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## AGRICULTURE AND TRADE REPORTS

# Effects of North American Free Trade Agreement on Agriculture and the Rural Economy

**Steven Zahniser and John Link (editors)**

### Abstract

U.S. agricultural trade with Canada and Mexico has nearly doubled since the implementation of the North American Free Trade Agreement (NAFTA). While only a portion of this overall increase can be attributed solely to the agreement, NAFTA has allowed competitive market forces to play a more dominant role in determining agricultural trade flows among the three countries. By dismantling numerous trade barriers, the agreement has contributed to an expansion in U.S. agricultural exports and increased the domestic availability of various farm and food products. In addition, NAFTA has established rules and institutions that mitigate potential trade frictions and promote foreign direct investment. Conversely, many of the initial trepidations that were voiced concerning declining agricultural employment and environmental degradation have not materialized. Thus, NAFTA should be judged not just in the context of the trade gains associated with the agreement's agricultural provisions, but also in terms of the benefits derived from "locking in" key trade, investment, and institutional reforms in an increasingly integrated North American market.

**Keywords:** North American Free Trade Agreement, NAFTA, agriculture, Mexico, Canada, United States, trade, environment, transportation, employment.

## FOREWORD

This document is the third in a series of reports about the North American Free Trade Agreement (NAFTA) and its impact on U.S. agriculture and the rural economy. The report is prepared in accordance with the North American Free Trade Agreement Implementation Act, which requires the Secretary of Agriculture to submit a biennial report on this subject to the U.S. Congress, starting in 1997 and ending in 2011. This edition of the report reflects the research team's understanding of economic and policy developments through early 2001.

Since NAFTA's implementation, U.S. agricultural trade with its partners in the agreement has increased in both size and relative importance. Between 1993 and 2000, U.S. agricultural exports to Canada and Mexico expanded by 59 percent, while corresponding exports to the rest of the world grew only 10 percent. Similarly, U.S. agricultural imports from Canada and Mexico increased 86 percent between 1993 and 2000, compared with 42 percent for U.S. agricultural imports from the rest of the world.

NAFTA is one of many factors contributing to the economic integration of the agreement's member countries. Other factors that are particularly important with respect to agriculture are unusual weather conditions, population growth, and changes in exchange rates and macroeconomic performance. With this in mind, the report provides a careful assessment of NAFTA's impact in the context of other events and economic forces.

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# CONTENTS

<b>Executive Summary</b> .....	v
<b>PART I: NAFTA'S IMPACT ON U.S. AGRICULTURE: A BROAD OVERVIEW</b> .....	1
<b>Developments in Trade Policies, Domestic Agricultural Programs, and Dispute Resolution</b> .....	1
Introduction .....	1
The Canada-U.S. Free Trade Agreement .....	1
The North American Free Trade Agreement .....	2
NAFTA and Domestic Agricultural Policies .....	3
Agricultural Trade Disputes in the NAFTA Era .....	6
Dispute Resolution Mechanisms in NAFTA .....	7
References .....	9
<b>NAFTA's Impact on U.S. Agricultural Trade: An Overview</b> .....	10
Introduction .....	10
Trends in U.S. NAFTA Trade .....	10
Evaluating NAFTA's Impact .....	11
<b>Investment in Agriculture and Food Processing</b> .....	22
Introduction .....	22
U.S. Farm and Food-Processing Investment .....	22
NAFTA and Foreign Direct Investment .....	23
Recent ERS Research about FDI .....	25
Conclusion .....	26
References .....	26
<b>Employment in U.S. Agriculture and Related Industries</b> .....	28
Introduction .....	28
Sectoral Employment Levels .....	28
Federal Assistance with Trade Adjustment .....	31
Textiles and Apparel: A Closer Look .....	35
Conclusion .....	41
References .....	41
<b>NAFTA, Agricultural Trade, and the Environment</b> .....	43
Introduction .....	43
The Environmental Impact of Trade Liberalization: Theory and Evidence .....	43
Trade Liberalization and Agriculture: Empirical Evidence .....	44
The North American Agreement on Environmental Cooperation .....	45
Environmental Concerns: The Effects of Trade and NAFTA's Rules .....	47
Conclusion .....	48
References .....	48

<b>Modal Choices in the Transportation of U.S.-Mexico Agricultural Trade</b> . . .	51
Delays Accompany Growth in U.S.-Mexico Trade . . . . .	51
The Improved Efficiency of Mexican Rail Carriers . . . . .	52
Challenges Facing Intermodal Rail . . . . .	52
Recent Developments in Maritime Systems . . . . .	53
Conclusion . . . . .	54
<b>PART II: DETAILED COMMODITY ASSESSMENT</b> . . . . .	56
<b>Livestock and Animal Products</b> . . . . .	56
Cattle . . . . .	56
Beef . . . . .	58
Hogs . . . . .	60
Pork . . . . .	63
Poultry Meat . . . . .	64
Dairy . . . . .	67
<b>Grains, Oilseeds, and Related Products</b> . . . . .	70
Corn . . . . .	70
Sorghum . . . . .	71
Barley . . . . .	72
Oats . . . . .	74
Wheat . . . . .	75
Rice . . . . .	78
Oilseeds and Oilseed Products . . . . .	80
Peanuts and Peanut Products . . . . .	83
<b>Other Field Crops</b> . . . . .	86
Dry Beans . . . . .	86
Cotton . . . . .	87
Sugar and Sweeteners . . . . .	90
<b>Vegetables</b> . . . . .	95
Fresh Tomatoes . . . . .	95
Processed Tomatoes . . . . .	98
Bell Peppers . . . . .	100
Fresh-Market Cucumbers . . . . .	101
Squash . . . . .	103
Eggplant . . . . .	104
Snap Beans . . . . .	105
Fresh and Processed Potatoes . . . . .	106
Frozen Broccoli and Cauliflower . . . . .	108
<b>Fruits and Fruit Juices</b> . . . . .	110
Fresh Citrus . . . . .	110
Orange Juice . . . . .	111
Fresh Apples . . . . .	114
Fresh Pears . . . . .	117
Fresh Peaches . . . . .	118
Avocados . . . . .	120
Grapes . . . . .	121
Cantaloupe . . . . .	122
Watermelon . . . . .	123

## EXECUTIVE SUMMARY

U.S. agricultural trade with Canada and Mexico has nearly doubled since the implementation of the North American Free Trade Agreement (NAFTA). While only a portion of this overall increase can be attributed solely to the agreement, NAFTA has allowed competitive market forces to play a more dominant role in determining agricultural trade flows among the three countries. By dismantling numerous trade barriers, the agreement has contributed to an expansion in U.S. agricultural exports and increased the domestic availability of various farm and food products. In addition, NAFTA has established rules and institutions that mitigate potential trade frictions and promote foreign direct investment. Conversely, many of the initial trepidations that were voiced concerning declining agricultural employment and environmental degradation have not materialized. Thus, NAFTA should be judged not just in the context of the trade gains associated with the agreement's agricultural provisions, but also in terms of the benefits derived from "locking in" key trade, investment, and institutional reforms in an increasingly integrated North American market.

### **What is NAFTA?**

NAFTA, which took effect on January 1, 1994, provides for the progressive elimination of most barriers to trade and investment between Canada, Mexico, and the United States over the 14-year period that ends on January 1, 2008. The agreement also incorporates the Canada-U.S. Free Trade Agreement (CFTA), whose implementation was completed on January 1, 1998. Although NAFTA's transition is still in progress, most of the process of tariff elimination for agricultural products has already taken place. Thus, NAFTA's influence on U.S. agriculture to date should provide a good indication of the agreement's long-term impact.

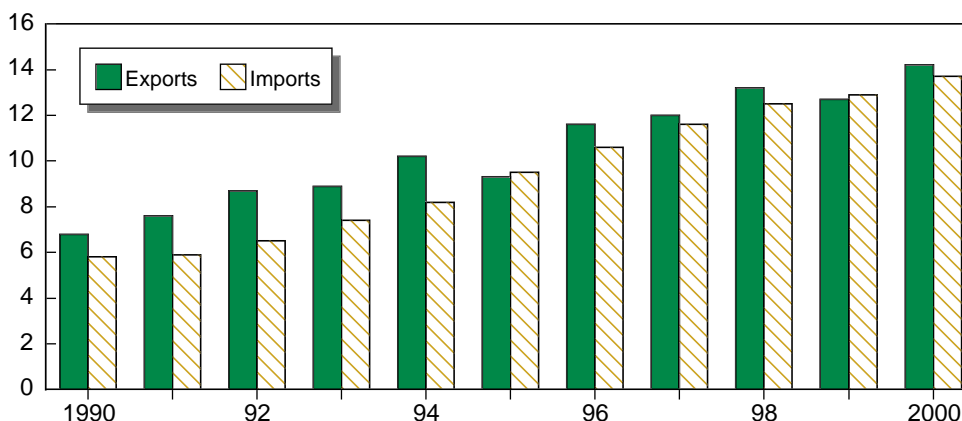
### **NAFTA's Trade Impact**

U.S. agricultural trade with Canada and Mexico has continued on an upward trend since the implementation of NAFTA (fig. A-1). These two countries were the destination for 28 percent of U.S. agricultural exports and the origin of 35 percent of U.S. agricultural imports in 2000. A decade earlier, these shares were only 17

Figure A-1

#### **U.S. agricultural trade with the NAFTA countries, 1990-2000**

U.S. dollars (billions)



Source: Foreign Agricultural Trade of the United States database.

percent and 25 percent, respectively. However, many of these changes already were underway prior to NAFTA. Moreover, other factors - such as population growth, changes in macroeconomic performance and exchange rates, and unusual weather patterns - generally have had a much stronger effect on U.S. agricultural trade with Canada and Mexico than NAFTA.

A commodity-by-commodity analysis provides a fuller understanding of NAFTA's impact on U.S. agricultural trade (table A-1). For most commodities, NAFTA's influence is relatively small, generating a small increase in the export or import of a particular commodity with either Canada or Mexico. For a handful of commodities, NAFTA has had a much larger impact, with an increase in trade volume of 15 percent or more that is directly attributable to the agreement. This is particularly true for products whose trade was severely restricted prior to CFTA and NAFTA.

Rice is one such example. U.S. rice exports to Mexico have more than doubled in volume since NAFTA's implementation, and the gradual reduction of Mexico's tariffs on U.S. rice has played a key role in the expansion of this trade. Similarly, U.S. cotton exports to Canada and Mexico have tripled, as the textile and apparel industries in each NAFTA country were able to integrate more fully due to the phasing out of various trade barriers related to these sectors. NAFTA also has provided a boost of at least 15 percent to U.S. pear and apple exports to Mexico.

There has been marked growth in certain U.S. agricultural imports as well. For instance, NAFTA has raised the volume of U.S. imports of fresh tomatoes from Mexico by some 8-15 percent, despite the enactment of a price-floor agreement among principal Mexican and U.S. growers. Similarly, the elimination of U.S. tariffs on fresh potatoes from Canada has led to increased imports, although an expansion in Canadian production and processing and the strong U.S. dollar also are responsible for the growth of this trade. Sugar imports from Mexico have risen considerably from the small levels allowed prior to NAFTA, although achieving the modest duty-free amount of 116,000 metric tons has involved excruciating bilateral consultations.

### ***NAFTA's Investment Impact***

An important element of NAFTA is the agreement's rules concerning foreign direct investment (FDI). These rules strengthen the rights of foreign investors to retain profits and returns from their initial investments. The combination of trade liberalization and investment reform has stimulated FDI in the North American food processing industry, with firms in each NAFTA country providing substantial investment capital.

U.S. direct investment in the Mexican food processing industry has more than doubled since NAFTA's implementation, reaching \$5.3 billion in 1999. Much of these investments are concentrated in highly processed products such as pasta, confectionery products, and canned and frozen meats. Similarly, under CFTA and NAFTA, U.S. FDI in the Canadian food processing industry expanded from \$1.8 billion in 1989 to \$5.0 billion in 1999. But unlike FDI in Mexico, U.S. FDI in Canada has been geared more towards the handling and processing of grains.

**Table A-1—NAFTA has dramatically affected the volume of trade of certain commodities**

Commodity	Annual average of actual trade				Units	Estimated change in trade volume due solely to NAFTA
	Value		Volume			
	1990-93	1994-2000	1990-93	1994-2000		
<b>Selected exports to Canada</b>						
Beef and veal	349	317	85	92	mt	Increase -- High
Wheat products <sup>1</sup>	22	48	27	66	mt	Increase -- High
Cotton	62	91	42	60	mt	Increase -- Medium
Processed tomatoes	71	109	--	--	--	Increase -- Medium
<b>Selected exports to Mexico</b>						
Rice	41	87	161	386	mt	Increase -- High
Dairy products	151	162	--	--	--	Increase -- High
Cotton (including linters)	102	342	80	235	mt	Increase -- High
Processed potatoes	6	19	8	28	mt	Increase -- High
Fresh apples	28	61	54	112	mt	Increase -- High
Fresh pears	16	26	31	51	mt	Increase -- High
Corn	178	521	1,557	4,326	mt	Increase -- Medium
Oilseeds	401	740	1,662	2,956	mt	Increase -- Medium
Beef and veal	149	309	50	107	mt	Increase -- Medium
Sorghum	402	307	3,687	3,083	mt	Decrease -- High
<b>Selected imports from Canada</b>						
Wheat (excluding seed)	136	268	1,109	1,920	mt	Increase -- High
Wheat products <sup>1</sup>	38	98	72	185	mt	Increase -- High
Beef and veal	111	264	260	638	mt	Increase -- High
Corn	21	30	218	268	mt	Increase -- Medium
Fresh potatoes	51	85	274	380	mt	Increase -- Medium
Processed potatoes	50	199	91	313	mt	Increase -- Medium
Cattle and calves	741	857	1,063	1,185	no	Decrease -- High
<b>Selected imports from Mexico</b>						
Wheat products <sup>1</sup>	4	14	6	21	mt	Increase -- High
Cattle and calves	388	300	1,144	965	no	Increase -- High
Peanuts (shelled & in shell)	*	3	*	4,323	mt	Increase -- High
Sugar (cane & beet)	2	49	1	17	mt	Increase -- High
Fresh tomatoes	264	470	322	608	mt	Increase -- Medium
Processed tomatoes	15	16	--	--	--	Increase -- Medium
Cantaloupe	40	47	120	136	mt	Increase -- Medium

\* = Negligible. mt = Metric tons. no = Number.

<sup>1</sup> Includes flour, bulgur wheat, starch, gluten, and uncooked pasta.

Estimates reflect changes in trade volume during 1994-2000 due solely to CFTA and NAFTA and are based on assessments of ERS analysts:

High = A change of more than 15 percent, compared with what would have occurred without CFTA and NAFTA.

Medium = A change of 6 to 15 percent.

Source for trade data: Foreign Agricultural Trade of the United States database.

## **NAFTA and Agricultural Employment**

By increasing opportunities for U.S. exports and encouraging the more efficient allocation of economic resources, NAFTA has had a small, positive influence on U.S. agricultural employment. However, only a few agricultural sectors have experienced substantial changes in their employment levels since NAFTA's implementation, and many of these changes are driven by factors other than the agreement. Employment in crop production has changed very little, while employment in live-

stock production has decreased, reflecting technological change and consolidation in the hog industry and drought and poor ranging conditions in the cattle industry. Employment in landscaping and horticultural services and in veterinary services increased substantially during the 1990's, but this growth is most likely due to factors other than NAFTA, such as consumer preferences and the strength of the U.S. economy.

Two manufacturing sectors related to agriculture - textiles and apparel - have experienced a definite decline in employment since the implementation of NAFTA. However, this reduction has been underway since the 1970's and probably would have continued in the absence of NAFTA. Still, by encouraging the development of a more integrated textile and apparel industry within North America, NAFTA has been accompanied by expanded textile and apparel trade among the NAFTA countries, increased productivity in the U.S. textile and apparel sectors, and the retention of jobs in the textile sector that would have relocated to other parts of the world in the absence of the agreement.

### ***Sanitary and Phytosanitary Measures***

By "locking in" key trade and investment reforms, the agricultural sectors and governments of the NAFTA countries have been able to devote greater attention to resolving conflicts related to sanitary and phytosanitary (SPS) measures. Some efforts in this area have taken place with the trilateral NAFTA Committee on SPS Measures. In addition, producers in each NAFTA country have worked to meet higher quality standards and to participate actively in the formulation of new standards.

When these efforts have been successful, they have increased agricultural trade. Efforts to inspect and approve at the regional level, and in some instances at the level of individual producers, have opened the door to new markets across international borders. Examples of this approach include:

- ✿ U.S. imports of avocados from certain approved growers in the Mexican state of Michoacán;
- ✿ U.S. recognition of the Mexican state of Sonora as being free of hog cholera;
- ✿ Mexico's lifting of its ban on citrus from Arizona and producing areas in Texas that are not regulated for fruit fly; and
- ✿ continuing efforts to design and implement a satisfactory inspection process for U.S. apple exports to Mexico.

### ***Trade Frictions in the NAFTA Era***

Trade growth also generates conflicts. Agricultural producers in each NAFTA country have been involved in several disputes, many of which concern counter-vailing-duty (CVD) measures and/or charges of dumping. There are two active NAFTA dispute resolution panels in this regard. One relates to U.S. exports of high-fructose corn syrup, and the other to U.S. exports of bovine carcasses. Previous NAFTA panels have issued rulings in cases involving U.S. exports of refined sugar to Canada, Canadian exports of live swine to the United States, and Mexican exports of fresh cut flowers to the United States. Canada and the United States continue to spar over the activities of the Canadian Wheat Board, and the Office of the U.S. Trade Representative recently initiated a Section 301 investigation of this subject.



Dispute resolution under the formal NAFTA mechanisms represents only a small part of the process. Most disputes are addressed in earlier stages through governmental consultations and negotiations. The private sector also has begun to play a larger role in dispute resolution. For example, in two recent disputes over grapes and cattle, producer groups in Mexico and the United States worked jointly to resolve regulatory incompatibilities that were at the root of the disagreement.

### ***NAFTA and the Environment***

The available evidence suggests that NAFTA is having a combination of positive and negative environmental effects, as producers select alternative techniques of production, increase or decrease the scale of production, and modify the crop and animal composition of their activities in response to changing economic incentives. But none of these effects are particularly widespread. Studies also suggest that NAFTA has not encouraged a general weakening of environmental standards.

By helping to elevate incomes in each NAFTA country, the agreement should also have a positive, long-run effect on the demand for environmental quality and regulation. This effect should be especially pronounced in Mexico, as that country reduces the gap in per capita income that currently separates it from Canada and the United States.

One of NAFTA's real innovations was the creation of the North American Commission for Environmental Cooperation (CEC), which promotes environmental objectives and provides opportunities for environmental organizations and other stakeholders to voice their concerns. Several public symposia have been held under the auspices of the CEC. By bringing environmental concerns before policy-makers, these gatherings have facilitated the coordination of trade and environmental policies and lessened the potential conflicts between the two.

### ***NAFTA and Transportation***

Transportation bottlenecks, especially for trucks at principal ports of entry along the U.S.-Mexico border, continue to hamper NAFTA trade. Implementing NAFTA's motor carrier provisions, which allow Mexican trucking firms to have greater access to the United States, should help to alleviate these bottlenecks. Several studies have quantified the total delay costs along the entire U.S.-Mexico border, and the most recent comprehensive study placed these costs at \$77.4 million in 1999. This estimate would have been even higher if increases in air pollution associated with border congestion had been taken into account.

Further development of the Mexican transportation system will have an important influence on what modes of transportation are used to ship U.S.-Mexico agricultural trade. With the continuing integration of the U.S. and Mexican railway systems, intermodal rail (truck-rail-truck) may attract increased traffic of containerized grains. Improvements in the Mexican Port of Veracruz should increase the competitiveness of ocean grain shipping from U.S. ports along the Gulf Coast. However, improvements in Mexican grain ports may also lower transportation costs for U.S. competitors.

## **Conclusion**

By clearing the way for increased trade and investment among Canada, Mexico, and the United States, NAFTA is enabling agricultural producers and consumers throughout North America to benefit more fully from their relative strengths and to respond more efficiently to changing economic conditions. Each NAFTA country has taken part in the expanded agricultural trade and foreign direct investment fostered by the agreement. Moreover, the agreement has been accompanied by substantial improvements in the North American transportation system and in the institutional capacity of the NAFTA governments to facilitate agricultural trade, resolve trade disputes, and cooperate on environmental issues. Together, these developments are resulting in a more prosperous, more integrated North American economy.

# Part I

## NAFTA's Impact on U.S. Agriculture: A Broad Overview

### Developments in Trade Policies, Domestic Agricultural Programs, and Dispute Resolution

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#### Introduction

Important changes in trade policies and domestic agricultural programs have accompanied the implementation of the North American Free Trade Agreement (NAFTA). Some of these changes are explicitly required by the agreement. NAFTA contains a detailed schedule for the progressive dismantling of most barriers to trade and investment between Canada, Mexico, and the United States. In addition, the agreement creates a set of formal mechanisms for the resolution of trade disputes within the NAFTA region.

Other changes reflect efforts to adapt to the new economic conditions associated with freer trade, even though these actions are not explicitly required by NAFTA. The NAFTA countries have modified their domestic agricultural policies in order to bring their agricultural sectors into conformance with their NAFTA commitments. This has not been an easy task, since the close link between domestic agricultural policies and trade barriers makes it difficult to disentangle the two. Moreover, low market prices over the last several years have motivated Canada and the United States to increase their government support to agricultural producers.

Also, the NAFTA countries have strengthened their institutional capacity to address trade frictions through a variety of cooperative measures. In many instances, this has enabled them to resolve trade disputes without a formal dispute proceeding. Overall, this combination of trade liberalization and institutional development is enabling regional flows of trade and investment to grow at an accelerated pace, bringing the NAFTA countries closer to their common goal of a unified market.

#### The Canada-U.S. Free Trade Agreement

NAFTA is structured as three bilateral agreements, one between Canada and the United States, a second between Mexico and the United States, and a third between Canada and Mexico. The first accord is the Canada-U.S. Free Trade Agreement (CFTA), which took effect on January 1, 1989, and is subsumed by NAFTA. The provisions of the second and third agreements took effect on January 1, 1994, the date of NAFTA's implementation.

