

# Major Trends in U.S. and World Apple Markets

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The apple market in the United States and in the world has seen a number of major trends and a number of major reversals of trends in the last decade or so. However, these are not just a curiosity for apple growers in New York. They have had a very direct impact on your competitiveness and profitability. Your future success will depend on how well you understand what is happening and on how well you adapt your operations to meet the changed situations. In this paper, I discuss some of the key trends that seem most relevant and some of the opportunities that they offer for the New York apple industry.

## GLOBAL TRENDS IN SUPPLY AND DEMAND

Global forces of supply and demand have had a major influence on the apple industry in the last decade.

### World Fruit Supply Trends

There has been a tremendous surge in the world production of most major fruits in the last decade (Table 1). Annual average world production of major fruits rose 13.1% between 1979-81 and 1989-91. In the following decade, the increase was 41.2%, or an average increase of 3.5% per year. At the same time, world population grew by only 15%. Thus, per capita supplies of all fruit rose from 61.63 kg in 1990 to 71.75 kg in 2002, an increase of 16.4%. Per capita supplies of apples rose in the same period from 7.56 kg to 9.82 kg, an increase of almost 30%; pears rose from 1.79 to 2.76 kg per capita, an increase of 54.2%.

*... producers and their organizations must be willing to change, they must do their homework on where their comparative advantages might lie and they need courage to strike out in new directions.*

Two regions, China and the Southern Hemisphere, have contributed to most of the growth in the past decade. China's production of apples has risen fivefold to over 20 million metric tons in the decade. Pear production has increased more than threefold. This has led to intense competition in the fresh apple and fresh pear markets in East Asia and in the concentrated apple juice market around the world. The South-

ern Hemisphere increases have been less spectacular. Apple production rose by one-third between 1990 and 1998, before falling back since. Pear production rose by over 75% between 1989-91 and 1999-2001. Most of the Southern Hemisphere sales are concentrated in Northern Hemisphere markets in the March to June period. China and the Southern Hemisphere have taken many markets once dominated by U.S. suppliers. This has led to increased supply pressure in the domestic U.S. market.

The mix of varieties produced around the world has also changed dramatically in the last decade. For example, in 1990, supplies of Fuji, Gala and Braeburn were less than one percent of production in either the European Union or the United States. In the current 2002-03 season, they will account for 56 million boxes (15%) of the EU crop and 46 million boxes (21%) of the U.S. crop. That growth has been largely at the expense of existing major varieties such as Red Delicious, Golden Delicious, Rome and McIntosh. These three varieties have also been making major gains in export markets. By 2010, my forecast is that, excluding China, Gala will be the third largest variety in the world after Red Delicious and Golden Delicious, Fuji will be fourth and Braeburn eighth. If China is included, Fuji will be the world's dominant variety. New contenders include varieties like Pink Lady, Cameo, Honeycrisp, Pinova, Pacific Beauty, Jazz, etc. Accordingly, we can expect the challenge to older varieties for consumers' favor to continue.

The good news on the supply side is that the acreage planted to many fruits, including apples and pears, has either stabilized or declined in the last two to three years. Depressed market conditions have caused many producers to pull back. Production of most major fruits (except apples) stabilized in 2001 and one can be cautiously optimistic about 2002. However, production capacity still exceeds total demand capacity.

### World Economic Trends

Demand for fruits is heavily influenced by the general state of the world economy. Since 1995, many regions have suffered major economic setbacks. The Mexican peso crisis of 1995 foreshadowed the Asian financial crisis that began in 1997. Shortly thereafter, the former Soviet Union, many countries in central and eastern Europe and much of Latin America slipped into recession. One common effect of all these crises was that the affected currencies lost

**TABLE 1**

World production of major fruits, 1979-81, 1989-91 and 1999-2001 (annual average, thousand metric tons)

