

Market Study of the Polish Tart Cherry Industry
Final Report

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Method and Report Structure

The information presented in this report was gathered from a combination of secondary (desk research) and primary (listening sessions, survey) sources. The source of information for all statistical charts contained in the report is indicated at the base of each table and a list of references and source for further information is included at the end of the reports.

The interviews all took place in Poland and comprised:

- 9 cherry producers
- 2 grower associations
- 1 crop advisor
- 4 buyers including brokers
- 3 input suppliers
- 3 State Research Facilities
- 3 food processors
- 4 retailers
- 4 academic departments

The Report consists of:

- an Executive Summary
- a general overview of the political, economic and agricultural environment in Poland
- a detailed review of the Polish supply chain for tart cherries
- an analysis of foreign trade in cherries, both imports and exports
- key factors that will impact developments in the tart cherry supply chain in the future
- appendices that list contact information for firms and academics in the Polish tart cherry industry, sources of additional information, slides and earlier reports to the industry

Executive Summary

1. Poland is the world's second largest producer of tart cherries, behind only the Russian Federation. According to FAO data, average production between 1999 and 2004 was 379 million pounds. Over the same period, U.S. production averaged 235 million pounds (269 million pounds when 2002 is dropped from the average). Over this period production ranged from a low of 307 million pounds in 2000 to a high of 451 million pounds in 2004.
2. Tart cherry production in Poland has been increasing. In 1990 Poland had less than a 10 percent share of world output. By 2004, the share approached 20 percent. Although weather events will influence yields from year-to-year, the average annual growth rate in output between 1990 and 2004 was 8.5 percent.
3. Both yield and acreage harvested in tart cherries has been increasing. The average annual growth rate in yield between 1990 and 2004 was 4.4 percent. Over the same period the average annual growth rate in acreage harvested was 3.5 percent. Average reported yield is 3698 lbs/acre with a range of 2812 in 1991 to 4813 in 2004. Average reported acreage planted is 88,250 with a range of 57,328 in 1990 to 98,758 in 2004.
4. There is some evidence that the growth in area harvested has begun to slow. Reported statistics indicate a decrease in both 2002 and 2003, with only a minimal increase (less than 1 percent) in 2004. It should be noted that this does not imply that new plantings are not occurring, but is more likely reflective of removal of old orchards. Newly planted orchards are most often designed to be very intensive in production.
5. There are a large number of small farms in the Polish tart cherry sector. In 2004, there were over 133,000 tart cherry growers in Poland. Almost 94 percent had less than 3 acres of cherries. Only 78 farms were reported with more than 25 acres. Growers have been reluctant to organize although some beginning efforts are now underway.
6. Labor is currently plentiful and cherries are hand-harvested. There are both immigrant (Ukraine, Russia) workers and domestic workers who often have vacation time from other jobs during the period of cherry harvest.
7. Currently brokers play a major role in the supply chain. They often provide harvest labor, equipment, and transportation. They are also the source of supply and pricing information at the grower – and sometimes – buyer end.
8. A large portion of the cherries harvested in western Poland are exported fresh to be processed in Germany. Cherries harvested in the eastern regions are normally processed in Poland.
9. There is a wide diversity in the domestic processing sector with some older firms remaining with a very local focus and some new (or refurbished) firms with a focus on export markets, particularly to the EU. Foreign direct investment is evident in the

processing sector. There is some evidence of direct contracts between growers and processors.

10. The genetics and nursery sectors appear particularly well-organized and are active with sales throughout the world as well as within Poland.
11. The retail food sector is very concentrated with large amounts of foreign direct investment in multinational chain stores. Quality control and consistency were high and a focus on retail produce buyers.
12. Although financial resources are clearly limited, the state supported research institutions continue to invest in tart cherry research. There are extensive variety collections and trials in each region of the country and experiments related to orchard management continue.
13. Polish consumers appear to have a particular affinity for tart cherries. They are found in many food products (both retail grocery and restaurant) and are consumed fresh in limited amounts during the harvest season. There appears to be some opportunity for growth in dried cherry products and products with a well-defined health-benefits campaign.

Political and Economic Setting

Geography and Population

Poland has a geographic area of 312,685 km² and is the fifth largest member of the EU. The population of Poland is approximately 38,635,000 (July, 2005). Poland is bordered by seven countries and has northern ports on the Baltic Sea. Its neighbors are Russia, Lithuania, Belarussia, Ukraine, Slovakia, Czech Republic, and Germany. Warsaw is the capital of Poland and the country is governed as a Republic. Poland is divided into 16 administrative divisions, called voivodships. The most important agricultural products in Poland, in descending order by value, are: potatoes, all fruits, all vegetables, wheat, poultry, eggs, and pork.



Source: CIA Factbook-Poland, available at <http://www.cia.gov/cia/publications/factbook/geos/pl.html>

Historical Overview of Agricultural Transformation

Following WWII, Poland underwent two important transformations. First, through treaties, Poland's borders were shifted 120 miles to the West, giving Poland portions of Germany and granting Ukraine and Belarus portions of what had previously been Polish territory. Also, as a result of the treaties from WWII, control of Poland was given to the Soviet Union, and ultimately, those in the communist party (Polish Embassy, 2003).

The pattern of land distribution in Poland was different from that in many of the other countries occupied by the Soviets during this period. Land belonging to owners in what had been Germany was redistributed to Polish peasants and the majority of the land in Poland remained in private hands. Between 1957 and 1970, the percentage of arable cropland which was collectivized ranged from a low of 13.2 percent in 1960 to 15.9 percent in 1970. In addition, the stated objectives of the ruling party in Poland at the time were to increase agricultural productivity but also to maintain a peasant-owned system of agriculture supported by farmer organizations and input collectives (Landau and Tomaszewski, 1985).

Cooperatives, state farms, and farmer organizations were formed as distinct modes of agricultural production in Poland. Supply contracts were used by government planners in Poland to direct production and as a way to deliver inputs and technical assistance to farmers. In theory, the contracts were supposed to work well for all agricultural products; however, they were most successful for storable, industrial goods. Horticultural production remained largely private in Poland and production contracts generally failed for perishable products since some processors would refuse to take delivery when harvests were abundant. The main tool used to collectivize farms in Poland was the offer of pensions to land owners who forfeited their ownership in exchange for guaranteed pension income. Rather than forced collectivization, land was gradually collectivized as farmers retired. Between 1970 and 1980, the percentage of collectivized farmland ranged from a low of 16.4 percent in 1971 to 24.2 percent in 1980.