In many respects, CFTA served as a blueprint for NAFTA. First, CFTA gradually eliminated most tariffs and non-tariff barriers to U.S.-Canada trade in goods over the 9-year period that ended on January 1, 1998. Second, CFTA committed Canada and the United States to work toward the harmonization of technical regulations and standards. Third, CFTA established bilateral dispute settlement panels to rule on cases involving countervailing and anti-dumping duties. Similar provisions are all found in NAFTA.

Only a few exceptions were made to CFTA's process of trade liberalization: U.S. imports of Canadian dairy products, peanuts and peanut butter, cotton, and sugar and sugar-containing products; and Canadian imports of U.S. dairy products, poultry, eggs and margarine. These restrictions, originally specified as quotas, were later redefined as tariff-rate quotas (TRQ's) to comply with the Uruguay Round Agreement on Agriculture (URAA). A TRQ is simply a quota for a volume of imports at a favorable tariff. After the quantitative limit is reached, a higher tariff is applied on additional imports.

As a safeguard measure, CFTA offers special temporary protection to U.S.-Canada trade in fruits and

vegetables in the form of a price-based tariff snapback system. This system, which expires on January 1, 2008, guards against imports from either country depressing domestic prices. Each country may use the snapback provision to re-impose temporary tariffs under certain conditions. So far, these safeguards have rarely been used.

## The North American Free Trade Agreement

As part of NAFTA, most tariffs and non-tariff barriers governing U.S.-Mexico agricultural trade are being progressively dismantled. Numerous tariffs and other restrictions were eliminated immediately upon NAFTA's implementation. The remainder are to be phased out during periods of 4, 9, or 14 years, depending on the commodity and the importing country (table B-1).

U.S. pear exports to Mexico provide an example of a 4-year transition. Prior to NAFTA, Mexico levied a tariff of 20 percent on U.S. pears. On January 1, 1994, the day of NAFTA's implementation, Mexico immediately cut the tariff to 15 percent. On January 1, 1995, Mexico made a second reduction, dropping the tariff to 11.25 percent. The third and fourth reductions occurred on January 1, 1996, and January 1, 1997, when Mexico lowered the tariff to 7.5 percent and 3.75 percent, respectively. Mexico made its fifth and final reduction on January 1, 1998, eliminating the tariff in its entirety. Because this process featured five annual reductions, some analysts describe this transition as having occurred over a 5-year period, even though it lasted only 4 years, from January 1, 1994, to January 1, 1998.

Prior to NAFTA, about 25 percent of the value of U.S. agricultural exports to Mexico were subject to licensing requirements. These restrictions were immediately converted to either tariffs or TRQ's. Wheat, tobacco, cheese, evaporated milk and grapes (shipped during certain periods of the year) are examples of products where licensing requirements were converted to tariffs, which are being phased out over the 9-year period that ends on January 1, 2003. Other products subject to licensing - including corn, dry beans, poultry, barley/malt, animal fats, potatoes, and eggs - were converted to TRQ's. Similarly, the United States converted its import quotas for dairy products, peanuts, cotton, sugar, and sugar-containing products to TRQ's. Under the TRQ arrangement, each country is required to gradually expand each quota, while

phasing out the associated over-quota tariff during the transition period.

Most products subject to these TRQ's are duty-free up to the level of the quota. Exempt from this requirement are those products to which the importing country applies special safeguards. These provisions offer added protection against import surges by allowing specified quantities to be imported at preferential NAFTA rates. Excess quantities are assessed tariffs equal to the lower of either the existing tariff rate when NAFTA took effect or the current most-favored-nation (MFN) rate. The tariff assessed on in-quota volumes for special safeguard products is being phased out over a 9-year period. The over-quota tariff will not be phased out until January 1, 2003, when both the in-quota and over-quota tariffs are to be eliminated. Mexico applies the special safeguard to imports of live swine, pork, potato products, fresh apples, and coffee extract on a calendar-year basis. The United States applies special safeguards on a seasonal basis to selected horticultural crops. Similar arrangements govern certain products traded between Canada and Mexico.

According to NAFTA's rules of origin, products from countries that are not parties to the agreement do not qualify for NAFTA tariff reductions, even if the goods are shipped through a NAFTA country. Moreover, each NAFTA country is allowed to maintain its own tariff schedule toward third parties. In fact, both Canada and Mexico have established additional free-trade agreements with countries other than the United States since the implementation of NAFTA.

Export subsidies between Canada and the United States are strictly prohibited, as originally negotiated under CFTA. Otherwise, NAFTA permits export subsidies if the importing country agrees to them or if the importer receives subsidies from other countries. This provision has enabled the United States to continue using the Dairy Export Incentive Program (DEIP) to promote dairy product exports to Mexico. In addition, both Canada and the United States have used government credit guarantees, not considered an export subsidy under NAFTA, to foster the sale of grains and oilseeds to Mexico.

NAFTA requires that sanitary and phytosanitary (SPS) measures be scientifically based, nondiscriminatory, and transparent, and that these measures restrict trade in a minimal fashion. The agreement also establishes the NAFTA Committee on Sanitary and Phytosanitary Measures to facilitate technical cooperation between

**Table B-1—Chronology of CFTA and NAFTA**

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January 1, 1989	Implementation of CFTA
January 1, 1994	Implementation of NAFTA  Mexico eliminates tariffs for United States on sorghum, certain citrus fruit, and fresh strawberries, as well as a seasonal tariff (December 1 to May 30) for oranges  United States eliminates tariffs for Mexico on corn, sorghum, barley, soymeal, apples, pears, peaches, fresh strawberries, beef, pork, and poultry, as well as a seasonal tariff (June 1 to November 30) for oranges
January 1, 1998	Canada and United States complete 9-year transition period associated with CFTA  Remaining Canada-U.S. tariffs are eliminated  Mexico and United States complete 4-year transition period under NAFTA  Mexico eliminates tariffs for United States on pears, plums, and apricots  United States eliminates tariffs for Mexico on non-durum wheat, soyoil, and cotton, as well as a seasonal tariff (December 1 to May 30) on oranges
January 1, 2003	Mexico and United States to complete 9-year transition period under NAFTA  Mexico to eliminate tariffs for United States on wheat, barley, rice, dairy, soybean meal and soyoil, poultry, peaches, apples, frozen strawberries, hogs, pork, cotton, and tobacco, as well as a seasonal tariff (June 1 to November 30) on oranges  United States to eliminate tariffs for Mexico on durum wheat, rice, limes, winter vegetables, dairy products, and frozen strawberries
October 1, 2007	Mexico and U.S. to eliminate tariffs on U.S.-Mexico sugar trade
January 1, 2008	Mexico and United States to complete 14-year transition period under NAFTA  Mexico to eliminate tariffs for United States on corn, dried beans, and milk powder  United States to eliminate tariffs for Mexico on frozen concentrated orange juice (FCOJ), winter vegetables, and peanuts.

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the NAFTA countries in the development, application, and enforcement of such measures. Since the agreement's implementation, producers in each NAFTA country have strived to meet higher quality standards and to participate actively in the formulation of new standards.

These efforts hold the promise of further increasing agricultural trade within North America. Efforts to inspect and approve produce at the regional level, and in some instances at the level of individual producers, have opened the door to new markets across international borders. Examples of this approach include:

- ✿ U.S. avocado imports from certain approved growers in the Mexican state of Michoacán;

- ✿ U.S. certification of the Mexican state of Sonora as a low-risk region for hog cholera;
- ✿ Mexico's lifting of its ban on citrus from Arizona and producing areas in Texas that are not regulated for fruit fly; and
- ✿ continuing efforts to design and implement a satisfactory inspection process for U.S. apple exports to Mexico.

## **NAFTA and Domestic Agricultural Policies**

Beyond the removal of tariffs and non-tariff barriers, the objectives of CFTA and NAFTA are relatively modest, certainly when compared to the European model of economic integration. While members of the

European Community have adopted a common agricultural policy, the NAFTA members merely agreed to liberalize the trade of most agricultural products, while leaving domestic agricultural programs in each country intact. It was left for each government to adjust its policies in order to make them compatible with trade liberalization.

Now in its eighth year, NAFTA has witnessed significant changes in the domestic agricultural policies of its signatory countries. While these changes generally were in response to factors other than NAFTA, most notably domestic budget pressures and the URAA, NAFTA certainly has had an effect as well. Through the liberalization of North American trade, each country has constrained the set of policy instruments available to policymakers. In particular, both domestic and trade policy instruments designed to raise producer prices are now difficult to maintain, as greater access to markets tends to unify prices within the free-trade area.

### **Early Policy Changes Reduced Government Intervention**

**United States.** In April 1996, 28 months after NAFTA's implementation, the United States adopted the Federal Agriculture Improvement and Reform (FAIR) Act of 1996, which fundamentally changed the nature of farm support in this country. During the debate leading to this act, there was some concern about how U.S. acreage controls and government policies regarding stockpiles of commodities would perform in the face of Canada's open access to the U.S. market, particularly with respect to wheat.

The FAIR Act removed the link between income support payments and farm prices by providing for predetermined production flexibility contract payments. These decoupled government payments,<sup>1</sup> also referred to as AMTA payments,<sup>2</sup> were meant to provide income support to eligible producers of wheat, feed grains, upland cotton, and rice over a 7-year period (1996-2002). The FAIR Act also eliminated Acreage Reduction Programs (ARP's) and allowed producers to repay marketing loans at levels below the

<sup>1</sup> Policies are generally perceived to be decoupled when transfer payments are unrelated to the current or future price or quantity of a commodity produced or marketed, and from the quantity of inputs used in production.

<sup>2</sup> AMTA refers to the Agricultural Market Transition Act, which is title I of the FAIR Act.

original loan rate in order to reduce the likelihood that commodities pledged as collateral would be forfeited to the government.

In addition, the FAIR Act set expenditure levels for the Export Enhancement Program (EEP), although it did not eliminate the program. The EEP is a classic example of a program that is incompatible with a free-trade area since import controls are necessary for the program to be effective. Otherwise, products from NAFTA partners would flow into the United States seeking the higher domestic price induced by the program. While the EEP has been used to subsidize the export of several commodities, 80 percent of its aid prior to 1995 was focused on wheat. Since mid-1995, the United States had stopped using the EEP to subsidize wheat exports, partly because of the program's incompatibility with a free-trade area. Just as important, the United States surrendered its GATT Section 22 waiver (which allowed for the imposition of quotas if imports were deemed to interfere with domestic support programs) under the terms of the URAA. Without the threat of quantity restrictions provided by Section 22, it would be difficult to limit wheat imports from Canada.

**Canada.** Canada's domestic agricultural programs also have undergone considerable reform during the CFTA-NAFTA period, although the free-trade area probably has had less of an influence on these changes than in the United States. The Two-Price Wheat Program is a good example of how CFTA affected Canada's domestic agricultural policies. Recognizing that this program would be unsustainable if Canadian millers and bakers could import U.S. wheat or flour duty-free, the Canadian government abandoned the program before the 1988/89 crop year and offered producers limited compensation under the Two-Price Wheat Compensation Act (Klein and Storey, 1998).

In 1995, producer subsidies for grains and oilseeds, provided through freight subsidies under the Western Grain Transportation Act (WGTA), were replaced by two transitional programs, implemented over a 3-year period to cushion the impact of eliminating the WGTA. The next year, the Gross Revenue Insurance Plan (GRIP), a voluntary revenue insurance plan introduced in 1991, was also terminated. GRIP guaranteed a minimum target revenue for insured crops to producers who chose to pay the premiums. This left the Net Income Stabilization Account (NISA) as the main income safety net for Canadian farmers.

Under NISA, which applies to grains, oilseeds, cattle, hogs, and horticulture, producers can deposit money annually into an interest bearing account and receive a matching contribution from the government. Federal contributions are fixed at 3 percent, while contributions from provincial governments vary by province. Producer deposits earn a 3-percent interest bonus over prevailing competitive rates. NISA is a voluntary program designed to help producers stabilize their farming income. In years of low income, producers are permitted to make withdrawals from their individual accounts. NISA is designed to protect revenue rather than support prices. As a result of these changes, direct payments for crops fell by more than 60 percent between 1996 and 1997.

**Mexico.** In anticipation of NAFTA and in order to reduce the fiscal burden associated with its domestic agricultural programs, Mexico launched the Program of Direct Support for the Countryside (*Programa de Apoyos Directos para el Campo*—PROCAMPO) in 1994. PROCAMPO is a 15-year program of direct payments that compensates producers for the loss of input subsidies, price supports, and import protection. It is designed to provide transitional income support to farmers, while allowing Mexican agriculture to undergo structural changes in response to market conditions and the phasing-out of trade barriers under NAFTA. Farmers who continue to produce receive annual PROCAMPO payments based on historical area planted in nine specified crops.

In 1996, Mexico announced the *Alianza para el Campo* (Alliance for the Countryside), a major initiative to improve agricultural productivity that includes PROCAMPO and other programs. The Alianza budget covers payments per ton made by the Support Services for Agricultural Marketing Agency (ASERCA) to first-hand buyers of wheat, corn, and sorghum in certain Mexican states. The payments are conditional on the buyers having paid producers an administered minimum price. In addition, ASERCA pays rice producers a deficiency payment for each ton marketed, up to an overall limit. The other Alianza programs mostly relate to infrastructure and extension-type assistance. Among these, the most important is PRODUCE Capitaliza, a program consisting of three main elements: a “ferti-gation” program (using irrigation canals to deliver liquid fertilizer), a mechanization program, and a program designed to improve pasture quality for livestock producers.

## **Government Support Has Increased in Recent Years**

During the early years of the agreement, the domestic agricultural policies of the NAFTA countries appeared to be on a converging path, as each country significantly reduced the level of government intervention in its agricultural sectors. Although each country continued to maintain a comprehensive system of government support for agriculture, there was clearly a move toward greater market orientation. In particular, the distorting effects of agricultural policies were substantially reduced, as each NAFTA country moved away from programs that relied on market price support payments to ones which rely on decoupled income support payments. Figure B-1 illustrates the extent to which the level of government support to agriculture, as measured by the Producer Support Estimate (PSE), declined in each country between 1991-93 (the 3 years preceding NAFTA) and 1997.<sup>3</sup> In 1997, each country's overall PSE was about 15 percent.

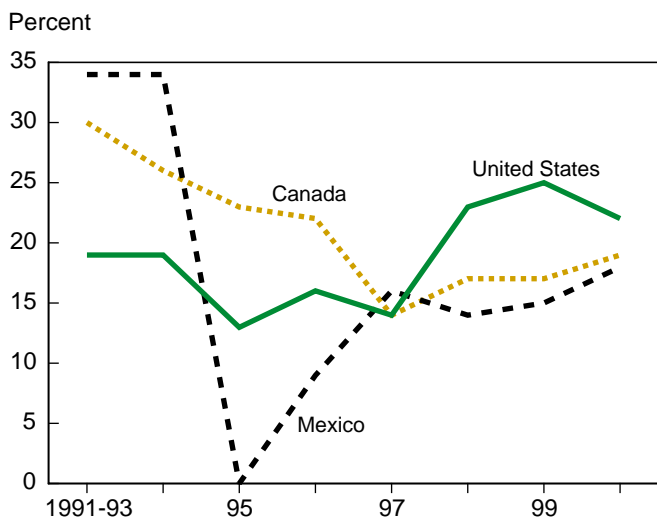
Since early 1998, farmers in each NAFTA country have faced severely depressed prices, which has led U.S. and Canadian policymakers to increase assistance to farmers. In the United States, Congress enacted emergency appropriations, consisting largely of supplemental AMTA payments and disaster relief payments, in October 1998, October 1999, and June 2000. As a result, total government direct payments reached a record \$25.9 billion in Fiscal Year (FY) 2000, after averaging just \$6.4 billion per year during the first 2 years of the FAIR Act (FY's 1996-97).<sup>4</sup> While helping to maintain farm incomes, these payments significantly increased the level of government expenditures on the agricultural sector, reversing what had been a trend toward reduced government support. By 1999, the U.S. PSE had increased to 25 percent, before declining to 22 percent in 2000. The U.S. PSE is the only one among the three NAFTA countries that was greater during 1998-2000 than it was immediately prior to NAFTA.

<sup>3</sup> The Producer Support Estimate (PSE) is an indicator of the value of gross transfers to agricultural producers from government policies, as measured by the Organization for Economic Cooperation and Development (OECD). The PSE comprises support from consumers and taxpayers in the form of market price support and budgetary payments to producers.

<sup>4</sup> For the Federal government of the United States, fiscal years begin on October 1 and end on September 30. Thus, FY 2000 began on October 1, 1999 and ended on September 30, 2000.

Figure B-1

### Producer support estimates (PSEs) for the NAFTA countries



Note: Prior to 1997, the values correspond to each country's producer subsidy equivalent, a slightly different measure used to calculate government support of agriculture.

Source: Organization for Economic Co-operation and Development (1997, 1999, 2001).

In Canada, the federal government instituted the Agricultural Income Disaster Assistance (AIDA) Program in December 1998, pledging Can\$900 million (about US\$600 million) over 2 years to help producers caught in the farm crisis. This sum represented 60 percent of a total aid package of Can\$1.5 billion (US\$1 billion). Under Canada's cost-sharing arrangement, provincial governments provide 40 percent of total funding. In 2000, direct program payments to Canadian producers increased to Can\$2.8 billion (US\$1.9 billion), 42 percent above their 1999 level and nearly double the previous 5-year average (Statistics Canada, 2001). In addition to AIDA payments, this total was made up of payments under several ongoing programs (including NISA, fall cash advances, and the Crop Insurance Act), as well as three one-time initiatives - the Alberta Farm Income Assistance Program and the Canada-Manitoba and the Canada-Saskatchewan Adjustment Programs. As a result of increases in both market price support and budgetary payments, Canada's PSE rose to 19 percent in 2000.

In July 2000, a 3-year safety net agreement worth Can\$5.5 billion (US\$3.7 billion) was signed. This agreement replaces AIDA with the Canadian Farm Income Program (CFIP), while continuing other ongoing programs. The new agreement goes into effect in 2001 and includes CFIP payments of Can\$2.2

billion (US\$1.5 billion) over 3 years. However, in February 2001, Canada's federal government pledged an additional Can\$500 million to CFIP for 2001, which would increase to Can\$833 million (US\$555 million) with provincial contributions. In addition, producers will be eligible to apply under the Spring Credit Advance Program for interest-free loans of up to Can\$50,000, compared to the previous limit of Can\$20,000 in 2000.

In 2000, Mexico's PSE increased to an estimated 18 percent, even though the budget for the *Alianza* program was unchanged compared with 1999, at about US\$500 million. The increase in the PSE was due to higher producer prices in Mexico and a slight appreciation of the peso. In general, Mexico has not followed the U.S. and Canadian lead in increasing support to agricultural producers during the ongoing farm crisis, citing fiscal constraints.

### Agricultural Trade Disputes in the NAFTA Era

The architects of NAFTA correctly anticipated that the agreement occasionally would be accompanied by trade disputes among the signatory countries. Laying the groundwork for the satisfactory resolution of these differences, they incorporated provisions within the agreement that established a new set of formal dispute settlement mechanisms. In addition, the NAFTA governments have made a sustained effort since the agreement's implementation to address matters of tension in a less adversarial, more cooperative fashion, before they take the form of a formal dispute.

There are four main sources of trade disputes among the NAFTA partners. First, on a few occasions, unintended ambiguities in the agreement's text have led to disputes over how to interpret NAFTA. Second, domestic policies that influence production, prices, or trade have direct spillover effects into the agricultural markets of the other NAFTA countries. With the deepening of trade and the increased integration of the NAFTA economies, these spillover effects may have increased, leading to further disputes. Third, a growing number of disputes are related to sanitary and phytosanitary issues, which are particularly complicated due to the existence of three different regulatory frameworks managing diseases and pests within the region. Fourth, the increased competitive pressures associated with freer trade have led some industries to seek protection through trade actions.



## Dispute Resolution Mechanisms in NAFTA

NAFTA created several formal mechanisms for the resolution of trade disputes. The principal mechanisms of this sort are specified in four chapters of the agreement:

- ✿ Chapter 11 - disputes related to investment;
- ✿ Chapter 14 - disputes related to services;
- ✿ Chapter 19 - disputes related to the application of antidumping and countervailing duty laws; and
- ✿ Chapter 20 - disputes related to the general interpretation or application of the agreement.

So far, agricultural trade disputes have been addressed solely under Chapters 19 and 20.

The arbitration panels associated with NAFTA's dispute settlement mechanisms have several distinguishing characteristics (Gifford, 1997). First, the agreement clearly spells out the right to establish a panel and the conditions under which a panel may be established. Second, experts may serve on panels in their personal capacity and not necessarily as government representatives. Third, the panels are marked by a quasi-judicial process of written submissions, counter-submissions, oral hearings, and cross-examination. Moreover, this process takes place within the context of a legal framework of rights and obligations. Fourth, NAFTA specifies firm timelines concerning the establishment and operation of the panel. Finally, no party to a dispute is allowed to block the adoption of a report.

National antidumping (AD) and countervailing-duty (CVD) investigations and assessments of duties are mechanisms that many countries - including the NAFTA partners - use to address trade practices that are found to violate specific rules. AD duties may be imposed if imports are being sold below their "normal" value (i.e., the price existing in the home market of the exporting country) and if these imports are causing or threaten to cause material injury to a domestic industry. CVD duties may be imposed on imports that are causing or threaten to cause material injury to a domestic industry in order to offset subsidies provided to producers or exporters by the government of the exporting country.

Such mechanisms have been in existence for some time in North America. Canada and the United States had well-developed laws and institutions of this type long before CFTA and NAFTA, although the creation of comparable laws and institutions in Mexico is a fairly recent development. NAFTA does not prevent the application of AD or CVD measures, nor does it provide for harmonized procedures or criteria for determining whether dumping has occurred or when and how countervailing duties should be set. However, the NAFTA countries must follow the rules of the World Trade Organization (WTO) regarding the application of these measures.

Agricultural producers in each NAFTA country have been involved in disputes concerning CVD measures and/or charges of dumping. Several of these cases have made their way to the NAFTA Secretariat, which administers the agreement's provisions for dispute resolution. There are two active NAFTA panels in agricultural cases under Chapter 19, and both cases concern Final Antidumping Duty Determinations by Mexico. One relates to U.S. exports of high-fructose corn syrup (HFCS); the other relates to U.S. exports of bovine carcasses. Previous NAFTA panels have issued rulings in cases involving U.S. exports of refined sugar to Canada, Canadian exports of live swine to the United States, and Mexican exports of fresh cut flowers to the United States.