Fruit	1979-81 (1000 MT)	1989-91 (1000 MT)	1999-2001 (1000 MT)	Change 1979-1981 to 1989-1991 (%)	Change 1989-1991 to 1999-2001 (%)
Apples	34,362	39,724	59,894	+15.6	+50.8
Pears	8,592	9,529	16,504	+10.9	+73.2
Other deciduous	14,589	17,203	30,926	+17.9	+79.8
Total deciduous	57,543	66,456	107,324	+15.5	+61.5
Grapes	66,106	58,457	63,227	-11.6	+8.2
Total citrus	59,321	77,073	105,451	+29.9	+36.8
Total tropical	90,206	106,316	159,115	+17.9	+49.7
Total berries	2,487	3,340	5,007	+34.3	+49.9
<b>Grand Total</b>	<b>275,663</b>	<b>311,642</b>	<b>440,124</b>	<b>+13.1</b>	<b>+41.2</b>
(exc. Apples)	241,301	271,918	380,230	+12.7	+39.8

purchasing power vis-à-vis the U.S. dollar. Many still have not recovered. For example, in northeast Asia (excluding China), GNP per capita in 2002 is still more than 10% below 1995 levels. In southeast Asia, it is more than 20% lower. China has been the outstanding exception in eastern Asia. Its GNP per capita has grown by 57% since 1995. Because its GNP per capita is still relatively low (less than \$1,000), China is still not a major market for U.S. goods. South Asia, especially India, has also escaped much of the recent downturn, but its purchasing power is low. In contrast, Japan, which could be a major positive influence on the whole region, has limped from recession to recession in the last decade.

The fall has been even more dramatic in other regions. For example, the leading economy in the Middle East, Saudi Arabia, had a GNP per capita of \$11,260 in 1980 and had enjoyed a growth rate in the previous decade of 9.6%. In 2000, its GNP per capita had fallen to \$7,230 after a negative growth rate of -1.2% in the previous decade.

Much of the economic growth since World War II has been driven by the freeing up of internal economies and the expansion of international trade. The widespread economic problems have been both a reason and an excuse for the world's failure to pursue major trade liberalization initiatives since 1995. The World Trade Organization has made little progress since the "Battle in Seattle," the abortive summit in 1999. Most of the easy gains within the North American Free Trade Agreement (NAFTA) have been made. The new U.S. Farm Bill has boosted protectionist forces in both Canada and Mexico. The Free Trade Area of the Americas (FTAA) has still not got off the ground after almost a decade of talk. Meantime, the European Union appears unable to reform its Common Agricultural Policy (CAP), a policy that has been inimical to freer trade.

### World Demand Trends for Food

About 45% of the world's population lives in countries with per capita incomes below \$1,000, so that their main goal is to meet their food necessities. Another 30% have per capita incomes between \$1,000 and \$3,000. In these countries, a rapidly growing middle class is an important market for imported foods. A further 12% have per capita incomes between \$3,000 and \$10,000. The remaining 13% live mostly in the developed world and have average incomes of close to \$30,000. In many cases, countries with favorable income profiles have unfavorable demographic patterns in terms of food demand.

In the developed world, the total population is nearing a peak. The number of older people is growing very rapidly. The number of children, teenagers and young adults is either static or declining. The role of the traditional family is shrinking. In many countries, one-third of all households are made up of a single adult who is either unmarried, separated, divorced or widowed. As a result, the demand for food at home is static while the demand for food away from home is increasing. The total volume of food consumed is flat, while more and more of the consumers' income is being spent on food services. This has led to flat or falling demand for basic food products.

Markets have become increasingly segmented as consumers' interests diverge and they have the purchasing power to demand what they want. Some want foods with low salt, low chole-

sterol or low fat. Some want foods with specific vitamins and minerals present. Some want their food prepared in kosher or halal style. Many have diets influenced by medical needs of age, sickness, allergies or sensitivities. Many pursue different kinds of vegetarian diets. At the other extreme, many consumers are so pressed for time that they eat only convenience foods crammed with fats, sugars and preservatives.

