

Globalization of the Washington Apple Industry: Its Evolution and Impacts¹

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Introduction

Over the past few years, "globalization" has become an immensely popular topic. Like other *au courant* terms in the social sciences that emerge from time to time to capture the spirit of ongoing social change, writings on globalization can have an apocryphal tone. Thus, some authors consider it important to identify a date, generally in the early 1970s, that marks the emergence of the "globalization era" (Amin 1994; Bonanno 1996). Yet, the integration of production and consumption systems on a global scale is an ongoing process that is as old as capitalism itself (Sweezy 1992). Perhaps, as McMichael (1996) argues,

it is not globalization that is new, but our awareness of it.

Debates over when globalization began and what it signifies can appear to be trivial. However, the concept of globalization does reflect important shifting realities. Technological and political-economic changes are promoting the further integration of human activity on a global scale centered around the construction of transnational systems of production, trade, finance and consumption. Simultaneously, governments are arguably playing a declining role in the regulation of economic activity within their legally defined territories (Cox 1994; Sassen 1996), and for larger firms at least, the accumulation of capital and the management of enterprises has become a more international activity (Fagan 1994).

While one must be careful not to ascribe undue influence to the role of globalization in promoting particular social changes, globalization can help explain how cross-national commodity systems affect social, economic and political changes at a local level. "Few Studies dealing with the

restructuring of contemporary capitalism successfully link macro-economic developments to a careful empirical analysis of the impact of these developments at the level of the job structure and the quality of work" (Leach 1995: 342). A study of globalization processes that is grounded in an understanding of how social processes evolve at the local level (Marsden 1992), can help us improve our understanding of macro-micro social linkages (Symes, 1992), as well as create a more refined conceptualization of globalization for developing policy responses that can help communities adapt to these macro social forces.

The objective of this paper is to contribute to such research by analyzing the historical roots of the globalization of the Washington apple industry and what some of the contemporary impacts of that process appear to be. In particular, we are most concerned with how the increasing global marketing of Washington apples has been associated with changes in labor relations in that industry, including the ongoing attempts by the

International Brotherhood of Teamsters ("Teamsters") and the United Farm Workers (UFW) unions to organize workers in apple orchards and packing houses. This campaign is in response to complaints from the largely Hispanic workforce that some firms have neglected those who pick, pack and ship apples.

We recognize that there can never be a "clean" description of what globalization is and what the associated impacts are because of the tremendous variability that exists in production and commodity systems (Raynolds 1994). Indeed, the case of Washington apples reveals just how "dirty" a concept globalization can be. Certainly, the labor force that works in the apple industry can be said to be globalized to the extent that it employs a large number of immigrant and migrant workers. Also, in recent years there have been cases of multinational firms, specifically Dole Fruit Co. and Dovex, and Italian based firm, purchasing apple warehouses and orchards in the state, although their influence in the state apple industry is still relatively small.

However, we note that in the case of Washington apples, globalization is characterized not by the cross-national production of the commodity, but by the internationalization of its distribution, or what we refer to as the "accessing of global markets." In addition, we also observe that Washington apples have been marketed internationally for nearly 100 years, although the industry has become far more oriented towards global markets during the past decade. Assuming that "A Global Commodity Chain consists of sets of interorganizational networks clustered around one commodity or product, linking households, enterprises, and states to one another in the world-economy" (Gereffi 1994: 2), the globalization of the Washington apple industry clearly has occurred, and as a result of a long historical process.

Our study describes this century-long globalization of Washington's apple industry, and then proceeds to discuss related changes in labor relations during the most recent period of expansion. It is based on observations of the

industry, supplemented by historical material, recent industry sources, and public statistics. Together, we describe the historical periods that can be used to outline the establishment and growth of the industry and how exports have always been an integral part of the industry. Since 1987, however, the industry has become increasingly dependent on overseas markets. This shift, in turn, is hastening structural changes in the industry, particularly in terms of ownership structure and labor issues.

The Birth of Washington's Apple Industry: 1885-1920

To comprehend fully what globalization represents in the case of Washington apples, and what the associated transformations have been within the structure of the industry and its labor relations, it is useful to analyze the historical roots of the industry. The word "industry" is most appropriate in this case because, unlike other apple growing regions in the United States, apple production in Washington was viewed primarily

as a commercial venture from its inception. The history of commercial production of Washington apples is also intriguing in that in many aspects it is a stereotypical case of the settlement and exploitation of land and water resources in the western United States.

The seeds of the apple industry were literally and figuratively sown throughout the state by white settlers in the late 19th Century. Many early plantings were experimental and small, and intended primarily for family and local use. However, it was soon discovered that the soils and climate of the arid eastern section of the state were ideal for producing a high quality fruit, so long as irrigation was available. Soon, settlers began establishing small orchards in the sagebrush, generally five to ten acres in size, with the clear goal of commercial sales in mind (Bright 1988). These settlers had to develop small irrigation networks on their land to access water from local rivers. They transported their produce by wagon to nearby local markets to a growing population of miners, loggers and other settlers. However, the

development of the industry was limited by the distances to major markets and the difficulties in accessing water.