Two completed agricultural cases under Chapter 20 have involved the United States. One concerned the interpretation of Canadian TRQ's on poultry, dairy products, barley, and margarine; the other dealt with U.S. safeguard duties on broomcorn brooms from Mexico. In addition, Mexico successfully brought a case under Chapter 20 concerning U.S. delays in implementing NAFTA's provisions for cross-border trucking. On February 6, 2001, the arbitration panel recommended that "the United States take appropriate steps to bring its practices with respect to cross-border trucking services and investment into compliance with its obligations under the applicable provisions of NAFTA" (NAFTA Secretariat, 2001). In response, the U.S. Department of Transportation's Federal Motor Carrier Safety Administration issued a proposed set of rules for implementing these provisions in May 2001. The commentary period for the proposed rules ended on July 2, 2001.

Occasionally, dispute settlement under NAFTA intersects with dispute settlement under the WTO. For

example, the United States has requested a WTO panel review of Mexico's HFCS duties, in addition to using NAFTA mechanisms.

Dispute resolution under the formal NAFTA mechanisms and AD and CVD actions represent only a very small part of the resolution process that has occurred and is strengthening under NAFTA. Most disputes are addressed in earlier stages through consultation and negotiation in the other venues that exist for their resolution. By fostering greater communication among parties engaged in trade, these mechanisms may also help to prevent trade disputes from occurring. One may identify three other trade dispute resolution mechanisms, in addition to the NAFTA arbitration panels and AD and CVD actions: governmental negotiations, private industry negotiations, and technical working groups and assistance (table B-2).

Government negotiations offer a venue for resolving disputes before they reach the litigation or investigation stage. Ad hoc negotiations have addressed trade disputes as they occur, as in the cases of U.S.-Canada grain trade disputes and the U.S.-Mexico tomato dispute. Other negotiations are conducted in standing committees, such

as the NAFTA SPS Committee. As the number of disputes relating to SPS measures has grown significantly in recent years, the role of the SPS Committee has been to facilitate technical cooperation between NAFTA partners and to enable consultation on SPS measures. One achievement of the working group has been the implementation of "regionalization." This term refers to the process in which certain regions of countries are declared to be free of pests or disease, thus permitting some trade to take place, even though disease or pests are present in other parts of the country. This is an example of trilateral *regulatory management*.

Government negotiations have also resolved disputes through *market management* and *policy management*. Market management may be necessary to assist the adjustment of sensitive sectors to increased competition under free trade, by stipulating temporary market conditions such as minimum prices. Government negotiations have also led to policy management in cases where one country's domestic policy has a direct impact on producers in other NAFTA countries. While the scope of NAFTA does not extend to domestic programs, subsequent government negotiations have resolved cases in which domestic programs had signif-

**Table B-2—Examples of Resolving Trade Disputes through NAFTA**

Dispute resolution mechanism	Selected examples
National Countervailing duty (CVD) or Antidumping (AD) actions	Mexico investigated or implemented duties on HFCS, hogs, apples, and wheat from the United States and wheat from Canada. United States investigated or implemented duties on tomatoes and broomcorn brooms from Mexico, and potatoes, beef, and wheat from Canada. Canada investigated and placed duties on apples, refined sugar, and potatoes from United States.
NAFTA arbitration panels	Chapter 19 panels considered Mexican AD duties on U.S. HFCS exports, U.S. refined sugar and product exports to Canada, Canadian swine exports to United States, and Mexican fresh cut flower exports to United States. Chapter 20 panels considered Canadian TRQs on poultry, dairy, barley, and margarine, and U.S. safeguards on broomcorn brooms from Mexico.
Government negotiations	" <i>Regionalization</i> " has addressed hog cholera, poultry Newcastle disease, avocado fruit fly, and karnal bunt in Mexico and the United States. <i>Market management</i> by United States and Mexico established minimum price agreements for U.S. apples and Mexican tomatoes, and negotiated outcomes for U.S.-Canada trade in beef, pork, and wheat. <i>Policy management</i> has modified Mexico's dry bean quota auction system, U.S.-Canada sweetener trade.
Industry negotiations	U.S. and Mexican grape industries resolved dispute over Mexican labeling regulations. Mexican and U.S. cattle industry negotiations prevented Mexican AD. Advisory Committee on Private Commercial Disputes Regarding Agricultural Goods is established.
Technical assistance	NAFTA Sanitary and Phytosanitary (SPS) Committee facilitates regional technical cooperation. United States and Mexico established bilateral Plant Health Working Group and Karnal Bunt Team. Two countries also are cooperating in development of Mexican national grading and standards system for perishable commodities.

inant trade impacts, and helped smooth out differences in incompatible policies and regulations.

Private industry has begun to play a larger role in dispute resolution within the NAFTA region. In two recent disputes involving grapes and cattle, producer groups in Mexico and the United States worked together to address the regulatory incompatibilities and allegations of dumping that were at the root of the disagreements. In an effort to minimize litigation by strengthening private dispute resolution capacity, the NAFTA governments helped establish the Advisory Committee on Private Commercial Disputes Regarding Agricultural Goods. This organization, which is voluntarily supported by growers and shippers in the fruit and vegetable trade, allows its members to settle private commercial disputes largely on their own and in accordance with mutually recognized standards that are built into the group's by-laws and contracts.

Incompatible national regulatory frameworks are sometimes the result of inadequate national capacity to set and enforce standards. Technical assistance provides a mechanism for resolving or preventing disputes by building scientific and institutional capacity. The NAFTA SPS Committee has been one avenue for facilitating regional technical cooperation. Other programs have been established to address scientific cooperation and assistance relating to specific SPS concerns. Technical assistance and cooperation in developing agricultural statistics and strengthening analytical capacity can also contribute to the reduction of trade tensions by improving information and communication.

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# NAFTA's Impact on U.S. Agricultural Trade: An Overview

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## Introduction

NAFTA's influence on U.S. agricultural trade varies by commodity and trade partner. In some instances, NAFTA has had a tremendous impact on the export or import of a particular commodity with either Canada or Mexico. In most instances, however, NAFTA has generated a more modest effect. Through the elimination of numerous trade barriers, Canada, Mexico, and the United States are enabling producers, consumers, and other economic agents throughout North America to respond more efficiently to changing economic conditions and to benefit more fully from their relative strengths. Thus, U.S. agricultural trade with Canada and Mexico has generally grown somewhat more under NAFTA than it would have otherwise. These expanded trade ties offer the NAFTA economies additional insulation from the adverse effects of weather-related emergencies, localized economic downturns, and other factors.

Although the transition period for NAFTA's ambitious project of trade liberalization is only about one-half complete, many trade barriers were eliminated immediately upon the agreement's implementation, and others are rapidly nearing the end of their phase-out period. NAFTA's longest transition period—14 years (January 1, 1994, to January 1, 2008)—only applies to a handful of commodities: U.S. imports of Mexican frozen concentrated orange juice, certain winter vegetables, sugar, and peanuts; and Mexican imports of U.S. corn, sugar, dried beans, and milk powder. Thus, NAFTA's impact on U.S. agricultural trade to date should provide a good indication of the agreement's long-term impact.

## Trends in U.S. NAFTA Trade

Since the implementation of NAFTA, U.S. agricultural trade with its NAFTA partners has grown in size and importance. Between 1993 and 2000, U.S. agricultural exports to Canada and Mexico increased from \$9.0 billion to a record \$14.2 billion, while U.S. agricultural imports from these countries climbed from \$7.4 billion to \$13.7 billion.

At the same time, NAFTA is facilitating a reorientation of U.S. agricultural trade in which U.S. exporters and importers devote greater attention to the North American market. In 2000, 28 percent of U.S. agricultural exports was destined for either Canada or Mexico, compared with 21 percent in 1993 and 17 percent in 1990. Similarly, Canada and Mexico supplied 33 percent of U.S. agricultural imports in 2000, compared with 29 percent in 1993 and just 25 percent in 1990.

A comparison of the growth rates for U.S. agricultural trade with the NAFTA countries and the rest of the world further underscores the increased importance of the North American market. Between 1993 and 2000, U.S. agricultural exports to Canada and Mexico grew at a compound annual rate of 6.8 percent, in contrast to 1.4 percent for U.S. agricultural exports to the rest of the world. Similarly, U.S. agricultural imports from Canada and Mexico increased at a compound annual rate of 9.3 percent between 1993 and 2000, while agricultural imports from the rest of the world increased only 5.2 percent.

## Exports to NAFTA Partners

Canada is the second largest foreign customer of U.S. agriculture (after Japan), accounting for 15 percent of U.S. agricultural exports in 2000. Even though Canada is a mature market for U.S. exporters, U.S. agricultural exports to Canada have increased under CFTA and NAFTA, from \$4.2 billion in 1990 to \$7.6 billion in 2000. This expansion corresponds to a compound annual growth rate of 6.1 percent. Compared with Mexico, Canada purchases a much broader array of U.S. agricultural commodities. The top seven products—feeds and fodders, beef, cattle, coffee, soybean meal, chocolate, and lettuce—accounted for only 24 percent of the total in 2000. It takes at least another 40 commodities to reach the 50-percent mark.

Mexico is a rapidly growing market for U.S. agricultural exports. Since the implementation of NAFTA, U.S. agricultural exports to Mexico have expanded from \$3.6 billion in 1993 to \$6.5 billion in 2000, corresponding to a compound annual growth rate of 8.8 percent. Seven commodities accounted for 50 percent of the value of

this trade in 2000: soybeans, beef, corn, cotton, sorghum, feeds and fodders, and wheat.

U.S. agricultural exports to Mexico depend heavily on the health of the Mexican economy. In late 1994, the Mexican peso collapsed, and the difficult recession that followed sharply reduced the purchasing power of Mexican consumers and increased the short-term competitiveness of Mexican exports. Consequently, U.S. agricultural exports to Mexico plunged from \$4.6 billion in 1994 to \$3.5 billion in 1995, a decrease of more than \$1 billion, while Mexican agricultural exports to the United States surged from \$2.9 billion to \$3.8 billion. Fortunately, Mexico has experienced sustained economic growth since 1996. As a result, U.S. agricultural exports to Mexico increased 85 percent in value between 1995 and 2000.

U.S. agricultural suppliers hold dominant market shares in both Canada and Mexico. The U.S. share of Canada's total agricultural imports reached 66 percent in 2000, after hovering in the 61-to-63-percent range during much of the 1990's. The U.S. share of the Mexican market has increased slightly under NAFTA, from 73 percent during 1990-93 to about 75 percent during 1994-99.

### **Imports from NAFTA Partners**

Under CFTA and NAFTA, U.S. agricultural imports from Canada have grown at an average annual rate of 10.6 percent. Between 1990 and 2000, this trade climbed from \$3.2 billion to \$8.7 billion. Ten commodities—beef, cattle, pork, biscuits and wafers, potatoes, cocoa, swine, and feeds and fodders, canola oil, and wheat—accounted for 52 percent of the total in 2000.

Similarly, U.S. agricultural imports from Mexico have increased at a compound annual rate of 9.3 percent under NAFTA. Between 1993 and 2000, imports grew from \$2.7 billion to a record \$5.1 billion. This trade is highly seasonal, as the Mexican growing season complements the U.S. growing season for a number of commodities, especially in the category of fruits and vegetables. In 2000, nine commodities—malt beverages, coffee, tomatoes, cattle, peppers, cucumbers, grapes, cauliflower, and broccoli—accounted for 55 percent of the value of this trade.

### **Evaluating NAFTA's Impact**

Obviously, not all of the changes in U.S. agricultural trade with Canada and Mexico that have occurred

since NAFTA's implementation may be attributed to the agreement. Adverse weather conditions, exchange-rate movements, macroeconomic performance, evolving consumer preferences, population growth, and technological change are but a few of the factors other than NAFTA that have affected U.S. agricultural trade over the past 7 years.

The second part of this report contains a detailed, commodity-level analysis of NAFTA's impact on U.S. agricultural trade. Table C-1 summarizes the main findings of this analysis regarding the estimated change in U.S. agricultural trade that may be attributed directly to CFTA and NAFTA, isolating the effect of these agreements from other factors. For commodities that were subject to quotas or other quantitative restrictions prior to the two agreements, the volume of trade during 1994-2000 was compared with previously allowed quantities. This assumes no over-quota trading, except where it was determined that the quantitative restrictions in existence before CFTA and NAFTA were not enforced. For commodities formerly subject to tariffs, economic models and expert assessments were used to estimate the impact of tariff changes.

### **Livestock and Animal Products**

U.S. trade with Canada and Mexico in livestock and animal products has continued to grow under NAFTA. Since NAFTA's implementation, U.S. exports to Canada and Mexico in this category have averaged \$2.4 billion per year, in contrast to \$2.1 billion in 1993 and \$1.5 billion in 1990. U.S. imports of livestock and animal products from the two countries averaged \$3.0 billion per year during 1994-2000, up from \$2.5 billion in 1993 and \$2.0 billion in 1990.

Canada and Mexico's combined share of U.S. imports of livestock and animal products also has increased, but their share of U.S. exports reveals no clear trend. During 1994-2000, Canada and Mexico supplied 45 percent of U.S. imports in this category, compared with 42 percent in 1993 and 35 percent in 1990. In contrast, the two countries accounted for 24 percent of U.S. exports of livestock and animal products during 1994-2000, 27 percent in 1993, and 22 percent in 1990.

CFTA and NAFTA have affected U.S. trade in livestock and animal products in a variety of ways. Upon NAFTA's implementation, Mexico immediately eliminated its tariff on non-breeding cattle from Canada and

**Table C-1—Estimated change in the volume of U.S. agricultural trade with Canada and Mexico due solely to CFTA and NAFTA, 1994-2000**

Product	U.S. exports to		U.S. imports from	
	Canada	Mexico	Canada	Mexico
<b>Grains and products:</b>				
Corn	Increase -- low	Increase -- medium	Increase -- medium	Negligible effect
Sorghum	Little to no trade	Decrease -- high	Little to no trade	Little to no trade
Barley	Negligible effect	Increase -- low	Increase -- low	Little to no trade
Oats	Little to no trade	Little to no trade	Negligible effect	Little to no trade
Wheat	Negligible effect	Increase -- low	Increase -- high	Increase -- low
Wheat products	Increase -- high	Negligible effect	Increase -- high	Increase -- high
Rice	Increase -- low	Increase -- high	Little to no trade	Little to no trade
<b>Oilseeds and products:</b>				
Oilseeds	Negligible effect	Increase -- medium	Negligible effect	Negligible effect
Meals and oilcakes	Negligible effect	Decrease -- low	Increase -- low	Negligible effect
Vegetable oils	Increase -- low	Increase -- low	Increase -- low	Negligible effect
<b>Animals and animal products:</b>				
Cattle and calves	Negligible effect	Increase -- high	Decrease -- high	Increase -- low
Beef and veal	Increase -- high	Increase -- medium	Increase -- high	Little to no trade
Hogs	Little to no trade	Negligible effect	Negligible effect	Little to no trade
Pork	Increase -- low	Increase -- low	Negligible effect	Little to no trade
Poultry meats	Increase -- low	Increase -- low	Increase -- low	Little to no trade
Dairy products	Negligible effect	Increase -- high	Negligible effect	Little to no trade
<b>Other crops:</b>				
Peanuts	Negligible effect	Negligible effect	Negligible effect	Increase -- high
Dry beans	Little to no trade	Negligible effect	Little to no trade	Little to no trade
Cotton	Increase -- high	Increase -- high	Little to no trade	Negligible effect
Sugar	Negligible effect	Negligible effect	Negligible effect	Increase -- high
<b>Fruits and vegetables:</b>				
Fresh tomatoes	Negligible effect	Increase -- low	Increase -- low	Increase -- medium
Processed tomatoes	Increase -- medium	Increase -- low	Increase -- low	Increase -- medium
Bell peppers	Increase -- low	Negligible effect	Increase -- low	Increase -- low
Cucumbers	Negligible effect	Little to no trade	Increase -- low	Increase -- low
Squash	Increase -- low	Little to no trade	Negligible effect	Negligible effect
Eggplant	Increase -- low	Little to no trade	Little to no trade	Increase -- low
Snap beans	Increase -- low	Little to no trade	Increase -- low	Increase -- low
Fresh potatoes	Increase -- low	Increase -- low	Increase -- medium	Little to no trade
Processed potatoes	Increase -- low	Increase -- high	Increase -- medium	Little to no trade
Frozen broccoli and cauliflower	Little to no trade	Little to no trade	Increase -- low	Increase -- low
Fresh citrus	Negligible effect	Little to no trade	Little to no trade	Increase -- low
Orange juice	Increase -- low	Little to no trade	Little to no trade	Increase -- low
Apples	Negligible effect	Increase -- high	Negligible effect	Little to no trade
Pears	Negligible effect	Increase -- high	Little to no trade	Little to no trade
Peaches	Negligible effect	Little to no trade	Little to no trade	Little to no trade
Grapes	Negligible effect	Increase -- low	Little to no trade	Negligible effect
Cantaloupe	Negligible effect	Little to no trade	Little to no trade	Increase -- medium
Watermelon	Negligible effect	Little to no trade	Little to no trade	Increase -- low

Estimates reflect changes in trade volume during 1994-2000 due solely to CFTA and NAFTA and are based on assessments of ERS analysts:

High = A change of more than 15 percent, compared to what would have occurred without CFTA and NAFTA

Medium = A change of 6 to 15 percent

Low = A change of 2 to 5 percent

Negligible effect = Less than 2 percent.

Source: Economic Research Service, USDA.

the United States, a tariff that it had imposed for all countries in late 1992. This tariff elimination is estimated to have increased the number of U.S. cattle exported to Mexico in 1994 by some 18-33 percent. Since then, exports have fluctuated in response to short-term economic conditions in both countries, ranging from a low of \$14 million in 1995 to a high of \$131 million in 1997.

With respect to U.S.-Canada cattle trade, the exemption of Canadian beef from the U.S. Meat Import Law has had a greater impact than CFTA and NAFTA tariff changes. In addition, the Restricted Feed Cattle Program (originally called the North-West Pilot Program) enables U.S. feeder cattle to be shipped to selected Canadian feedlots without going through the usual quarantine procedures. This program has helped to increase U.S. cattle exports to Canada from roughly 40,000 head in 1996 and 1997 to about 350,000 head in 2000. About 180,000 cattle participated in the program in 2000, and some 203,000 are taking part in 2001.

The elimination of Mexican tariffs on U.S. beef, coupled with sustained economic growth in Mexico, has given a sizable boost to U.S. beef exports to Mexico. During 1994-2000, this trade averaged \$309 million per year, in contrast to \$135 million during 1989-93. Although small in total value, Mexican beef exports to the United States have trebled under NAFTA—expanding from an annual average of \$2 million during 1989-93 to \$12 million during 1994-2000.

CFTA and NAFTA have had an especially powerful effect on U.S.-Canada beef trade. Perhaps the greatest impact is due to the removal of import quotas from this trade. In addition, the agreements provide the two countries with much greater access to each other's beef market, in comparison to both pre-CFTA levels and the general levels afforded by the Uruguay Round Agreement on Agriculture (URAA).

In an environment of freer trade, U.S. beef imports from Canada have grown steadily, from \$191 million in 1990 to \$981 million in 2000. In contrast, U.S. beef exports to Canada have trended downward over the last 7 years, from \$365 million in 1994 to \$299 million in 2000. This shifting trade balance is partially due to increased U.S. investment in Canadian meat processing. For instance, U.S. firms own the two largest slaughter plants in Canada. Still, U.S. beef exports to Canada are perhaps twice as high as they would have been other-

wise, due to the greater market access secured by CFTA and incorporated within NAFTA.

CFTA and NAFTA have had little effect on North American hog trade, since the health restrictions and duties that influence this trade are not directly related to either agreement. Due to animal health concerns, U.S. hog imports from Mexico are non-existent, and Canadian hog imports from the United States are small in number. Following Mexico's imposition of antidumping duties in early 1999, U.S. hog exports to Mexico dropped from about 208,000 head in 1998 to 52,000 head in 2000. Although U.S. hog imports from Canada quadrupled between 1989 and 2000—climbing from 1.1 million to 4.4 million head—this development is not due to CFTA and NAFTA since this trade already was duty-free at the time of CFTA's implementation.

Tariff elimination in U.S.-Canada pork trade has provided a small boost to U.S. pork exports to Canada. Exports averaged \$82 million per year during 1994-2000, up from \$32 million in 1993 and \$26 million in 1990. In contrast, U.S. pork imports from Canada demonstrated no clear trend during the 1990's. Imports averaged \$485 million per year during 1994-2000, above the 1993 level of \$307 million but somewhat below (in real terms) the 1990 level of \$428 million.

As part of NAFTA, Mexico is phasing out its tariffs on U.S. and Canadian pork. This has provided a small stimulus to U.S. pork exports to Mexico. During 1994-2000, this trade averaged \$93 million per year, in contrast to \$59 million during 1989-93. However, the far more significant drivers of this export growth have been the rapid recovery of the Mexican economy following its recession in 1995 and continuing economic growth since then.

NAFTA's impact on U.S. poultry exports to Canada and Mexico is difficult to assess. Canada maintains a "permanent" tariff-rate quota (TRQ) for poultry that will not be eliminated under NAFTA, but it has consistently allowed imports above that amount. In fact, prior to CFTA, the Canadian government would often offer supplemental permits for chicken imports in excess of existing quotas. Similarly, Mexico has not enforced the quantitative limits of its TRQ on U.S. poultry, so it is possible that the Mexican government would have waived its licensing requirement for U.S. poultry had NAFTA not been implemented.

Currently, U.S. imports of Mexican poultry products are virtually non-existent due to U.S. health restrictions. However, Mexico and the United States are working together to specify conditions under which Mexico can safely export such products to the United States. For instance, processors in the Mexican states of Sinaloa and Sonora are now allowed to import live birds from the United States for slaughter and processing and then ship the processed parts back to the United States, subject to USDA approval of the Mexican facilities.

NAFTA has not had much effect on U.S.-Canada dairy trade, as CFTA did not substantially address the quantitative restrictions that govern this trade. NAFTA has expanded U.S. access to the Mexican dairy market, but other factors have worked to limit U.S. dairy exports to Mexico. International prices for dairy products have declined, and the United States reduced its subsidies for dairy exports as part of the URAA. As a result, U.S. dairy exports to Mexico averaged \$162 million per year during 1994-2000, roughly the same as the 1989-93 average.