Consumers are also increasingly concerned about how their food is grown, harvested, handled, shipped and prepared. They demand evidence that the food industry has been kind to the soil, air and water, farm animals and wildlife, and has provided adequate housing, working conditions and wages to farm workers. Some abhor synthetic chemicals, genetically modified organisms or sewage sludge used in food production. Others wish to get more of their food directly from the producer to avoid the middlemen ogres. Farmers' markets, roadside stands, U-pick, community supported agriculture (CSA) networks, etc., are becoming more popular. A stronger mainstream trend is for consumers to choose "better-for-you" foods, not by brands, but by where they shop. Specialty chains such as Trader Joe's and Whole Foods cater to this sentiment.

During the last decade, the traditional supermarket chains that once dominated food retailing in developed countries have faced a triple threat. The fast food industry has taken a growing share of the consumers' food dollar. Discounters such as WalMart have brought their

everyday low price strategy to the food business. A transformation has taken place among consumers who have gone from passively absorbing the products the mass marketers supplied them to aggressively seeking the food attributes of their choice. The supermarket chains absorbed a little from each of these threats. They have introduced food service bars and other takeaway food. They have sought internal and external efficiencies through mergers, acquisitions and restructuring. And they have become champions of many of the consumers' social and environmental goals.

The net effect is that retailers in the developed world now demand the same or better quality from their suppliers at lower prices and with many additional warranties and services added. Many have tried to build alliances with a few preferred suppliers for each commodity. These are usually the largest suppliers. Many smaller suppliers have been scrambling for the remaining business, further weakening their bargaining power. Percentage marketing margins in food have grown and, since retail prices have been flat or declining, the dollar and percentage returns received by growers have fallen.

Many of these same pressures are beginning to appear in the developing world. Generally, their populations are still growing rapidly. A large proportion of that population is children and young families in their high consumption years. At their relatively low average income levels, even small increases in income translate rapidly into buying more and better food and, in

**TABLE 2**

U.S. production of major fruits, 1989-91 and 1999-2001 (annual average, thousand metric tons).

Fruit	1989-1991 (1000 MT)	1999-2001 (1000 MT)	Decade change (%)
Apples	4,426.8	4,675.7	+5.6
Pears	841.0	903.8	+7.5
Other noncitrus	9,164.1	10,470.6	+14.3
Total noncitrus	14,431.9	16,050.1	+11.2
Total citrus	10,684.0	14,250.5	+33.2
<b>Grand Total</b>	<b>25,115.9</b>	<b>30,291.5</b>	<b>+20.6</b>
(exc. Apples)	20,689.1	25,615.8	+23.8

**TABLE 3**

U.S. imports and exports of fruit products, 1990 and 2001 (thousand metric tons).

Product	Imports	Imports	Change 1990-2001 (%)	Exports	Exports	Change 1990-2001 (%)
	1990 (MT)	2001 (MT)		1990 (MT)	2001 (MT)	
Fruit & preparations	1,969.9	3,769.3	+91.3	2,483.0	3,306.2	+33.2
Fresh & frozen	1,473.5	3,012.4	+104.4	2,092.7	2,831.3	+35.3
Bananas	3,270.0	4,107.4	+25.6	0.0	0.0	0.0
Total	5,239.9	7,876.7	+50.3	2,483.0	3,306.2	+33.2

**TABLE 4**

U.S. trade in fresh apples, fresh pears and apple juice, 1990 and 2001.

Product	Imports	Imports	Change 1990-2001 (%)	Exports	Exports	Change 1990-2001 (%)
	1990 (MT)	2001 (MT)		1990 (MT)	2001 (MT)	
Fresh apples	106,146	157,121	+48.0	379,433	692,365	+82.5
Fresh pears	40,942	85,316	+108.4	108,741	167,180	+53.7
Apple juice	(gallons)* 233.7	(gallons)* 344.3	+47.3	(gallons)* 15.0	(gallons)* 7.3	-51.5

\*million single strength equivalent.

particular, buying imported food. Without renewed economic growth, many of these countries will not achieve their market potential. And, without further trade liberalization, many consumers will face restricted access to imported foods.