Around the turn of the century, these limitations began to be overcome, as illustrated by the case of the establishment of the apple industry in North-Central Washington (including Chelan, Douglas and Okanogan counties), which became the largest producing region in the state in the pre-WWII era. The completion of a railroad link from Wenatchee to the Puget Sound region (Seattle) in 1893 by the Great Northern Railroad provided the solution to the transportation problem, while the development of increasingly large and modern irrigation systems addressed the water problem. Initially, the irrigation systems were built by farmers, with real estate developers helping organize the construction of larger systems by recruiting engineers who had experience in developing the Yakima Valley, and by accessing loans from private lenders. The critical event in the expansion of irrigation systems in the North-

Central and the South-Central (Yakima) regions, took place in 1905 when the *U.S. Department of the Interior* decided to allocate funds for further irrigation development (Mabbott 1940).

The period from 1905 to 1915 has been referred to as the "apple craze" in Eastern Washington, with prospective orchardists being encouraged, often through publicity actions on the part of the *Great Northern Railroad*, to purchase land and establish apple orchards (Luce 1972), which were touted as low maintenance, high income earners (Schwantes et al. 1988). In 1904, it was estimated that a minimum of 426,000 apple trees were planted in the Wenatchee valley (Mabbott 1940), and this continued to rise until the 1910-12 period, which is considered to have been the peak period for plantings in the valley (USDA 1940).

Clearly, the development of irrigation systems and the wooing of settlers to the region created a major push for the rapid establishment and expansion of a commercial apple industry in eastern Washington. This led to amazing profit potential for

early settlers and developers. Mabbott recounts a case of one settler who purchased land in the Wenatchee area in 1886 under the *Desert Reclamation Act* for 25¢ an acre, and who was able to sell this land twenty years later for \$1,000.00 per acre! The idea of owning a 10 acre orchard on the western frontier was undoubtedly appealing to many. This appeal, and the resulting rapid growth of the industry, is exemplified by the fact that the total number of apple bearing trees in the North-Central region grew fivefold between 1910 and 1920 (Mabbott 1920).

Equally important to the development of the industry was the laying of railway lines, which permitted the "export" of apples out of the North-Central region. Railway service to Chicago and Seattle permitted the sale of apples not only to growing American urban markets, but outside the United States as well. Particularly intriguing is the fact that global selling was practiced from the birth of Washington's apple industry. Luce (1972) reports that Yakima apples were shipped to Hong Kong and Honolulu in 1898 and to Europe

in 1899! By 1906, Washington apples were being shipped via the port of Seattle to Australia, Japan, New Zealand, the United Kingdom, South Africa, Egypt and Latin America. Given our working definition of globalization as access to global markets, we must conclude that the apple industry in Washington was "globalized" from its inception a century ago.

To summarize, the Washington apple industry clearly began as a commercial industry. Its early development was made possible by the construction of railway lines and irrigation systems, both of which were financed in part by the federal government. On the ground, as it were, orchards were planted in small plots by farm families, who were attracted to the west in hopes of making a comfortable living by being commercial orchardists.

In the 1920s, "the most common size orchards in both the Wenatchee and Yakima districts were from 10 to 15 acres ... However, there were many orchards of considerably greater size which usually were owned by some fruit company" (Mabbott 1940: 38).

The financial success of the dreams of these farm households was dependent on shipping apples out of the region to both national and international destinations. As apple production expanded, price maintenance became the major challenge facing this infant industry.

Preserving Prices - The Era of "Stable" Production: 1920-1940

The creation of the Washington apple industry was quick and extensive. As trees matured, production expanded. Although data on commercial production in Washington State at the turn of the century is sketchy, Mabbott (1940), using data supplied by the Wenatchee Valley Traffic Association, reports that the number of boxes of apples shipped from the North-Central district grew from 2.5 million in 1912 to more than 10 million by the 1920s. Consequently, the hope of easy returns on investment in apple orchards soon turned to an imperative of how to "handle the crops."

After WWI, the market situation for Northwest apples became particularly competitive. Not only was there now a huge supply of Washington apples that had to be marketed, but apple production in the Northeastern US was becoming increasingly commercialized and began to exert a strong influence on the price of northwest apples (Prugh and Gerry 1930). In addition, "Since the end of the World War, apples have experienced increasing competition from other fresh, canned, and dried fruits and from fruit and tomato juices" (USDA 1940; 5a), particularly citrus fruits.

Thus, by the 1920s, the Washington apple industry had exited its initial growth phase, and entered an era of institutional and technological development that was not geared towards increasing production levels, but towards improving quality and maintaining returns to growers. One of the crucial institutional changes was the creation of marketing cooperatives. In addition to maintaining warehouses, cooperatives "could provide greater outlets for fruit grown and reduce the costs of

transportation, distribution, production and packing" (Bright 1988: 108). In turn, these cooperatives took to organizing federations to further lower costs in packing and shipping, and to promote the marketing of apples in various locations², using brand names developed by the federations. For example, the Wenatchee-Okanogan Cooperative Federation was founded in 1922 as an association of eight producer cooperatives. By 1926, this federation had developed the "Skookum" brand of apples, and was selling branded apples to buyers in 228 cities in 37 states, as well as to 10 foreign markets (Gwin 1927). Many of the marketing functions, such as packing, were thus being transferred off the farm to cooperative and privately owned packing sheds, which enabled growers to lower their costs associated with packing, shipping and marketing and to improve access to markets.

Another important institutional change was the development of grading standards. Standards limit confusion in the market place, particularly when buyers and sellers

are not in direct physical contact with each another. Buyers need to know what they are ordering and sellers need to be assured that the product is not being dismissed out of hand when it reaches the buyer's location.