### **Grains and Feed**

For most grains and grain products, the impact of NAFTA on U.S.-Canada and U.S.-Mexico trade is small in comparison to the influence of other factors. Generally, NAFTA has amplified expansions in trade that would have occurred without the agreement. In addition, NAFTA has tempered reductions in trade, such as those that resulted from Mexico's severe recession in 1995.

Under NAFTA, the Canadian and Mexican markets have grown in importance to U.S. grain and feed traders. During 1994-2000, NAFTA's share of U.S. grain and feed exports averaged 17 percent, compared with 13 percent in 1993 and 11 percent in 1990. NAFTA's share of U.S. imports in this category averaged 61 percent during 1994-2000—a dramatic increase from the levels of 57 percent in 1993 and 48 percent in 1990.

Two-way trade in grains and feed has long been a feature of U.S.-Canada economic relations. Each country is a major supplier of these commodities to the world, and each counts the other as one of its most important export markets. This somewhat unusual situation has led to frictions between the two countries. Still, this two-way trade has continued to grow under NAFTA. U.S. grain and feed exports to Canada aver-

aged \$1.2 billion during 1994-2000, up from \$960 million in 1993 and \$576 million in 1990. U.S. imports of Canadian grain and feed averaged \$1.5 billion during 1994-2000, in contrast to \$948 million in 1993 and \$538 million in 1990.

CFTA and NAFTA have facilitated a geographic reorientation of the Canadian grain sector. Prior to CFTA, Canadian grain flows tended to move in an East-West direction that was artificially imposed by trade barriers and transportation subsidies. Now, these flows are more likely than in the past to move from north to south.

U.S. exports constitute the vast majority of U.S.-Mexico grain and feed trade. These exports averaged \$1.5 billion per year during 1994-2000, in contrast to \$924 million during 1989-93. The United States is a key supplier of cereals to Mexico, accounting for 89 percent of Mexican imports during 1994-99. Canada supplied 9 percent. U.S. imports of Mexican grains and feed averaged \$137 million during 1994-2000, more than 3 times the 1989-93 average of \$42 million.

In 2000, U.S. grain and feed exports to Canada and Mexico equaled \$3.1 billion. In terms of value, the most important commodities in this trade were corn (\$637 million), sorghum (\$442 million), and wheat (\$197 million). The major subcategory of feeds and fodder (excluding oilcakes) accounted for \$639 million. Grain and feed imports from Canada and Mexico totaled \$1.9 billion. The commodities with the largest share of these imports were wheat (\$228 million), oats (\$117 million), and barley (\$75 million). Biscuits and wafers accounted for \$509 million.

The NAFTA countries are implementing many significant changes in their trade policies for grains and feed. With respect to corn, NAFTA's most prominent change is Mexico's replacement of import licensing with a TRQ, which itself will be eliminated in 2008. In addition, Mexico has consistently permitted imports of U.S. corn to surpass the quantitative level specified by the TRQ without applying the high over-quota tariff allowed by NAFTA. Beginning on June 7, 2001, Mexico levied minor over-quota tariffs of 1 percent on yellow corn and 3 percent on white corn, following a long period in which no over-quota tariff was applied. These minor tariffs will remain in effect until the end of 2001.

These policies have facilitated U.S. corn exports to Mexico. During 1994-2000, this trade averaged \$521



million per year, compared with \$400 million in 1990 and just \$35 million in 1993, a year in which this trade was unusually low. Reforms in Mexico's domestic agricultural policies and a series of severe droughts have provided additional stimulus to U.S. corn exports.

CFTA and NAFTA have had a small effect on U.S.-Canada corn trade, which just entered its fourth year of being completely free from tariff restrictions. U.S. corn exports to Canada averaged \$112 million per year during 1994-2000, in contrast to \$80 million in 1993 and \$72 million in 1990. Corresponding imports from Canada averaged \$30 million during 1994-2000, which also was the value of this trade in 1992 and 1993.

Upon NAFTA's implementation, Mexico immediately eliminated its seasonal tariff on U.S. sorghum. However, U.S. sorghum exports to Mexico also have been affected by the greater access provided by Mexico to U.S. corn. In response to these changes and significant modifications of Mexico's domestic agricultural policies, many livestock producers in Mexico have switched from sorghum to corn feed. Thus, the combined effect of the tariff reductions for corn and sorghum has been to discourage Mexican sorghum imports from the United States. In recent years, declining sorghum prices have boosted U.S. sorghum exports to Mexico, from \$250 million in 1997 to \$441 million in 2000.

CFTA and NAFTA gradually eliminated the tariffs on U.S.-Canada wheat trade, providing a substantial boost to U.S. imports of Canadian wheat. During 1994-2000, these imports averaged \$268 million per year, up from \$210 million in 1993 and \$80 million in 1990. U.S. wheat product exports to Canada also have benefited from tariff elimination. This trade averaged \$48 million per year during 1994-2000, compared with \$27 million in 1993 and \$12 million in 1990.

Despite Canada's elimination of its tariff on U.S. wheat, Canadian imports of this product in the form of grain remain inconsequential. The low level of this trade reflects both Canada's historic strength in wheat production and the long-term impact of continuing restrictions on wheat imports as a result of various regulatory actions. In 1998, Canada and the United States negotiated an agreement on wheat trade regulations that should improve U.S. access to the Canadian market. However, the two countries continue to spar over the activities of the Canadian Wheat Board, and the Office of the U.S. Trade Representative recently initiated a Section 301 investigation of this subject.

As part of NAFTA, Mexico eliminated its import-licensing requirement and is now phasing out its tariffs on U.S. and Canadian wheat. These actions have provided a small stimulus to U.S. wheat exports to Mexico. This trade averaged \$195 million per year during 1994-2000, compared with \$70 million during 1989-93. In response to market incentives, Mexican farmers have devoted less land to wheat than in previous years. Thus, NAFTA may be indirectly fostering U.S. wheat exports to Mexico by encouraging Mexican farmers to produce other crops.

Mexico's phytosanitary requirements effectively ban rice imports from Asia, allowing the United States to serve as the predominant foreign supplier of rice to the Mexican market. In 2000, U.S. rice exports to Mexico equaled \$102 million, compared with \$56 million in 1993. Should Asian rice exporters satisfactorily address Mexico's phytosanitary requirements, the tariff advantage enjoyed by the United States under NAFTA would become extremely important. However, rough rice accounts for the bulk of Mexico's rice imports, and no major Asian rice exporter currently allows this product to be exported.

### ***Oilseeds and Oilseed Products***

NAFTA's impact on U.S.-Canada trade in oilseeds and related products is substantially different from its impact on U.S.-Mexico trade. With respect to U.S.-Canada trade, CFTA and NAFTA have made a small contribution to increased two-way trade in processed goods, particularly vegetable oil. With respect to U.S.-Mexico trade, NAFTA has led to increased U.S. soybean exports, as Mexican vegetable oil demand is primarily satisfied by domestically produced oil crushed from imported oilseeds.

As is the case with agricultural trade as a whole, NAFTA is facilitating a process in which Canada and Mexico account for a greater share of U.S. trade in oilseeds and oilseed products. During 1994-2000, these two countries purchased 16 percent of U.S. oilseed and oilseed product exports, in contrast to 14 percent in 1993 and 11 percent in 1990. Similarly, Canada and Mexico supplied an average of 38 percent of U.S. oilseed and oilseed product imports during 1994-2000, up from 37 percent in 1993 and 30 percent in 1990. Mexico accounted for 69 percent of U.S. oilseed and oilseed product exports to NAFTA countries during 1994-2000.

In 2000, U.S. oilseed and oilseed product exports to Canada and Mexico equaled \$1.6 billion. The most important commodities in this trade were soybeans (\$750 million), soybean meal (\$189 million), and sunflower oil (\$87 million). The United States supplies about three-fourths of Canada's total oilseed imports (in value terms) and is the predominant exporter of soybeans to Mexico. During 1994-99, the United States supplied 96 percent of Mexican soybean imports in terms of volume, while Argentina and Brazil supplied 2 percent and 1 percent, respectively. U.S. oilseed and oilseed product imports from Canada and Mexico totaled \$636 billion in 2000, with canola oil and rapeseed accounting for \$228 million and \$52 million, respectively.

CFTA and NAFTA have not greatly affected U.S.-Canada oilseed trade, which was relatively free of restrictions at the time of CFTA's implementation. However, tariff reductions under the two agreements have boosted vegetable oil trade between the two countries. During 1994-2000, U.S. vegetable oil exports to Canada averaged \$185 million per year, in contrast to \$100 million in 1993 and \$57 million in 1990. U.S. imports of Canadian vegetable oil (including waxes) averaged \$322 million during 1994-2000, up from \$213 million in 1993 and \$89 million in 1990.

By reducing barriers to U.S. feed grains, NAFTA has facilitated a noteworthy expansion in the Mexican feed industry. This development has created a much larger demand within Mexico for protein meal and the imported soybeans needed to product this product. Thus, NAFTA has provided an important indirect impetus to U.S. soybean exports to Mexico. This trade averaged \$674 million per year during 1994-2000, compared with \$334 million per year during 1989-93.

As part of NAFTA, the United States established a tariff-rate quota (TRQ) for raw peanuts from Mexico, enabling Mexico to export substantial quantities of that product to the United States for the first time. Between 1994 and 2000, this trade increased from \$1 million to \$4 million, although it often fluctuates from one year to the next.

### **Other Field Crops**

NAFTA has had an important impact on U.S. trade of other field crops. Two noteworthy examples—cotton and sugar—are discussed here.

NAFTA affects U.S. cotton trade via two routes. First, NAFTA is paving the way for duty-free cotton trade

within North America. Canada did not levy a tariff on imported cotton prior to CFTA, and the United States and Mexico have completed the first 7 years of their 9-year transition to duty-free trade in cotton. Second, NAFTA's rules of origin provide for virtually unlimited access to the U.S. market for textiles and apparel manufactured by a NAFTA member from yarn and fiber produced by a NAFTA member. Ultimately, NAFTA will assure free trade within North America not only for cotton but also for many products made from cotton.

These changes have combined with more powerful developments, including the peso devaluation and various difficulties facing Asian textile exporters, to boost U.S. cotton exports to Canada and Mexico. During 1994-2000, these exports (including linters) averaged \$432 million, in contrast to \$250 million in 1993 and \$112 million in 1990. In 2000, these exports reached \$578 million.

Mexico and the United States are moving toward freer trade in sugar through the application of a complicated formula, based on the difference between projected production and projected domestic consumption, that is used to calculate the duty-free quotas for this trade. This process is occurring over a lengthy transition period (1994-2007). So far, U.S. imports of Mexican cane and beet sugar have grown from \$64,000 in 1993 to \$29 million in 2000. This development, coupled with low world prices for sugar, places additional stress on the U.S. sugar program.

Regarding U.S.-Canada sugar trade, the United States initially interpreted CFTA as meaning that any U.S. imports of Canadian sugar in excess of the U.S. TRQ should be subject to the low CFTA tariff rather than the prohibitive second-tier tariff associated with the TRQ. This action greatly stimulated these imports during 1990-94. But in 1995, the United States began to apply the most-favored-nation (MFN) tariff to over-quota imports, in accordance with the URAA.

### **Vegetables**

North American vegetable trade has continued to flourish under NAFTA. U.S. vegetable exports to Canada and Mexico (including dried beans, dried peas, and dried lentils) averaged \$1.7 billion per year during 1994-2000, in contrast to \$1.3 billion in 1993 and \$1.0 billion in 1990. U.S. vegetable imports from its NAFTA partners also have grown, from \$1.2 billion in 1990 and \$1.4 billion in 1993 to an average of \$2.2

billion since 1994. In 2000, this trade encompassed \$2.0 billion in U.S. exports and \$3.0 billion in U.S. imports.

Over the last decade, the United States has solidified its position as Canada's main foreign supplier of vegetables. The United States accounted for 81 percent of Canada's vegetable imports during 1994-2000, compared with just 70 percent during 1984-88. Mexico supplied 8 percent of Canadian vegetable imports during 1994-2000. The United States also accounted for 85 percent of Mexico's vegetable imports during 1994-2000, while Canada supplied 11 percent.

Mexico has long been a major supplier of vegetables to the U.S. market, accounting for 40 percent of the total value of U.S. vegetable imports during 1994-2000. However, Canada's share of the U.S. market has risen in recent years, from 10 percent in 1990 to 25 percent in 2000. Overall, Canada and Mexico's share of U.S. vegetable imports has increased under NAFTA, from 53 percent in 1990 and 55 percent in 1993 to an average of 59 percent during 1994-2000.

U.S. vegetable imports from its NAFTA partners totaled \$3.0 billion in 2000. Some of the most important components of this trade in terms of value were tomatoes (\$573 million), potatoes (\$434 million), and peppers (\$386 million). Corresponding exports to Canada and Mexico equaled \$2.0 billion. Commodities with a large share of this trade included lettuce (\$168 million), tomatoes (\$143 million), and potatoes (\$77 million).

CFTA and NAFTA have had an important impact on two of the largest components of U.S. vegetable trade with Canada and Mexico: tomatoes and potatoes. U.S. tomato imports from Mexico expanded from an annual average of \$256 million during 1989-93 to \$470 million during 1994-2000. Although NAFTA tariff reductions have provided a moderate boost to this trade, NAFTA's influence has been tempered by a series of price floors implemented by principal Mexican and U.S. growers under a suspension agreement to settle an antidumping investigation.

U.S. tomato exports to Canada have fluctuated under CFTA and NAFTA. During 1994-2000, this trade averaged \$105 million, up from \$80 million in 1990 but down from \$111 million in 1993. ERS analysts estimate that the tariff changes initiated by CFTA have increased the volume of this trade by some 14-18 percent, compared with what would have occurred in

the absence of these changes. CFTA and NAFTA also have contributed to increased U.S. tomato sauce exports to Canada. This trade expanded from \$4 million in 1990 and \$43 million in 1993 to an annual average of \$53 million during 1994-2000.

In a major development, U.S. (and Mexican) tomatoes now face increased competition from Canada, due to a rapidly growing greenhouse industry in that country. U.S. tomato imports from Canada have ballooned from \$3 million in 1990 to \$161 million in 2000. Tariff reductions are a small contributing factor to the emergence of this trade, which is driven in large part by increasing U.S. demand for high-quality, higher-priced tomatoes and the strong U.S. dollar.

NAFTA has provided a moderate boost to U.S. imports of processed tomatoes from Mexico. Over the past several years, this trade has branched out from primarily tomato paste into tomato juice and sauce. Tomato juice imports were non-existent until 1996 but equaled \$7 million in 2000. Similarly, tomato sauce imports were minor until 2000, when they reached \$4 million.

Through Mexico's establishment of TRQ's for processed potato products from the United States, NAFTA has had a large, positive impact on U.S. processed potato exports to Mexico, particularly for frozen french fries. As the TRQ's for this product expands during the transition to free trade, U.S. exports of frozen french fries to Mexico have increased substantially, from \$6 million in 1993 to \$22 million in 2000.

U.S. imports of Canadian potatoes (fresh and frozen) averaged \$274 million during 1994-2000, in contrast to \$104 million in 1990 and \$129 million in 1993. Although the elimination of U.S. tariffs on Canadian potatoes has provided a moderate boost to this trade, other factors have played an important role, including the expansion in Canadian potato production and processing and the relative strength of the U.S. dollar.

### ***Fruits and Fruit Juices***

Overall, U.S. fruit trade with Canada and Mexico has grown substantially since the implementation of NAFTA. U.S. imports of fruits and prepared fruits (including juice) from Canada and Mexico have grown from \$410 million in 1990 and \$422 million in 1993 to an average of \$792 million per year during 1994-2000. Corresponding exports have averaged \$1.3

billion under NAFTA, in contrast to \$888 million in 1990 and \$1.0 billion in 1993.

U.S.-Canada trade in fruits and prepared fruits is well established. Excluding juices, U.S. exports of such products did not demonstrate a clear trend over the past decade, fluctuating between \$686 million in 1994 and \$794 million in 2000. In contrast, U.S. juice exports to Canada increased gradually over this period. During 1994-2000, this trade averaged \$222 million per year, in contrast to \$162 million in 1993 and \$138 million in 1990. In value terms, orange juice accounts for 55 percent of these exports. U.S. orange juice exports to Canada averaged \$121 million during 1994-2000, compared with \$83 million in both 1990 and 1993. Through the elimination of Canada's tariff on retail-ready orange juice and technological changes in the packaging and marketing of orange juice, the composition of this trade has shifted from frozen concentrate to single-strength juice.

U.S. imports of Canadian fruits and prepared fruits grew steadily during the 1990's. During 1994-2000, these imports (excluding juices) averaged \$116 million, up substantially from \$62 million in 1990. Berries other than strawberries constitute more than half of this trade. U.S. imports of Canadian fruit juice are relatively small, averaging \$18 million during 1994-2000.

Trade data clearly show the deleterious consequences of the peso devaluation and subsequent recession on U.S. exports of fruits and prepared fruits to Mexico. Between 1994 and 1995, total exports in this category (including juice) plummeted from \$197 million to \$91 million. During 1994-2000, this trade averaged \$163 million per year, in contrast to \$70 million during 1989-93. With the continued expansion of the Mexican economy, this trade reached \$277 million in 2000, signaling the probable long-term opportunities in Mexico for U.S. fruit exporters.

NAFTA has had a substantial impact on several aspects of U.S. fruit trade with Mexico. Thanks in part

to the end of Mexican licensing requirements, U.S. grape exports to Mexico have averaged \$22 million per year under NAFTA, in contrast to \$3 million during 1989-93. The elimination of Mexican tariffs on U.S. pears has strengthened U.S. pear exports to Mexico. This trade averaged \$26 million per year during 1994-2000, compared with \$14 million during 1989-93. Continuing economic growth in Mexico should provide an additional impetus to this trade, which reached \$42 million in 2000.

U.S.-Mexico apple trade has faced many challenges since NAFTA's implementation, including Mexico's economic crisis of late 1994 and 1995, the levying of antidumping duties by Mexico, and difficulties in securing an inspection process that facilitated trade while addressing phytosanitary concerns. As a result, U.S. apple exports to Mexico have fluctuated substantially, from \$40 million in 1995 to \$102 million in 2000. Still, NAFTA tariff reductions and the elimination of Mexico's licensing requirement have provided a substantial boost to U.S. apple exports to Mexico. This trade averaged \$61 million per year during 1994-2000, compared with \$23 million during 1990-93.

U.S. imports of Mexican fruits and prepared fruits have averaged \$586 million per year under NAFTA, up from \$287 million during 1989-93. This growth reflects expanding consumer demand associated with the strong U.S. economy, changing consumer preferences in the United States, and, to a lesser extent, changes in trade restrictions under NAFTA. For example, the gradual elimination of the seasonal U.S. tariffs on Mexican cantaloupe has facilitated U.S. cantaloupe imports from Mexico. This trade averaged \$47 million per year during 1994-2000, compared with \$42 million during 1989-93. Holding all other factors constant, NAFTA and URAA tariff changes were expected to increase this trade by some 17-25 percent above what would have occurred in the absence of these agreements.

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Table C-2—U.S. agricultural trade with NAFTA (Mexico and Canada), 1992-2000

Commodity	Value										Share of world							
	1992	1993	1994	1995	1996	1997	1998	1999	2000	1993	1994	1995	1996	1997	1998	1999	2000	
	<i>\$ Million</i>										<i>Percent</i>							
Agricultural exports to world	43,159	42,915	46,251	56,347	60,417	57,217	51,815	48,278	51,580	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
Exports to NAFTA:																		
Agriculture, total	8,746	8,937	10,163	9,345	11,583	11,963	13,169	12,700	14,195	20.8	22.0	16.6	19.2	20.9	25.4	26.3	27.5	
Animals & animal products	2,164	2,126	2,401	1,868	2,165	2,718	2,891	2,833	3,304	26.5	26.0	17.0	19.3	23.8	27.2	27.7	27.9	
Grains & feeds	1,873	1,770	2,188	2,094	3,198	2,360	2,909	2,829	3,070	12.6	16.1	11.2	15.3	15.4	20.8	20.2	22.4	
Fruits & preparations, ex. juice	785	839	871	794	809	881	880	935	1,041	35.9	33.5	29.9	30.5	31.6	34.6	37.2	37.9	
Fruit juices, including frozen	166	170	184	210	227	229	256	267	278	36.9	34.7	32.8	35.8	34.6	39.0	35.6	39.0	
Nuts & preparations	170	171	169	179	198	204	206	223	249	16.8	14.9	15.1	15.4	14.5	12.7	15.4	18.3	
Vegetables & preparations	1,227	1,321	1,515	1,372	1,486	1,701	1,918	1,871	2,042	43.7	42.0	37.7	38.9	41.0	45.4	43.5	45.7	
Oilseeds & products	1,006	1,028	1,184	1,193	1,562	1,770	1,626	1,563	1,599	14.1	16.4	13.3	14.4	14.6	17.1	19.1	18.7	
Other	1,356	1,511	1,652	1,635	1,937	2,100	2,483	2,180	2,612	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
Forestry	n.a.	n.a.	1,635	379	1,538	1,878	1,908	2,067	2,251	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
Agriculture & forestry, total	n.a.	n.a.	11,798	9,724	13,121	13,841	15,077	14,767	16,446	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
Agric. & non-agric., total	n.a.	n.a.	165,282	173,518	189,345	221,502	233,162	253,509	290,290	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
Agricultural imports from world	24,799	25,137	27,031	30,263	33,520	36,160	36,908	37,737	38,991	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
Imports from NAFTA:																		
Agriculture, total	6,522	7,384	8,194	9,467	10,556	11,561	12,482	12,881	13,740	29.4	30.3	31.3	31.5	32.0	33.8	34.1	35.2	
Bananas & plantains	103	94	59	47	44	63	57	40	24	8.8	5.5	4.1	3.7	5.1	4.7	3.3	2.1	
Coffee, including products	290	281	385	660	640	742	649	576	589	18.4	15.5	20.2	23.0	19.1	18.9	19.9	21.8	
Animals & animal products	2,228	2,467	2,326	2,739	2,800	3,053	3,132	3,294	3,764	41.9	40.4	45.6	46.0	47.0	45.2	45.2	45.3	
Cattle, live	1,245	1,341	1,151	1,409	1,121	1,119	1,144	1,000	1,152	100.0	100.0	99.7	100.0	99.6	100.0	100.0	100.0	
Grains, products, & feeds	828	1,008	1,372	1,403	1,669	1,862	1,707	1,815	1,875	57.0	59.6	60.7	62.8	62.9	59.3	60.7	60.7	
Fruits & preparations	391	380	438	570	616	639	808	993	852	27.6	29.6	35.2	32.1	31.7	37.0	36.0	31.4	
Fruit juices, incl. frozen	37	42	66	94	88	90	107	96	89	6.4	10.1	14.9	9.6	10.9	16.1	12.2	11.8	
Vegetables & preparations	1,072	1,379	1,491	1,746	2,066	2,201	2,727	2,715	2,977	54.9	53.1	54.7	58.6	59.4	62.3	59.3	62.9	
Tomatoes	139	310	326	423	618	576	668	609	573	95.4	94.7	94.0	91.9	88.8	88.1	88.4	89.5	
Sugar & related products	244	253	310	304	354	389	451	494	504	22.4	26.0	22.8	18.8	21.0	26.8	31.1	32.1	
Beverages, ex. fruit juices	373	387	460	494	607	715	865	1,019	1,199	19.0	20.7	20.2	20.8	21.1	22.8	23.4	25.2	
Oilseeds & products	361	440	663	641	814	800	872	707	636	37.5	43.4	36.6	39.9	37.6	42.0	38.2	34.3	
Cotton, ex. linters	0	0	0	2	16	0	0	5	1	0.1	0.0	22.3	5.7	12.4	0.9	3.9	2.6	
Seeds, field & garden	59	65	78	79	94	117	113	109	118	31.1	33.4	32.6	30.2	31.4	26.6	23.6	24.1	
Cut flowers	16	19	21	31	30	39	41	43	47	4.8	5.0	6.0	5.2	6.5	6.6	7.2	7.8	
Nursery stock, bulbs, etc.	90	103	110	131	155	185	227	248	281	37.9	37.5	37.9	40.9	45.3	48.6	48.8	51.1	
Other	430	468	418	526	562	666	728	727	783	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
Forestry	n.a.	6,539	7,771	7,400	9,026	9,908	10,067	12,187	11,276	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
Agriculture & forestry, total	n.a.	13,923	15,965	16,867	19,582	21,469	22,549	25,068	25,016	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
Agric. & non-agric., total	n.a.	151,133	177,899	207,032	229,469	253,881	269,553	308,432	366,764	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
Trade balance:																		
Agriculture with world	18,361	17,779	19,220	26,084	26,897	21,057	14,907	10,541	12,588	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
Agriculture with NAFTA	2,223	1,553	1,969	-122	1,026	402	687	-181	455	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
Forestry with NAFTA	n.a.	n.a.	-6,136	-7,021	-7,488	-8,030	-8,159	-10,120	-9,025	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
Agric. & forestry with NAFTA	n.a.	n.a.	-4,167	-7,143	-6,462	-7,628	-7,472	-10,301	-8,570	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
Agric. & non-agric. with NAFTA	n.a.	n.a.	-12,617	-33,514	-40,124	-32,379	-36,391	-54,923	-76,474	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	

n.a. = not available or does not apply.