### **U.S. Trends in Supply and Demand**

Even though acreage devoted to fruit production in the U.S. has been static in the last decade except for grapes and oranges, production has continued to rise due to increased productivity (Table 2). The supply of fruits is influenced by past planting decisions and the length of time trees take to reach maturity, so trends over an interval as short as one decade must be treated with caution.

While apple production in 1999-2001 averaged only 5.6% more than in 1989-91, and pear production only 7.5% more, average production of all competing fruits grew by almost 24%. During the same period, the U.S. population grew by just 10%. Apple production actually set a new record in 1998 at almost 20% above the 1989-91 average, so apples contributed a lot to increased supplies during the decade.

The strong dollar has also made the U.S. market an attractive target for imports of fruit from many countries (Table 3). While fruit exports have also risen, imports have increased much more rapidly. Some of the biggest percentage increases have been in tropical products such as fresh mangos and fresh and frozen pineapples that are not produced commercially on the U.S. mainland.

In the case of fresh apples and fresh pears, exports have continued to outrun imports and the trade balance has continued to grow (Table 4). Imports of fresh pears have grown at a faster rate than exports. In contrast, the trade balance for apple juice has been overwhelmingly negative, and getting worse.

### **Trends in the U.S. Economy**

During the 1990s, the U.S. economy enjoyed the longest peacetime expansion in history. The annual rate of growth in GNP was 2.2%, an exceptional performance given the size of the U.S. economy. Unemployment declined steadily to near record lows. By the year 2000, per capita income exceeded \$34,000. However, the consequences for much of the food sector have been lukewarm. While sales of personal computers, SUVs, fitness club memberships and \$3 cups of coffee exploded, overall retail food sales volume limped along. In most cases, retail food prices have barely kept up with inflation. However, the growing muscle of the discount and supermarket chains has meant that even those gains have not been passed back to farmers. The farmers' share of the consumer's food dollar has fallen from 30.6 cents in 1980 to 23.7 cents in 1990 and 18.7 cents in the year 2000.

In addition, the changing demographics and preferences of consumers in developed countries have been mirrored in the United States. An older population, more single person households, more single parent families, a highly mobile way of life and increasing faddishness about food are causing shifts in what different consumers want, wants for which they are rarely willing to pay extra. Consumers have long been concerned about pesticides, food additives and nutritional value. Now they want food suited to their allergies, lifestyles, social interests, etc. A

recent *Wall Street Journal* report suggested that throwing a dinner party is now an ordeal because of the growing American obsession with health. Among the requests from guests it cited allergies to nuts, objections to wine, milk, garlic, unpasteurized cheese and Italian pasta (because it was grown too close to Chernobyl) and vegetarian, vegan and other voluntary dietary restrictions.

The lifestyle change that may be most relevant to apples and pears is the decline of planned mealtimes and the increased prevalence of snacking in many people's lives. Even children now have considerable discretion in what and when they will eat. Major food companies such as Kellogg, General Mills and Frito Lay have introduced hundreds of new snack products in the last decade. Some tap into diet and health concerns, but just as many cater to consumers' desires for products that are fun and sweet (and fattening). Carbonated soft drinks continue to dominate the snack beverage market. For the younger generation, the marketing incentives are often more important than the food. For example, McDonald's or Burger King have become the biggest national distributor of toys or videos featured in their promotions.

Attitudes and behavior toward food have an almost schizophrenic quality. People talk one game and act another. For example, most people know that eating fruit is good for their health. Yet, only 17.4% in 1994-96 met the healthy eating guidelines for fruit. For moderately active individuals, the Food Pyramid recommendation is for three servings per day. The actual number of servings in 1996 averaged 1.3. This was little changed from the level of 1.1 servings attained 20 years earlier.