Economic difficulties in agriculture and elsewhere in Poland led to the rise of the Solidarity movement in 1980 (Polish Embassy, 2003). At this time, consumer and producer subsidies reached an unsupportable level and the ruling party decided to move toward a more market-oriented style of socialism. Producer subsidies were such that the government was paying growers as much as three times what consumers were paying for products in the marketplace. In 1982, the Polish government undertook sweeping economic reforms to liberalize prices and to privatize state-owned businesses, with the ultimate goal of increasing efficiency and productivity by making managers directly responsible for the performance of their businesses (Crane and Yeh, 1990). These reforms largely failed when high inflation rates and unhappy citizens forced the government to repeal the efforts. In 1986, the ratio of producer to consumer prices in Poland was 1.8, higher than similar ratios in Hungary and the USSR (Liefert and Swinnen, 2002). More sweeping attempts at market liberalization were undertaken in the late 1980s and early 1990s. The drivers of these reforms were extremely high inflation rates, continuing declines in output, product shortages, falling incomes, and ineffective market structures (Belka, 2001). In 1989, the Soviet Union agreed to officially recognize and share power with the Solidarity party in Poland.

Poland's Transition to a Market Economy

Four periods of transition in business activity followed the Solidarity movement in 1989 (Blazyca and Rapacki, 2001).

1. 1990 – 1992 “transformation recession”

In 1990 the Balcerowicz Plan was adopted in Poland to guide economic and social reforms. This marked the beginning of price liberalization; food prices were liberalized in 1989 with most other prices liberalized by 1990. By 1990, food costs were 28 times higher than they had been in 1988. Subsequently, 1990 and 1991 were marked by falling economic output and GDP with hyperinflation present late in the period. Unemployment increased from nearly zero to 10 percent.

2. mid-1992 to late 1994 “early revival”

Real incomes for Polish farmers during this time decreased by nearly a third compared with incomes prior to the Solidarity movement. This and the previous period were also marked by changing food consumption patterns and changes in the composition of agricultural enterprises as both consumers and farmers moved to those items they could afford to purchase and produce (Liefert and Swinnen, 2002). Small agricultural land holders in Poland were especially hard hit as their sources of agricultural inputs disappeared after the transition.

3. 1994 to mid-1998 “acceleration”

Between 1990 and 1997, per capita consumption of meat, milk, and potatoes decreased while consumption of cereals increased. The livestock sector in Poland shrunk considerably during this period of the transition.

4. 1998 to present

Since 1998, Poland has experienced declining employment and has suffered from low labor productivity. Real interest rates are high and approximately 19 percent of the country's workforce is unemployed. Agriculture has traditionally been a strong sector in the Polish economy. In 2004, 19 percent of the population was employed in agriculture but it contributed only 3 percent to GDP. Growth and investment in manufacturing is outpacing growth in the agricultural sector and inflows of foreign investment are directed primarily at manufacturing.

Agricultural Land Ownership Patterns

The Agricultural Property Agency (APA) is the agency in charge of redistribution of state-owned agricultural land in Poland. After the formation of this agency (granted authority in 1991), land was redistributed as follows:

Table 1. Land redistribution under the APA

Land	Action
2.8 million HA	Leased to 6,000 new farmers
728,000 HA	Sold for expansion of family land
161,000 HA	Transferred free of charge
330,000 HA	Redistributed through “management” or “administration”
616,000 HA	Low-grade land still to be redistributed

Source: Giovarelli and Bledsoe, 2001

From 1992 until 2000, the APA annually sold approximately 100,000 hectares of the land to lessees under the Civil Code. In 2000, this procedure was declared unconstitutional because it violated the rights of local governments to own land.

Today, Polish farmland is increasingly held by private owners. In July 2003, a new set of rules regarding land ownership in Poland were adopted that favor family farms. Land purchases now require an application, farm size is restricted to 300 acres of farmland, and the farm must be operated by a private farmer deemed qualified for the endeavor by the Minister of Agriculture and Rural Development. Foreigners wishing to purchase Polish farmland must also apply for the purchase. In 2003 permits allowed the purchase of nearly 500 hectares (1,200 acres) of farmland, mainly by German citizens.

Between 1995 and 2004 the share of farmland by size has shifted to more small and large farms and fewer medium size farms. Table 2 shows that the percent of farms between 1 and 2 hectares in size has increased as has the share of farms larger than 15 hectares. At the same time, the share of farms between 2 and 15 hectares have decreased. In 1995, the total amount of land in agricultural production in Poland was 20.4 million hectares, but by 2004, this amount fell to 18.5 million hectares.

Table 2. Percent of farms by size in Poland, 1995-2004

Year	Total	Area of agricultural land - Farms				
		<2 ha	2 to 5	5 to 10	10 to 15	more than 15 ha
		% of total				
1995	100	21	33.7	26.6	10.7	8
2000	100	23.8	32.6	23.8	9.9	9.9
2001	100	22.8	33.8	24.3	9.7	9.4
2002	100	26.5	32.2	21.9	9.3	10.1
2003	100	25.8	33	22.1	9.2	9.9
2004	100	26.1	32.1	21.7	9.6	10.5

Source: Central Statistical Office - Poland available at <http://www.stat.gov.pl/english>

EU Accession

On May 1, 2004, Poland joined the European Union, bringing increased market access to the 24 other European Union member countries and most importantly, new government interventions and investments into Polish farms. Poland's accession to the EU has many implications for production and trade in the region, and with the U.S.

Prior to accession, the value of agricultural production from the EU-15 was larger than the value of U.S. agricultural production. The new member countries add 28 percent more population to the EU and 40 percent more arable land. Studies suggest that the two commodity categories most likely to be affected by the accession are beef and grain crops.

More stringent EU standards will likely have a big impact on trade as well. For tart cherries, accession means that Polish manufacturers of cherry products will have to comply with EU manufacturing standards, but it also means open and free access to EU markets once the standards are met. Stringent manufacturing standards may also mean that some small manufacturers who cannot afford to comply with EU standards will go out of business, or be subsumed into larger companies through foreign direct investment or direct buyout.

