers are contracted to produce wheat for Warburtons according to firmly enforced procedures. To minimize variances in end product quality, producers have to produce varieties determined by Warburtons using certified seed from chosen suppliers and designated production practices. Producers have to track weather conditions and crop management activities performed throughout the growing season. Quality is measured at the point of harvest and each strategically important step along the chain. Handling protocols must be adhered to from the moment the combine enters the crop to the point of delivery of the grain to an elevator at a time determined by Warburtons. Storage and handling practices are therefore another critical responsibility of producers, elevators and transport contractors.

#### Canadian System

Within the Canadian system, Warburtons guarantees to pay contracted Canadian producers ~CAD\$18 over the price of CWB # 1 grade for any wheat that meets their specifications. The ~CAD\$18 premium is purely a reward for producers producing according to Warburtons’ protocols. Unlike the UK system, it is not calculated on the relative value of wheat attributes, or calculated using algorithms that take account of strategic as well and tactical related factors impacting the price of milling wheat of a similar quality to that demanded by Warburtons. The Canadian pricing model is unsophisticated and blunt, with little opportunity to use it as an instrument to incrementally increase the chain’s performance.

Canadian elevators do not get involved in developing or managing the pricing system. They are responsible for identifying preferred producers, awarding contracts, and enforcing identity-preserved conditions along the chain post-farm by maintaining the correct characteristics and keeping Warburtons’ wheat separate from other varieties until they are purposely co-mingled according to pre-determined rates during the process of transporting them to the UK. A management fee is paid to the elevators for administering grower contracts and preserving the integrity of wheat according to Warburton’s exacting demands.

In 1994, and to ensure grain prices somewhat reflected their end requirements through being able to monitor quality according to end-market requirements and to incentivise producers to produce wheat whose quality differed from Canadian commodity standards, Warburtons needed to establish a distinct grading scheme. Unlike standard CWB grades, easily monitored physical traits such as colour (measured through Kernel Visual Distinction) are not the overriding factor for Warburtons. Internal characteristics such as the falling-number count and optimum (rather than maximum) protein levels are of

greater importance. An example of the differences that these two approaches can have upon producer returns is that the wet harvest of 2005 led to many wheat producers grain being downgraded to CWB grade 3 due to poor colour.

However, producers contracted to Warburtons for the 2005 season that followed their production protocols were paid grade 1 prices, along with a pre-agreed premium of ~CAD\$18 per tonne, in some cases for the exact wheat that CWB had downgraded because of kernel colour. The differences stem from Warburtons identifying specific attributes important to their situation and maintain quality within exacting requirements; CWB seeks to maintain consistent quality, whether or not the wheat exactly matches the demands of individual customers. The reason Warburtons paid the same agreed premium price, even though they may have been able to buy the wheat at or above CWB Grade 3 prices is simple. Trust and commitment are critical elements in the chain's success. By paying Grade 3 prices, Warburtons would have undermined producers' commitment to the chain - which would end the trust producers have for Warburtons' and, therefore, discourage them from producing for Warburtons again. Short term financial gain for Warburtons would have seen a return to the long term problems which they formed the chain to address.

In return for standing by producers in this way, Warburtons expects nothing less than complete trust and commitment to the program; and it is made clear to producers that any deviation from acting responsibly and in a trustworthy fashion will result in there immediate suspension from the program, with no chance of again supplying Warburtons. This situation has occurred - when a Canadian producer was removed from the system for failing to supply the correct shipment to Warburtons.

### UK Supply System

The payment and grading system for UK wheat is more sophisticated the Canadian system and results in farmers receiving more precise market signals on how closely their wheat matches market requirements. UK prices are calculated by first establishing a floor price that Warburtons grain never falls below, along with an upper limit beyond which Warburtons and producers share 50/50 incremental price increases. A premium is then established that tracks beyond market prices when they exceed the floor price, along with a seasonal based payment to offset storage and handling costs. Exact premiums are based on optimum rather than maximum level of protein, falling-numbers, etc.

### Comparison

The difference in the Canadian and UK pricing models is one reason that Warburtons have at times expressed frustration at how inflexible the system followed by the Canadian wheat is compared to the arrangement is has with Centaur Grain and the challenges this brings to creating mutually advantageous value. While part of difference stems from geographic proximity, attitude plays a significant role too. The UK chain is short with relatively few players; and all of the players have a commercial stake in the chain. The Canadian chain is longer, more complex and more rigid than the UK chain. This is, in part, because its operations are impacted by non-commercial stakeholders such as industry institutions, legislation that is unrelated to assisting businesses adapt to market

realities, and political philosophies or agendas. Furthermore, in the UK, prices and pricing strategies are negotiated between Warburtons and Centaur Grain, both of who have direct commercial interests in the initiative succeeding. In Canada, prices and pricing strategies are negotiated between Warburtons and CWB, the latter having little direct commercial investment in the initiative itself and whose operations are meant to benefit the entire industry: not one marketing arrangement.

While decisions can be made quickly and decisively in the UK chain, it can take years for the Canadian chain to achieve similar outcomes. As example of this is the speed with which the UK chain has developed and expanded, even though its development began five years later than Warburtons Canadian wheat sourcing. Due to inflexibilities inherent to the Canadian Wheat Board and Canadian Grain Commission it took three years simply to establish the Canadian system. Another impact of the Canadian marketing and business arrangements in general is its negative impact on price negotiations. Warburtons and Centaur Grain recently agreed upon a five year pricing model that offers producers added premiums for producing wheat that precisely matches Warburtons requirements. By contrast, the annual pricing arrangements agreed with the Canadian Wheat Board are relatively unsophisticated and annual. Furthermore, in the UK, Warburtons can have a promising variety grown for it within one year of its initial identification. In Canada, due to regulatory hurdles and industry structure, the same process takes five to six years.

#### 4.3.2 Information sharing

The situation that Warburtons found itself in 1992, when it was unable to use any of that year's Canadian wheat, was caused by two main reasons. The first was a lack of information sharing. No one on the Canadian side of Warburtons value chain was aware of the impact that changing varieties, pooling, or the reduced use of certified seed had on end quality. Nor did they necessarily care given the narrow attitudes that often arise in highly legislated systems. The second was their adherence to processes that, by their very nature, led to inconsistent quality and overall poor performance of wheat delivered to Warburtons' UK bakeries. Addressing the challenge successfully would rely upon identifying information that could communicate Warburtons' end needs along the entire chain. It would also rely on sharing information effectively, thereby enabling people to act upon it for commercial gain.

Information on the performance of logistical operations and how closely flour manufactured from wheat sourced through Canadian and UK suppliers is readily shared with suppliers to enable continual improvements to occur along the chain. That means information on an array of production and supply factors needs to be collated and communicated along the chain. These include verification that the crop was grown from certified seed and the location of each crop, crop management practices, and weather patterns during the growing season. Post harvest factors include purity, falling numbers, storage conditions and shipment dates of each batch. This required an extensive information and communication technology (ICT) system. The chosen ICT was developed by Cengea, a Winnipeg based IT company.

Next to feedback on how wheat grades to specific requirements, which is shared with UK producers through Centaur Grain and Canadian producers through the elevators and Warburtons' Technical Centre, Brandon, pricing is the most important information mechanism. Warburtons is the only member of the chain to have access to all the information from across the chain, other members are provided with information pertinent to their role link in the chain. For instance, producers would not gain the same value from having access to information that Centaur Grain or the Technical Centre sees as important because of its strategic nature for arranging shipments or commingling varieties according to protein or falling number levels.

By collecting information from along the entire chain, the system provides a practical basis for benchmarking, which in turn supports a continual improvement process through enabling the partners to identify what activities do and do not create value. Particularly in the UK system where strategic as well as operational information is readily shared between Centaur and Warburtons, it offers members of the value chain the opportunity to both identify ways to reduce costs and increase quality, which results in higher profits. It also allows decisions to be made surrounding who should be responsible for making certain decisions and who is responsible for implementing a task, achieving a particular outcome, or managing an initiative. This establishes a greater level of accountability than would otherwise exist, resulting in a highly effective and efficient chain.

#### **4.3.3 Coordination of operations**

The proactive exchange of information on actual versus target performance is key to successfully coordinating the Warburtons chain. Enabled by the information and communication system described above, Warburtons and their value chain partners have established a system that ensures the identity and integrity of Warburton wheat is preserved along the entire chain. This could not have been achieved without a thorough understanding of the processes required to achieve the desired outcomes, which stemmed from the value chain mapping exercise. The process of identifying the causes of past quality problems, then developing systems to prevent them reoccurring led to Warburtons and the initial partners (elevators in particular) determining the appropriate roles, responsibilities, accountabilities and governance systems for ensuring the chain performed as intended.