At the instigation of the apple industry, the Washington State Legislature in 1913 mandated the creation of the Horticultural Inspection Service (Luce 1972). Under this system, the State Commissioner of Agriculture holds a hearing known as the *State Grade and Pack Conference* during the annual meetings of the State Horticultural Society. Grading standards for Washington apples are debated and decided upon at these meetings (Maynard 1923). These standards, which were established nearly a decade before any relevant Federal standards (Bright 1988), continue to be more stringent than Federal standards, thus ensuring Washington's reputation for high quality apples.

Having established these quality standards, the next challenge was enforcement. In 1921, the 1913 law was amended to allow the State of Washington to enter into a coope-

orative agreement with the USDA for inspecting Washington apples (Luce 1972). Carloads of apples being unloaded in major cities thus could be checked by USDA inspectors, limiting a buyers' ability to reject product. Luce also states that this program led to a swing to predominately F.O.B. (Freight on Board) sales of Washington apples, because grades were uniform and buyers and sellers could both be confident that the apples packed on to a train met the buyers' specifications.

Numerous technological developments also took place at this time in Washington's orchards and packing houses. These included the refinement and expansion of cold storage capacity in order to maintain apple quality and extend the marketing season into the spring months (Mabbott 1940), the development of improved portable spraying technology (Luce 1972) and the washing of apples before packing. In order to maximize both quantity and quality of production, the control of insect and other pests became one of the central concerns of Washington's apple

industry. By the 1930s, "control of insect pests represents about half the total costs of growing apples to harvest time in the Wenatchee-Okanogan district" (USDA 1940: 18).

One of the biggest pest problems was codling moth, which entered the Pacific Northwest in the 1880s. An early technological response to this problem was the use of lead-arsenate sprays in the orchards, which led to a case in "the fall of 1926 when a fruit retailer in England was hailed into court and fined for selling American apples carrying an excessive amount of arsenic" (Luce *op cit*: 27). One response to this dilemma was the washing of fruit before it was packed, which, according to Bright (1988), further contributed to the decline of on-farm packing as farms could not afford to invest in packing lines that could clean fruit. Thus, we note that not only were export sales an important element of the Washington apple industry at an early part of its history, but that global food safety issues could arise and stimulate a technological and institutional response within the industry.

It was also during this period that the Delicious variety, a hardy tree that produced a sweeter fruit that was popular with consumers, stored better than other varieties, and grew well in the eastern Washington climate, came to dominate the industry. One of the first major Red Delicious strains, known as Starking, began to be planted in the State in the 1920s (Luce 1972). The popularity of Delicious varieties continued to grow, particularly during the 1930s, because Red Delicious prices were constantly higher than for virtually all other varieties. During the period from 1930-1937, net return per acre after picking and packing costs for Washington's Delicious apples was \$236.00, nearly double that of the state's next most profitable variety, the Yellow Newtown, at \$146.00 (USDA 1940: 17). Although other varieties did not disappear, Red Delicious came to dominate the industry, at the same time that midwestern agriculture was also developing a "Fordist," mass production model (Kenney et al. 1989).

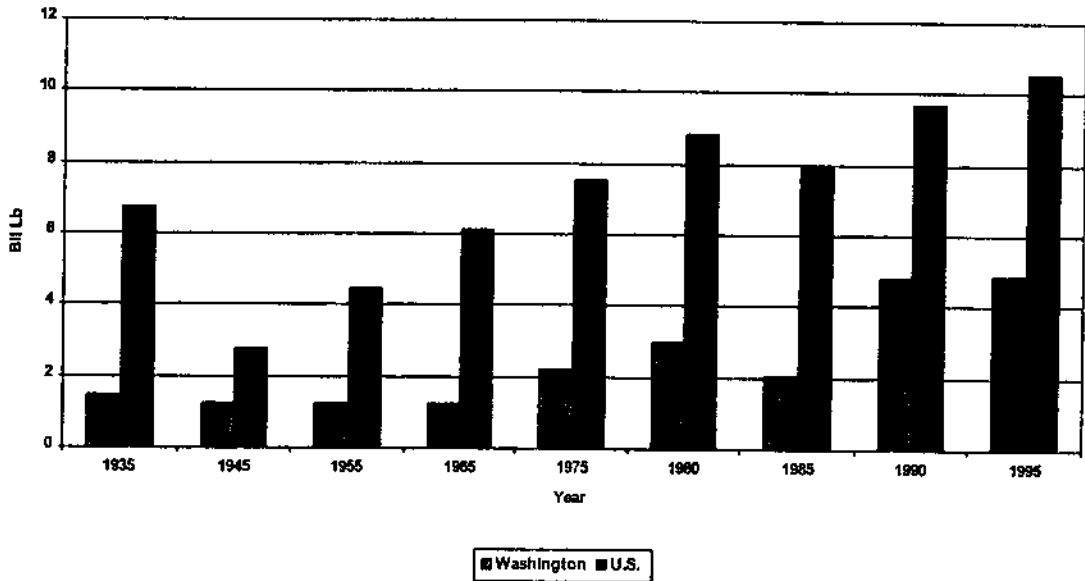
The late 1920s and 1930s were characterized by an era of "stability" in the Washington apple industry. Overall production of apples did not appreciably rise or fall. Indeed, during the depression years, apple acreages decreased, despite various federal programs to help growers cope with weakening prices. For example, Bright (1988) reports that apple acreage in the Wenatchee-Okanogan district decreased from 33,000 to 27,000 acres between 1933 and 1939. The Washington apple industry also faced increased competition from other fruits for domestic markets, and production costs for apples grew as well (USDA 1940). All of these factors contributed to a price squeeze for growers.