### **U.S. Demand for Apples and Apple Products**

These national and international forces have had an influence on the demand for apples and apple products in the U.S. The consumption of fresh apples has been static or declining in the last couple of decades. Per capita consumption rose from an average of 17.7 lbs in 1979-81 to 19.6 lbs in 1989-91, but fell back to 17.2 lbs in 1999-2001. Per capita consumption of apples for canning and freezing has been 5.9, 6.5 and 5.5 lbs for the same three periods, while that for apples for juice has been 11.7, 18.7 and 21.4 lbs, respectively. The growth in juice consumption has been powered almost entirely by increased imports. Domestic supplies for juice have just about kept pace with population growth.

During the last two decades, both retail prices and grower prices of fresh apples in the U.S. have declined in real terms by about 20%. Given the static consumption, this would imply that the demand curves for U.S. fresh apples have shifted to the left. However, particularly in the last decade, the proportion of new, higher-priced varieties reaching the market has continued to rise. This would suggest that the demand for older varieties such as Red Delicious, Golden Delicious and McIntosh has been depressed further by competition from the newer varieties. The prices of these older varieties now fluctuate in a much narrower range in response to supply shifts. In turn, the demand for many of the newer varieties is starting to become inelastic, that is, total revenue will begin to fall as volume rises. These findings are borne out by the latest Belrose, Inc. retailer survey. Retailers indicated that they plan to stock more of the Gala, Cameo,

Braeburn, Pink Lady, Fuji, Jonagold, and Granny Smith in the coming year and less of the Empire, McIntosh, Golden, Rome, and Red Delicious. So shifts in preferences between varieties should continue for some time.

Real grower prices of apples for canning, freezing and for juice have also fallen in the last two decades. The average canning price has fallen by 40% and the average juice price by over 50% between 1979-81 and 1999-2001. The biggest single influence on the canning price was the supply of domestic juice apples. The next most important influence was the supply of imported apple juice. The same factors had the biggest influence on the demand for U.S. juice apples. This suggests that both large domestic crops and large juice imports help to pull down the prices of all major categories of apples for processing.

### **Bringing the Lessons Home to New York State**

How does New York State compare to the major apple producing states? For years, Belrose, Inc. has developed a competitiveness index for major apple producing countries based on production, infrastructure, and financial and marketing considerations. Usually, New Zealand and Chile top the international league table, well ahead of France. This year, the United States was in sixth place after Austria and Belgium. We have had many requests for some measure of competitiveness among U.S. states. The results for 2002 were presented in the May 2002 issue of the "World Apple Report." As a separate entity, Washington State would rank among the top three countries in the world, just behind New Zealand and neck and neck with second place Chile. The index scores for New York, Michigan, California and Pennsylvania were closely bunched together and would have placed them in the top 12 countries internationally. New York's biggest advantage was in stability of production and proximity to market. However, New York was below average in yield per acre and in export performance. It also faced problems with inputs such as land, water, labor and capital availability.

Total production in New York State has been fairly stable for at least 30 years. Returns per acre have averaged \$2,200 over the last three years, a level insufficient to sustain profitability. New York has been able to increase the percentage of production sold fresh in the last decade, which should have boosted returns somewhat. However, average grower prices for fresh apples have been below the U.S. average and below that of neighboring states like Pennsylvania and the New England states. There is no way to separate how much of these low returns are due to varieties being offered and how much due to marketing weaknesses. In contrast, in recent years, New York grower prices for canning apples have frequently been higher than grower prices in Pennsylvania or Michigan, which has put pressure on the remaining processors in the state.

### **Strategies for Improvement**

From the foregoing, it is clear that just to hold its own the New York apple industry needs to improve in a few key areas:

- It needs a higher proportion of newer varieties that can command a premium in the fresh market.
- It needs to get its average yields per acre up to



competitive levels, perhaps double the present average levels.

- It needs to improve its marketing clout with major retailers.
- It needs to exploit alternative emerging markets more aggressively.
- It needs to develop new products that will expand its processing industry.