Coordination begins with Bob Beard (Warburtons' Procurement Director) and Nick Parr (Warburtons' 'bread guru') traveling to Warburtons Technical Centre in Brandon, Manitoba each fall to identify the precise mix of Canadian and UK wheat varieties needed to bake the 'perfect loaf'. This provides Warburtons Technical Center and Centaur Grain with the ratio and attributes (e.g. protein, falling numbers, etc..) at which Canadian and UK wheat must be shipped to the millers. The Technical Centre communicates the volume and types of wheat required for each shipment to the elevators – who in turn communicate with each producer to organize individual shipments. The

same Brandon-based trials lead to Warburtons and Centaur Grain developing a supply scheme for the following twelve months.

The elevators manage the logistics, including contracting agreed producers, sourcing wheat as required, and arranging transportation from Manitoba and Saskatchewan through to the UK. The three Canadian varieties (Teal, Pasqua and Columbus) are co-mingled to produce a mix that, along with the UK wheat (Hereward), produces a flour that precisely meets Warburtons exacting quality standards.

#### 4.3.4 Governance and conflict resolution

The extensive information system also enables Warburtons to inform the elevators, then producers, for the reasons behind their decisions. This objectivity, supported by Warburtons' exhibiting unquestionable commitment to the chain over a number of years, leads to greater buy-in from all the members. This level transparency about chain operations and performance minimizes the chance of conflicts, which would otherwise limit the effectiveness of the chain.

Minimizing conflict throughout the chain provides opportunities to enhance long-term performance through facilitating the open exchange of information and ensuring each participant is accountable to each other, and the overall initiative: which is the purpose of chain governance. This has proven critical to the chain's success and, in practice, was developed in three stages from information provided by the value chain mapping process. The first stage of establishing the governance system was to identify and assess each member's needs and risks. The second stage was using the results of stage one to apportion roles and responsibilities for each member of the chain. The third was turning those assessments into performance and benchmarking metrics, supported by a reward and penalty system, to enforce accountability.

In both the Canadian and UK situation, grading occurs at all critical points along the chain. The first is prior to harvest, when seed is checked for purity, the region it was grown, and germination rate. Then, immediately after harvest, crops are scrutinized to ensure they meet Warburtons criteria. Crops meeting the necessary standards are immediately accepted for future delivery to Warburtons at the pre-agreed premium price. From then testing occurs whenever the crop is moved or aggregated. Canadian crops are tested on delivery to the elevator, which occurs at a future time requested by Warburtons. A third test occurs when the product is loaded into a rail car, at which time the first of four aggregation processes takes. The fourth test occurs at Thunder Bay when the wheat is loaded into barges which transport the wheat to Port Cartier. The fifth test occurs when the wheat is no longer held as individual varieties and is co-mingled according to pre-determined mixes during its loading into a sea-going vessel. The sixth and final test occurs when Canadian wheat is mixed with wheat sourced from Centaur Grain to manufacture the flour ultimately used by Warburtons' baking process.



In reality, while samples are taken at each critical step in the handling process, the system relies on trust. Any producer or chain member found not following procedures is guaranteed not to receive a Warburtons contract the following year. Accountability is therefore as crucial to the value chain's success and sustainability as Warburtons' commitment to purchase any wheat grown on contract and which meets its requirements at \$18 above CWB Grade 1 prices.

#### **4.4 Results of Value Chain Collaboration**

Financial results stemming from the Warburton value chain are readily identifiable. Warburtons share of the UK bakery market expanded by 18.5 percent last year alone, making it the UK's fastest growing baker. Its annual sales now exceed CAD\$851 million, larger than any of its major competitors and making it the UK's fifth most valuable brand.

For producers the benefits include an opportunity to secure premiums above that otherwise attainable and reduce costs through understanding their processes more effectively. It also allows them to plan more effectively over the long-term, further reducing their exposure to risk. In addition to having a guaranteed market and access to premium prices or additional management fees, producers are applying lessons learnt from the Warburtons' initiative to their operations supplying other markets. In the UK for instance, Centaur Grain have proven that the benefit to producers of applying lessons learnt from Warburtons to their other operations leads to distinct financial benefits. While the UK average for wheat meeting milling quality is less than 50 percent, Warburtons' producers regularly achieve a 'hit-rate' of over 75 percent; even in difficult growing seasons.

Both of the Warburtons schemes have expanded considerably since their inception. Canadian supply commenced as a pilot in 1995 by supplying 30,000 tonnes of wheat. The 1998 UK pilot began with Centaur Grain supplying 5,000 tonnes of a wheat variety known as Hereward. In 2006, ~800 Canadian producers supplied well over 200,000 tonnes of wheat to Warburtons. Centaur Grain supplied over 130,000 tonnes. Warburtons have themselves expanded their bakery production and product range considerably over the same time period. This has been enabled through access to consistent quality inputs and the ability to innovate quickly in relation to identified market demands. These are now core features of Warburtons commercial strength.

The basis and structure of relationships existing within the Warburtons' supply system has changed considerably since the establishment of their value chains. This is particularly the case in the UK where the members are geographically located closer together and are legislated in terms of varietal development, supply structure and pricing models they can apply. The UK side of the Warburtons systems therefore sees a greater sharing of strategically important information, along with an increased propensity to identify, and then act upon, value creating and capturing opportunities compared to their

Canadian counterparts. This includes the establishment of a five year pricing formula while Canada sticks rigidly to annual prices, calculated from short term scenarios.

For the UK partnership in particular, that improvement in relationships has led to an even greater inclination to explore opportunities to develop innovative methods to address common challenges and, in doing, capture greater value along the entire chain. One example of this is the way that Centaur Grain and Warburtons together host on-farm field days for UK primary school students. The field days highlight the role of farming in pragmatic terms, and the health-related (included environmental) benefits of achieving ‘x’ in order to achieve ‘y’. The result: students view agriculture as more than simply the production of cheap commodities, and view quality bread as part of a healthy diet. Similarly, Centaur Grain are exploring the possibility of using wheat that does not meet Warburtons’ quality standards, or another crop such as Canola to manufacture bio-diesel for use in Warburtons’ delivery vehicles.

The combined benefits of Warburtons value chain approach are particularly important given consumers’ growing discernment and their preparedness to trade up to premium products that meet their needs. The Warburton case study also illustrates how identifying the relationship between cause of poor or inconsistent (quality from the customer’s perspective), and addressing such as a value chain, offers additional benefits such as cost reduction.

	<b>Summary</b>
<b>Marketing Context</b>	<ul style="list-style-type: none"> <li>• Premium bread products that sell for five times the price of a ‘value’ loaf</li> <li>• Britain’s largest independent baker - selling on quality, not lowest price</li> <li>• The UK’s fastest growing bakery: 2006 sales increase of 18.5 percent</li> </ul>
<b>Initial Conditions</b>	<ul style="list-style-type: none"> <li>• Wheat quality deteriorating</li> <li>• Fear of poor quality undermining brand loyalty</li> <li>• Disconnect between wheat production and consumer market</li> <li>• Inability for producers to succinctly capture value from the market</li> <li>• Marketing activities based on finding a home for already produced wheat</li> </ul>
<b>Critical Success Factors</b>	<ul style="list-style-type: none"> <li>• Open communication along the entire chain</li> <li>• Commitment to abide by agreements negotiated between the partners</li> <li>• Strong and well enforced governance structure</li> <li>• Clearly identifiable roles and responsibilities, accountabilities               <ul style="list-style-type: none"> <li>○ Enforced through monitoring and communicating performance</li> </ul> </li> <li>• Processes designed to produce target quality wheat</li> <li>• Introduced system to accurately measure performance</li> </ul>
<b>Value Chain Collaboration</b>	<ul style="list-style-type: none"> <li>• Distinct grading system</li> <li>• Guaranteed producer premiums for wheat meeting specified quality</li> <li>• Ensures all crops grown solely from verification certified seed</li> <li>• Handling protocols adhered to along the chain</li> <li>• Benchmarking provides basis of continual improvement measures</li> </ul>