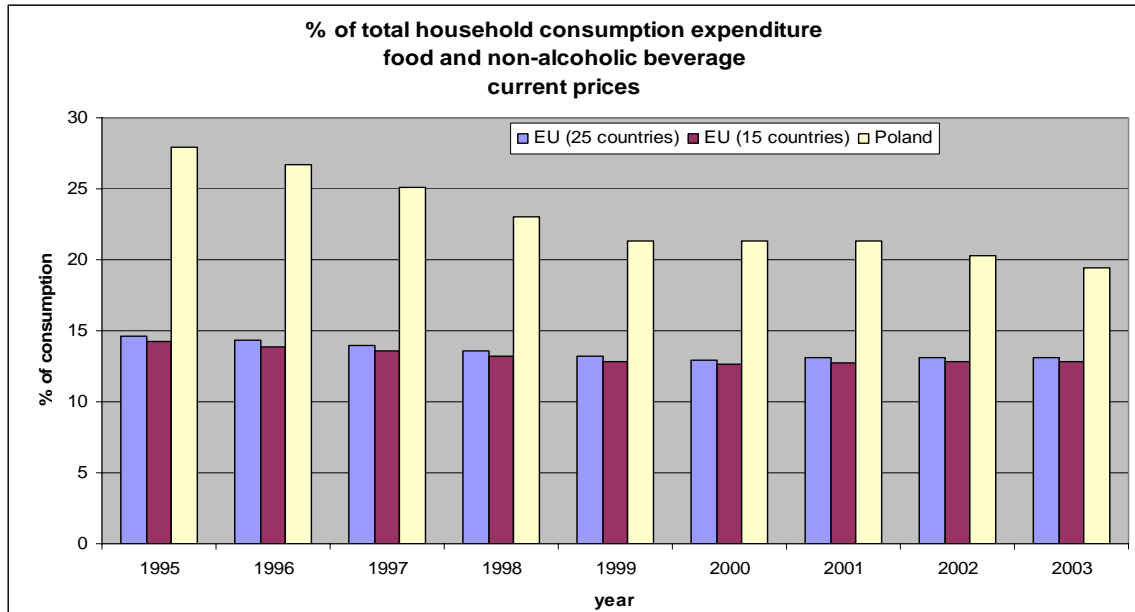
Reforms in the Common Agricultural Policy (CAP), the overarching agricultural support mechanism for the EU, mean that all agricultural producers in the EU will receive support in new forms. In the new CAP, payments for agricultural producers are being transformed from "coupled" payments based on production to fully "decoupled" payments that carry with them multifunctionality requirements. Ultimately, the new CAP should result in decreased payments for all agricultural producers in the EU, though initially payments may be higher than historic payments to the new EU members.

Current Economic Environment

Poland has suffered from high rates of inflation, unemployment and stagnant GDP growth since the transition to a market based economy in 1989. However, GDP growth has rebounded, with the latest estimate of the real GDP growth rate being 5.6 percent in 2004 (the same rate for the U.S. in 2004 was 4.4 percent). By sector, Poland's GDP is mainly comprised of services (65.9%) and industry and manufacturing (31.3%). Agriculture contributes only 2.9 percent to Poland's national GDP. The average share of agriculture in the EU-15 prior to accession was about 2 percent.

Polish consumers are spending a lower proportion of their budget on food and alcohol compared with expenditures nearly 10 years ago. In 1996, Poles spent more than 27 percent of their budget on food and alcohol. In 2003 Polish consumers spent just over 19 percent on food and alcohol, still more than the EU-15 and EU-25 averages of 12.8 and 13.1 percent, respectively.

Figure 1. Polish household expenditures on food and non-alcoholic beverages



Source: Eurostat Yearbook, 2004

Overview of Polish Agriculture

Agricultural production in Poland is nearly equally divided in value between plant and animal production. In 2003, 52.8 percent of the total value of Polish agricultural production came from plant products, and 47.2 percent came from animal products. Since the beginning of Poland's transition, the value of agricultural production has steadily fallen, the value of plant production has decreased by over 21 percent, and the value of all animal production has increased by just over 2 percent. The decrease in value for plant production coincides with an overall decrease in arable land used for production (Table 2).

Specifically, the total value of fruit production was 8.6 of the total in 2003. Among tree fruits in Poland, apples account for nearly 90 percent of the total value of production in 2003. Processed fruit exports from Poland have increased in recent years. In 2003, the total value of processed fruits exports from Poland was about \$631 million and 82 percent of these exports were to the EU.

Polish Tart Cherry Supply Chain

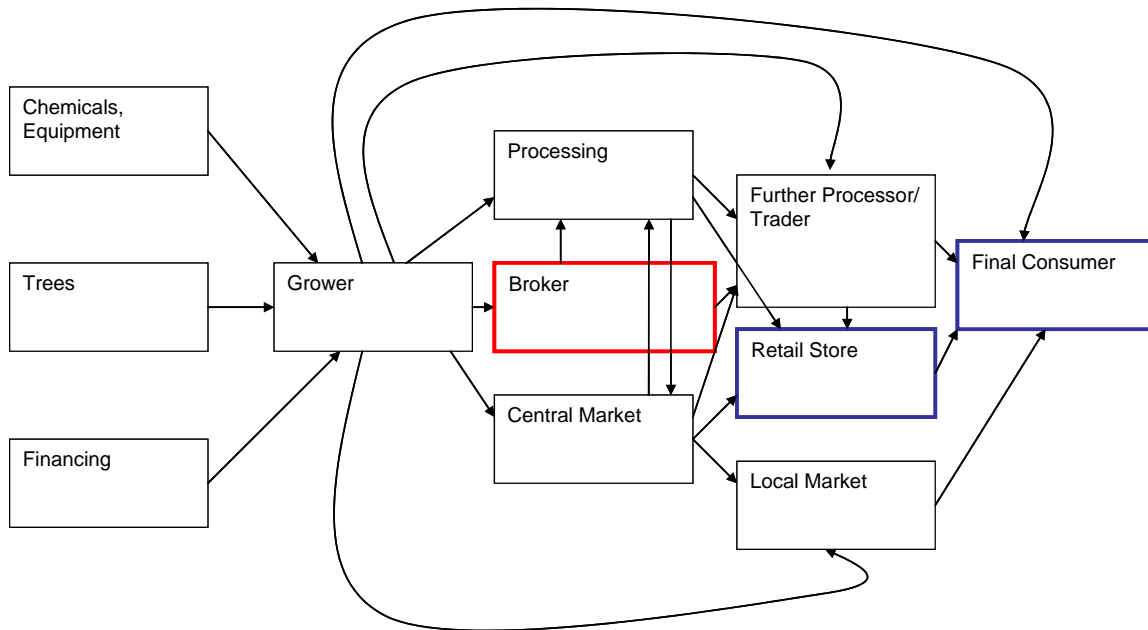
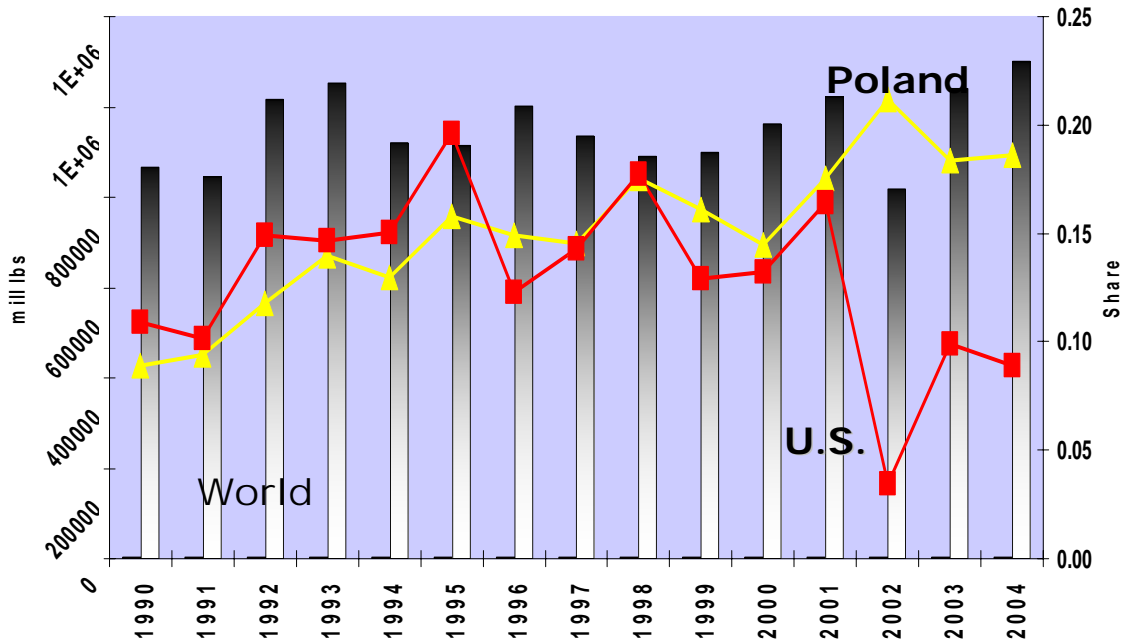