In spite of these difficulties, however, one quarter of the U.S. apple crop in the 1930s was being produced in Washington, with over half being sold in 66 major U.S. cities (Office of the Secretary of State 1938). The principal markets were New York, Chicago and L.A., which alone accounted for one-fifth of all Washington and Oregon shipments (Quitsland 1940). Overseas

shipments did decline somewhat as a result of the depression, but were still appreciable. These exports accounted for approximately 10 per cent of all U.S. **commercial** apple production. However, producing for specific export markets was not common. Exports were generally treated as an extension of domestic markets. With the onset of WWII, exports took an understandable dive.

This era of stability in production continued into the post-WWII era. As evidence by Figure 1, from 1935 to 1965 apple production in Washington hovered between 1.2 and 1.4 billion pounds. This mirrored the situation across the United States, where production averaged between 4.5 and 5.5 billion pounds. Technological developments did continue after the war, with one of the more significant being the commercial introduction of Controlled Atmosphere (CA) storage technology in 1959, which allowed for year round storage and sale of apples (O'Rourke 1994). However, these developments did not immediately stimulate production increases, although they did create the conditions for the

Figure 1
APPLE PRODUCTION
 Washington vs. U.S.



Source: WA Agricultural Statistics, various issues and U.S. Ag Statistics, various

second round of expansion in Washington's apple industry.

The Second Era of Expansion: 1970-Present

Washington's apple industry began a new phase of expansion during the late 1960s. This new growth in acreage and production levels began slowly, and was made feasible by several factors. Perhaps

the most important was the development of the Columbia Basin Irrigation Project during the 1950s by the U.S. Bureau of Reclamation. This project delivers Columbia River water from behind Grand Coulee Dam to the central part of Washington State. This particular region is very arid and water is **the** constraining factor of production. The expansion of irrigation into this region provided the possibility for the establishment and

growth in production of a variety of agricultural commodities, including apples.

An additional factor was the commercial introduction of controlled atmosphere (CA) storage. This technology enhanced the apple industry's ability to hold large volumes of fruit for sales during the summer months in the year following harvest. The first commercial CA storage was apparently built in 1959. Since that time the proportion of the crop marketed during the summer months has increased from 5 to 15 percent, a truly dramatic increase when considering the tremendous growth in production since 1959.

These conditions did not lead to an immediate increase in plantings of apple orchards. Rather, they contributed to a set of conditions that would eventually facilitate that expansion. Much of the desert lands that were opened to irrigation in the Columbia Basin originally were planted in potatoes, sugar beets and other annual crops. During the 1960s, the sugar beet industry began to go into decline due to political-economic changes in the sugar

industry. At the same time, severe winter damage to apple trees during the winter of 1968-69 that helped push up apple prices during the 1970s, along with a favorable change in income tax policy that allowed people to shift income from other sources into agriculture without paying tax on that income, created conditions favorable for increased investments in apple orchards. The loss of sugar beet processing facilities in the winter of 1978-79 added to the expansion push as beet growers looked for replacement crops.

These factors led to a surge in tree plantings in Washington beginning in the late 1970s and early 1980s. Washington increased its share of U.S. fresh apple production from 25 percent in the late 1960s to about 60 percent in the mid 1990s (See Figure 1). Overall apple production in the United States expanded from 6 million to 11 million pounds per year between 1965 and 1995, with 3.5 million pounds of that increase occurring in Washington State. The ability to harvest and pack this rapidly expanding crop in Washington was made possible in

large measure by Mexican and Mexican-American labor, whose history in the State dates back to the 1950s when immigrant labor began to be utilized to harvest vegetables such as green peas and asparagus.

In terms of the structure of ownership in the industry, this second wave of expansion has followed a very different pattern from the first. Most orchards in turn-of-the-century Washington were located in the Yakima (South-Central) and Wenatchee-Okanogan (North-Central) districts and were 10 to 15 acres in size. Although average orchard sizes did increase through the century, as late as 1978, only 3.1 per cent of orchards in the State were more than 100 acres in size (174 of 5,626 orchards), with these orchards accounting for 30.4 percent of all the orchard land in the State (see Table 1).

Just 14 years later, in 1992, orchards larger than 100 acres accounted for 7.4 per cent of all orchards and 53.1 percent of all orchard land. Much of this expansion has taken place in the Columbia Basin. It has been due in part to the

active influence of the "state," which in this case included the federal government's development of irrigation systems and agricultural support services, water and land which was made available to investors at relatively low prices, permitting the development of large orchards, although still largely under family ownership. This development of new apple orchards is also significant because yields from replanted orchards seldom match those from "virgin" soil.