<p><b>Comparison of UK vs. Canadian Chain</b></p>	<ul style="list-style-type: none"> <li>● UK Suppliers (Centaur Grain) <ul style="list-style-type: none"> <li>○ Short chain with few links</li> <li>○ Close geographic proximity</li> <li>○ Extremely well organized and coordinated by Centaur Grain</li> <li>○ Ongoing strategic-level discussions between Centaur and Warburtons</li> <li>○ Wheat priced on in accordance to precise desired attributes</li> <li>○ Long term pricing and supply contract with Centaur and producers</li> <li>○ Centaur essentially a “new-generation” cooperative led by food industry veteran</li> <li>○ No restriction what wheat can be grown where, by whom</li> <li>○ Work closely with private seed breeders (Nickerson Ltd) to improve quality</li> <li>○ Producers firmly embedded in the chain, many on a long term basis</li> </ul> </li> <li>● Canadian Value Chain <ul style="list-style-type: none"> <li>○ Long and complex, with many actors</li> <li>○ Extended geographic proximity</li> <li>○ Coordinated by Warburtons, with advise from elevators</li> <li>○ Wheat priced on one set premium above CWB Grade 1 price</li> <li>○ Short-term annual pricing and contracts</li> <li>○ Greatest influence on long-term operations come from legislation</li> <li>○ Restrictions on what wheat can be grown where</li> <li>○ Greater restrictions on breeding and registering wheat</li> <li>○ Most wheat breeding activities conducted by AAFC scientists</li> <li>○ Less opportunity to share detailed information along the entire chain</li> <li>○ Producers loosely aligned to chain through annual contracts</li> </ul> </li> </ul>
<p><b>Results</b></p>	<ul style="list-style-type: none"> <li>● Improved quality and consistency of Canadian wheat purchased</li> <li>● Improved producer efficiency</li> <li>● Producers identify lessons that can be applied to other operations</li> <li>● Increase in volume (200,000+ tonnes, Canadian; 130,000+ tonnes, UK)</li> <li>● Increased financial returns for all the partners</li> <li>● Expanding share of <u>UK bread market</u></li> </ul>

## 5.0 Perfection Fresh Australia Pty Ltd

Formed in 1978, Perfection Fresh Australia (PFA) is a CND\$140+ million family owned and operated company, headquartered in Sydney, Australia. Its annual growth rate averages 12.8 percent. In 1992, when this case study commences, PFA's marketing operations were located in the Sydney Markets, where it competed with 150 other commodity traders, all largely competing for market share on price. Fifteen years later, PFA is a national company with operations located in Sydney, Melbourne, Brisbane, Bundaberg and Perth. It also operates seasonal offices in the Northern Territories; has financial interests in greenhouses and mango plantations, and operates produce packing facilities in Queensland, New South Wales and Western Australia.

Using lessons learnt outside of the agriculture and agri-food industry, the Perfection Fresh Australia ("PFA" or "Perfection") case study illustrates that more effective ways exist to supply fresh produce to consumers than the traditional commodity approach. Particularly as consumer purchase behaviour is increasingly centered on freshness, quality and taste. Not the lowest price. Through a business model that combined the extensive sharing of information, to support the supply of consistently high quality products through sometimes complex distribution systems, with carefully chosen vegetable varieties, PFA were able to leverage partners' knowledge to exploit market opportunities for the benefit of all concerned. The ability to capture greater value by ensuring the delivery of consistent high quality products produced from specific seed varieties has proven a powerful strategy for success.

### 5.1 Marketing Context

The product featured at the centre of this case study is the Original Grape Tomato™ (OGT), which won the SIAL prize for the *World's Best New Fruit and Vegetable Product of 2002*. Not the only grape tomato on the market, annual sales of the OGT exceed CAD\$4 million (wholesale) and are growing, a phenomenal achievement for what has traditionally been small a section of the overall tomato category. Similar to other PFA initiatives, the OGT project succeeded through the existence of a value chain partnership. The product, a direct competitor to commodity cherry tomatoes, succeeded through offering consumers a consistently high quality eating experience. Through applying lessons learnt through from the OGT initiative across its entire business, PFA's annual sales of approximately CAD\$140 million continue to grow at an average of 12.8 percent. Profitability as a percentage of overall turnover is also increasing.

Tasty, as well as texturally and aesthetically appealing, OGTs were packaged in an eye-catching clear 200gm plastic container. The entire operation, from production and shipping, through to branding and merchandizing, focused on providing a superior product to a category largely devoid of excitement. The consistency in sensory and physical quality which lay behind the product's success was made possible by a closely-aligned value chain that stretched from seed breeder and producer, through to retailer and consumer. Consumer interest for the OGT and similar tastier tomatoes has resulted in an increase in the overall volume and value of the Australian tomato category. Even though

the overall sales of fresh tomatoes at retail are stagnant or increasing only marginally, OGT sales have increased by an average of 48 percent annually since 2003.

As has happened on a worldwide basis, the Australian retail sector has consolidated, resulting in smaller numbers of larger, more sophisticated customers. Likewise, their success relies to a large extent on the existence of dependable sophisticated suppliers. While retail chains such as Woolworths (Australia's largest retailer) comprise an increasingly large share of PFA's overall business, PFA also supplies independent retailers of all sizes. It also serves foodservice operators that range in size from independent restaurants and conference/leisure centres through to national Quick Service Restaurants (QSRs) including McDonald's, and TriCon (KFC, Taco-Bell, Pizza Hut). It also exports to retail and foodservice customers located in South East Asia, Europe, and the United States.

- Firms/organizations involved

The main organizations involved in this case study include producers, chosen for their production and management acumen, and willingness to operate as a coordinated group; two seed companies - De Ruyter, who bred the chosen variety and Rijk Zwaan who distributed the seeds and provided agronomic support; Withcott Seedlings – who ensure that producers receive strong virulent seedlings at the ideal age for planting; and PFA, who coordinated the overall initiative; Woolworths supported the initiative from the outset and continue to be the preferred retail customer. The involvement of all the participants was the culmination of long-term strategic relationships established over a period of approximately five years and had enabled the development of other programs that, though similar in concept to OGT, did not always feature varieties that are exclusive to PFA.

While, as mentioned, customers of the OGT encompassed large and small retailers and foodservice operators, this case study focuses on two in particular. Woolworths (retail) and McDonald's (foodservice). Neither purchased the OGT because it was offered at the same or lower price than competing grape tomatoes; or cherry tomatoes for that matter. Both Woolworths' and McDonalds' purchase decisions were based entirely on eating quality, the consistency of that quality, along with assuredness of supply and price.

- Time period

Because the OGT initiative could never have achieved the level of continued success that it has without the necessary infrastructure and capabilities already being in place, the case study stretches from 1992 through to 2003. It describes developments leading up to the launch of the OGT in January 2001, as well as how the chain was first initiated, and then managed. OGT is therefore the product featured at the centre of this case study; the closely-aligned value chain provided the platform and process that enabled the OGT to succeed commercially.

In June 2003, less than 30 months after its launch and after achieving great commercial success in the retail and foodservice sectors, PFA's *Original Grape Tomato*<sup>TM</sup> was awarded a SIAL prize for excellence in agri-food innovation. The benefits of

commencing a new initiative, from the outset, with a mindset of operating as a value chain had been proven financially successful and had been recognized internationally.

## 5.2 Initial Conditions

While PFA's target market has not changed radically since its establishment in 1978, the manner in which it supplies those markets has. The fresh produce industry has traditionally been commodity driven, companies trading entirely on a transactional basis. Immediate one-off trades based on price, with winners and losers. Produce marketers (agents) often operated as arbitrators, capturing (not sharing) information that emanated from either end of the chain. Their power came from creating a choke point in the value chain. This prevented producers from gaining access to market information, and customers from gaining access to production information. Neither could obtain a full sense of how effective operations undertaken at any stage along the chain were for maximizing quality or cost efficiency, or where opportunities lay to improve operation that could ultimately benefit the entire chain. To make matters worse, supermarket buyers scouted the wholesale markets for the cheapest spot deals and, when possible, played agents off against each other to reduce prices even further. In such a trading environment, short-term pricing rather than overall product value and cost containment drove the majority of business decisions.

And price on any given day was entirely dependent on the laws of supply and demand, not on long-term strategy for how to best position a product for capturing added value or operating the chain in ways that could reduce the costs of everyone involved. Business was conducted like a game of cat and mouse between agents and their customers on the one hand; and agents and producers on the other. In an effort to manage their own risk, agents handled produce on a consignment basis - only paying growers a month or more after the product was sold to a customer. If produce spoiled due to bad handling or poor demand, a bill for the cost of disposal could be sent to the grower. Little accountability resided with the agent; immense risk resided with the producer.

By the late 1980s, a consolidating retail sector had led to a change in market dynamics. With a smaller number of buyers to target, market agents had only been able to encourage increased purchases of ever greater volumes of produce through discounting. Cutting prices to retain market share had however heavily impacted PFA's profitability. In fact the company was near bankruptcy. It was clear that PFA needed to adopt new business strategies in order to prosper (even survive!) in what was a rapidly changing industry.

Redefining itself strategically meant finding a new way of dealing with consolidating retail and foodservice customers that were themselves grappling with the issue of needing to differentiate to remain competitive. Retailers and foodservice operators foresaw that differentiating themselves in the market could allow them to increase their margins by taking some of consumers' attention away from price and, in turn, increasing their loyalty to a particular store. Successful differentiation would however rely on the ability to source products of consistent and specific quality that reflected demands of target

markets. Yet spot buying from market agents made it almost impossible to secure guaranteed consistent quality over the long term, or position products as differentiated due to improved quality or value compared to commodities. Securing consumer loyalty would therefore rely on retailers adopting a more strategic approach to dealing with their suppliers than previously.