Many of the ingredients are already in place to execute these strategies. The research and extension agents in the Cornell University system can play a major role in finding new or improved varieties and in developing systems to enhance yields. Nurseries, farm chemical companies, agricultural advisers and other service providers can play a major role in improving productivity. The New York Apple Association has a good image with retailers. However, it needs more resources if it is to compete effectively against the powerful category management programs of Washington State and New Zealand in the domestic market and France and Italy in Europe. The huge urban population in New York and surrounding states offers numerous opportunities for creative direct marketing through on-farm and roadside markets, U-pick, farmers' markets and community supported agriculture networks. Creative uses of the Internet could help exploit these outlets in new and different ways.

One of the difficulties in executing any strategy is that the New York industry has so many different segments, geographical locations and potential opportunities. Thus, it has been very difficult to develop a statewide strategy. Part of the problem may be in treating the industry as if it were homogeneous. The USDA has come up with a typology of farms that may provide a useful basis for assessing the needs and potential of different districts and of the whole state. Among what they term "Small Family Farm," there are five categories (Table 5). Among "Other Farms," they list three categories.

Nationwide, the USDA estimates that about 6% of farms are limited resource, 15% are retirement farms and 43% are residential/lifestyle farms. Thus, just over one-third are farms where farming is the primary occupation. In the context of a New York apple farm, sales of \$100,000 in the last three years could have been generated from about 45 acres of orchard, \$250,000 from 111 acres and \$500,000 from 223 acres.

The latest census data for New York apple orchards are now five years old and acreage is now almost 10% lower than it was then. However, the 1997 census data give us a rough measure of the distribution of New York apple orchards (Table 6).

From the above data, it would appear that most of the 76.6% of New York apple farms with less than 50 acres would fall into the category of limited resource, retirement, residential/lifestyle or lower-sales farms. Given the relatively low tree density, low percentage of bearing trees and low yields, most of these holdings were old or unproductive. Even if the average grower price doubled to 24 cents per pound, sales in most of these farms would be less than \$100,000. If all their product was sold for processing at recent average prices of 6.5 cents per pound, their average revenue would be about half of what is shown here. The unknown factor is the asset value of these orchards. Fifteen acres or more near a prime development area could be worth more than the \$150,000 used as the minimum for a limited-resource farm. However, this would not be true in

areas where farming is the only option.

In contrast, the 301 farms with 50 or more acres all averaged sales of more than \$100,000 even at recent depressed price levels. About half

of these were small farms with higher sales, and about half were large farms. Together, they farmed 69.1% of New York apple acres and accounted for almost 90% of New York apple

**TABLE 5**

**USDA farm typology.**

Category	Farm sales (\$1,000)	Farm assets (\$1,000)	Household income (\$1,000)	Occupation
<b>Small family farms</b>				
1. Limited-resource farms	<100	<150	<20	Varied
2. Retirement farms				Retired
3. Residential/lifestyle farms				Non-farm
4. Farming-occupation farms: lower sales	<100			Farming
5. Farming-occupation farms: higher sales	100-250			Farming
<b>Other farms</b>				
6. Large family farms	250-500			Farming
7. Very large family farms	>or = 500			Farming
8. Nonfamily farms (nonfamily corporations) (cooperatives operated by hired managers)				Farming

**TABLE 6**

**Characteristics of New York orchards, 1999-2001.**

Acres harvested in 1997	Farms (no.)	Acres (no.)	Trees/acre (no.)	Trees non-bearing (%)	Yield/acre (49 lbs)	Rev/farm* (\$)
0.1 to 0.9 acres	134	55	82	14.1	52.6	109
1.0 to 4.9 acres	355	771	97	25.3	123.9	1,356
5.0 to 14.9 acres	254	2,150	129	16.0	179.6	7,663
15 to 24.9 acres	112	2,096	120	15.1	208.0	19,622
25.0 to 49.9 acres	130	4,501	124	14.6	324.2	56,579
50.0 to 99.9 acres	129	9,072	137	16.3	372.7	132,099
100.0 to 249.9 acres	121	18,392	132	10.8	400.2	306,607
250.0 to 499.9 acres	37	11,733	156	14.0	409.3	654,194
500.0 to 749.9 acres	8	4,992	150	26.9	430.3	1,353,213
750.0 acres or more	6	6,487	94	5.8	433.8	2,363,858
<b>Total</b>	<b>1,286</b>	<b>60,250</b>	<b>133</b>	<b>14.2</b>	<b>379.9</b>	<b>89,696</b>

\*Assuming average price of 12 cents per pound.