This shift in the location and size of commercial apple production in Washington State is illustrated in Table 2. Data on the number of apple orchards and acres in orchards are broken down by selected Washington counties for 1982 and 1992. Grant County, which lies within the Columbia Basin, went from 12,448 acres of apples orchard in 1982, most of which was planted between 1978 and 1982, to 24,154 acres in 1992. Anecdotal evidence suggests that this growth in apple orchards in Grant county continues. In any case, nearly half (48.6 per cent) of the increase in apple acreage in the 10 counties

TABLE 1

Number of Apple Orchards and Acres of Orchard in Washington State

Acres	Orchards				Acres			
	1978	1982	1987	1992	1978	1982	1987	1992
< 5	2,229	1,786	1,527	1,380	3,627	3,212	2,971	2,501
5-25	2,079	2,150	2,037	1,698	25,828	26,704	25,278	21,163
25-50	762	790	803	729	15,616	27,357	27,716	25,216
50-100	382	418	498	449	25,096	28,117	33,126	30,382
> 100	174	262	330	340	35,077	60,340	73,519	89,846
Total	5,626	5,406	5,195	4,596	115,244	145,630	162,610	169,108

Source: U.S. Department of Commerce, Bureau of the Census, *Census of Agriculture*, Vol. 1, Part 47.

listed in Table 2 occurred in Grant country.

The increasing size of orchards underscores an important historical shift that is taking place in Washington's apple industry. Between 1982 and 1992, the average orchard size in Grant Country went from 61.9 to 99.4 acres, which is three times the average size of orchard in the Wenatchee-Okanogan district and more than twice those in the Yakima district. Where orchard expansion was once measured in tens of acres, well-financed orchard

developers, including pension funds, insurance companies and other non-local interests (Gilbert 1997), now think in terms of thousands of acres.

This expansion in acreage has had a number of effects, including a tremendous surge in production. A key turning point for the industry, in terms of how it viewed marketing, came with the 1987 growing season. The maturing of trees planted in the late 1970s and early 1980s, in conjunction with a good growing season, caused fresh apple production in Washington State to

TABLE 2

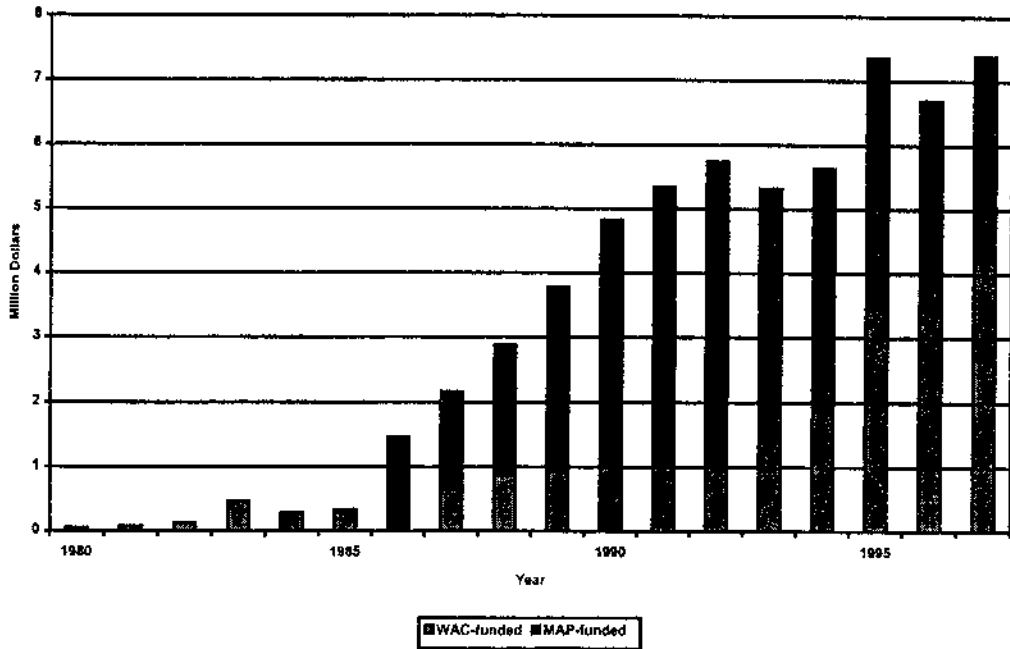
Number of Apple Orchards and Acres of Orchard in Washington State by Selected Counties

	1982			1992		
	Number	Acres	Avg.	Number	Acres	Avg.
Wenatchee-Okanogan District						
Chelan County	980	17,643	18.0	826	17,825	21.6
Douglas County	454	14,211	31.3	411	14,126	34.4
Okanogan County	819	25,011	30.5	631	25,395	40.3
(Sub-Total)	2,253	56,865	25.2	1,868	57,356	30.7
Yakima District						
Benton County	197	7,593	38.5	211	10,746	50.9
Kittitas County	22	292	13.3	42	1,095	26.1
Yakima County	1,781	58,841	33.0	1,454	61,910	42.6
(Sub-Total)	2,000	66,726	33.4	1,707	73,751	43.2
Columbia Basin						
Adams County	25	1,237	49.5	28	2,247	80.2
Franklin County	77	3,032	39.4	121	5,347	44.2
Grant County*	201	12,448	61.9	243	24,154	99.4
(Sub-Total)	303	16,717	55.2	392	31,748	81.0
Walla-Walla County	24	1,872	78.0	23	4,042	175.7

*In the 1978 census, data by county for apple orchards none is available.

Source: U.S. Department of Commerce, Bureau of the Census, *Census of Agriculture*, Vol. 1, Part 47.

Figure 2
Washington Apple Export Promotion, 1980-97



Source: William Jensen, Washington Apple Commission.

jump from 3.16 billion pounds in 1986 to 5 billion pounds in 1987! This crop was so large that some of it was lost because of a shortage of bins to handle the fruit in the orchards and insufficient warehouse space. It was also too large for the domestic

market to absorb at prices that would cover harvesting and packing costs. This crop, probably more than anything else, forced the industry to realize that it could not achieve any level of profitability without the export market.