While following a consignment approach to business had appeared to reduce market agents' financial risk, over the long term it had placed them in a precarious position. Little consideration had been given to the impact that failing to take responsibility for services rendered to suppliers or customers had had on companies such as PFA's long-term competitiveness. Successfully operating on a transactional arms-length trading basis relied upon agents' having many suppliers and customers to arbitrate between. Consolidation, particularly amongst its larger retail customers, resulted in fewer opportunities to secure market power through taking an arbitrage approach to business were rapidly diminishing.

Moreover, in a traditional commodity business approach, loyalty is minimal between trading partners. This affects the behaviour of companies situated along the entire value chain. It leads to business acquaintances consciously protecting information which they believe their suppliers or buyers could use against them. Each company, even PFA, had developed a 'silo' mentality and refused to share anything but the most basic of information with its suppliers or buyers. However, this created inefficiencies along the chain and prevented any concerted attempt to improve operations or innovate according to market demands.

Furthermore, immense transaction costs resulted from the resentment and distrust that existed between the businesses. These included the spoilage of produce along the entire chain; a constant need to monitor quality at each and every level of the chain due to inconsistency; and suppliers and buyers continually haggling over price. It limited the effectiveness with which new products could be developed and delivered to the market; and the ability to capture value from the market.

The adversarial relationships that existed along the value chain effectively made it impossible for the businesses to rapidly adapt to a changing market and industry. Margins were coming under increasing pressure due to rising costs and prices fluctuated according to supply and demand. Also, the adversarial relationships that existed between companies made them unable to develop the responsiveness necessary to innovate ahead of competitors. Doing so would require a coordinated approach to the development, production, delivery and marketing of products through open sharing of market and performance related information: the very thing that the adversarial relationships discouraged.

Besides consolidation and the resulting evolution in market dynamics, another factor negatively impacting Perfection's success was consumers' changing purchasing habits. Successfully servicing an increasingly discerning consumer required retailers to become more sophisticated in both sourcing and merchandizing. Increasingly, a focus on taste,

consistency, aesthetics, and convenience were becoming more important to a retailers' success than simply offering the lowest price.

For agents, the ability to provide high quality produce with the desired sensory attributes on a consistent basis relied on the very things which a consignment approach to business discouraged: trust, accountability, the continuous exchange of meaningful performance related information, and using the knowledge and expertise of organizations suited along the entire chain to adapt to changing market conditions. Addressing these shortcomings through the adoption of new business practices offered PFA the opportunity to create the knowledge and business capability necessary to supply high quality products to specific markets. The incentive for others along the chain to follow suit would be opportunity it created to capture added value and increase profitability along the chain.

### **5.3 Motivation for Developing a Collaborative Value Chain**

#### **5.3.1 Pricing**

The Wikipedia definition of a commodity is an undifferentiated product whose value arises from the owner's right to sell rather than the right to market. This is because commodities are seen as a range of offerings possessing a similar level of quality, usually in large volumes, and easily accessible: often from numerous suppliers. No longer considering products as mere commodities provided PFA with the opportunity to identify new ways of acquiring the right to capture added value from the inputs and the processes they used to produce, deliver and market products to consumers. Rather than have to waste resources and risk dissatisfying customers through having to manage products that fluctuated in quality and volume, often with little if any notice, they would redesign the value chain to produce the quality and service that their customers desired. Simultaneously, delivering operational improvements enabled producers to create and capture the value necessary to remain economically viable in the face of increasing competition.

Creating sustainable value is not just a function of the product. Many promising varieties fail to reach their potential value because suppliers lack the infrastructure necessary to support their delivery to consumers in the quality to which they are capable. Or varieties are sold to producers through the open market, which results in a flood of products of inconsistent quality onto a market in a style that is unable to capture the available value. The inevitable result is disenchanted producers, lost opportunities, and poor performance. Furthermore, seed breeders are unable to capture the financial returns necessary to support a level of innovation necessary to adapt to consumer demands.

Looking at other industries, PFA realised that economic value could be created from the processes involved in procuring, handling and marketing products throughout the chain. Value would not just come from the product itself, it would come from implementing and maintaining systems designed to better service customers and provide information to suppliers. It would also come from securing legally protected rights to specific varieties, which prevented the flooding of markets and subsequent price reductions. In exchange



for setting a guaranteed minimum sales target for volumes of seed purchased by producers supplying PFA, De Ruiter signed the proprietary rights for the OGT variety to PFA. Ownership of the seed enabled PFA to ensure that OGT would only be grown where and when they wanted by preferred growers, to the required volumes, and that it would only be handled along the entire chain by preferred stakeholders.

This ensured that OGT could reach the end market in consistently high quality. Activities along the chain could be coordinated to increase consumer demand ahead of an increase in supply, or visa versa if supply fell below expected levels. Performance at every level of chain was closely monitored and regularly reported to key stakeholders through written reports, one-on-one telephone calls, or group meetings. Poor quality OGT simply did not make it to the market. Over time, improvements in chain performance led to consumers possessing greater appreciation and, therefore, perceived value for OGTs: for which they were prepared to pay a premium.

Together these factors provided an opportunity to price products according to a reasonably static end market value; not according to a fluctuating commodity basis price that had little relevance to quality (which is how tomatoes are usually priced). PFA had therefore created a system that added value to genetics to which they held the proprietary rights. In turn, PFA and everyone of their value chain partners received greater financial returns through having the ability to provide retail and foodservice customers with higher value products than competing suppliers.

In addition to capturing added value, treating products with greater care and attention reduced the participants' costs to below those usually associated with a commodity trading approach. This meant that margins could be increased along the entire chain. Suppliers also gained through the introduction of a quality-based grading scheme and a grower forum that provided the ability for OGT producers to share insights with each other on ways to better manage their own operations. Through doing so, PFA had also established a 'producer club' where producers viewed their success as partly dependent on the success of other chosen and capable producers – and therefore felt encouraged (even obliged) to share information for the good of the group.

Ultimately, a combination of improved systems and added value meant that everyone benefited from the initiative. Retailers gained from the competitive advantage of having ready access to consistently higher quality products and knowing well in advance if any quality or supply issues were likely to occur. Consumers benefited by having access to consistently high quality tomatoes that were not priced significantly higher than that considered a decent price for commodity tomatoes.

In 2003, in an effort to completely eradicate the price fluctuations that hurt producers and limited their ability to plan financially over the long-term, PFA introduced a guaranteed price to producers of OGT when their crops met the required quality standards. The same approach was targeted at encouraging retailers to limit the extent of price fluctuations that all too often strengthen consumer perceptions that produce is a commodity whose price often exhibits little correlation to its quality. With fluctuations in commodity market

prices, particularly for cherry tomatoes (the closest rival for market share to OGTs), OGT producers commonly received twice the price and higher overall returns than they could if producing cherry tomatoes.

By not supplying into a market typified by fluctuating supply, quality and therefore price, producers regularly earned a premium of up to 100% above prices paid for cherry tomatoes. PFA was able to increase its margins and invest more money into accessing new markets, which offered further opportunities to innovate ahead of competitors. One of those markets was foodservice. When McDonald's was looking for a tasty tomato to include in a soon to be launched range of salads, it approached PFA seeking access to the OGT. It could have accessed cheaper tomatoes elsewhere; however McDonalds knew that taste rather than price would be a deciding factor in encouraging target consumers to repeat purchase a new salad product that they were developing.

### **5.3.2 Information sharing**

The development of closed circle of strategic relationships with major customers and suppliers provided PFA with the opportunity to access what was once considered proprietary information surrounding the market and how operations along the entire chain could be managed to maximize value. Utilizing skills of everyone along the chain enabled information from along the chain to be turned into knowledge and new capabilities that the chain could act upon for mutual benefit. The creation of knowledge, along with ability to act upon that knowledge, also enabled PFA and its suppliers to benefit from the growing power of larger supermarkets. Again, by changing its business model, PFA had positioned itself able to benefit from what it originally considered a negative when attempting to operate as an arbitrator – the growing power of supermarkets. In fact, PFA firmly believed that having a strong relationship with larger retailers would enable PFA to leverage their customers' market presence for their own (and producers') benefit.

An approach that proved particularly effective to facilitate information sharing along the chain, and eventually became a stalwart of OGT's ultimate success was information field days. Attended by key representatives from organizations situated along the entire chain, they provided explicit opportunities for everyone to learn by sharing information as a chain. This in turn helped strengthened relationships and saw the value chain develop into a close-knit interdependent group of committed companies and individuals. Providing separate perspectives from each link in the chain led to the identification of ways to overcome challenges more effectively than if operating as individuals. The meetings also provided opportunities to celebrate victories, further cementing relationships along the entire chain.