Figure 2. The tart cherry supply chain in Poland

Production Trends

Poland is the world's second largest producer of tart cherries, behind only the Russian Federation. According to FAO data, average production between 1999 and 2004 was 379 million pounds. Over the same period, U.S. production averaged 235 million pounds (269 million pounds when 2002 is dropped from the average). Polish production ranged from a low of 307 million pounds in 2000 to a high of 451 million pounds in 2004.

Figure 3. Polish and U.S. shares of world tart cherry production, 1990-2004



Source: FAO DataSTAT

Tart cherry production in Poland has been increasing. In 1990 Poland had less than a 10 percent share of world output. By 2004, the share approached 20 percent. Although weather events will influence yields from year-to-year, the average annual growth rate in output between 1990 and 2004 was 8.5 percent.

Both yield and acreage harvested in tart cherries has been increasing. The average annual growth rate in yield between 1990 and 2004 was 4.4 percent. Over the same period the average annual growth rate in acreage harvested was 3.5 percent. Average reported yield is 3698 lbs/acre with a range of 2812 in 1991 to 4813 in 2004. Average reported acreage planted is 88,250 with a range of 57,328 in 1990 to 98,758 in 2004. New intensive production technologies are reported to result in yields as high as 20 tonnes per hectare.

Cultivars

Shatte Morello or “English Morello” is the main variety of tart cherry grown in Poland. Shatte Morello is known for its sour flavor and strong skin. The variety exhibits high yields and good cold hardiness. Shatte Morellos are eaten fresh in Poland, but most often are used in baking, jams, yogurts, and juices. Over the last thirty years of production growers have planted small blocks of other cherry varieties for specific products, yet current plantings trend points toward Poland’s tart cherry production becoming a monoculture of Shatte Morello.

There is a healthy nursery stock sector in Poland with extensive collaboration with agricultural universities, especially around Poznan and Warsaw. Similar to most fruit farmers in Poland, the primary focus of Polish nurseries is on apple stock, with most other fruits being of secondary concern. Two nurseries, located near Skierniewice and Lublin offer a variety of tree fruits and brambles for sale, including four varieties of tart cherries. All of the tart cherries for sale from this nursery are dark skinned Morello type cherries, with the exception of Northstar, a U.S. bred cherry that is a cross between English Morello and a Serbian pie cherry that closely resembles Montmorency in appearance. The nursery sector appears well organized with an umbrella organization of 73 firms operating in 2003. Nursery sales from Poland are to domestic and international markets.

Grower Organizations

Many Polish tart cherry growers fear cooperation with other growers. Prior to the transformation, growers were required to cooperate with state owned processing cooperatives or marketing organizations that resulted in delayed payments or refusals to accept delivery by state owned processing firms. Growers had little if any contact with the sale or marketing of their products, prices were determined by the state and specific quantities required. After the fall of communism in 1989 little seems to have changed in the minds of Polish fruit producers. Producer lack trust in one another and an organized system and they have little knowledge of marketing and promotion. There has been discussion about the formation of grower organizations and some fledgling organizations have been formed. Incentives were strong in 2004 with very low fresh fruit prices and EU incentive programs (5 percent of the value of sales returned to grower members for registered organizations). At this time it is unclear whether efforts to establish grower organizations will be successful.

Harvest technology and Orchard Design

As in the United States, economics have had a significant influence on Polish farm design. For example, high unemployment rates in Poland have led to low wages (relative to the United States) and a strong reliance on the agricultural sector to provide employment. In 2002, 27.4 % of Poles and 58.2% of the total rural population lived in a household directly connected to agriculture (Polish Ministry of Agriculture and Rural

Development, 2004). A natural result of this abundance of labor is a continued reliance on hand harvest in the Polish tart cherry production system. Hand-harvest allows Polish growers to plant trees at a higher density, resulting in higher yields per acre. Hand-harvest also permits Polish growers to harvest younger trees (2 years old). By using a hand-harvest system, there is no immediate pressure to increase farm size in order to spread out the cost of agricultural machinery. Hand-harvesting also limits soft fruit problems that can be aggravated by mechanical harvester technology. Conversely, a limitation of this system is that production technology options are limited to low cost systems that are more appropriate for small farms. (For example, Polish farms are more likely to use hand powered sprayers or lower cost tractor-powered sprayers).

Although Polish rural employment currently relies heavily upon agricultural labor, the potential to lose this supply of labor is possible, driven by the high education level of Poles, EU accession and the opportunity to earn better wages elsewhere in the EU. In anticipation of future labor conditions, the Polish tart cherry industry has undertaken the development of a new mechanical harvester. The Polish harvester uses technology similar to a blueberry harvester, passing over the tree and beating out fruit with rotating “fingers”, rather than shaking the tree’s trunk like an American harvester, or “shaker”. This over-the-row harvester requires an orchard design which uses smaller trees with lower trunks, requires intensive annual pruning, has high density tree plantings, (up to 1150 trees per acre or one tree every three feet), and will give higher yields than the current hand-harvest orchard designs.