Sources: For forestry data, FAS BICO reports; for all other data, Foreign Agricultural Trade of the United States database.

**Table C-3—U.S. agricultural trade with Mexico, 1992-2000**

Commodity	Value										Share of world							
	1992	1993	1994	1995	1996	1997	1998	1999	2000		1993	1994	1995	1996	1997	1998	1999	2000
	\$ Million										Percent							
Agricultural exports to world	43,159	42,915	46,251	56,347	60,417	57,217	51,815	48,278	51,580		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Exports to Mexico:																		
Agriculture, total	3,804	3,619	4,594	3,541	5,445	5,178	6,160	5,634	6,545		8.4	9.9	6.3	9.0	9.1	11.9	11.7	12.7
Animals & animal products	1,259	1,176	1,363	825	1,088	1,534	1,673	1,574	1,879		14.6	14.7	7.5	9.7	13.4	15.7	15.4	15.9
Grains & feeds	1,061	887	1,228	1,062	2,069	1,165	1,639	1,576	1,709		6.3	9.0	5.7	9.9	7.6	11.7	11.3	12.5
Fruits & preparations, ex. juice	77	111	185	85	95	117	128	190	247		4.7	7.1	3.2	3.6	4.2	5.0	7.6	9.0
Fruit juices, including frozen	7	8	12	6	7	8	15	16	30		1.7	2.3	0.9	1.1	1.2	2.3	2.1	4.2
Nuts & preparations	37	37	44	33	45	44	47	60	80		3.6	3.8	2.8	3.5	3.1	2.9	4.1	5.9
Vegetables & preparations	158	172	250	141	249	281	432	376	464		5.7	6.9	3.9	6.5	6.8	10.2	8.7	10.4
Oilseeds & products	717	656	852	833	1,099	1,192	1,156	1,051	1,033		9.0	11.8	9.3	10.2	9.9	12.2	12.9	12.1
Other	488	571	661	555	792	838	1,069	791	1,104		n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Forestry	n.a.	n.a.	413	249	250	292	367	395	435		n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Agriculture & forestry, total	n.a.	n.a.	5,007	3,790	5,695	5,470	6,527	6,029	6,980		n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Agric. & non-agric., total	n.a.	n.a.	50,843	46,292	56,761	71,378	79,010	86,909	111,349		n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Agricultural imports from world	24,799	25,137	27,031	30,263	33,520	36,160	36,908	37,737	38,991		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Imports from Mexico:																		
Agriculture, total	2,379	2,720	2,895	3,836	3,765	4,111	4,688	4,883	5,079		10.8	10.7	12.7	11.2	11.4	12.7	12.9	13.0
Bananas & plantains	103	94	59	47	44	63	57	40	24		8.8	5.5	4.1	3.7	5.1	4.7	3.3	2.1
Coffee, including products	252	251	333	592	570	664	511	446	464		16.5	13.4	18.1	20.4	17.1	14.9	15.4	17.2
Animals & animal products	375	460	388	602	175	231	273	363	479		7.8	6.7	10.0	2.9	3.6	3.9	5.0	5.8
Cattle, live	341	430	352	546	122	177	206	293	406		32.0	30.6	38.6	10.9	15.7	18.0	29.3	35.2
Grains, products, & feeds	53	60	85	105	128	158	156	161	168		3.4	3.7	4.6	4.8	5.3	5.4	5.4	5.4
Fruits & preparations	321	314	358	475	508	530	676	854	701		22.8	24.2	29.4	26.5	26.2	30.9	31.0	25.9
Fruit juices, incl. frozen	26	31	58	80	74	65	91	71	68		4.7	8.8	12.7	8.1	7.9	13.6	9.1	8.9
Vegetables & preparations	809	1,058	1,125	1,306	1,499	1,484	1,791	1,679	1,778		42.1	40.0	41.0	42.5	40.1	41.0	36.6	37.6
Tomatoes	133	304	315	406	580	517	567	490	412		93.4	91.7	90.1	86.3	79.7	74.9	71.0	64.3
Sugar & related products	31	38	69	91	121	129	158	177	175		3.4	5.8	6.9	6.4	7.0	9.4	11.1	11.1
Beverages, ex. fruit juices	169	186	219	275	360	484	631	759	884		9.1	9.8	11.2	12.4	14.3	16.6	17.4	18.6
Oilseeds & products	42	29	27	32	37	32	50	43	39		2.5	1.8	1.8	1.8	1.5	2.4	2.3	2.1
Cotton, ex. linters	0	0	0	2	16	0	5	1	1		0.1	n.a.	22.3	5.6	8.0	0.6	3.9	2.6
Seeds, field & garden	7	8	7	9	11	18	14	14	14		4.1	2.9	3.8	3.5	4.9	3.4	3.1	2.8
Cut flowers	12	14	15	23	20	24	25	27	30		3.6	3.7	4.5	3.4	4.0	4.1	4.6	4.8
Nursery stock, bulbs, etc.	7	8	6	8	10	11	13	14	16		2.8	2.1	2.3	2.5	2.7	2.7	2.7	2.9
Other	173	169	147	187	194	216	243	229	238		n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Forestry	n.a.	318	300	304	393	440	407	416	378		n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Agriculture & forestry, total	n.a.	3,038	3,195	4,140	4,158	4,551	5,095	5,299	5,457		n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Agric. & non-agric., total	n.a.	39,917	49,493	61,684	72,963	85,830	94,709	109,721	135,926		n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Trade balance:																		
Agriculture with world	18,361	17,779	19,220	26,084	26,897	21,057	14,907	10,541	12,588		n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Agriculture with Mexico	1,425	899	1,699	-295	1,680	1,067	1,472	751	1,466		n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Forestry with Mexico	n.a.	n.a.	113	-55	-143	-148	-40	-21	57		n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Agric. & forestry with Mexico	n.a.	n.a.	1,812	-350	1,537	919	1,432	730	1,523		n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Agric. & non-agric. with Mexico	n.a.	n.a.	1,350	-15,392	-16,202	-14,452	-15,699	-22,812	-24,577		n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

n.a. = not available or does not apply.

Sources: For forestry data, FAS BICO reports; for all other data, Foreign Agricultural Trade of the United States database.

Table C-4—U.S. agricultural trade with Canada, 1992-2000

Commodity	Value										Share of world							
	1992	1993	1994	1995	1996	1997	1998	1999	2000	1993	1994	1995	1996	1997	1998	1999	2000	
	\$ Million										Percent							
Agricultural exports to world	43,159	42,915	46,251	56,347	60,417	57,217	51,815	48,278	51,580	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
Exports to Canada:																		
Agriculture, total	4,942	5,317	5,569	5,804	6,138	6,785	7,009	7,066	7,650	12.4	12.0	10.3	10.2	11.9	13.5	14.6	14.8	
Animals & animal products	905	950	1,038	1,042	1,077	1,184	1,218	1,258	1,425	11.8	11.2	9.5	9.6	10.4	11.5	12.3	12.0	
Grains & feeds	812	883	960	1,032	1,130	1,195	1,270	1,253	1,361	6.3	7.0	5.5	5.4	7.8	9.1	9.0	9.9	
Fruits & preparations, ex. juice	708	728	686	709	714	763	752	745	794	31.2	26.4	26.7	26.9	27.4	29.5	29.6	28.9	
Fruit juices, including frozen	159	162	171	204	220	222	241	251	248	35.2	32.4	31.8	34.7	33.5	36.7	33.5	34.8	
Nuts & preparations	133	134	126	145	154	160	160	163	169	13.2	11.0	12.3	11.9	11.3	9.8	11.3	12.5	
Vegetables & preparations	1,068	1,149	1,265	1,231	1,237	1,420	1,485	1,495	1,579	38.0	35.1	33.9	32.4	34.3	35.2	34.8	35.3	
Oilseeds & products	289	372	332	360	462	578	470	512	566	5.1	4.6	4.0	4.3	4.8	4.9	6.3	6.6	
Other	868	940	991	1,080	1,144	1,262	1,414	1,389	1,508	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
Forestry	n.a.	1,113	1,222	130	1,288	1,586	1,541	1,672	1,816	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
Agriculture & forestry, total	n.a.	6,430	6,791	5,934	7,426	8,371	8,550	8,738	9,466	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
Agric. & non-agric., total	n.a.	100,444	114,439	127,226	132,584	150,124	154,152	166,600	178,941	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
Agricultural imports from world	24,799	25,137	27,031	30,263	33,520	36,160	36,908	37,737	38,991	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
Imports from Canada:																		
Agriculture, total	4,143	4,664	5,299	5,631	6,791	7,450	7,794	7,998	8,662	18.6	19.6	18.6	20.3	20.6	21.1	21.2	22.2	
Bananas & plantains	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Coffee, including products	38	30	52	68	70	78	137	130	126	2.0	2.1	2.1	2.5	2.0	4.0	4.5	4.7	
Animals & animal products	1,852	2,007	1,938	2,137	2,625	2,821	2,859	2,931	3,285	34.0	33.7	35.6	43.2	43.5	41.3	40.2	39.5	
Cattle, live	903	911	799	863	999	943	938	708	746	67.9	69.4	61.0	89.1	83.9	81.9	70.7	64.8	
Grains, products, & feeds	775	948	1,287	1,298	1,541	1,704	1,551	1,654	1,707	53.5	55.9	56.1	58.0	57.5	53.9	55.3	55.2	
Fruits & preparations	70	66	80	95	108	109	132	139	151	4.8	5.4	5.8	5.6	5.4	6.0	5.0	5.5	
Fruit juices, incl. frozen	11	11	9	14	14	25	16	25	21	1.7	1.3	2.2	1.6	3.0	2.5	3.2	2.8	
Vegetables & preparations	263	322	366	439	568	716	936	1,036	1,198	12.8	13.0	13.8	16.1	19.3	21.4	22.6	25.3	
Tomatoes	6	6	10	17	37	59	101	120	161	2.0	3.0	3.9	5.6	9.1	13.3	17.4	25.1	
Sugar & related products	213	214	241	213	234	260	293	318	329	19.0	20.2	15.9	12.4	14.1	17.4	20.0	20.9	
Beverages, ex. fruit juices	204	201	241	219	247	231	235	260	315	9.8	10.8	9.0	8.5	6.8	6.2	6.0	6.6	
Oilseeds & products	319	411	635	608	777	767	822	664	597	35.0	41.7	34.8	38.1	36.1	39.6	35.9	32.2	
Cotton exc. linters	0	0	0	0	0	0	0	0	0	n.a.	0.0	0.0	0.0	4.4	0.3	n.a.	0.0	
Seeds, field & garden	53	56	71	70	83	98	99	94	104	27.0	30.5	28.9	26.7	26.5	23.2	20.5	21.3	
Cut flowers	4	5	6	7	10	15	16	15	18	1.2	1.4	1.5	1.7	2.5	2.5	2.6	2.9	
Nursery stock, bulbs, etc.	83	95	103	124	146	174	214	234	265	35.1	35.4	35.6	38.4	42.6	45.9	46.1	48.2	
Other	257	299	271	339	368	449	485	497	545	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
Forestry	n.a.	6,221	7,471	7,096	8,633	9,468	9,660	11,771	10,898	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
Agriculture & forestry, total	n.a.	10,885	12,770	12,727	15,424	16,918	17,454	19,769	19,560	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
Agric. & non-agric., total	n.a.	111,216	128,406	145,348	156,506	168,051	174,844	198,711	230,838	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
Trade balance:																		
Agriculture with world	18,361	17,779	19,220	26,084	26,897	21,057	14,907	10,541	12,588	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
Agriculture with Canada	798	653	270	173	-653	-665	-785	-932	-1,012	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
Forestry with Canada	n.a.	-5,108	-6,249	-6,966	-7,345	-7,882	-8,119	-10,099	-9,082	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
Agric. & forestry with Canada	n.a.	-4,455	-5,979	-6,793	-7,998	-8,547	-8,904	-11,031	-10,094	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	
Agric. & non-agric. with Canada	n.a.	-10,772	-13,967	-18,122	-23,922	-17,927	-20,692	-32,111	-51,897	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	

n.a. = Not available or does not apply.

Sources: For forestry data, FAS BICO reports; for all other data, Foreign Agricultural Trade of the United States database.

# Investment In Agriculture and Food Processing

## Introduction

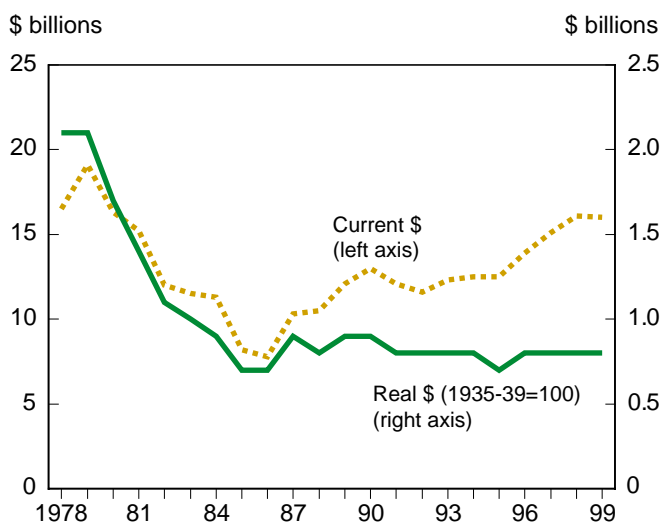
Prior to the implementation of NAFTA, there was some concern about the agreement's potential impact on agricultural investment. Some people thought that investment in U.S. agriculture might decline because of the agreement, especially if capital flowed to Canada and Mexico instead of the United States.

This scenario is not borne out by the available data. Between 1993 and 1999, nominal capital expenditures in U.S. agriculture increased from \$12.5 billion to \$16.0 billion (fig. D-1). In real terms, annual farm capital expenditures climbed steadily between 1995 and 1998, before declining slightly in 1999.

In addition, food-processing companies in each NAFTA country viewed the agreement as an excellent opportunity to increase their foreign direct investment (FDI) in the other NAFTA countries. In 1998, sales of U.S. food industry affiliates exceeded \$14 billion in Canada and \$12 billion in Mexico, easily surpassing the value of U.S. processed food exports to those countries (\$5.1 billion to Canada and \$2.8 billion to Mexico).

Figure D-1

### Farm business capital expenditures, 1978-99



Source: Economic Research Service, USDA.

## U.S. Farm and Food Processing Investment

### Farm Capital Expenditures

It is difficult to assign capital expenditures to pre- and post-NAFTA eras. Negotiations for the agreement were underway in 1991. The accord was approved in 1993 and became effective January 1, 1994. Thus, many investment decisions were made well before the adoption of NAFTA, as farmers and other investors appraised the potential effects of the agreement as it was being negotiated.

Farmers may have taken a second look at their capital investment decisions as they discovered that the effects of NAFTA were more favorable than some had anticipated. In 1994, farm capital expenditures (as defined by ERS) increased slightly in nominal terms but decreased in real terms. In 1999, these expenditures exceeded their level in 1993, in both real and nominal terms.

Farm capital expenditures in several regions of the country rebounded in 1999, even though the total for the United States decreased slightly (table D-1). Between 1994 and 1999, capital expenditures in the Southern Plains experienced the greatest proportionate increase (58 percent), followed by the Pacific States (50 percent). Capital expenditures in the Corn Belt underwent the smallest increase (10 percent).

In the States bordering Mexico, some producers initially thought that they might lose markets due to NAFTA. Fruit and vegetable growers in Florida and the Pacific States, particularly California, feared that competition from Mexico would lower their economic returns. However, export opportunities in the NAFTA countries were more robust than anticipated. In this context, capital expenditures in the Southeast and the Pacific regions fluctuated during 1994-99, with the Pacific States experiencing a surge in expenditures in 1999. In the Northeast, where the agricultural and food sectors have become increasingly integrated with their Canadian counterparts, capital expenditures generally increased in the first half of the 1990's, held fairly steady during 1996-98, and then increased sharply in 1999.



**Table D-1—Capital expenditures in U.S. agriculture, 1991-99**

Year	Total	Northeast	Lake	Corn Belt	Northern Plains	Appalachia	Southeast Plains	Delta	Southern	Mountain	Pacific
<i>Million dollars</i>											
1991	13,140	970	1,644	2,920	1,451	1,219	691	735	1,224	906	1,377
1992	12,616	929	1,826	2,636	1,412	1,292	755	659	1,159	791	1,154
1993	13,868	963	1,846	2,975	1,653	1,308	858	790	1,323	944	1,303
1994	13,880	930	1,910	2,986	1,613	1,224	871	727	1,193	1,061	1,361
1995	13,776	1,050	1,782	2,891	1,621	1,512	1,014	694	1,396	1,230	1,525
1996	15,196	1,174	1,960	2,915	1,864	1,625	957	770	1,233	1,213	1,481
1997	16,244	1,134	2,113	3,209	1,959	1,590	1,043	820	1,469	1,278	1,627
1998	17,956	1,130	1,970	3,098	1,498	1,332	752	664	1,025	1,038	1,445
1999	17,932	1,265	2,328	3,307	1,908	1,683	1,223	866	1,888	1,417	2,043

Source: Compiled from ERS information. Data exclude dwellings.

### Capital Stock in U.S. Agriculture and Food Processing

In nominal terms, the capital stock in U.S. agriculture (defined as fixed reproducible tangible wealth) increased gradually over the 1993-98 period and then declined slightly in 1999 (fig. D-2). This upturn follows a period of relative stability in the capital stock's nominal value that dates back to the late 1980's. NAFTA, together with transition payments under the Federal Agriculture Improvement and Reform Act of 1996, may have sustained this period of stability.

In real terms, the capital stock in U.S. farms has decreased slowly since the implementation of NAFTA, continuing a trend that dates back to 1980. This means that much capital stock, such as farm equipment and

farm buildings, has not been fully replaced. There are many reasons for this, including the consolidation of farms and the more efficient use of machinery and equipment, resulting in economies of scale.

In contrast, investment in food processing has grown in both nominal and real terms since NAFTA's implementation. The U.S. food and beverage industry increased its capital stock in real terms by nearly 9 percent from 1993 to 1999. Fixed private capital investment in the total U.S. economy grew by nearly 16 percent during this period, compared to a 4-percent increase in agriculture (U.S. Department of Commerce, Bureau of Economic Analysis).

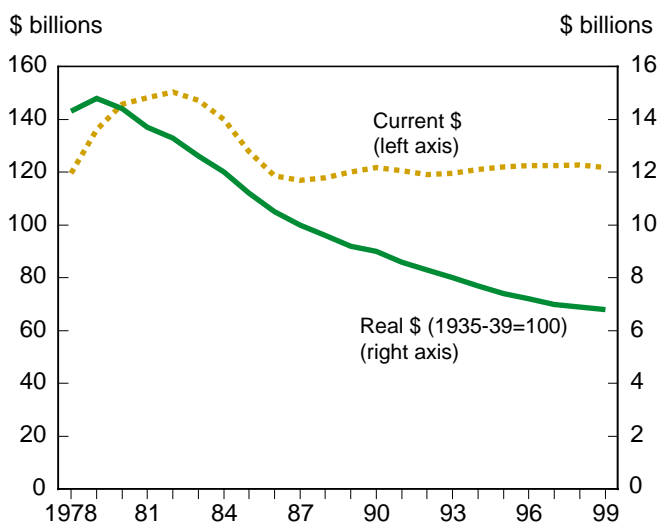
### NAFTA and Foreign Direct Investment

An important element of NAFTA that is often overlooked is the agreement's rules concerning FDI. These rules generally strengthen the rights of foreign investors to retain profits and returns from their initial investments. They also guarantee equal treatment to foreign and domestic investors alike under the laws of each NAFTA country and prohibit new laws that would change the status of foreign investments, once they are established.