The meetings proved invaluable to developing capabilities necessary for the OGT initiative to attain long term commercial success. More than once they provided insights that could not otherwise have been acquired in such a timely and effective manner. One example of how processes were continually improved to the benefit of all involved stem from a meeting held early in the development of the OGT project. Following a comment

that while the tomatoes all looked the same and were grown from the same variety, yet did not taste the same on arrival in Sydney, one producer mentioned that it was almost impossible to prevent itinerant workers from picking some tomatoes too early. As producers had to adhere to strict levels of colour (ripeness) when packing the tomatoes to ensure consistency of presentation and taste, they left immature tomatoes to ripen in bulk bins before packing into plastic cartons.

While this meant that the tomatoes all looked the same on arrival in Sydney, because tomato sweetness (brix) does not increase after harvest, immaturity picked tomatoes never achieved the same taste as those harvested correctly. While the difference was quite obvious, and the cause of the problem had been identified, solving it was another issue. A process needed to be established for ensuring the consistency of harvested tomatoes.

Many of the grape tomatoes were harvested by students who tended not to settle in one place for more than a few weeks, so formal training was impractical. Instead, it was decided that a full colour, legal-sized sheet of paper showing the correct size, colour and characteristics of tomatoes sought for harvest would provide immediate guidance for the pickers on which fruit they should (and should not) pick. Furthermore, the sheet could be expanded to show examples of fruit that would never reach the desired quality. Instructions were given for these to be picked and thrown on the ground in order to preserve resources that the crop could invest in the production of the necessary high quality fruit. What could have taken many pages of writing and hours of training to achieve was accomplished by a one sided sheet, presenting life-sized colour photographs and a few bullet points.

### 5.3.3 Coordination of operations

The competitive strength that stems from coordinating an entire chain is borne out by the OGT initiative. PFA had identified a variety of grape tomato that they believed would offer consumers the attributes that they sought the most and provided producers with the productivity they needed to remain financially viable. A strategic alliance had been struck between Rijk Zwaan (RZ), the seed company that owned the variety rights in Australia, the original plant breeders De Ruiters (DR), and PFA. The next task was to allot roles and responsibilities amongst the strategic partners as deemed necessary to forming an effective value chain to capture commercial opportunities. By identifying and communicating everyone's roles and responsibilities along the chain, including how performance would be monitored, everyone was made accountable to the entire partnership. Making people accountable is critical to achieving commercial success and ensuring value chain partners work as a coordinated team.

Over time, the knowledge and capabilities that developed from the partnership enabled PFA to develop what was essentially a highly effective two-fold approach to supply. Larger corporate retail and foodservice customers were supplied directly through specialized logistic facilities. Smaller customers would be supplied through market stands or warehouses, where deliveries could be aggregated to improve economies of scale. As PFA developed specialized products, this approach also heightened customer 'switching

costs', making them more likely to use PFA as their sole produce supplier. PFA would no longer be an arbitrator that survived through acting as the choke point for information flowing from either end of the chain. It would strategically embed itself in the value chain by coordinating, not preventing, information exchange and operations along the entire chain. Facilitating a greater exchange of information could also be used as a catalyst for motivating innovation according to specific market demands.

PFA would handle the post-harvest operations. The alliance partners would together monitor ongoing trials, varietal developments and provide producers with agronomic support. PFA and RZ would jointly manage production arrangements. RZ and DR would provide the technical support as necessary. By identifying specific roles and responsibilities and sharing performance related information, a process had been established for ensuring accountability amongst each the different partners and the performance they would need to attain to remain part of the alliance. While the genetics provided the basic resource behind the chain's success, it was the knowledge resource created through the sharing of information that made the chain sustainable.

Together, the three companies identified the most appropriate growing areas and potential producers needed to produce guaranteed year-round supply. At regular intervals, the group met to estimate the size of production area required and, as they were sourced from Europe, the extent of seeds required for the forthcoming year. This enabled PFA and its partners to move forward in the surety that they had access to a large consumer market. Woolworths also assisted in estimating the potential market and overall production requirements. To provide the ability to coordinate and execute transport, packaging, and delivery arrangements with precision, a strategic alliance was formed with a logistical provider.

Time also proved that the most suitable producers were not long time tomato growers. They tended to have entrenched ideas on tomato production and were not suited to trailing new ideas or learning as a group.

#### **5.3.4 Governance and conflict resolution**

The best value chain governance models are based on a 'carrot and stick' approach. Commercial incentives encouraged the entire chain to follow suit with PFA's vision for the OGT. The proprietary nature of the OGT project, with PFA possessing the seed rights, meant that producers were contracted to only grow a certain variety of grape tomato that could only be marketed through PFA. That meant that PFA was able to balance supply with demand. In conjunction with its major retail and foodservice customers, PFA developed twelve-month rolling demand forecasts. PFA then worked with seed companies and producers to develop production schedules that were 20 percent higher than forecasts. This gave a margin of error and spread the risk of experiencing demand spikes that could not be met, or experiencing supply shortages. Consistent prices, effective grading, and market surety all worked to lessen the likelihood of conflicts

occurring at any point along the chain. It was in everyone's interest to work collaboratively.

Producers were paid on quality. They were penalized on poor quality through discounts. If quality proved particularly poor, their produce was simply rejected. Resentment if produce was discounted or downgraded was managed through the application of a uniform and widely communicated grading structure implemented across the entire chain and supported through end of season reporting through written and verbal communications: commonly delivered in group settings. This approach also led to the development of a uniform culture and proactive communication style developing across the value chain partnership. The result was greater openness and transparency at all levels of interaction between PFA and its business partners, and no nasty surprises. This helped further strengthen relationships horizontally between the 50+ producers and vertically along the chain, leading to continual improvements. The creation and sharing of knowledge also empowered everyone to look for new opportunities to add further value.

To acquire maximum competitive advantage from its redefined strategic intent, PFA introduced a company wide human resource (HR) policy that through a system of affording responsibility and accountability to individual people and teams, with rewards given for achieving designated objectives, empowered people to achieve. This was partly achieved by hosting workshops and conference calls involving all PFA employees, at which specific objectives and completion dates were established. Employees and owners alike became answerable for the completion of activities identified during sessions hosted by an independent third party facilitator.

The open sharing of strategically and operationally important information throughout the PFA enterprise and creating a critical mass of individual experts from fields relating to the development, production, delivery and marketing of OGT had established what academics term "a closed system". Rather than a company orientated around separate functional units such as research, production, marketing and accounts, PFA evolved into a company whose governance structure was orientated around the entire process of researching, producing, delivering, and marketing high quality products. HR, financial accounting and quality assurance were support services, not separate functions. Functional units did not exist in isolation. The resulting consistency and empathy across all PFA operations led to the stronger development of relationships with business partners along the chain too.

#### **5.4 Results of Value Chain Collaboration**

Taking a systems rather than functional approach to operations performed along the chain has enabled PFA to exert greater control over the overall chain without establishing a bureaucracy which would have stifled performance. Its value creating efforts have strengthened relationships and reduced financial uncertainties along the chain, in turn facilitating faster, more effective and commercially-significant innovation. The strong governance system employed to coordinate the OGT initiative has discouraged any

member of the chain from exhibiting the opportunistic behaviour common to commodity markets and which results in high transaction costs and limits the opportunity to extract economic value from the market. This change in behaviour is illustrated by producers consciously acknowledging that they need to work together and openly share information necessary to increasing the capability of all producers to increase the quality and consistency of tomatoes produced under the OGT initiative, and do so cost effectively. They no longer compete against each other: they compete against other value chains.

For PFA, replicating lessons learnt from the OGT initiative across its entire operations has enabled the company to establish closer more effective links with over two thousand producers and significantly reduce costs across its entire business. Many producers are also attaining far greater levels of profitability than previously. A number have expanded acreage as a direct result of supplying markets through PFA. PFA's own profitability has increased markedly – which is particularly significant, given its bankruptcy in 1992. Retailers and foodservice operators are benefiting. As are the seed companies. Many have gone onto develop new successful value chain alliances with PFA for other products, as well as with other companies. PFA has successfully launched over 35 products using the exact approach.

The case also proves that access to commercially valuable information relies to a great extent on establishing constructive relationships with business partners. Constructive relationships have become a key factor in PFA's success. PFA has purposely developed and maintained constructive relationships with retailers and foodservice customers, seed companies, nurseries, producers, and logistic providers. All are crucial to enabling PFA to facilitate a value chain that is able to adapt to market needs faster and more profitably than their competitors. The players share strategically important information in the knowledge that it will be kept within the chain to achieve mutually beneficial competitive advantage for everyone. This leads to improved coordination and innovation at all levels of the chain, allowing the chain to rapidly react to changes in the market or individual customer requirements.

Gaining access to what was once considered secret information, along with the development of capabilities to act upon that information as a coordinated value chain, is a critical success factor in achieving sustained commercial success. PFA has used this approach to evolve into the facilitator of a highly tuned value chain network that executes well planned decisions with precision by sharing necessary information in a timely and accurate manner across critical levels of the chain. The results speak for themselves.