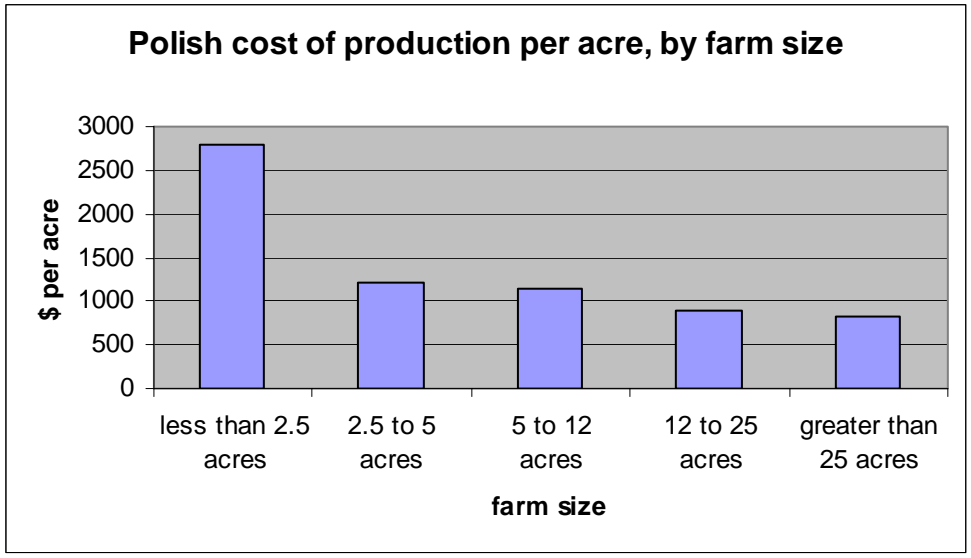
The results of new harvesting technology remain to be seen, but potential shifts in global competitiveness could be dramatic. Already, the U.S. industry is experiencing increased international competition which has been aggravated by short crops in 2002, 2003 and 2004¹. Given this reality, competitiveness between the U.S. and Polish tart cherry industries will be heavily influenced by their ability to adopt new harvesting technology.

Production Costs

Polish surveys showed that fungicide and harvest are also substantial portions of total cost of production. On average, fungicide applications made up approximately 20% of total costs while hand harvest labor made up approximately 38%. Polish surveys also demonstrated a consistent trend of decreasing costs for larger producers.

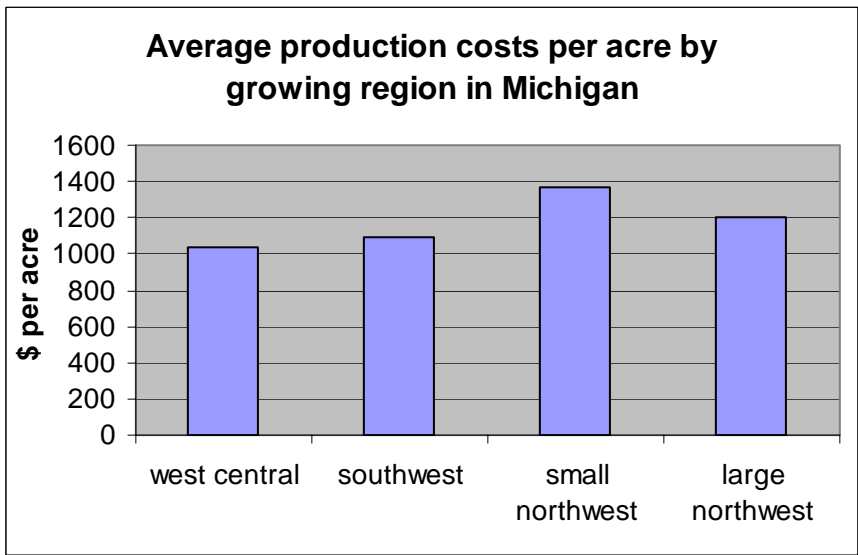
¹ The Michigan disaster crop of 2002 was of great importance to Polish exporters. Michigan’s tart cherry yields in 2002 averaged 550 pounds per acre, a hard hit considering that yields have averaged nearly 7000 pounds per acre over the past 25 years. While Michigan growers were mostly able to ride out the short term financial losses, they were unable to prevent the inflow of new imports from Poland and the establishment of new relationships between American purchasers and Polish exporters. The 2003 and 2004 crops were also short, and the 2005 crop is predicted to be short (June 2005).

Figure 4. Polish cost of production per acre by farm size



Michigan cost of production data indicate that costs decrease slightly in the southern production zones. However, tart cherry production appears to represent a less valuable activity given that there are more profitable crops that can be produced in the southern regions and that orchard life cycles are generally shorter. The data also consistently showed that across all production regions, the two largest costs to growers were harvest costs and crop protection costs. Amongst harvest costs, the largest portion of expenses went to the purchase of harvesting equipment, while in crop protection costs, the majority of costs went to fungicide purchases.

Figure 5. Costs per acre for tart cherries grown in four production regions in Michigan



Some of the different weaknesses of in production systems in Michigan and Poland have become obvious through this research. For example, while Michigan growers consistently plant orchards with densities between 115 and 130 trees per acre, Polish orchards vary considerably with the smallest planting density at 200 trees per acre and the largest at 1150 trees per acre. Also, Polish producers depend in large part on cheap labor. As a result, their costs of production are susceptible to wage increases. In Michigan, there are large costs and much excess capacity associated with cherry harvesters. As a result, any innovation which can either bring down the cost of harvesters or make better use of this equipment is desirable. A possible advantage of overhead harvesting is the development of tunnel spraying technology. This has the advantage of making use of the harvester in place of a tractor drawn sprayer and also making less-expensive, more efficient fungicide applications.

Brokers

Brokers are an integral part of the tart cherry supply chain – they move and consolidate cherries from many small farms to domestic and foreign processors. In most cases, brokers operate by taking direct ownership of the fruit and growers are paid immediately. Less common are brokers who market the fruit on behalf of growers for a commission. Tart cherries are highly perishable, so brokers play an important role by moving fruit from the grower to the processors in a timely fashion. Few production contracts seem to exist among Polish tart cherry growers, so the marketing of the fruit comes after harvest leaving growers three days at most to sell their fruit to final consumers or processors. Polish brokers also handle other fruits and farm products.

In many cases, brokers organize harvesting labor for growers. In the Poznan region, where tart cherry farms tend to be larger, brokers organize harvesting labor for many of the tart cherry growers, sourcing labor largely from Russia. Brokers tend to play a major role in the supply chain. They often provide harvest labor, equipment, and transportation. They are also the source of supply and pricing information at the grower – and sometimes – buyer end.

There is some evidence of contractual relationships between processors and brokers and that processors use brokers to obtain large amounts of fruit. Polish fruit growers are reluctant to cooperate in marketing agreements and so some processors may view brokers as a more workable option than vertical integration with fruit growers. The sheer number of tart cherry growers, especially in the Skiernowice region, may keep some processors from creating formal production agreements. In their current role, brokers have the potential to exert significant market power as they control what information passes to growers and to processors, including price and production information.

Processing

There is a wide range in the size and types of Polish tart cherry processors. Some domestic processors are modern with the capacity to process more sour cherries, should

demand or supply increase, while other processors are small and produce only for local markets.

Prior to transformation, the majority of food processing facilities in Poland were state-owned companies. By 1999 over 77 percent of food processors were privately held (PAIZ, 2003). In 2003, there were 30,000 food processing companies in Poland; however, less than 10 percent of these companies employed more than 9 people. The value of all processed fruits and vegetables sold by companies with more than 9 employees was \$1.96 billion in 2003.