**TABLE 7**

**Marketing alternatives, by major category.**

Category	How defined	Alternatives included
Process-driven	Determined by how the fruit is grown, e.g., no synthetic chemical used.	<ul style="list-style-type: none"> <li>√ Organic</li> <li>√ Sustainable</li> <li>√ Bio-dynamic</li> </ul>
Direct marketing	Farm deals face-to-face with consumer	<ul style="list-style-type: none"> <li>√ On-farm markets</li> <li>√ On-farm U-Pick</li> <li>√ Roadside stands</li> <li>√ Farmers' markets</li> <li>√ Itinerant peddlers</li> </ul>
Demographic segment	Specific segments of the population are targeted	<ul style="list-style-type: none"> <li>√ Ethnic markets</li> <li>√ Upscale restaurants</li> <li>√ Local retailers</li> <li>√ Community supported agriculture</li> <li>√ Tourists</li> </ul>
Marks of excellence	Symbols are used to show a superior product	<ul style="list-style-type: none"> <li>√ Brands</li> <li>√ Certificates of origin</li> <li>√ Logos, marks, etc.</li> </ul>
Marketing via alternative media	Indirect marketing via media	<ul style="list-style-type: none"> <li>√ Direct mail</li> <li>√ Catalog</li> <li>√ Internet</li> </ul>

production. Average yields were low and the percent of trees non-bearing varied widely. However, even modest increases in average prices would dramatically increase their average revenues.

Most larger apple operations will have to depend for much of their income on sales to conventional fresh wholesale and processing markets. In either case, it will be absolutely vital to have the right varieties, to increase tree density, and to raise average quality and productivity. Research and extension agents and agriservice representatives can play a vital role in facilitating that transition. The prospects for enhanced marketing to processing channels depend heavily on the new product prowess of the major processing companies. For existing processing products, the pressures of international competition are likely to keep downward pressure on prices. Lowering unit costs will be the primary way to increase net revenues. Enhanced marketing in the fresh market wholesale channels will depend on New York's ability to deliver a year-round supply of desirable varieties. About the only four varieties that New York can currently deliver are McIntosh, Empire, Red Delicious and Rome—all varieties that retailers plan to stock less of in the coming season. Even if varieties meet retailer specifications, New York must be able to wrest shelf space away from Washington, New Zealand, Chile and other suppliers. That will take a powerful, coordinated effort from the big players in the New York apple industry.

In the meantime, every segment of the New York apple industry urgently needs to explore the opportunities available in alternative markets, whether traditional direct markets such as U-pick, roadside stands or farmers' markets, or newer outlets such as Community Supported Agriculture (CSAs) and Internet marketing.

Marketing alternatives can be classified in a number of ways (Table 7). Some of the biggest hype has been given to process-driven alternatives such as organic or biodynamic. These are, in essence, product variants, not alternatives to conventional wholesaling and processing outlets. As volume increases, more of these products

must be moved through conventional channels. Direct marketing approaches such as U-Pick, roadside stands and farmers' markets are also well established. These are most suitable in areas near large urban/suburban populations and busy highways. A third marketing alternative is to serve specific demographic segments such as ethnic markets, upscale restaurants or CSA networks that want a different food experience. These offer a great opportunity for vegetable growers who can produce thousands of specialty crops and herbs. They offer less opportunities for apple and pear growers where developing a specialty variety requires a large investment per acre and many years of maturation.