Improvements in the coordination of operational, financial, marketing and research activities have resulted in increased profitability and competitiveness. Systems have been introduced to guarantee supply and minimize price fluctuations. Producers and PFA employees work together to monitor quality throughout the year and benchmark the performance of operations in order to continually improve and adapt to changing market situations. A once failing company has become Australia's second largest produce marketer. The financial fortunes of PFA and many of its trading partners have benefited greatly too.

	<b>Perfection Fresh Australia (PFA)</b>
<b>Marketing Context</b>	<ul style="list-style-type: none"> <li>• Development of a premium tomato leading to overall category growth</li> <li>• Adding excitement to a predominately commodity category</li> <li>• Capturing value through more effective marketing</li> <li>• Benefiting from the increasing power and capability of retailers</li> <li>• Placing greater consumer focus on quality, not lowest price</li> </ul>
<b>Initial Conditions</b>	<ul style="list-style-type: none"> <li>• Company close to bankruptcy, competing against 150 similar companies</li> <li>• Commodity tomato marketer, protecting market through price discounts</li> <li>• Selling on consignment, accepting little accountability for its actions</li> <li>• Changing retail market, leading to fewer players</li> <li>• Producers receiving lesser and fluctuating returns</li> </ul>
<b>Critical Success Factors</b>	<ul style="list-style-type: none"> <li>• Choosing partners will great care, based on historical determinants</li> <li>• Facilitating open exchange of information along the chain</li> <li>• Identified roles and responsibilities, communicated along the chain</li> <li>• Strength through accepting and expecting responsibility / accountability</li> <li>• Developing and enacting strong codes of governance</li> <li>• Rewarding for quality, penalizing for poor performance</li> <li>• Measuring, comparing and communicating grower performance against defined metrics – both as individuals and compared to the group average</li> <li>• Ownership of seed rights enabling long term planning and execution</li> <li>• Carefully choosing members of the chain</li> <li>• Monitoring and communicating performance along the chain</li> <li>• Celebrating success as a team</li> <li>• Breaking down barriers between functional departments within PFA</li> </ul>
<b>Value Chain Collaboration</b>	<ul style="list-style-type: none"> <li>• Clearly and openly communicating performance expectations</li> <li>• Showing leadership through commitment to the partners</li> <li>• Developed information sharing strategies and processes</li> <li>• Standardizing quality according to market demands</li> <li>• Producer payment based on quality, with guaranteed prices for quality</li> <li>• Information used to maximize market opportunity offered by OGT genetics</li> </ul>
<b>Results</b>	<ul style="list-style-type: none"> <li>• Through applying lessons learnt across its entire business, Perfection Fresh Australia’s annual growth has averaged 12.8 percent since 2003</li> <li>• Increased profit to growers, PFA, and its other partners</li> <li>• OGT sales expanding at an average of 48.5 percent annually, even though commodity fresh tomato sales are largely stagnant</li> <li>• Continued investment in breeding new varieties that appeal to consumers</li> <li>• Increasing share of the retail market, even though competing against other grape tomato varieties</li> <li>• Development and proliferation of OGT as a brand</li> <li>• SIAL award for the World’s Best New Fruit and Vegetable Product, 2003</li> <li>• Lessons learnt replicated across entire business</li> <li>• Over 30 new products successfully launched in a similar fashion</li> </ul>

## **6.0 Milk Marketing in the Upper Midwest US**



The Upper Midwest region of the US (Minnesota, Wisconsin, the Dakotas and Iowa) has long been an important milk and dairy product supply region in the US. It is also a region of relatively sparse consumer population relative to milk production capability. As such, the region evolved as a surplus producer of milk with typically the lowest milk price in the US, and facilities developed to manufacture dairy products (mainly cheese and butter/skim milk powder) that could then be transported to markets throughout the US.

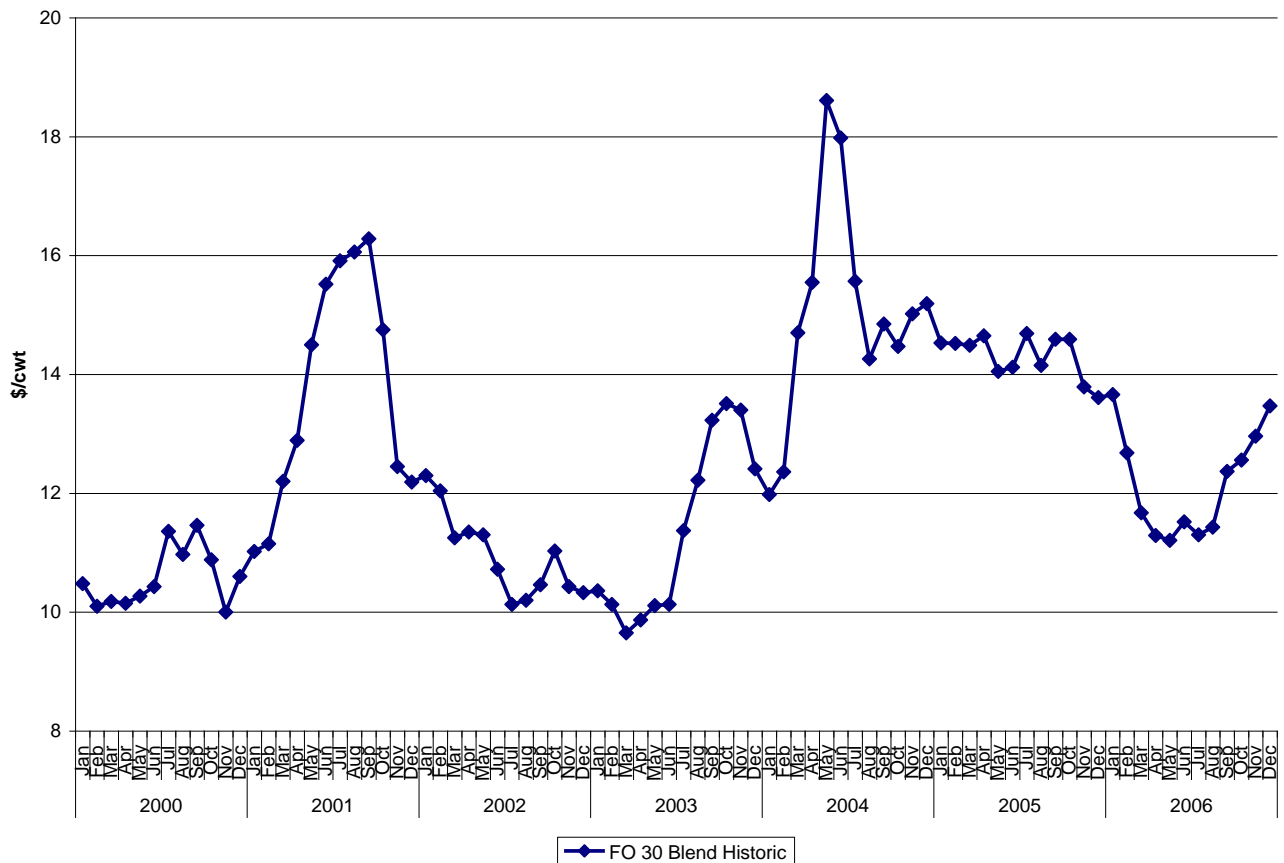
The changes in this long standing market dynamic changed in the 1980's and 1990's. This case describes how a dairy processor (a producer-owned cooperative) developed a collaborative relationship with dairy farmers to maintain its efficiency and profitability in the changing competitive dynamic.

## 6.1 Marketing Context

Prior to the late 1990's when it was overtaken by California, Wisconsin was the leading US state in terms of milk production. Minnesota typically ranked fourth or fifth among US states in terms of milk production. Taken together, the Upper Midwest states (Wisconsin, Minnesota, South Dakota and North Dakota) have always been the leading dairy region in the US. Milk marketing in the region is facilitated by federal marketing orders which establish minimum prices paid by processors as well as milk quality and delivery standards, and operate producer price pools. Processors in the region are a combination of producer cooperatives, privately held firms and some publicly traded firms. Competition among Upper Midwest processors for supplies of raw milk is aggressive, as described below.

Milk processing in the region spans milk bottling, cheese manufacturing, butter and skim milk powder manufacturing, and manufacturing of ice cream and soft products. However, cheese production is the mainstay in the region, accounting for 70% or more of milk marketed. Thus, the blended milk price received by farmers is sensitive to changes in US cheese prices. This is significant, since cheese prices and the underlying milk supply and demand conditions factoring into cheese manufacturing in the US are highly volatile. Figure 6.1 below provides an indication of the situation. Since 2000, federal order blend prices have fluctuated significantly and erratically. The figure shows that Upper Midwest milk prices have ranged from over \$US 18/cwt to less than \$US 10/cwt. Moreover, very large price fluctuations in excess of \$US 1/cwt regularly occur on a month-over-month basis. Throughout the 1990's until about 2005, dairy futures contracts were still developing and were not used extensively by producers. Dairy farmers thus faced significant price risk in managing their operations that was not readily mitigated. The result was a decreasing milk supply.