In the tart cherry sector, former state-owned companies tend to be very large with excess capacity and rather limited processing abilities. Some of these companies are primary processors who then sell their product to repackagers, or final processors, like jam or dessert makers. Foreign processing companies participate by buying fresh product through brokers and shipping to their own processing facilities, or by buying processed products from primary processors in Poland which they further process into any number of products.

Domestic processors produce a variety of tart cherry products, including confections, chocolates, dairy products (milk, yogurt, kefir), baked goods (cookies, cakes), juice, juice syrups or sherberts, wine, and brandy. The Polish Minister of Agriculture and Rural Development oversees a labeling program to promote all Polish processed products called “Polish Good Food”.

Inflows of foreign direct investment (FDI) to the processing sector were over 12 percent of total foreign investment in Poland in 2000. By 2004, FDI fell to less than 2 percent of the total, being dwarfed by foreign investments in manufacturing (Table 3.) FDI in the Polish processing sector is possible through direct ownership or partnership with domestic companies. Kraft and Land O’Lakes are two processing firms with current holdings (full and partnership) in the Polish dairy sector. German and Dutch processors are already active in the marketplace for tart cherries with well established relationship with suppliers and brokers from Poland.

Table 3. Inflows of FDI by industry in 2004

Industry	Total	Share
Manufacturing	3,251.5	41.40%
Food processing	135.3	1.70%
Agriculture	14.5	0.20%
<i>Total inflow in 2004</i>	<i>7,857.7</i>	<i>100%</i>

Source: Polish Information and Foreign Investment Agency, available at <http://www.paiiz.gov.pl/index/>

The leading fruit and vegetable processors in Poland in 2003 were:

- Hortex (9 manufacturing plants throughout Poland)
- Bonduelle Polska (with a factory in Gniewkow)
- Pudliszka S.A. (owned by H.J. Heinz Co.)
- Kotlin Sp. z.o.o
- Materne
- Agros Nova
- Grupa Maspex Wadowice
- Sonda
- Alima Gerber (manufacturer of baby foods in Poland)
- Dr. Witt
- Clippo
- Hellena

Consumer Products

The plight of the Polish consumer can be explained by many of the facts highlighted in the above sections about Poland's economic performance and subsequent recovery during and after the transition period. Specifically, Polish consumers experienced very high inflation rates early during transition, high and persistent unemployment, and some of the lowest wage rates among central European countries (lower than Hungary and the Czech Republic, for example) (PAIZ, 2003). Poland's GDP has steadily risen since 1992 at an average of about 5 percent per year, however, real wage rates have increased at a slower rate (Kowalik in Blazyca and Rapacki, 2001; Polish Official Statistics, 2003)

Per capita consumption of fresh and processed fruits has increased in Poland to around 57 kg per year, and will likely continue to increase somewhat, along with demand for meat and other more expensive food products as incomes increase and the economy improves (Sachs, 2001; Halicka, 2001). Polish consumers are very familiar with tart cherries and their presence in many products. As noted above, a wide variety of products made of or containing tart cherries are available in the Polish marketplace. Many Poles still rely on public transportation and tend to purchase smaller quantities more frequently. Thus, packaging for processed products is often lightweight with smaller container sizes (i.e. tetrapak juice boxes).

There is some evidence of growing demand for "healthy" products and low-input production processes among Polish consumers. Factors contributing to this trend include a young population (about 60 percent between 18 and 64), rising incomes, and increased exposure to the global marketplace. An ecological farming movement exists in Poland, with two separate grower organizations and a registration program administered by the Minister of Agriculture and Rural development. The number of farms inspected for registration has increased from 27, in 1990, to 2,286 in 2003 (MARD, 2004).

Retail Markets for Tart Cherries

Grocery Retailers

Over the past two years there has been an explosion in the number of foreign-owned supermarkets operating in Poland. In 2004, of the top twenty investors in Poland, Metro Group AG, Tesco Plc., and Carrefour, ranked 5th, 8th, and 17th, respectively (PAIZ, 2003). Major foreign-owned retailers have supermarkets in the large metropolitan areas of Krakow, Poznan, and Warsaw. The share of supermarkets in Poland in overall food retailing is estimated at 70 percent. Small, domestically owned retailers still exist in urban and rural markets.

Retail produce buyers in large chain supermarkets are very knowledgeable about consumer demands and preferences and the sources, availability, and pricing of domestic and global produce. They track purchases through membership clubs and use promotions, discounts, and taste tests to feature products. These markets carry a variety of domestic and foreign products which use tart cherries (Polish produced and other). Retail fresh produce buyers also buy tart cherries from local suppliers when they are in season.

Wholesale Markets

A formal program to establish a wholesale distribution sector for Polish fruits, vegetables, and flowers was established in 1994. The markets were designed to mimic the organization of wholesale markets in the EU. In addition to numerous small, local markets, there are 7 supra-regional, 6 regional, and 6 pre-border wholesale markets in Poland (Halicka, 2001). Tart cherries are sold through wholesale and local markets, however, there is no evidence that processing firms buy cherries from these sources. Rather, large wholesale markets serve as sourcing centers for sellers in small local markets and may serve very small processors to some degree.

Similar to the producer services provided by input collectives during the pre-transition period, there is some evidence that supra-regional wholesale markets provide education and training to growers as well as inputs in an effort to secure relationships with processors.

Small, local bazaar markets, or green markets, and sidewalk vendors are very important players in the distribution of fresh fruits and vegetables to Polish consumers. These vendors are supplied directly by growers and also through direct purchases at larger wholesale markets. These markets are successful for at least two reasons: first, there is a tradition among Polish consumers of regular purchases of fresh fruits and vegetables at these types of outlets and second, public transportation is the main transportation source in Poland, and so frequent small purchases at small markets are more convenient for many Polish consumers.

Foreign Trade

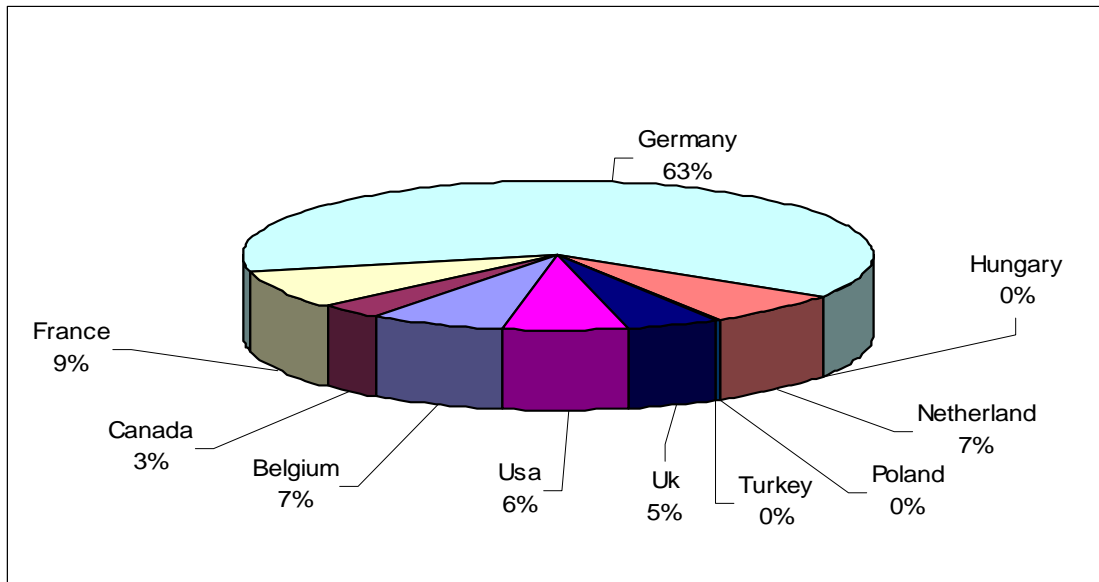
Prior to accession, Poland was the largest supplier of frozen tart cherries to the EU member countries. In 2001, 75 percent of all frozen tart cherries imported by the EU came from Poland, and in 2002, Poland shipped about 63 percent of the total. Polish exports to the EU in 2002 fell, however, as the extremely short U.S. crop shifted Polish exports to the U.S. In 2002, 75 percent of all tart cherries imported by the U.S. were Polish.