Re-Globalization of Washington Apples

As noted earlier, exports have been part of the Washington apple industry since its inception. Exports declined during the Depression and War years, but rebounded slowly during the 1960s and 1970s. During the latter period, although some firms were active in foreign markets, exports were primarily an outlet for selling excess fruit in years of bountiful production.

Gradually, the industry began to recognize the potential of international markets. In 1980, the Washington Apple Commission funded \$45,563 of export promotion for the industry. By 1985, this figure had risen to \$333,184, funded by per-box industry surcharges. The US Department of Agriculture also began significant investments in Washington apple export promotion, starting with a \$1.4 million contribution in 1986 (See Figure 2). Recent figures indicate total estimated expenditures of \$7.4 million in 1997, including \$3.2 million from the USDA and \$4.2 million from Washington

apple growers (Jensen 1997). Initially, no particular markets were targeted. More recently, however, sophisticated, culturally-specific campaigns have been launched in countries considered to be prime growth markets for Washington apple export (ibid.).

The jump in production levels that began with the 1987 crop brought about a change in the mindset of many people in the state's apple industry. That year's production level, combined with the realization that the number of acres of apple orchards was continuing to increase, led many to realize that export markets needed to be an integral part of the marketing mix, and not just a release valve for extra production. A concerted marketing effort was put into place in various countries. Subsequently, the 1990s have witnessed a steady expansion in Washington state apple exports to historic highs, from about 10 million boxes in the early 1980s to nearly 30 million in 1994 and 1995 (See Table 3). Exports now account for nearly one-third of all fresh apples shipped from the state.

TABLE 3**Recent History of Washington Apple Production and Shipments****(Figures in 1,000s of 42 lb. boxes)**

Year	Total Wash.	Processed	Total Fresh	Exports*	Domestic Fresh	Share of U.S. Fresh Apple Prod.	Share of U.S. Apple Exports
81-82	65,714	17,146	47,871	10,635	37,236	45.1%	60.9%
82-83	62,262	15,377	46,885	10,589	36,296	43.5%	65.8%
83-84	71,429	19,397	52,032	10,020	42,012	47.4%	73.2%
84-85	68,929	18,629	50,300	9,509	40,791	49.0%	71.5%
85-86	49,025	12,313	36,712	5,370	31,342	36.4%	54.7%
86-87	71,584	16,627	54,957	7,093	47,864	50.7%	60.0%
87-88	106,974	38,910	68,064	14,448	53,576	50.6%	79.5%
88-89	84,507	20,872	63,635	8,820	55,355	50.7%	63.2%
89-90	109,502	31,056	78,446	14,428	64,018	56.0%	82.2%
90-91	105,625	32,076	73,549	14,349	59,200	55.0%	76.0%
91-92	92,930	21,729	71,201	19,457	51,744	53.0%	72.1%
92-93	102,046	27,893	74,153	17,126	57,027	53.9%	68.0%
93-94	114,041	30,953	83,088	28,398	54,690	57.0%	80.0%
94-95	131,681	40,000	91,681	30,585	61,095	60.0%	83.8%
Est. 95-96	108,056	29,000	79,056	23,035	56,021	60.0%	65.8%

*Excludes Canada

Source: *Wenatchee Valley Traffic Association*
Washington Apple Commission

As the 20th Century comes to a close, Washington producers now dominate USA fresh apple exports, which have increased four-fold during the last decade. Eighty percent of all U.S. apple exports in 1994 and 1995 were grown in Washington (See Table 3). By 1995, Washington apple exports accounted for about \$346 million in sales (Jensen 1997). In an era when access to foreign markets has become a rallying cry for U.S. agriculture, the "re-globalization" of the Washington State apple industry has become a major success story. Such heady growth, however, has not been sustained without significant impacts on the structure of Washington's apple industry, including its organization, location, and employment.

Impacts of the "Re-Globalization" of the Apple Industry

Not only have export sales of Washington apples grown rapidly in recent years, but access to global markets, which in this paper we are equating with "globalization," has undergone a qualitative change

during the past decade. Continued and improved access to foreign markets is now considered by industry participants and observers to be absolutely essential for the marketing of each year's crop. However, this means that the industry will have to compete against other producing regions, with the People's Republic of China looming in the not too distant future as a potential major competitor. In this context, it is important to note that between 1990 and 1994 "the average price (for apples), however, has declined from \$328 to \$270 per ton" (Wahlers 1996: 4). In other words, increased access to global markets does not automatically translate into higher prices.

To cope with these pressures, the industry has begun diversifying into alternative varieties such as Gala, Fuji, Braeburn and Jonagold. Thanks to the efforts of the New Zealand apple industry, there is consumer recognition for these varieties in some Pacific Rim markets and a willingness to pay prices substantially higher than is normally paid for Red Delicious. That price differential has induced many

growers throughout the industry to rapidly shift into the newer varieties. These plantings are in both old orchards (i.e. replanting) and new ground, primarily in the Columbia Basin (NY Times 1996). The response by growers to price signals for newer varieties has been so rapid that in less than ten years Fuji has become the number three apple variety in Washington.