**Figure 6.1 Historic Producer Blend Milk Prices, Upper Midwest-Federal Order 30, \$US/cwt, 2000-2006 Monthly**



## 6.2 Initial Conditions

Starting in the 1980’s, milk production in the Upper Midwest region leveled off and began to decline. This came about as many small dairy farms exited the industry, and others switched into other enterprises. The situation persisted through the 1990’s and early 2000’s, and it created a situation in which excess dairy processing capacity existed in the region. In order to retain volumes in processing facilities, processors began to aggressively compete with one another for the now scarce milk supply.

This situation created a new dynamic in the Upper Midwest dairy industry:

- Competition between processors resulted in price premiums being paid for farmers’ milk. The best indicator of this was that Minnesota and Wisconsin went from being the low-price point for milk in the US to among the highest-price milk markets
- Federal Milk Marketing Orders establish minimum milk prices. However, actual prices paid by processors were observed to be well over the regulated minimum.
- Local price cycles became evident. This occurred as competition in local milk marketing zones escalated prices to levels that were unsustainable for competing processors to pay. As a result, eventually a processor (or individual plant) would

close or cut back volume purchased. Following the cut back, local prices would decline. The price cycle would resume as farm milk production further declined.

Within the scope of price premiums that resulted from processor competition, a number of specific pricing initiatives were employed by processors. These included the following:

- Pervasive use of milk hauling subsidies. Processors would blend the cost of hauling into the base milk price offered to producers, such that the full cost of hauling was not transparent.
- Competitively-driven quality premiums. Processors would fragment base prices into increased payment proportional to somatic cells and bacteria, with different quality premium programs used in different geographies according to the needs of plants supplied
- Use of volume premiums to attract and retain large high volume Grade A producers. Processors paid higher unit prices for higher volumes supplied according to a volume schedule
- Forward pricing arrangements. Processors locked in prices for future delivery, or offered prices to cushion price volatility risk.

The above measures attempted to provide short-term relief from processing volume adjustments. However, none had proven successful in materially expanding the milk supply; for the most part they were procurement gimmicks. For one large cooperative Upper Midwest dairy processor, this was unsatisfactory. As the milk supply continued to decline in the Upper Midwest, the processor was facing pressure to liquidate its processing facilities, abandon its traditional suppliers in the Upper Midwest, and move its operations to California and the western US, where milk production was increasing.

### **6.3 Motivation For Coordination**

The processor was driven to collaborate more closely with its producer suppliers as the milk supply situation in the Upper Midwest tightened. It was observed that either the processor needed to take an active role in increasing the profitability of its farmer-suppliers, or needed to close its facilities and exit the region. It decided to increase the profitability of Upper Midwest suppliers. However, it had to do this within a very competitive processing environment; in particular, it could not merely increase the milk prices it paid in order to increase farmers' profitability, because its margins would then suffer. Instead, it devised a strategy of close collaboration involving technical and management assistance, and price risk management.

### **6.4 Development of Value Chain Collaboration**

The processor decided that, rather than discontinue its Upper Midwest US operations, it would work with producers to increase the milk supply available to it for processing. In order to improve the viability of its Upper Midwest plants, the processor initiated a means to increase farmer investment in new and more scale-efficient dairy farm facilities through closer collaboration. The processor developed mechanisms which would allow

farmers to make new investments in barns, equipment, and cattle which could operate at improved profitability and create additional supply for the processor's plants.

#### **6.4.1 Investment in Farm Facilities**

The processor developed a range of services that were offered to producers interested in dairy expansions. This included the following:

- Facility engineering and design
- Construction arrangements
- Facilitation of environmental permitting/approval process
- Leasing of cows
- Farm management assistance

The processor developed a program to which producers could apply for assistance in expanding dairy operations. For example, under one program, new dairy facilities to milk 1,100 cows were constructed. The processor provided all the technical design and construction support, and obtained permits for building on behalf of the producer. The processor also helped obtain financing for the project, but did not finance the project itself. Producers had to qualify for the program by participating in a screening program operated by the processor to ensure that the expansion was consistent with their family goals and management style.

#### **6.4.2 Pricing**

In order to facilitate investment in new dairy facilities, a specialized price mechanism was developed. The primary purpose of the price mechanism was to insure farmers' debt servicing capacity on new dairy investments under the program. The pricing was implemented as a 5-year contract, and the structure of this contract provided much of the strength that allowed banks to lend for the dairy investment projects themselves.

The pricing worked as follows. First, producers were paid under the processor's standard producer payment system with respect to base price, component tests, milk quality, etc. This pricing generally tracked the milk marketing order pool prices, with competitive adjustments.

In addition, a formula price scheme was developed that operated in parallel to the generic milk pricing system operated by the processor. It operated as follows:

- A feed cost formula was developed based on specified quantities of corn, hay, and prepared dairy ration. The formula was indexed to a specified milk production level and was priced using publicly available USDA price data
- To the feed cost formula was added a fixed factor. The fixed factor could be chosen by an enrolling producer from a menu of options.
- An index milk price was developed. The milk price used was obtained from the USDA, was publicly available, and was representative in terms of component tests, milk quality, etc.

- If the index milk price fell below the feed cost plus the fixed factor, the processor paid out the difference as a payment to the producer.
- The producer paid a fixed fee per volume of milk shipped to the processor for this price protection. The fee was dependent on the level of the fixed factor chosen; the larger the fixed factor, the larger the fee.

The key aspects of this price mechanism were the following. First, the index milk price was established to be publicly available and yet be highly correlated with the producer's actual milk price received. Thus, it cushioned milk price risk relevant to the individual producer. Secondly, producer payments could be triggered by decreasing milk prices, increasing feed costs, or both. Third, the producer could choose the desired level of protection and the fee paid. Flexibility was introduced into the system such that, if the producer wanted different levels of the fixed factor in each year over the five year term, the fee could be averaged over the period. The fee collected by the processor was deposited in a contingency fund that was used to pay out claims to producers. Finally, a provision was included that required at least half of producer funds paid in to the pricing program to be returned to producers, either as triggered claims or as a lump-sum payment.

#### **6.4.3 Information Sharing**

Information transfer was central to the collaboration. Producers were required to provide periodic financial statements as part of the program, and to inform the processor of any problems or changes in their operation. Producers were also required to maintain specific standards in terms of milk production and milk quality in order to be part of the program. The processor provided cost benchmarking services and on-site farm management assistance to participating producers. For intellectual property reasons, producers were required not to disclose the nature of their contractual arrangement with the processor or the details of the pricing mechanism.

#### **6.4.4 Governance**

The basic governance of the relationship was a contract between the producer and processor. The contract specified the term, pricing mechanism specifics, and the obligations of producer and processor.

### **6.5 Results of Value Chain Collaboration**

The program has resulted in significant changes in the processor's milk volumes procured, and in the Upper Midwest dairy industry. In the ten years since introduction, more than 200 dairy farm investment projects have been carried out. The expansion of dairy herds by over 100,000 cows resulted from the above, and the resulting increase in production was over 2 billion pounds of milk per year. As a consequence of the initiative, there are many more scale efficient and low-cost dairy farms operating in the region.

This occurred against an overwhelming trend to the contrary, as the Upper Midwest continued to decrease in dairy cows, milk production, and dairy farms. This is illustrated in Table 6.1 below, using the state of Minnesota as an example. Between 1992 and 2006, total milk production decreased from almost 9.9 million pounds to about 8.4 million pounds, and the number of dairy cows decreased from over 650,000 to 450,000. The net result was a loss in the number of dairy farms from over 14,000 in 1992 to about 5,400 in 2006. Within the processor's collaborative system, the number of cows and milk production increased sharply. Finally, the processor has maintained and grown its Upper Midwest dairy operations, and has invested in other parts of the US.

The critical factor influencing the success of the strategy has been the processor's focus on making farmers profitable in order to make itself profitable. Consistent with this, the processor has been willing to provide the full range of information and services to make dairy operations more profitable, and it has developed services that others were not providing. This was particularly the case with the price risk management component, which had the effect of facilitating investment in dairy farm operation that otherwise could not have occurred from a credit access perspective.