This combination of trade liberalization and investment reform has stimulated FDI in the North American food processing industry, with firms in each NAFTA country providing substantial investment capital. For producers, FDI has meant greater dissemination of new technology and gains in efficiency. For consumers, it has meant lower food costs, expanded choices in food and beverages, and greater uniformity in food quality. Other benefits include an increase in employment attributable to U.S. affiliates in Mexico

Figure D-2

#### Total capital stock in U.S. agriculture, excluding operator dwellings, 1978-99



Source: Economic Research Service, USDA.

and Canada, as well as to Mexican and Canadian affiliates in the United States, and increased earnings from U.S. investments abroad.

### ***U.S. FDI in Mexico's Processed Food Industry***

U.S. FDI in Mexico's processed food industry increased from \$2.3 billion in 1993 to \$5.3 billion in 1999. The largest amount of new money in recent years occurred in 1997, although new direct investment continued to flow into Mexico in 1998 and 1999. In addition, funds from affiliates in Mexico were reinvested, but at a lower rate than the high point of 1996. These positive trends began in the late 1980's, when the Mexican government changed many of its rules governing FDI. The enactment of NAFTA further increased investor confidence in Mexico, creating a synergy between investment and trade. Mexico is now the second largest host country (after the United Kingdom) for U.S. FDI in processed foods and beverages.

Nearly three-fourths of U.S. FDI in Mexico's processed food industry is concentrated in highly processed products. Examples include mayonnaise and salad dressing, concentrates and flavorings, confectionery products, pasta and related products, and canned and frozen meats. Only 5 percent is in processed fruits and vegetables. Another 15 percent is in beverages, and about one-tenth is in grain milling or bakery products (Secretaría de Comercio y Fomento Industrial, 1997).

### ***U.S. FDI in Canada's Processed Food Industry***

Between 1989 and 1999, U.S. FDI in Canada's \$40-billion processed food industry expanded from \$1.8 billion to \$5.0 billion. In 1999, some U.S. companies disinvested in Canadian firms, and a smaller amount of earnings were reinvested. This marks the slowing of a trend that began prior to the Canada-U.S. Free Trade Agreement (CFTA) and reflects the heightened integration of the U.S. and Canadian food processing sectors. Canada is the third largest host country for U.S. FDI in processed foods. Total FDI in Canada's food and agricultural sectors equaled \$20.5 billion in 1999, with most of the investment coming from the United States, the United Kingdom, and Australia (Statistics Canada, 2000).

There are many specific examples of U.S. FDI in the Canadian agriculture and food processing. Cargill was

the first U.S. firm to have grain-handling assets in Canada. ConAgra has built new elevators throughout the Canadian prairies, and Archer-Daniels-Midland (ADM) has forged a strategic alliance with United Grain Growers (UGG), with options for procurement. New facilities also have been built to handle increased cross-border trade. Joint ventures between the Saskatchewan Wheat Pool (SWP) and General Mills in Sweetgrass, Montana, and Northgate, North Dakota, are facilitating trade in both directions. U.S. firms also have acquired major Canadian grain-processing firms. A joint venture also was formed between Schrier and Prairie Malt (Cargill). The U.S. firm Rahr has a plant in Alix, Alberta, and ConAgra recently acquired Canada Malt, the largest malting company in Canada. In addition, two of the largest U.S. flour-milling firms, ADM and ConAgra, are major participants in Canada's flour industry.

### ***Mexican FDI in the U.S. Processed Food Industry***

Mexican firms also have increased their investments in U.S. food companies. In 1999, Mexican FDI in the U.S. processed food and beverage industry equaled \$1.0 billion. As recently as 1997, this total was just \$304 million. Large companies based in Mexico own a variety of U.S. enterprises engaged in food processing. GIBSA, one of Mexico's largest bread making companies, is a leading investor in U.S. bread-baking companies. Other examples include Gruma (a major tortilla maker), Minsa (a large corn milling company), and DESC (a maker of Mexican-style food products).

### ***Canadian FDI in the U.S. Processed Food Industry***

In contrast, Canada's presence in the U.S. processed food industry declined to \$610 million in 1999, as the Bronfman family (Seagram's) liquidated its industry assets. This is a sharp departure from the first several years of NAFTA, as Canadian FDI in the U.S. processed food industry grew without interruption from \$5.1 billion in 1993 to \$7.6 billion in 1997, exceeding the U.S. presence in Canada.

The recent decline in Canadian FDI in the U.S. processed food industry coincides with lower FDI from all countries in the U.S. processed food industry. Factors contributing to this overall decline include the strong U.S. dollar and the relative maturity of the U.S. food processing sector. However, there are examples that run counter to this trend. In 2001, George Weston,

Ltd., a Toronto baking and food retailing company, acquired Best Foods Brand baking products in the United States, an acquisition costing \$1.7 billion.

## Recent ERS Research about FDI

ERS has completed several studies about the basis for U.S. FDI in the Canadian and Mexican processed food industries, as well as the general relationship between trade and FDI. Whether FDI complements or substitutes for trade is crucial to whether FDI is viewed as beneficial to U.S. agriculture and food processing.

Gopinath, Pick, and Vasavada (1999) study the determinants of exports and FDI by the U.S. processed food industry with respect to 10 developed countries (Australia, Belgium, Canada, France, Germany, Japan, the Netherlands, Italy, Spain, and the United Kingdom) during 1982-94. The authors find a small but negative relationship between export price and the sales of foreign affiliates in the U.S. processed food industry, which suggests that exports and FDI are weak substitutes. In addition, the authors offer evidence that the U.S. food processing industry uses FDI as a means to “jump” the protectionist policies of other countries.

Bolling and Somwaru (2000) evaluate the impact of various factors on the presence or absence of FDI in the 43 sub-sectors of the Canadian and Mexican processed food industries. Industry size, as measured by industry sales, is found to be the principal determinant for U.S. firms choosing one sub-sector over another for FDI in both Canada and Mexico. U.S. exports and industry concentration also are significant determinants. U.S. exports to Mexico are negatively related to U.S. FDI in the Mexican processed food industry, indicating a competitive relationship. In the Canadian case, the relationship between exports and FDI is positive but statistically insignificant. These differing results may reflect the fact that the Canadian and U.S. economies are more closely intertwined than the Mexican and U.S. economies. They also may be due to the type of products traded between the United States and the two host countries.

Bolling and Somwaru's model correctly predicts the presence of U.S. FDI in Canada's meat packing, evaporated and dried milk, canned fruits and vegetables, chocolate and cocoa, bottled and canned soft drinks, and prepared fresh and frozen fish industries. For Mexico, the model was able to predict the presence of

U.S. FDI in sausage and preparations, evaporated and dried milk, frozen fruits and vegetables, prepared feeds, bread and bakery products, soybean oil, malt beverages, bottled and canned soft drinks, and macaroni and noodles. The authors conclude that FDI prevails only in certain sub-sectors, which can be explained reasonably well by the above mentioned trade and industry characteristics.

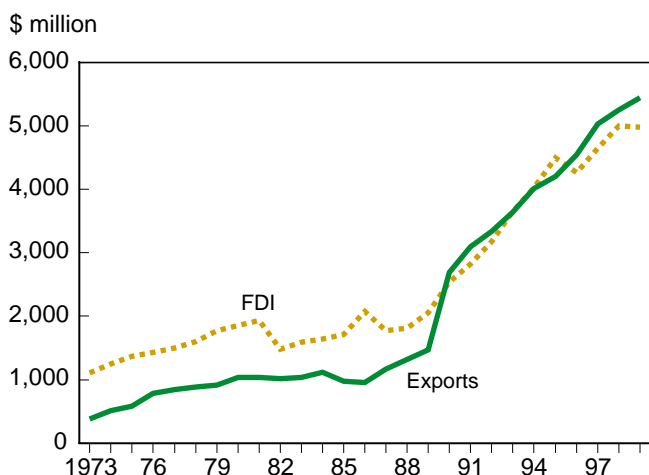
Bolling, Neff, and Handy (1998) find that U.S. FDI in the processed food industries of the Western Hemisphere countries generally complements U.S. exports. Most product sales from these investments stay in the host country, rather than being re-exported to the United States. This is particularly true in the case of Mexico. Regional trade agreements, such as NAFTA and MERCOSUR (the Southern Common Market), and liberalized rules concerning foreign investment have encouraged investors in the processed food industry.

In an analysis of annual data for 1973-99, Jerardo (2001) determines that exports and FDI in the processed food industry have a quantifiable relationship. Preliminary estimates suggest that a \$1-billion increase in U.S. processed food exports to Canada is accompanied by an additional \$749 million of U.S. FDI in Canada's processed food industry. In the case of Mexico, FDI may be used to predict exports, although the statistical evidence is somewhat weaker. The estimates suggest that a \$1-billion rise in U.S. FDI in the Mexican processed food industry is joined by \$114 million in additional U.S. processed food exports to Mexico.

Jerardo also identifies several new patterns in exports and FDI since the implementation of CFTA and NAFTA. Before CFTA, the U.S. processed food industry preferred by large margins to invest directly in Canada (fig. D-3). Following CFTA's implementation in 1989, U.S. processed food exports to Canada began to accelerate, and soon, these exports began to parallel U.S. FDI in Canada's processed food industry. With respect to Mexico, FDI and exports closely tracked each other before NAFTA, with exports usually exceeding investments (fig. D-4). Starting in 1988, FDI and exports substantially increased. After NAFTA's implementation in 1994, U.S. FDI continued its sharp upward trend, leaving exports behind, especially in the wake of the peso devaluation in December 1994.

Figure D-3

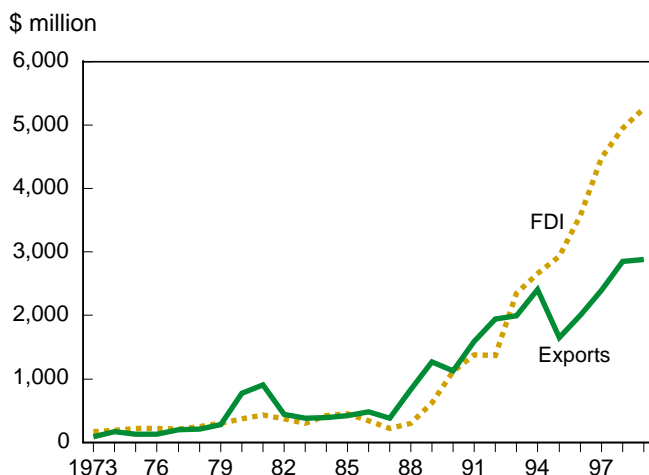
**U.S. foreign direct investment (FDI) in the Canadian processed food industry and U.S. processed food exports to Canada, 1973-99**



Sources: For U.S. direct investment in food and kindred products, based on historical cost, U.S. Department of Commerce, Bureau of Economic Analysis; for U.S. exports of processed food (SIC 20), Foreign Agricultural Trade of the United States database.

Figure D-4

**U.S. foreign direct investment (FDI) in the Mexican processed food industry and U.S. processed food exports to Mexico, 1973-99**



Sources: For U.S. direct investment in food and kindred products, based on historical cost, U.S. Department of Commerce, Bureau of Economic Analysis; for U.S. exports of processed food (SIC 20), Foreign Agricultural Trade of the United States database.

## Conclusion

NAFTA has coincided with rising capital expenditures in the U.S. farm economy through 1999. The increased capital expenditures in production are somewhat striking, given that agricultural capital expenditures are slow to adjust to changing economic conditions and that commodity prices have been relatively low. Econometric studies demonstrate that NAFTA has fostered a positive synergy between trade and FDI in the North American processed food industry. As a result, U.S. exports and U.S. FDI have grown together. This combination is one of NAFTA's success stories.

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# Employment in U.S. Agriculture and Related Industries

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## Introduction

NAFTA has likely had a small, positive effect on employment in U.S. agriculture. By opening the door to new export opportunities and allowing for the more efficient allocation of productive resources across economic sectors and geographic areas, NAFTA should increase opportunities for agricultural employment, as the United States enjoys a clear comparative advantage in many sectors within agriculture. At the same time, employment opportunities are narrowing in some agriculture-related industries in which the United States is less competitive, such as textiles and apparel. These structural changes generally predate NAFTA, but the accord reinforces these long-term trends.

Because U.S. agriculture is generally not labor-intensive, NAFTA's influence on employment in the sector has been relatively small to date. Over the long run, however, NAFTA may alter appreciably the composition and size of U.S. agricultural employment. This would especially be the case if Mexico further specializes in labor-intensive agricultural activities while the United States and Canada intensify their focus on capital-intensive ones. NAFTA-related flows of agricultural products are quite large in comparison to total U.S. agricultural trade, so the agreement is likely to play an important role in sharpening this process.

This section uses data from the Current Population Survey (CPS) to identify statistically significant changes in employment in agriculture and agriculture-related industries. These developments are placed in the context of other explanatory factors, as well as each sector's contribution to gross domestic product (GDP) and foreign trade, in order to draw inferences about NAFTA's effects on employment. The section also profiles agriculture-related certifications under two Federal programs for workers who are displaced by international trade: the Trade Adjustment Assistance (TAA) and NAFTA Transitional Adjustment Assistance (NAFTA-TAA) Programs. Finally, the section takes a closer look at the textile and apparel industries, whose economic restructuring is partially related to NAFTA.

## Sectoral Employment Levels

Table E-1 lists CPS estimates of U.S. employment from 1989 to 2000 for agriculture and 10 manufacturing sectors related to agriculture: lumber and wood products, furniture and fixtures, farm machinery and equipment, food and kindred products, tobacco manufacturing, textile manufacturing, apparel and other finished textile products, paper and allied products, leather and leather products, and forestry and fisheries. Asterisks in the table identify estimates that are statistically different from the corresponding estimate for 2000.

*Agricultural Employment.* According to CPS estimates, U.S. agricultural employment totaled 3,305,000 in 2000. Although this estimate is larger than the estimates for the pre-NAFTA period of 1989-93, the differences between the estimate for 2000 and the estimates for 1989-93 are not statistically significant. Thus, the CPS does not provide sufficient information to conclude that the level of agricultural employment in 2000 was any different from agricultural employment during the 5 years immediately prior to NAFTA.

However, several components of agricultural employment—livestock production, landscaping and horticultural services, and veterinary services—have demonstrated a statistically significant change since the implementation of CFTA and NAFTA (fig. E-1). This finding does not extend to crop production, whose estimated level of employment in 2000 was not statistically different from the corresponding estimates for 1989-99.

Employment in livestock production contracted from an average of 1,211,000 during 1989-93 to 993,000 in 2000, a decline of 18 percent. Although this reduction coincides with the two trade agreements, it is strongly associated with major developments in the livestock sector that are not the product of CFTA and NAFTA. The U.S. hog industry experienced substantial technological change and consolidation during the 1990's, while drought and poor ranging conditions have motivated a reduction of U.S. cattle inventories since 1996 (Gustafson, 2000; Mathews, et al., 1999).

**Table E-1—Employed persons by selected industry, age 16 years and over**

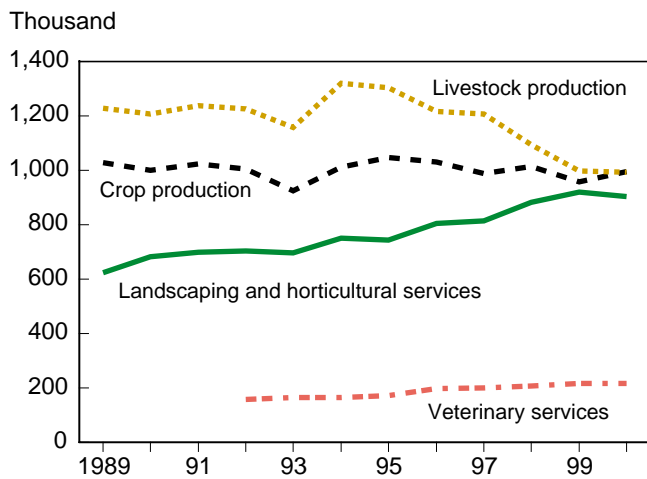
Industry	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
	<i>Thousands</i>											
<b>Total</b>	117,342 *	118,793 *	117,718 *	118,477 *	120,259 *	123,060 *	124,900 *	126,708 *	129,558 *	131,463 *	133,488 *	135,208
<b>Agriculture</b>	3,199	3,223	3,269	3,250	3,115	3,409	3,440	3,443	3,399	3,378	3,281	3,305
Agricultural production, crops	1,028	1,000	1,023	1,005	925	1,011	1,046	1,030	987	1,014	958	995
Agricultural production, livestock	1,228 *	1,207 *	1,236 *	1,225 *	1,158 *	1,319 *	1,304 *	1,217 *	1,206	1,094	998	993
Veterinary services	n.a.	n.a.	n.a.	156 *	165 *	164 *	170 *	198	199	206	215	217
Landscape and horticultural services	624 *	682 *	698 *	703 *	697 *	750 *	743 *	803	813	881	920	903
Agricultural services, n.e.c.	n.a.	334	312	162	170	165	177	196	n.a.	n.a.	n.a.	n.a.
<b>Lumber and wood products, except furniture</b>	792	789	721	689 *	712	732	816	795	820	863	824	784
Logging	151	156	143	138	140	145 *	169 *	158	154	133	126	123
Sawmills, planing mills, and millwork	426	418	367	338 *	352 *	386	411	403	413	442	429	421
Wood buildings and mobile homes	60	63	62	59 *	76	60 *	87	82	82	102	102	95
Miscellaneous wood products	156	152	149	154	144	141	150	153	170	186	168	145
<b>Furniture and fixtures</b>	664	694	631	608	634	662	645	661	661	675	661	645
<b>Farm machinery and equipment</b>	96	106	111	115	99	114	114	106	105	117	105	99
<b>Food and kindred products</b>	1,821 *	1,856	1,752	1,764	1,797 *	1,749	1,701	1,708	1,698	1,655	1,644	1,662
Meat products	456	482	473	489	482	475	442	461	470	439	475	456
Dairy products	208 *	177	144	158	156	161	142	125	122	124	144	153
Canned, frozen, and preserved fruits and vegetables	239	252 *	217	210	231	220	223	220	227	208	180	193
Grain mill products	147	142	145	138	141	141	144	145	154	161	148	157
Bakery products	233	239	226	206	233	240	235	219	224	230	228	232
Sugar and confectionary products	111	108	114	125	107	104	99	98	102	102	98	94
Beverage industries	219	242	230	204	220	203	211	232	208	192	193	197
Miscellaneous and not specified	209	213	202	236 *	228 *	204	207	208	191	199	179	181
<b>Tobacco manufactures</b>	54	47	59	52	54	50	53	49	59	52	46	48
<b>Textile mill products</b>	688 *	705 *	700 *	652 *	632 *	643 *	670 *	619 *	634	595	524	519
Knitting mills	127	114	113	105	133 *	108	112	97	101	97	86	86
Carpets and rugs	63	75	60	50	53	67	96	83	81	85	93	73
Yarn, thread, and fabric mills	427 *	446 *	452 *	416 *	372 *	403 *	398 *	364 *	365 *	329	271	294
<b>Apparel and other finished textile products</b>	1,172 *	1,108 *	1,073 *	1,053 *	1,033 *	1,009 *	1,011 *	954 *	945 *	825 *	733	708
Apparel and accessories, except knit	1,008 *	953 *	916 *	895 *	877 *	834 *	827 *	791 *	789 *	678 *	583	563
Miscellaneous fabricated textile products	164	154	157	157	157	175	185	163	156	147	150	145
<b>Paper and allied products</b>	749 *	737 *	740 *	733 *	723 *	703 *	723 *	668	683 *	683 *	640	595
Pulp, paper, and paperboard mills	349 *	332 *	328 *	314 *	292 *	293 *	299 *	275 *	265	251	233	221
Miscellaneous paper and pulp products	197	200	197	203	208	194	216	199	206	229	210	196
Paperboard containers and boxes	203	205	214	216	222	217	207	193	212	203	197	179
<b>Leather and leather products</b>	152 *	140 *	139 *	136 *	123	135 *	144 *	140 *	127 *	108	87	92
Footwear, except rubber and plastic	89 *	90 *	83 *	81 *	65 *	71 *	74 *	67 *	70 *	56	43	39
<b>Forestry and fisheries</b>	179	171	160	172	185	177	152	127	139	131	135	152
Forestry	98	89	81	93	102	112	71	68	71	67	72	84
Fishing, hunting, and trapping	81	82	79	80	83	65	81	60	68	64	63	68

\* = Difference between this estimate and the corresponding estimate for 2000 is statistically significant at the 95-percent confidence level. n.a. = not available, n.e.c. = not elsewhere classified.

Sources: Annual averages from household data in U.S. Department of Labor, Bureau of Labor Statistics (BLS), Employment and Earnings, various issues; supplemented with updates from BLS (1999) and from BLS directly.

Figure E-1

**Employment in subsectors of U.S. agriculture, age 16 and over, 1989-2000**



Source: Annual averages from household data in U.S. Department of Labor, Bureau of Labor Statistics (BLS), *Employment and Earnings*, various issues; supplemented with updates from BLS (1999) and from BLS directly. Series for veterinary services begins in 1992.

The U.S. Agricultural Censuses provide a glimpse of these developments. Between 1992 and 1997, the number of farms with live swine dropped from 191,347 to 109,754, while the U.S. inventory of hogs and pigs climbed from 57 million to 61 million head. Over the same period, the number of U.S. farms with cattle and calves declined from 1,074,349 to 1,046,863 (USDA/NASS, 1999: 30, 34).

Two agricultural subsectors have shown a substantial increase in employment. Employment in veterinary services climbed from an average of 161,000 in 1992 and 1993 to 217,000 in 2000, an increase of 35 percent. Meanwhile, employment in landscaping and horticultural services surged from an average of 660,000 during 1988-93 to 903,000 in 2000, an increase of 37 percent. To a small degree, freer trade in livestock and animal products may have boosted the demand for veterinary services. In general, however, these increases in employment reflect consumer preferences concerning gardening, landscaping, and pet ownership, rising U.S. incomes, and the strength of the U.S. economy.