There have also been numerous efforts to distinguish products by one or more marks of excellence. These may be proprietary (e.g., Dole) or generic (e.g., New York apples) brands, logos or marks. In Europe, there has been a large investment in geographical indications. Many producers believe that such Protected Geographical Indications (PGIs) can lead to a price premium. In addition, the Europeans have been using these as trade barriers. Various marks and labels are also being promoted as assurances to the consumer of the social desirability of production practices. Like process-driven approaches, their product must compete in the mass wholesale and processing segment. A final group of marketing alternatives relates to use of media for direct sales. Direct mail and catalog selling have long been established. Sales through Web sites are a modern variant on direct mail sales.

The only way to decide whether any of these marketing alternatives is appropriate for your business is to do a thorough analysis. Location is a key factor in some alternatives such as organic production or U-Pick marketing. For all of these alternatives, the size of the potential market and the likelihood of competition and your ability to offer a unique product are critical. The alternatives must pencil out financially. You have to know what your costs will be, what pricing strategy you will use and what level of promotion will bring in customers but not break the

bank. Many of these marketing alternatives also will require major changes in how your personnel operate (e.g., in direct marketing, you must think like a retailer, not a farmer), in your physical facilities and in working conditions. For each alternative you need to get the best information you can on each of these considerations and then objectively assess how your firm would rate on each consideration. I recommend some sort of numbering system. If your firm's total rating is below average in a particular alternative, or very low on a key factor such as market size or personnel skills, it is probably not for you. By comparing your firm's scores for different marketing alternatives, you can establish which one would have the greatest potential for you. It may well be after such an exercise you will decide that the conventional wholesaling or processing outlets are still your best alternative.

### Assessing Individual Marketing Alternatives

The sample form below (Table 8) can be used to create an objective score for each marketing alternative you wish to assess. Complete a form for each alternative and then compare results. Follow these easy instructions.

1. Enter a score from 1 to 5 for each consideration.
2. Enter the frequency of each score on the last line.
3. Enter the total score.

Note: The purpose of a checklist is to ensure that all key considerations are taken into account. The distribution of scores helps to highlight the areas of greatest strengths and weaknesses. The total score can be used in ranking different marketing alternatives.

### SUMMARY AND CONCLUSIONS

Many factors have combined to make life difficult in the apple and pear industries. The total food system is under stress from increased supplies, static or declining demand in the developed world and economic setbacks in the most promising markets in the developing world and the bruising retail battles that are involving every supplier. Slower market growth or increased competition in one region of the world has a ripple effect on every other region. For example, China's inroads into the southeast Asian fresh apple market have slowed Washington State exports and brought more pressure from Washington product in the eastern seaboard. The expansion of world apple juice supplies has led to increased U.S. imports of low cost apple juice concentrate and depressed prices of all processing apples.

Each producer, each district and each region has to combat these pressures. At the same time, changing market needs are offering many new market opportunities to producers. To grasp these opportunities, producers and their organizations must be willing to change, they must do their homework on where their comparative advantages might lie and they need courage and determination to strike out in new directions.

Somehow, somewhere, each year consumers eat about 60 million metric tons of apples (equivalent to 315 billion size 100 apples). I am convinced that if they used their ingenuity, apple growers can figure out ways to sell most of those apples at a profit.

**TABLE 8**

**Individual marketing alternatives assessment.**

Considerations	Scoring	1	2	3	4	5
1. Location	Most favorable = 5					
2. Market size	Largest = 5					
3. Competition	Least = 5					
4. Uniqueness of product offering	Most unique = 5					
5. Psychic value	Most value added = 5					
6. Pricing strategy	Most ability to control = 5					
7. Promotion	Most resources = 5					
8. Financing	Most resources = 5					
9. Personnel	Most suitable to needs = 5					
10. Working conditions	Least changes needed = 5					
11. Infrastructure needs	Least changes needed = 5					
12. Other factors	Most positive = 5					
Frequency of scores						
	<b>Total score:</b>					