Following accession to the EU, Poland has become one of the largest food exporters in the region, on average smaller only than France and Germany. In May and June 2004, the first two months following accession, Polish food exports increased by more than 77 percent. Within the EU, Germany is Poland's largest food trading partner and the largest destination for Polish frozen tart cherries.

Frozen Tart Cherry Imports

Between 2000 and 2003, Germany was the largest importer of frozen tart cherries, followed by France and the Netherlands. The U.S. share of imports of frozen tart cherries between 2000 and 2003 was higher than previous averages at 6 percent, largely because of the short crop in 2002.

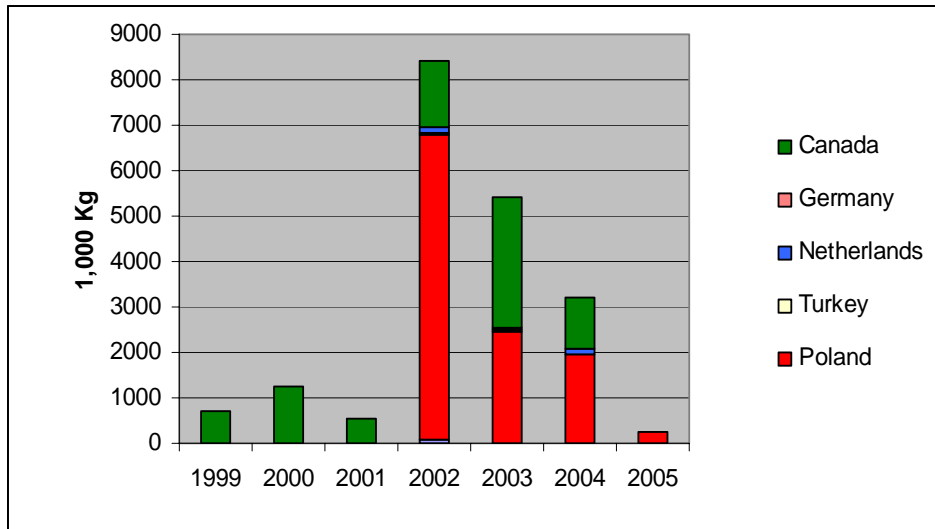
Figure 6. Share of Average Frozen Tart Cherry Imports (by value), 2000-2003



Source: Eurostat available at (<http://www.statistischesdaten.de/shop2/index2.php?lang=en>)

Prior to 2002, Canada was the main supplier of tart cherries to the U.S. market. In 2002 Poland was the largest supplier, and in 2003 Poland and Canada were the two largest suppliers of foreign tart cherries to the U.S. market (Figure 7).

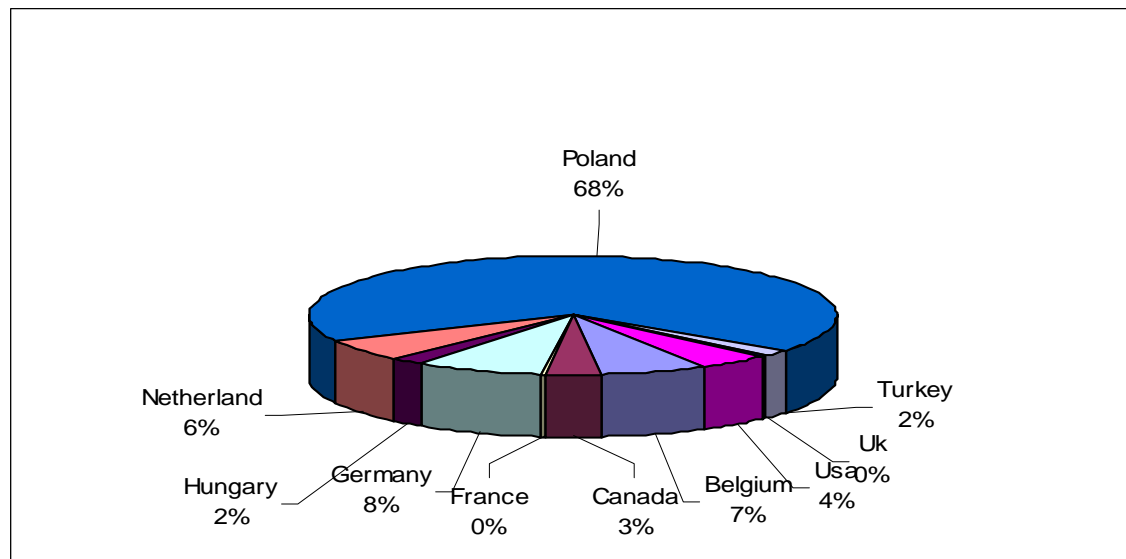
Figure 7 . U.S. imports of tart cherries, 1998-2003



Frozen Tart Cherry Exports

Among the ten largest traders of frozen tart cherries, exports from Poland dwarf all other competitors (Figure 8 and Table 4). Worldwide, Germany is the largest importer of frozen tart cherries, followed by the Netherlands and France.

Figure 8. Share of Average Frozen Tart Cherry Exports (by value), 2000-2003



Source: Eurostat available at (<http://www.statistischesdaten.de/shop2/index2.php?lang=en>)

Table 4. Yearly average value of frozen tart cherries exports and imports for the ten largest frozen tart cherry traders (1,000 \$US).