**Table 6.1 Minnesota Dairy Industry Statistics**

	<b>Milk Cows (Thousand)</b>	<b>Production (Million lbs)</b>	<b>Farms</b>
1992	653	9,858	14,600
1993	635	9,693	13,500
1994	609	9,342	12,600
1995	592	9,409	11,800
1996	583	9,440	10,900
1997	569	9,210	10,100
1998	551	9,275	N/A
1999	545	9,478	N/A
2000	534	9,493	8,287
2001	510	8,812	7,676
2002	487	8,458	6,985
2003	473	8,258	6,466
2004	463	8,102	5,969
2005	453	8,195	5,638
2006	450	8,364	5,384

**Table 6.2 Summary**

<b>Marketing Context</b>	<ul style="list-style-type: none"> <li>• Commodity milk processor</li> </ul>
<b>Initial Conditions</b>	<ul style="list-style-type: none"> <li>• Declining raw product volume</li> <li>• Lack of new farm investment</li> <li>• Pressure to exit region</li> </ul>
<b>Value Chain Collaboration</b>	<ul style="list-style-type: none"> <li>• Facilitation of producer investment</li> <li>• Technical assistance</li> <li>• Financial assistance</li> <li>• Price mechanism to manage risk</li> </ul>
<b>Results</b>	<ul style="list-style-type: none"> <li>• Increased investment in dairy farm facilities</li> <li>• Increased milk volume for processor</li> <li>• Processor remained in region</li> </ul>



## 7.0 Observations and Analysis of Cases

The above case studies describe a range of contexts in which collaboration developed among value chain segments to facilitate an objective. This section places the observations from the above case studies in context.

### 7.1 Comparison of Case Studies

Table 7.1 below provides a comparison of the case studies across the principal bases for comparison described in Section 2. The columns of the table refer to each of the cases and the rows present the bases of comparison. Based on the table, the following observations are evident:

- The range in the marketing context was not significant in determining the nature of value chain collaboration. Some of the cases dealt with what are more commodity-oriented products, such as processing tomatoes and dairy processing, while others dealt with premium high volume products- premium bread and the Original Grape Tomato (OGT)
- The initial conditions that lead to value chain coordination were remarkably similar. In every case, it appeared that a crisis (or near crisis) occurred before the value chain parties were induced to collaborate. Following collaboration, conditions improved relative to the initial situation. There seemed to be an implicit preference for value chain segments to retain their independence until their hands were forced into collaboration, even though the collaboration was mutually beneficial.
- Value chain coordination appeared to fragment into two related components- objective information and pricing contingent on that information:
  - Objective information, usually well beyond what was initially present, formed the basis for collaboration. In most of the cases, investment in credible measurement and data tracking was the key component. In the processing tomato case, third-party verification of acreage combined with credible yield data was fundamental. In the Warburtons case, verification of certified seed, transportation protocols, and a unique grading system were the cornerstone. The information sharing processes established by Perfection Fresh allowed it to standardize quality and reduce costs along its system. Information moved differently in the dairy marketing case- from processor to producer in the form of engineering and management expertise
  - Pricing/compensation was linked to information. In the processing tomato case, pricing was explicitly linked to yield, which required third-party information. Similarly, the PFA case used quality information as the basis for pricing. The grading system developed by Warburtons determined pricing for wheat. This was less evident in the dairy case.
- The results showed that, in all cases, in order for one party to be made better off, each or the players were made better off. In other words, in order to generate benefits, the benefits needed to be shared. In all cases, there were impacts in terms of a larger

revenue base for individual producers as well as a larger overall market. Particularly in the PFA case, cost savings throughout the chain freed up a greater share of overall revenue to share between and incentivise collaboration between the partners.

- Collaboration invariably was initiated by one of the parties in the chain, rather than as a joint venture. The initiating party tended to take ownership and responsibility for the collaborative strategy, and required investments. For example, in the PFA case, PFA made the investment in information technology that drove the innovation and established quality standards; these could have been established by producers or retailers. Similarly, the OPVG drove the development of processing tomato marketing- for the most part, its development was not a collaboration with processors.
- Three crop value chains and one livestock chain were evaluated as cases. There did appear to be differences in terms of information sharing according to crops vs. livestock.
  - In general, there was greater information transfer regarding the nature of the product in the crop cases compared with the dairy marketing case. The dairy marketing case involved information sharing related to engineering and management information, rather than focusing on sharing information on product quality or downstream value.
  - These differences can largely be explained in terms of objectives. In the three crop cases, a key aspect of collaboration was product quality- either directly, or indirectly in terms of developing better yielding and improved processing genetics. In the dairy case, the objective of collaboration was to grow the volume supplied and investment in productive assets.
  - Thus, collaboration in the crop cases involved collection and distribution of data on product quality, and tying of pricing to the quality data. In the dairy case, information related to engineering, management and technical data sharing, and pricing was designed to mitigate risk.

## **7.2 Conclusions**

The above results show that value chain collaboration can revolutionize agricultural marketing. In one case, collaboration probably saved an industry; in another, it saved the export market. In two cases, individual firms were probably saved by the collaborative efforts they initiated.

The principal factor evident throughout the cases is sharing of information. In several of the cases, information was jealously guarded prior to the initiation of the collaborative arrangement. Under collaborative arrangements it appeared that integrity of information, and simultaneous sharing of information among participants was of great importance. With regard to information integrity, efforts were made to use third-party information sources (dairy processing) for purposes of transparency and so that no perception of conflict of interest occurred. Similarly, the OPVG accessed a third-party to measure

fields for acreage calculations to avoid any potential conflict from it measuring fields. Overall, as information was shared, it improved the incentive for segments to work together since results at each stage could be tracked and improvements worked on jointly.

The incentive effects created by sharing information were greatly empowered when they were tied to pricing. This was most evident in the processing tomato and PFA cases. When Ontario tomato processors realized that investing in Ontario tomato genetics had the effect of reducing the tomato prices they had to pay (as well as improving the profitability of growers), the opportunity created by information sharing was seized upon. Similarly, the information backbone created by PFA to improve product quality became much more effective when the information was used to price on the basis of maintaining processes that assured a consistent increase in quality.

**Table 7.1 Summary of Case Studies**

	<b>ON Processing Tomatoes</b>	<b>Warburtons</b>	<b>Perfection Fresh Australia (PFA)</b>	<b>US Dairy Processor</b>
<b>Marketing Context</b>	<ul style="list-style-type: none"> <li>• Commodity product</li> <li>• Used in manufacturing</li> </ul>	<ul style="list-style-type: none"> <li>• Premium bread product</li> </ul>	<ul style="list-style-type: none"> <li>• Development of premium tomato</li> </ul>	<ul style="list-style-type: none"> <li>• Commodity milk processor</li> </ul>
<b>Initial Conditions</b>	<ul style="list-style-type: none"> <li>• Market protected by tariffs</li> <li>• Productivity in farm product lagging</li> <li>• Antagonistic relationship between producers and processors</li> </ul>	<ul style="list-style-type: none"> <li>• Wheat quality deteriorating</li> <li>• Supplier not sensitive to customer preferences</li> </ul>	<ul style="list-style-type: none"> <li>• Commodity tomato marketer</li> <li>• Selling on consignment</li> <li>• Changing retail market</li> <li>• Near bankruptcy</li> </ul>	<ul style="list-style-type: none"> <li>• Declining raw product volume</li> <li>• Lack of new farm investment</li> <li>• Pressure to exit region</li> </ul>
<b>Value Chain Collaboration</b>	<ul style="list-style-type: none"> <li>• Initiative to improve processor profitability</li> <li>• Pricing contingent on yield; discount schedule</li> <li>• Processor development of genetics</li> <li>• Annual negotiation of prices, terms</li> </ul>	<ul style="list-style-type: none"> <li>• Distinct grading system</li> <li>• Producer premiums</li> <li>• Verification of certified seed; handling protocols</li> <li>• Benchmarking</li> </ul>	<ul style="list-style-type: none"> <li>• Developed information sharing strategies and processes to standardize quality</li> <li>• Producer payment based on quality</li> <li>• Information used to maximize market opportunity offered by OGT genetics</li> </ul>	<ul style="list-style-type: none"> <li>• Facilitation of producer investment</li> <li>• Technical assistance</li> <li>• Financial assistance</li> <li>• Price mechanism to manage risk</li> </ul>
<b>Results</b>	<ul style="list-style-type: none"> <li>• Increased tomato yields; more consistent quality</li> <li>• Decreased tomato prices</li> <li>• Increasing producer revenue</li> <li>• Increased investment in processing</li> </ul>	<ul style="list-style-type: none"> <li>• Improved quality in Canadian wheat purchased</li> <li>• Improved producer efficiency</li> <li>• Increase in volume of 200,000 tonnes</li> </ul>	<ul style="list-style-type: none"> <li>• Increased profit to growers, PFA</li> <li>• Increased retail market share</li> <li>• Development and proliferation of OGT</li> </ul>	<ul style="list-style-type: none"> <li>• Increased investment in dairy farm facilities</li> <li>• Increased milk volume for processor</li> <li>• Processor remained in region</li> </ul>

Analyse de « Cas de Collaboration entre les maillons d'une filière agroalimentaire permettant de saisir les demandes du marché »