To sustain large-scale production of all varieties, many new orchards are being established in non-traditional apple-growing areas of the state, such as Grant county. Some of these new orchards are being established by packer-shippers in the Wenatchee and Yakima areas, as they seek to source more and more of the apples they pack from their own orchards. There is also an example of a new, very large-scale, intensively cultivated apple orchard being developed in the Columbia Basin region in conjunction with the construction of a new packing-shipping operation. Yakima and Wenatchee, the traditional centers of Washington's apple industry, will continue to dominate, but the role of

the small, independent orchardist in the traditional producing districts will probably continue to decline (Table 1).

One impact of this growing concentration and vertical integration of Washington's apple industry is an increase in demand for paid, rather than household, labor. Traditionally, the farm household supplied much of the labor used in apple orchards. However, as orchard size increases, the proportion of household labor used in the orchard declines relative to total labor requirements. Furthermore, as the number of orchard households declines, the amount of household labor used in apple orchards in Washington State will also decline. Hence, more and more hired labor will be needed in the apple orchards.

Unfortunately, accurate historical data on hired employment in production agriculture in Washington State is difficult to obtain. However, the situation recently has begun to improve, in part as a result of changes in state law that have expanded the definition of "covered employment." Thus, we know that

between 1990 and 1994, average annual employment in agricultural crop production in Washington State increased by 2,472 from 54,263 to 56,735. Of this total, the increase in average annual employment in tree fruits was 2,927, from 30,966 to 33,893! As apples account for nearly 90 per cent of the bearing acreage in deciduous tree fruits, it is assumed that much, if not most, of the increase in agricultural employment in Washington in the early 1990s can be attributed to the expansion of the "re-globalizing" Washington apple industry (Wahlers 1996).

The actual number of people employed in Washington's apple industry is even greater than these numbers suggest, since seasonal employment is the norm in the industry. In 1996, at the peak of the harvest season in October, 46,212 workers were employed by apple growers (Wahlers 1997). Wahlers estimates the average wage of apple harvesters in Washington in 1996 at \$7.13 per hour³. Because of data problems related to the structure of the workforce and the manner in which it is employed, it is very

difficult to develop an accurate assessment of what percentage of the annual income of agricultural laborers in Washington State is derived from their work in the apple industry. Average annual income for Washington tree fruit workers (\$1,575 in 1995) includes wages obtained working on other tree fruit crops, such as cherries and pears, but would not include wages earned by the same individual in the vegetable, e.g. asparagus, or other sectors. In addition, average annual income for Washington State agricultural laborers (\$6,664 in 1996), includes wages earned in non-agricultural as well as agricultural industries, but only for hours worked within the state (Wahlers, 1997). Thus, we can not precisely estimate the amount of income workers derive from their employment in the apple sector. However, it does appear that returns to neither growers nor workers appear to have increased concomitantly with the success of the industry in accessing new markets and rapidly increasing export sales.

As the volume of fruit harvested, packed and shipped has grown,

prices for apples have stagnated or declined, perhaps allowing for shipment of apples into more price sensitive markets. Utilizing information from various Washington State University Experiment Station and Cooperative Extension bulletins, we estimate that labor costs in apple production relative to those elsewhere in agriculture have declined, but have risen relative to the Consumer Price Index and other input prices. At the same time, some jobs in the apple industry have become more year-round and less seasonal, workers have become more attached to particular employers and communities, accumulated greater industry and employer-specific experience, and more are earning sufficient income to sustain permanent residency. Thus, the above information on agricultural wages can not be used to understand the increasingly complex structure of employment in the apple industry. This includes an increasing diversity in employment scenarios for wage labor in the industry.

With a billion dollars of annual revenue⁴, and highly visible marketing campaigns, Washington's apple

industry has been targeted for a labor organizing campaign that is demanding improved wages, fringe benefits, working conditions, and housing. Orchard workers involved in the campaign have voted to affiliate with the United Farm Workers (UFW) union; while workers in Wenatchee's and Yakima's apple warehouses have associated themselves with the International Brotherhood of Teamsters (IBT) union. Together, these two AFL-CIO affiliated unions have dedicated substantial financial and human resources in support of unionization. Growers and packers with high per-unit processing costs, especially the smaller and older operations, are hard-put to meet such expectations given the stagnation of prices. Subsequently, industry employers have banded together into the Washington Growers League.

Although it is too early to predict the outcome of the union organizing, efforts thus far have achieved limited success. In June and July, 1997, orchard workers, assisted by the UFW, consecutively struck two Columbia Basin apple orchard operations, gaining wage increases of \$1.00

per hour for some workers in one orchard (TCH 1997a; 1997b). This orchard had a reputation for poor working conditions, and was located in a non-traditional apple growing area of the state. The second orchard received 400 employment applications after its wage rates were reported in the press (Goodfruit Grower 1998).

Apple warehouse workers scored a victory in April 1997 when Stemilt, Inc., one of the largest fruit packers in the state, agreed to rehire and/or give full back wages and benefits to 14 employees who had been fired, suspended, or disciplined for their union organizing efforts (Teamsters 1997). Stemilt fruit is an industry leader both in developing export markets and in integrating development of new, large-scale orchards in non-traditional apple growing areas with their packing and shipping operations. However, workers at apple warehouses operated by Stemilt, in Wenatchee, and Washington Fruit, in Yakima, rejected representation by the Inter-national Brotherhood of Teamsters by votes of 205-290 and 121-161, respectively, in highly contested National Labor Relations

Board supervised elections in January 1998. The Teamsters Union has filed unfair labor practices charges with the NLRB concerning the elections and has vowed to continue in its effort to represent the apple warehouse workers (Seattle Times 1998; Capital Press 1997; TCH 1998a, 1998b).