*Manufacturing Related to Agriculture.* Four agriculture-related manufacturing sectors—textile mill products, apparel and other finished textile products, paper and allied products, and leather and leather products—have exhibited a statistically significant decline in employ-

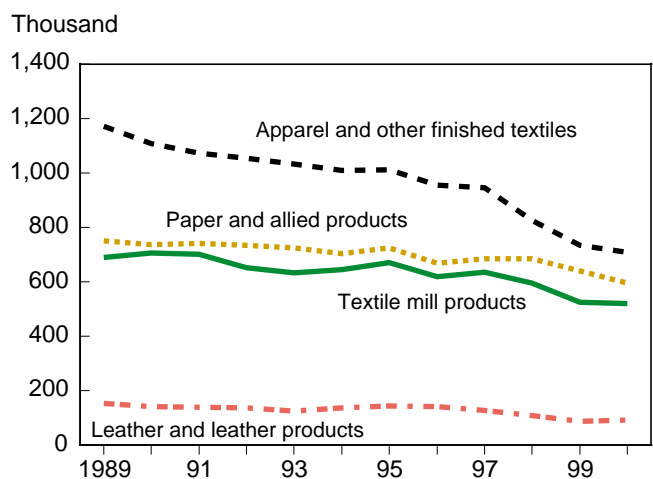
ment during the CFTA-NAFTA period (fig. E-2). None of the remaining agriculture-related industries showed a statistically significant change in employment.

U.S. textile and apparel employment peaked at 2.45 million in 1973. Since then, the two industries have experienced a sustained decline in employment—a trend that has continued under CFTA and NAFTA. Textile and apparel employment was estimated at 1.9 million in 1988 (the last year before CFTA), 1.7 million in 1993 (the last year before NAFTA), and 1.2 million in 2000. In recent years, the apparel industry has felt this contraction more sharply than the textile industry. Apparel employment dropped from an average of 1,104,000 during 1988-93 to 708,000 in 2000, a decrease of 36 percent. In contrast, textile employment fell from an average of 682,000 during 1988-93 to 519,000 in 2000, a decrease of 24 percent.

These reductions are part of a long-term process of economic restructuring within the two industries. Many activities that that can be performed at lower cost outside the United States have been relocated to other countries, and the remaining U.S. producers have made substantial gains in productivity. Of the 14 subsectors of the U.S. textile and apparel industries for which productivity data are reported, all but one experienced productivity gains over the 1990-99 period

Figure E-2

**U.S. employment in selected agriculture-related industries, age 16 and over, 1989-2000**



Source: Annual averages from household data in U.S. Department of Labor, Bureau of Labor Statistics (BLS), *Employment and Earnings*, various issues; supplemented with updates from BLS (1999) and from BLS directly.



(U.S. Department of Labor, Bureau of Labor Statistics, 2001).

NAFTA has played an important role in this process. Through strict rules of origin and the progressive elimination of trade barriers within North America, NAFTA has enabled Mexican and Canadian producers to expand their share of the U.S. market by a substantial margin. In terms of value, Mexico and Canada supplied 19 percent of U.S. textile and apparel imports in 1999, compared with just 9 percent in 1993. In terms of square-meter equivalents, Mexico and Canada have been the number-one and number-two exporters of textiles and apparel to the United States since 1998 (Green, 1999; U.S. Department of Commerce, Office of Textiles and Apparel, 2001).

As part of a more integrated and more competitive textile and apparel sector within North America, U.S. producers are often the primary suppliers of intermediate textile and apparel products to their counterparts in Canada and Mexico. Between 1993 and 2000, U.S. textile and apparel exports to these two countries increased from \$3.5 billion to \$9.5 billion. Moreover, Canada and Mexico accounted for 87 percent of the total increase in U.S. textile exports and 52 percent of the total increase in U.S. apparel exports that occurred over this period. Thus, NAFTA may have facilitated the retention of U.S. jobs - particularly in the textile sector - that would have relocated to other parts of the world in the absence of the agreement.

In paper and allied products, employment dropped from an average of 736,000 during 1988-93 to 595,000 in 2000, a decrease of 56 percent. Nevertheless, U.S. exports in this sector to NAFTA countries have increased substantially. Between 1989-93 and 1994-99, exports to Canada climbed by 89 percent, and exports to Mexico increased 91 percent (table E-2). The increase in imports from Canada and Mexico has been far more modest, slightly exceeding the overall growth rate of the U.S. economy. Therefore, CFTA and NAFTA are likely to have slowed the decrease in employment in this sector.

Since 1989, the leather and leather products sector has experienced a marked increase in both total exports and total imports and a reduction in output. Total exports were 40 percent higher in 1994-99 than in 1989-93, while total imports grew by 43 percent. Meanwhile, the annual average of the industry's GDP declined by 6

percent between 1990-93 and 1994-99 (table E-2). In this setting, employment in the sector fell from an average of 138,000 during 1988-93 to 92,000 in 2000, a decrease of 33 percent. Overall, this change does not seem to be related to CFTA and NAFTA, as Canada and Mexico's combined share of U.S. leather product imports increased only slightly, from an average of 3 percent in 1989-93 to 5 percent in 1994-99.

## **Federal Assistance with Trade Adjustment**

Trade-related industries are especially important to rural economies. Exports of goods -including agricultural, manufacturing, and mining products - make up about two-thirds of U.S. exports. Goods-producing industries currently account for 26 percent of nonmetro jobs but just 14 percent of metro jobs, making goods production disproportionately nonmetro. Increased growth in U.S. exports translates into greater employment growth and a lower unemployment rate in both metro and nonmetro areas.

However, industries and localities do not share equally in export-led growth, and some suffer adverse effects. Although layoffs from plant closings and downsizings constitute a small share of the nonmetro labor force, these developments can have a large impact on individual rural communities. In such instances, assistance is clearly warranted, not only to help displaced and dislocated workers, but also to help affected communities as they adapt economically and develop new sources of employment.

To assist with this process, the Federal Government operates the Trade Adjustment Assistance (TAA) and the NAFTA Transitional Adjustment Assistance (NAFTA-TAA) Programs. Both programs provide assistance to workers whose layoffs are determined by the U.S. Department of Labor (DOL) to have been caused by international trade. The NAFTA-TAA Program, which was established by the North American Free Trade Agreement Implementation Act of 1993, is virtually identical to the TAA Program. The main difference between the two programs is that NAFTA-TAA specifically provides assistance to workers "who lose their jobs or whose hours of work and wages are reduced as a result of trade with Canada or Mexico" (U.S. Department of Labor, 2001). FY

**Table E-2—Employment, output, and foreign trade in agriculture and related industries: 1994-99 versus 1990-93**

	Employment			GDP			Total exports		
	Avg. 1990-93	Avg. 1994-99	Percent Change	Avg. 1990-93	Avg. 1994-99	Percent Change	Avg. 1990-93	Avg. 1994-99	Percent Change
	---Thousand---			---\$ billions---			---\$ billions---		
<b>Total</b>	118,812	128,196	7.9	6,187.7	8,112.6	31.1	431.99	631.32	46.1
<b>Agriculture plus food and kindred products:</b>	5,007	5,084	1.6	180.1	203.6	13.0	42.30	54.67	29.2
Agriculture	3,214	3,392	5.5	76.7	82.1	6.9	23.53	27.93	18.7
Agricultural production, crops	988	1,008	2.0	n.a.	n.a.	n.a.	22.62	26.89	18.9
Agricultural production, livestock	1,207	1,190	-1.4	n.a.	n.a.	n.a.	0.91	1.04	14.7
<b>Agriculture-related industries</b>	5,993	5,617	-6.3	301.2	354.2	17.6	55.37	75.89	37.0
Food and kindred products	1,792	1,693	-5.6	103.4	121.6	17.6	18.77	26.74	42.5
Forestry and fisheries	172	144	-16.6	35.2	41.6	18.0	3.11	2.86	-8.2
Forestry	91	77	-15.8	n.a.	n.a.	n.a.	0.29	0.28	-0.5
Fishing, hunting, and trapping	81	67	-17.5	n.a.	n.a.	n.a.	2.82	2.57	-9.0
Lumber and wood products	728	808	11.1	32.6	41.5	27.0	6.89	7.03	2.0
Furniture and fixtures	642	661	3.0	16.4	22.0	34.1	2.40	3.36	40.3
Tobacco products	53	51	-3.0	12.7	15.9	25.2	4.60	4.95	7.6
Textile mill products	672	614	-8.6	24.0	25.4	5.8	4.35	6.62	52.2
Apparel and other textile products	1,067	840	-21.3	26.7	26.8	0.4	4.32	8.47	96.1
Paper and allied products	733	683	-6.8	45.5	55.1	21.1	9.44	13.87	46.9
Leather and leather products	134	124	-7.8	4.8	4.5	-5.6	1.48	1.99	33.7

	NAFTA exports			Total imports			NAFTA imports		
	Avg. 1990-93	Avg. 1994-99	Percent Change	Avg. 1990-93	Avg. 1994-99	Percent Change	Avg. 1990-93	Avg. 1994-99	Percent Change
	---\$ billions---			---\$ billions---			---\$ billions---		
<b>Total</b>	125.75	206.60	64.3	523.93	835.21	59.4	132.18	241.11	82.4
<b>Agriculture plus food and kindred products:</b>	8.72	12.37	41.8	25.50	35.30	38.4	7.20	12.02	66.9
<b>Agriculture</b>	4.00	5.52	38.3	9.10	13.46	48.0	3.63	5.58	53.7
Agricultural production, crops	3.65	5.13	40.6	7.24	11.05	52.6	2.12	3.70	74.7
Agricultural production, livestock	0.34	0.39	13.7	1.86	2.42	29.8	1.51	1.88	24.3
<b>Agriculture-related industries</b>	14.48	23.58	62.8	92.64	139.52	50.6	23.08	41.99	81.9
Food and kindred products	4.73	6.85	44.8	16.40	21.83	33.2	3.57	6.44	80.3
Forestry and fisheries	0.42	0.55	30.9	5.51	7.69	39.4	1.14	1.29	12.8
Forestry	0.05	0.08	50.5	0.94	1.52	61.5	0.03	0.04	19.2
Fishing, hunting, and trapping	0.37	0.47	28.1	4.57	6.17	34.9	1.11	1.25	12.6
Lumber and wood products	1.49	1.85	24.6	6.63	13.04	96.6	4.71	9.66	105.4
Furniture and fixtures	1.59	2.12	33.3	5.52	10.19	84.6	1.98	4.27	116.3
Tobacco products	0.02	0.05	132.8	0.33	0.34	5.1	0.24	0.04	-81.9
Textile mill products	1.64	3.18	93.7	5.64	7.88	39.6	0.49	1.52	208.5
Apparel and other textile products	1.36	3.31	142.8	30.78	48.10	56.3	2.23	6.99	213.7
Paper and allied products	2.89	5.05	74.7	10.90	15.09	38.5	8.35	11.00	31.7
Leather and leather products	0.34	0.62	83.9	10.93	15.36	40.5	0.38	0.78	105.0

GDP figures for forestry and fisheries include some agricultural services as well.

Sources: For employment, U.S. Department of Labor, Bureau of Labor Statistics; for GDP, U.S. Department of Commerce, Bureau of Economic Analysis; for trade, U.S. Bureau of the Census.

2001 appropriations included \$342.4 million for TAA and \$64 million for NAFTA-TAA.<sup>1</sup>

The goal of both programs is to assist individuals in acquiring the skills necessary for obtaining suitable reemployment. Assistance includes retraining, income support while in training, and job search and relocation allowances. A worker group at a plant or a portion of a plant must be certified by DOL in order for workers in that group to be individually eligible to receive benefits. A petition seeking certification may be filed by three or more workers, their union, or by a company official on the workers' behalf. Community-based organizations also are allowed to submit petitions for assistance under the NAFTA-TAA Program.

*Assistance to Nonmetro Areas.* Nonmetro counties account for a disproportionately high number of certifications in both programs, compared with the size of the U.S. population and work force in those counties and the number of establishments there (Hamrick, MacDonald, and Meyer, 2000).<sup>2</sup> Between January 1994 and September 1999, DOL certified 6,282 worker groups for assistance under the TAA Program (table E-3). Of the 5,071 certifications that can be clearly linked to a particular county, 40 percent correspond to nonmetro counties. Similar analysis of NAFTA-TAA certifications between January 1994 and January 1999 indicates that about 40 percent of the worker groups certified for assistance were from nonmetro counties (table E-4). In contrast, nonmetro counties account for about 20 percent of the U.S. population, labor force, and number of establishments. The main reason for certification under the NAFTA-TAA Program was that production at the affected companies had shifted to Mexico.

<sup>1</sup> Two other trade assistance programs are not discussed in this report: (1) technical assistance to employers through the Trade Adjustment Assistance Program (see the U.S. Department of Commerce's web site, <http://www.doc.gov>, and look under Economic Development Administration), and (2) the North American Development Bank, <http://www.nadbank.org>. For more information on TAA and NAFTA-TAA, see the web site of the U.S. Department of Labor's Employment and Training Administration, <http://www.doleta.gov>.

<sup>2</sup> A few researchers have mistakenly interpreted the estimated number of affected workers listed in the certification records of the TAA and NAFTA-TAA programs as a measure of the jobs lost due to international trade. These estimates actually are an indication from DOL to State governments of the maximum number of workers associated with each certification who might require assistance through the programs. For this reason, we focus instead on the number of certifications and their distribution by State, economic sector, and metro-nonmetro category.

Apparel and finished textile products is by far the industry with the largest number of certifications under both the TAA and NAFTA-TAA Programs. Worker groups at nonmetro apparel establishments accounted for 43 percent of non-metro TAA certifications, as well as 39 percent of all NAFTA-TAA certifications. Furthermore, about one-third of all nonmetro apparel establishments received worker-group certification under the two programs. The textile industry also had a sizable number of certifications in nonmetro areas, 126 under the TAA Program and 26 under the NAFTA-TAA Program.

Looking at the number of certifications by county, we see that the great majority of nonmetro counties in the Southeast United States had at least one certification during 1994-98 under either the TAA or the NAFTA-TAA Program (fig. E-3). Many of these counties had 4 or more certifications, mostly at textile or apparel plants. In Alabama, North Carolina, and South Carolina, almost all the certifications in nonmetro counties occurred in textiles or apparel, and a large number of nonmetro certifications in Tennessee also took place in apparel.

Two other regions with high concentrations of nonmetro certifications were the Pacific Northwest and the North Atlantic States. In the Pacific Northwest, nonmetro certifications occurred primarily in lumber and wood products (excluding furniture), while in the North Atlantic region, they covered a more diverse set of manufacturing industries, including textiles and apparel, leather and leather products, paper products, metal products, machinery, and electrical and electronic equipment.

Two smaller areas with substantial concentrations of nonmetro certifications were New Mexico/Texas and Kansas. Many certifications in these areas pertained to mining or other extractive industries, although Texas also featured a large number of apparel certifications. In these areas, the vast majority of mining and mining-related certifications took place under the TAA Program and not under the NAFTA-TAA Program, so it is unlikely that the economic developments associated with these certifications are closely related to NAFTA.

Two nonmetro counties with very large numbers of certifications deserve mention. First, Schuylkill County, Pennsylvania had 36 certifications during 1994-98. Almost all of these certifications occurred in textiles or apparel. Second, Williams County, North Dakota, located in the Williston Basin Oil Field, had

**Table E-3—Trade adjustment assistance program certifications, January 1994 - September 1999**  
*The apparel industry had the most certifications*

Industry	Nonmetro		Metro		Total U.S.	
	Certifications	Rate <sup>1</sup>	Certifications	Rate <sup>1</sup>	Certifications <sup>2</sup>	Rate <sup>1</sup>
	<i>Number</i>	<i>Percent</i>	<i>Number</i>	<i>Percent</i>	<i>Number</i>	<i>Percent</i>
Agriculture, forestry, and fishing	7	0.03	5	0.01	12	0.01
Mining	376	3.30	613	4.56	1,435	5.78
Manufacturing-total	1,855	2.23	3,091	1.04	4,758	1.25
Food and kindred products	13	0.22	57	0.37	70	0.33
Tobacco products	0	0.00	1	0.92	1	0.74
Textile mill products	126	6.44	175	3.94	301	4.70
Apparel and other textile products	965	27.20	1,007	4.86	1,986	8.18
Lumber and wood products, except furniture	141	0.68	46	0.27	191	0.51
Furniture and fixtures	24	1.00	32	0.34	56	0.47
Paper and allied products	24	2.24	49	0.89	73	1.11
Printing, publishing, and allied industries	8	0.08	19	0.04	27	0.04
Chemicals and allied products	15	0.80	82	0.78	97	0.78
Petroleum refining and related products	10	2.24	15	0.90	25	1.18
Rubber and miscellaneous plastics products	25	0.81	69	0.51	93	0.56
Leather and leather products	98	19.92	127	8.78	227	11.71
Stone, clay, glass, and concrete products	16	0.32	77	0.66	118	0.71
Primary metal industries	34	2.58	91	1.68	125	1.86
Fabricated metal products	38	0.67	106	0.34	144	0.39
Industrial and commercial machinery, and computer equipment	42	0.39	213	0.46	290	0.51
Electronic and other electrical equipment	151	7.02	302	2.01	479	2.79
Transportation equipment	51	1.81	104	1.14	158	1.33
Measuring, analyzing, controlling instruments	35	3.34	107	1.03	143	1.25
Miscellaneous manufacturing industries	39	1.43	115	0.73	154	0.84
Service sector and construction	16	0.00	28	0.00	77	0.00
Total	2,254	0.17	3,447	0.06	6,282	0.09

<sup>1</sup>TAA certifications as a percentage of all establishments.

<sup>2</sup>Total U.S. includes certifications in nonmetro and metro counties, and also certifications for worker groups at companies whose location was listed as "all locations," at companies certified in Puerto Rico, and at companies in cities that could not be identified as metro or nonmetro. Consequently, U.S. totals may exceed the sum of the nonmetro and metro categories.

Source: Calculated by ERS using data from Employment and Training Administration, U.S. Department of Labor, and from Enhanced County Business Patterns data, 1996.

25 certifications, all in mining or related industries and all under the TAA Program.

*Recent NAFTA-TAA Certifications.* An examination of NAFTA-TAA certifications for all counties (metro and nonmetro) during 1998-2000 provides additional insights into the distribution of recent certifications by State and by industry. Hardly any NAFTA-TAA certifications have occurred in agricultural production and services. This is largely due to the nature of the program, which provides assistance to employees rather than employers and business owners. Of the 1,188 certifications issued between 1998 and 2000, only six were in agriculture (table E-5). Of the six certifications in agriculture, four were in crop production, one was in livestock production, and one was in agricultural serv-

ices. Table E-6 summarizes these certifications, as well as those in the related industry of food processing.

Far more certifications during 1998-2000 were issued in manufacturing industries related to agriculture. A total of 546 certifications were issued in the agriculture-related sectors identified in table E-5, and another 13 were issued in cases involving agriculture-related firms in other sectors. About three-fourths of the agriculture-related certifications occurred in two sectors: apparel and other finished textile products (340 certifications), and lumber and wood products (71 certifications). Several States had more than 20 certifications in these two sectors. In apparel, the States are Georgia (30), North Carolina (54), Pennsylvania (27), Tennessee (32), Texas (52), and Virginia (23). In lumber and wood products, Oregon had 35 certifications.

**Table E-4—Trade adjustment assistance program certifications, January 1994 - September 1999**  
**Nonmetro areas led metro areas in apparel certifications**

Industry	Nonmetro		Metro		Total U.S.	
	Certifications	Rate <sup>1</sup>	Certifications	Rate <sup>1</sup>	Certifications <sup>2</sup>	Rate <sup>1</sup>
	<i>Number</i>	<i>Percent</i>	<i>Number</i>	<i>Percent</i>	<i>Number</i>	<i>Percent</i>
Agriculture, forestry, and fishing	9	0.04	10	0.01	19	0.02
Mining	16	0.14	17	0.13	58	0.23
Manufacturing-total	658	0.79	995	0.33	1,663	0.44
Food and kindred products	4	0.07	25	0.16	29	0.14
Tobacco products	0	0.00	0	0.00	0	0.00
Textile mill products	26	1.33	44	0.99	69	1.08
Apparel and other textile products	270	7.61	259	1.25	531	2.19
Lumber and wood products, except furniture	100	0.48	30	0.18	134	0.36
Furniture and fixtures	6	0.25	16	0.17	22	0.18
Paper and allied products	17	1.59	24	0.44	41	0.62
Printing, publishing, and allied industries	4	0.04	12	0.02	16	0.03
Chemicals and allied products	7	0.37	28	0.27	35	0.28
Petroleum refining and related products	1	0.22	1	0.06	2	0.09
Rubber and miscellaneous plastics products	15	0.48	38	0.28	53	0.32
Leather and leather products	26	5.28	28	1.94	55	2.84
Stone, clay, glass, and concrete products	8	0.16	27	0.23	35	0.21
Primary metal industries	8	0.61	28	0.52	36	0.54
Fabricated metal products	22	0.39	68	0.22	91	0.25
Industrial and commercial machinery, and computer equipment	19	0.18	60	0.13	79	0.14
Electronic and other electrical equipment	78	3.63	164	1.09	244	1.42
Transportation equipment	27	0.96	52	0.57	79	0.66
Measuring, analyzing, controlling instruments	14	1.33	57	0.55	72	0.63
Miscellaneous manufacturing industries	6	0.22	34	0.22	40	0.22
Service sector and construction	9	0.00	36	0.00	52	0.00
Total	692	0.05	1,058	0.02	1,792	0.03

<sup>1</sup> NAFTA-TAA certifications as a percentage of all establishments.

<sup>2</sup> Total U.S. includes certifications in nonmetro and metro counties, and also certifications for worker groups at companies whose location was listed as "all locations," "various locations," or "throughout the state," and at companies in cities that could not be identified as metro or nonmetro. Consequently, U.S. totals may exceed the sum of the nonmetro and metro categories.

Note: Many worker groups petition for and are certified under both the TAA and NAFTA-TAA Programs. Thus, the number of worker groups certified under these programs cannot be added together. Approximately 75 percent of the worker groups certified under the NAFTA-TAA Program also are certified under TAA.

Source: Calculated by ERS using data from Employment and Training Administration, U.S. Department of Labor, and from Enhanced County Business Patterns data, 1996.