Country	1993-99		2000-03	
	Import (\$1,000)	Export (\$1,000)	Import (\$1,000)	Export (\$1,000)
Belgium	3,074	3,972	4,597	4,611
Canada	974	329	2,211	2,214
France	5,109	509	5,693	169
Germany	31,602	3,841	41,822	5,399
Hungary	6	1,567	23	1,451
Netherlands	6,323	3,612	4,763	4,023
Poland	44	28,429	182	45,862
Turkey	20	2,940	12	1,494
UK	3,693	103	3,109	85
USA	135	2,071	4,296	3,062

Source: Eurostat available at (<http://www.statistischesdaten.de/shop2/index2.php?lang=en>)

Drivers of Future Change

Wage Rates and Labor

Currently, Poland has a plentiful supply of low cost agricultural labor. Emigration of Poles to more profitable jobs within the EU may strain the labor supply available for tart cherry harvesting. Conversely, if Poland maintains favorable agreements with its neighbors to the East, a plentiful labor supply for tart cherry harvesting may be available for many years to come as Ukrainians, Belarussians, and Russians immigrate to find better paying jobs in Poland.

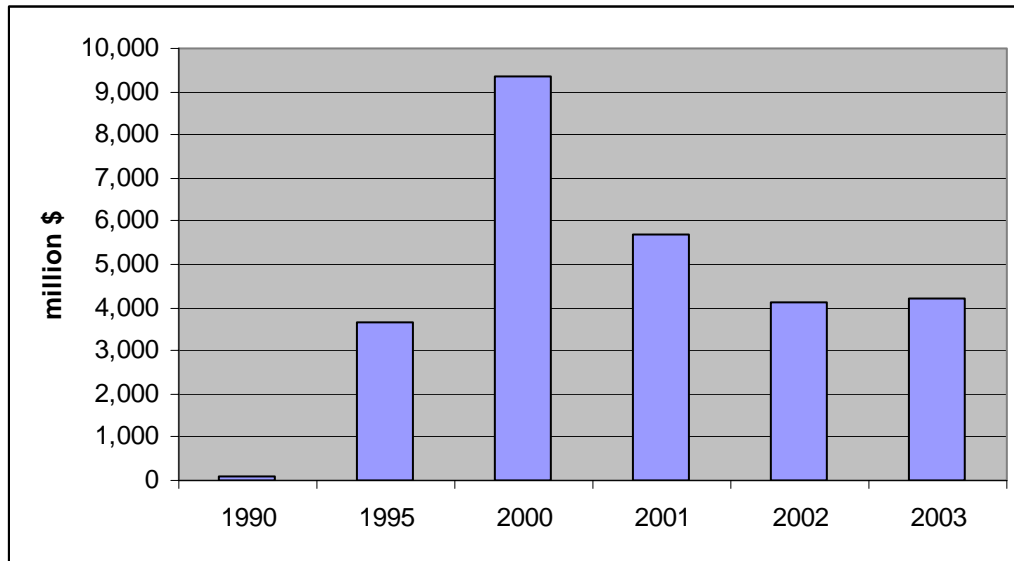
Land Consolidation

Poland's new rules on land ownership seem to favor the formation of medium to large sized family farms. After several years of a complete moratorium, foreigners can now purchase farm land in Poland, but only by obtaining a permit through a government agency. A common fear among Poles prior to EU accession was the loss of farmland to large foreign investors. In the short term, Poland will likely continue to restrict ownership of farmland by foreigners until it feels comfortable that land prices in the country mirror those in other EU countries.

Foreign Direct Investment

Continued inflows of FDI to Poland will fuel the rapid rate of modernization occurring in the country. The value of FDI inflows to Poland peaked in 2000 at nearly \$10 billion. Continued direct investment and investment through joint ventures or stock purchases by foreign companies mean that levels of technology in the food processing sector may equal or surpass those in the U.S. and EU in a very short time.

Figure 9. Value of FDI in Poland (million \$)



Source: Polish Information and Foreign Investment Agency, available at <http://www.paiiz.gov.pl/index/>

Technology

As with most industries, technology is driving current business practices and shaping business in the future. Communication technologies, like the internet and cellular phones reduce the cost of doing business and allow for real time decision making and long distance transactions. New harvest technologies, if adopted, may lower the costs of production for adopters in Poland and the U.S. and make some firms much more competitive than others. National policies, like EU accession and compliance under the CAP, give Poland an advantage through free access to EU markets, but also add more stringent requirements like new production methods and processing standards.

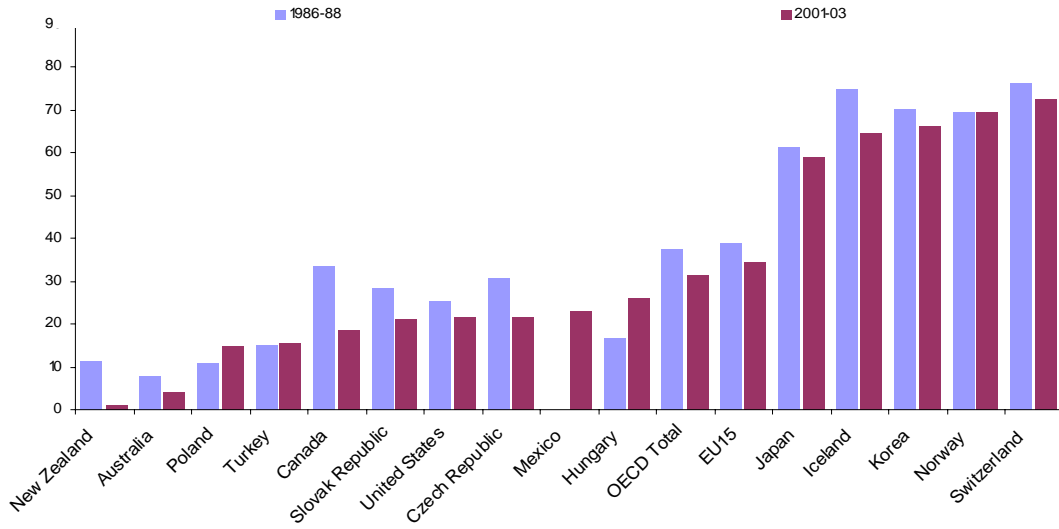
EU Policy

New EU member states went through a pre-accession transition period where many direct trade interventions (i.e. tariffs) were reduced. Therefore, there was virtually no change in tariff rates for Polish fruit in May 2004. The larger changes were realized as Polish farmers became eligible under the CAP. Agricultural support policies under the EU CAP have been of great benefit to the Polish agricultural sector. During the first three years of accession, Poland will receive €7 billion (roughly \$5.6 billion) in agricultural aid. Still, the level of support for Polish agriculture, as measured by the Producer Support Estimate (PSE) is low compared with other EU member countries and some of the countries with the highest support levels, like Japan and Switzerland (Figure 10).

The trend in EU policy is away from payments coupled with agricultural production, to direct decoupled payments along with support for agricultural practices which support multifunctionality of the rural areas in the EU. Future WTO agreements on support types

and levels will no doubt influence the levels of support and protection in the EU and Poland.

Figure 10. Producer support estimate: Percent of value of gross farm receipts



Source: OECD Factbook, 2005, available at www.oecd.org

Appendix: Information Sources on Poland

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