Depending on what happens to prices in the global apple market, the success of union activities in the industry could accelerate the shift to larger orchards and the decline in small farm production in the Washington apple industry. There are significant economies of size associated with larger, integrated apple operations. This means that the larger producers are more likely to remain profitable at lower prices and/or higher labor costs. This is doubly important if the orchard is owned or leased by a warehouse. Warehouses benefit by having direct control over large volumes of fruit. The warehouse will not lose the fruit to another warehouse. They will lose less time changing from one lot of fruit to the next, which increases productivity. Consistent fruit appea-

rance also will be easier to achieve because the warehouse is in control of growing practices. Finally, warehouses do not have to be as concerned with making profits on their orchard operations, so long as they are making profits in their warehouses. Thus, it would appear that the "re-globalization" of the Washington apple industry will be associated with a continuing reorganization of the industry around integrated, large-scale growing/packing/shipping operations.

Conclusion

Based on the case of Washington State's apple industry, what can we conclude about the nature of globalization and its local impacts? First, we would argue that globalization is not new to the latter half of the 20th Century. Evidence we presented indicates that there has been a global dimension to the Washington apple industry almost from its inception. What has changed in the last decade is the wide-spread acceptance by apple industry participants of the necessity of global

markets for marketing a rapidly expanding volume of fruit.

The evidence presented in our paper has also demonstrated that the state⁵ has played, and continues to play, a crucial role in the development and globalization of the Washington apple industry. Washington's first orchards were developed as part of a government sponsored program to settle the western frontier, and subsequent expansion of apple production in Washington was enabled in part by government-developed irrigation projects. In its most recent phase of expansion and globalization, the state plays an important role in the financing of international marketing promotion efforts, which have grown considerably over the past decade, and in negotiating less stringent trade barriers.

We would also argue that the example of the Washington apple industry demonstrates that globalization is produced, integrated and otherwise embedded in local places. The globalization of the apple industry is not something which happened by itself or in isolation from

other social processes unfolding in the industry, but was actively developed by individuals and groups inside and outside of the industry. This process continues as producers and exporters seek to learn about consumer tastes and marketing structures in various countries. Multi-lingual marketing materials are prepared, local distribution networks analyzed, and alliances forged with local partners in foreign markets. To meet different demand expectations and government regulatory requirements, Washington apple producers have had to modify operations and plant new varieties. In other words, people are actively involved in the process of globalization.

Over the years, global distribution of Washington apples has evolved from being an adjunct to domestic markets to being an integral part of annual sales. This has sustained the industry's growth, while exposing it to additional risks. Globalization has been embedded within, and perhaps hastened, the industry's consolidation and integration, while also mitigating a rapid decline in the overall number of

growers. Thus, Washington's apple industry is in a structural transition from its geographically concentrated, family-operated origins to a future as an organizationally concentrated, vertically integrated, and more geographically dispersed industry.

Finally, globalization, including international sales and product differentiation, combined with technological advances in storage and shipping, has had both positive and negative affects on the Washington apple industry's agro-industrial labor force. On the one hand, the addition of new varieties, increased volumes, improved storage technology, and year-round shipping, have led to longer periods of employment. Work in the orchards, including planting, thinning, and pruning as well as harvesting, stretches over many months of the year. Most warehouses now operate year-round. At the same time, prices are stagnant, pressuring Washington producers to minimize labor costs, including further automation of packing-shipping operations, moves to lower-cost areas, and use of less expensive labor. This labor force also has become

"globalized" in the last three decades through the shifting ethnic character of that workforce, which is now made up largely of Mexican and Mexican-American workers.

The restructuring of the geography of Washington State's apple production and its impact on the changing workforce is one area in particular where further research is needed. As Yakima and Wenatchee based warehouses develop large orchards in the Columbia Basin, problems associated with absentee ownership and management appear to be developing. Anecdotal evidence suggests that this new structure of agriculture may be leading to a problem of insufficient financial, social and political capital in small communities where agricultural laborers have come to reside.

In sum, we find that in the case of the Washington apple, globalization exists as a historical rather than a solely current phenomenon, and as an integral, rather than a discreet process that is associated with the ongoing structural evolution of the industry. What appears to stand out in the current period is the degree of

integration of international distribution in the industry's production, sales and marketing, as well the speed of industry reorganization, relocation, and restructuring, including the industrialization of labor relations. As global competition increases, the industry will have to contend with these and other pressures, which will undoubtedly lead to further adaptations.

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NOTES

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² Although we have been unable to find production costs for this particular historical period, it is interesting to note that by the 1930s, packing costs for apples were estimated at four times the

harvesting costs (USDA 1940), and are currently in the range of 6.8 to 1.

³ Most Washington apple harvesters are paid by the number of boxes picked, so Wahlers' estimates are based on a non-specified conversion from piece rates to hourly wages.

⁴ The "value of utilized production" of Washington apples broke the \$1.0 billion barrier in 1995. This amount slipped to \$0.9 billion for the 1996 and 1997 harvests (NASS 1998).

⁵ We are referring to the "state" here in a social-institutional sense. In the case of Washington apples, the "state" encompasses a variety of actors, including the U.S. federal government, as well as the Washington Apple Commission (WAC), which is chartered by the State of Washington, but receives its operating monies from a grower checkoff program.