## Textiles and Apparel: A Closer Look

The U.S. textile and apparel industries have experienced a deep economic restructuring over the past several decades. Since the two industries are located disproportionately in nonmetro counties and are concentrated in the Southeast (fig. E-4), this process has had a profound impact on a number of rural communities, particularly in the Southeast. With NAFTA and the implementation of multilateral trade liberalization initiatives, these industries are likely to experience further restructuring. This means that many if not most dislocated textile and apparel workers who

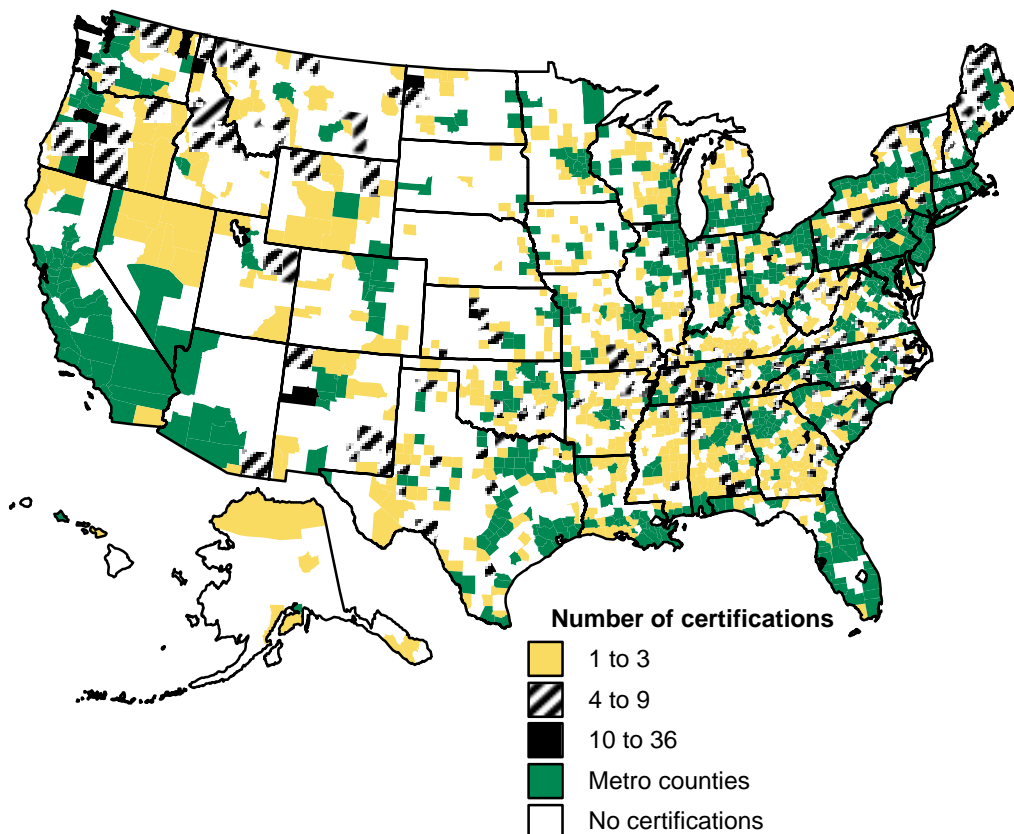
find a new job will likely do so in another industry or occupation.

### **NAFTA and the WTO's Agreement on Textiles and Clothing**

Substantial progress has been made in the liberalization of world textile and apparel trade over the last decade and a half. At the regional level, the United States joined with Canada and Mexico to establish NAFTA, one of the largest free-trade areas in the world. At the multilateral level, the Uruguay Round of trade negotiations yielded the World Trade Organization's Agreement on Textiles and Clothing (ATC). Together, these reforms open the U.S. textile

Figure E-3

**TAA and NAFTA-TAA certifications in nonmetro counties, 1994-98**



Source: ERS calculations using data from the U.S. Department of Labor, Employment and Training Administration.

and apparel industries to greater competition, while enabling the sectors to increase their competitiveness by integrating more closely with the corresponding industries in Canada and Mexico.

As part of NAFTA, Canada, Mexico, and the United States are creating a duty-free, quota-free market for textiles and apparel. To qualify for this enhanced market access, items must be constructed from yarn and fiber produced by a NAFTA country, in accordance with the agreement's rules of origin. The last duties on qualifying textile and apparel trade between Canada and the United States were eliminated on January 1, 1998, following the 9-year transition period specified by CFTA. Similarly, more than 90 percent of qualifying U.S.-Mexico trade in textiles and apparel was duty-free as of January 1, 1999, and the two countries are proceeding to eliminate the remaining duties by January 1, 2003.

The ATC provides a definitive end to the quantitative restrictions that have governed international trade in textiles and apparel for over 30 years. Under the ATC,

the quantitative restrictions established by the Multi-Fiber Arrangement (MFA) and earlier agreements are being eliminated gradually over the 10-year period that ends on January 1, 2005. This phase-out contains two parts: a four-stage process that eliminates the export restraints contained in previously negotiated bilateral agreements on products covered by the MFA, and accelerated quota growth for products still under restriction during the transition period. The ATC also deals with other non-MFA restraints related to textiles and clothing. With the elimination of these restrictions, tariffs will become the primary mechanism for trade protection in the textile and apparel industries.

***NAFTA's Impact on U.S. Textile and Apparel Trade***

NAFTA's direct impact on U.S. textile and apparel trade is difficult to quantify due to the lagged impact of changes in Mexican trade policy during the 1980's, the peso devaluation of December 1994, and structural changes in Asian textile production and trade. However, it is clear that Canada and Mexico's combined share of U.S. textile and apparel trade has

**Table E-5—NAFTA-TAA certifications by State and selected two-digit SIC codes, 1998-2000**

	Total	Agricultural production crops (01)	Agricultural production livestock (02)	Agricultural services (07)	Food and kindred products (20)	Textile mill products (22)	Apparel and other textile products (23)
United States	1,188	4	1	1	20	45	340
Alabama	27	0	0	0	0	2	20
Alaska	3	0	0	0	0	0	0
Arizona	20	0	0	0	1	1	3
Arkansas	19	0	0	0	0	0	4
California	70	1	0	0	0	0	15
Colorado	15	0	0	0	0	1	3
Connecticut	12	0	0	0	0	1	2
Delaware	0	0	0	0	0	0	0
District of Columbia	0	0	0	0	0	0	0
Florida	23	0	0	0	0	2	10
Georgia	47	0	0	0	0	6	30
Hawaii	0	0	0	0	0	0	0
Idaho	14	0	0	0	0	0	0
Illinois	24	0	0	0	1	0	1
Indiana	30	0	0	0	0	0	2
Iowa	9	1	0	0	0	0	1
Kansas	5	0	0	0	0	0	1
Kentucky	22	0	0	0	0	0	8
Louisiana	7	0	0	0	0	0	4
Maine	14	0	0	0	1	1	0
Maryland	2	0	0	0	0	0	0
Massachusetts	18	0	0	0	1	0	4
Michigan	46	0	0	0	3	2	2
Minnesota	16	0	1	0	1	0	1
Mississippi	4	0	0	0	0	0	2
Missouri	28	0	0	0	0	0	10
Montana	5	0	0	0	0	0	0
Nebraska	2	0	0	0	0	0	0
Nevada	4	0	0	0	0	0	0
New Hampshire	5	1	0	0	0	0	0
New Jersey	31	0	0	0	1	0	3
New Mexico	4	1	0	0	0	1	0
New York	57	0	0	0	1	3	9
North Carolina	112	0	0	0	2	10	54
North Dakota	0	0	0	0	0	0	0
Ohio	22	0	0	0	0	0	3
Oklahoma	4	0	0	0	0	0	0
Oregon	57	0	0	1	1	0	3
Pennsylvania	104	0	0	0	1	2	27
Puerto Rico	1	0	0	0	0	0	0
Rhode Island	0	0	0	0	0	0	0
South Carolina	30	0	0	0	0	3	19
South Dakota	4	0	0	0	0	0	0
Tennessee	59	0	0	0	1	3	32
Texas	125	0	0	0	2	3	52
Utah	6	0	0	0	0	0	2
Vermont	1	0	0	0	0	0	0
Virginia	31	0	0	0	1	3	23
Washington	33	0	0	0	1	3	3
West Virginia	1	0	0	0	0	0	1
Wisconsin	32	0	0	0	1	0	5
Wyoming	10	0	0	0	0	0	1

See notes at end of table.

Continued--

**Table E-5—NAFTA-TAA certifications by State and selected two-digit SIC codes, 1998-2000--Continued**

	Lumber and wood products (24)	Furniture and fixtures (25)	Paper and allied products (26)	Leather and leather products (31)	Other agriculture- related certifications	All other certifications
United States	71	9	28	33	13	623
Alabama	0	0	1	0	0	4
Alaska	3	0	0	0	0	0
Arizona	0	0	0	1	2	12
Arkansas	1	1	0	0	2	11
California	1	1	2	2	0	48
Colorado	0	0	0	0	0	11
Connecticut	0	0	0	0	0	9
Delaware	0	0	0	0	0	0
District of Columbia	0	0	0	0	0	0
Florida	0	0	0	0	0	11
Georgia	0	0	1	0	0	10
Hawaii	0	0	0	0	0	0
Idaho	10	0	0	0	2	2
Illinois	3	1	1	0	0	17
Indiana	0	0	0	0	0	28
Iowa	0	0	0	0	0	7
Kansas	0	0	0	0	0	4
Kentucky	1	0	0	0	0	13
Louisiana	1	0	0	0	0	2
Maine	1	0	3	3	0	5
Maryland	0	0	0	0	0	2
Massachusetts	0	0	0	1	0	12
Michigan	1	1	1	2	0	34
Minnesota	1	0	1	0	0	11
Mississippi	0	0	0	0	0	2
Missouri	0	0	1	2	1	14
Montana	4	0	0	0	0	1
Nebraska	0	0	0	1	0	1
Nevada	0	0	0	0	0	4
New Hampshire	0	0	0	1	0	3
New Jersey	0	0	1	0	0	26
New Mexico	0	0	0	0	0	2
New York	1	0	3	2	0	38
North Carolina	0	1	1	1	1	42
North Dakota	0	0	0	0	0	0
Ohio	0	0	1	0	0	18
Oklahoma	0	0	0	0	0	4
Oregon	35	1	2	0	0	14
Pennsylvania	1	1	1	2	2	67
Puerto Rico	0	0	0	1	0	0
Rhode Island	0	0	0	0	0	0
South Carolina	0	0	1	0	1	6
South Dakota	0	0	1	0	0	3
Tennessee	0	0	0	1	1	21
Texas	0	2	2	10	1	53
Utah	0	0	0	0	0	4
Vermont	0	0	0	0	0	1
Virginia	0	0	0	0	0	4
Washington	6	0	2	0	0	18
West Virginia	0	0	0	0	0	0
Wisconsin	1	0	3	3	0	19
Wyoming	0	0	0	0	0	9

No certifications occurred in tobacco manufactures (21).

Source: U.S. Department of Labor, Employment and Training Administration.



**Table E-6—NAFTA-TAA certifications in production agriculture and food processing, 1998-2000**

Certifications in production agriculture				
Year	Firm's location	Product(s)	SIC	
2000	New Mexico	Tomatoes	0161	
1999	New Hampshire	Greenhouse	0181	
1998	California	Tomatoes	0161	
	Iowa	Beans	0119	
	Minnesota	Beef processing	0211	
	Oregon	Seedings	0721	
Certifications in food processing				
Year	Firm's location	Product(s)	SIC	
2000	Maine	Potato chips	2096	
	Michigan	Cereal products	2033	
	North Carolina	Pet treats	2047	
	Tennessee	Stick candy	2064	
	Texas	Beer	2083	
1999	New Jersey	Ice cream products	2024	
	Minnesota	Choline chloride (a B-complex vitamin used for animal nutrition)	2048	
		Beer	2082	
	Michigan	Distilled spirits	2085	
	North Carolina	Beer	2082	
	Oregon	Beer	2082	
	Pennsylvania	Potato chips	2096	
	Texas	Beer	2082	
	Virginia	Instant tea	2086	
	Washington	Beer	2082	
	Wisconsin	Beer	2082	
	1998	Arizona	Dry pasta	2099
		Illinois	Beef carcasses	2011
Massachusetts		Canned fruit	2037	
New York		Packaging frozen fruits and vegetables	2037	

Source: U.S. Department of Labor, Employment and Training Administration.

increased since the implementation of NAFTA, even as the total value of this trade has continued to rise (figs. 5, 6). In 2000, Canada and Mexico supplied 18 percent of U.S. textile and apparel imports, compared with 7 percent in 1993. With respect to exports, Canada and Mexico accounted for 51 percent of the U.S. total in 2000, compared with 34 percent in 1993.

U.S. textile and apparel imports consist largely of apparel items - 79 percent in 2000. Mexico supplied 14 percent of U.S. apparel imports in 2000, while the countries and territories of the Caribbean Basin Initiative (CBI) provided 16 percent.<sup>3</sup> Apparel production is a labor-intensive activity and generally can be carried out at lower cost outside the United States.

With NAFTA and CBI, the United States has exported increasing amounts of apparel pieces, along with yarn and fabric, to Mexico and CBI participants, where they are assembled and returned to the United States as finished apparel products. As a result, the export-to-import ratio for U.S. textile and apparel trade is substantially larger for Mexico and CBI partners than for the world as a whole. In 2000, this ratio equaled 0.60 for Mexico, 0.51 for the CBI, and 0.20 for the entire world.

### Looking Ahead

Through the 1990's, the U.S. textile and apparel industries have boosted their productivity at an average annual rate of about 4 percent, twice the rate for all non-durable manufactured goods industries. High productivity growth, coupled with the other changes discussed above, has led to declining employment in the two sectors. DOL's Bureau of Labor Statistics projects that employment in these industries will decline by an additional 20 percent over the 1998-2008 period as a result of productivity increases in textiles and import competition in apparel (Tomson, 2000). Continued output growth is projected for both industries over the 10-year period.

The implementation of the ATC is likely to result in the further restructuring of the two industries. Since 1990, a number of studies have suggested that removing the MFA quotas would result in a decline in either employment or output in the U.S. textile and apparel industries ranging from 10 to 25 percent. The projected impact of MFA quota removal varies depending on assumptions regarding reciprocal liberalization by the less developed countries and the elasticity of substitution between imported and domestic goods, among other factors.

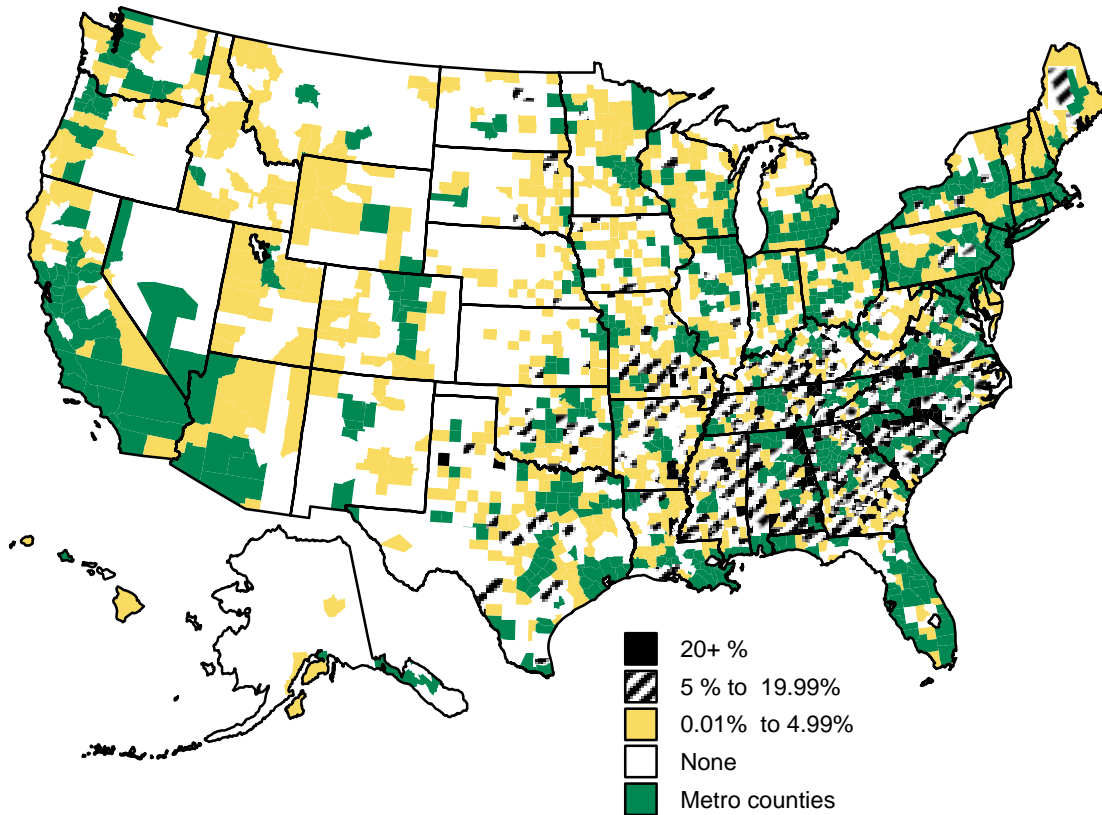
Using a static, computable general equilibrium (CGE) model of the world economy, Diao, MacDonald, Meyer, and Somwaru (2000) suggest that U.S. textile production could fall slightly under the provisions of the ATC. Mexico's production also falls under these circum-

<sup>3</sup> The CBI was started in the 1980s to allow quota-free access for selected countries in Central America and the Caribbean for products produced with U.S. fabric. Currently, 24 countries and territories participate in the CBI: Antigua and Barbuda, Aruba, Bahamas, Barbados, Belize, British Virgin Islands, Costa Rica, Dominica, Dominican Republic, El Salvador, Grenada, Guatemala, Guyana, Haiti, Honduras, Jamaica, Montserrat, Netherlands Antilles, Nicaragua, Panama, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, and Trinidad and Tobago.

Figure E-4

**Textile and apparel: Jobs in textile and apparel manufacturing as percentage of all jobs in county, 1996**

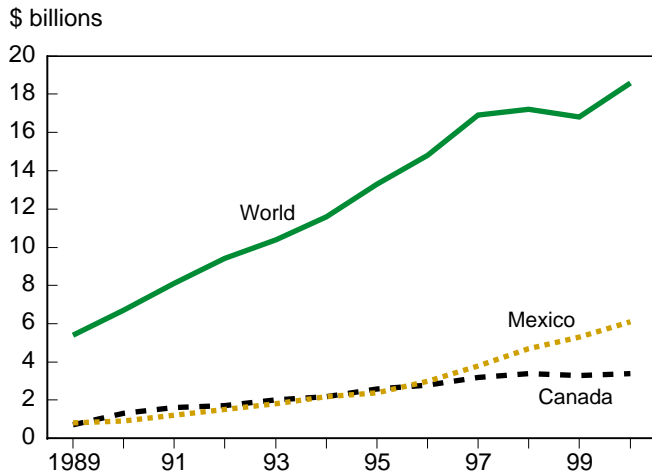
*Southeastern counties are most dependent on textile and apparel manufacturing*



Source: ERS calculations using County Business Patterns data.

Figure E-5

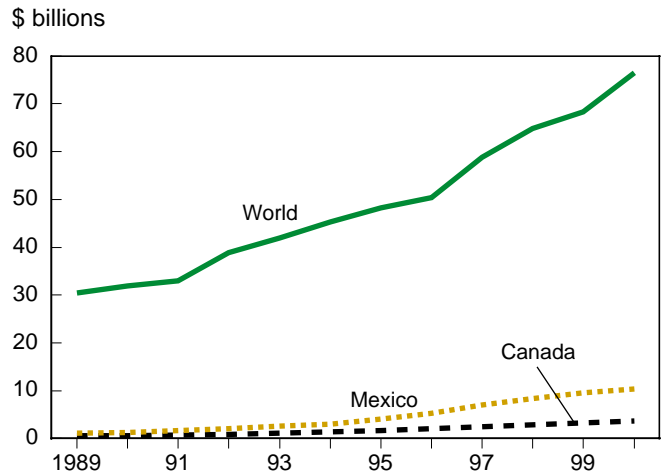
**U.S. textile and apparel exports, 1989-2000**



Source: Office of Textiles and Apparel, U.S. Department of Commerce.

Figure E-6

**U.S. textile and apparel imports, 1989-2000**



Source: Office of Textiles and Apparel, U.S. Department of Commerce.

stances—Asian exporters gain export share once global liberalization reduces the preference that countries such as Mexico currently receive under regional trade agreements. Clothing production in Southeast Asia is estimated 10 percent higher and production in China is estimated 12 percent higher. Mexico is the only developing country where clothing production falls in this simulation. Production changes for both the United States and the rest of North America estimated in this simulation are less than 1 percent.

The simulation mentioned above assumes that China is a member of the WTO, but the exact date of China's WTO accession is still under negotiation. According to the U.S. International Trade Commission (ITC), China's accession will have little net effect on the U.S. textile and apparel industries. Compared with a non-accession scenario, the main effects of accession would be to increase the share of U.S. imports from China and to reduce the share from other countries, particularly less developed countries in Asia. The ITC indicates that China's accession would reduce U.S. clothing output by about 1 percent and U.S. textile output by about 0.5 percent. An analysis of how these production changes might affect employment - using an input-output model at the DOL - suggests that additional U.S. job losses from including China in the WTO could total 6,100 jobs in the apparel industry and 2,100 in the textile industry. These reductions are small compared with the changes that occurred during the last half of the 1990's.

## Conclusion

By increasing export opportunities and improving economic efficiency, NAFTA has likely had a small, positive influence on U.S. employment in agriculture and in manufacturing industries related to agriculture. However, only a few of these sectors have experienced substantial changes in their employment levels since NAFTA's implementation, and many of these changes are driven by factors other than the agreement. Employment in crop production has changed relatively little, while employment in livestock production has decreased, reflecting technological change and consolidation in the hog industry and drought and poor ranging conditions in the cattle industry. Employment in landscaping and horticultural services and in veterinary services increased substantially during the 1990's, but this growth is most likely due to factors other than NAFTA, such as consumer preferences and the strength of the U.S. economy.

Two manufacturing sectors related to agriculture - textiles and apparel - have experienced a decline in employment that is connected to NAFTA. This reduction reflects a long-term process of economic restructuring that was well underway prior to the agreement. Still, by fostering the development of a more integrated textile and apparel industry within North America, the agreement has been accompanied by expanded textile and apparel trade among the NAFTA countries, increased productivity in the U.S. textile and apparel sectors, and further reductions in U.S. textile and apparel employment. To assist workers who are displaced by international trade, the Federal Government operates the NAFTA Transitional Adjustment Assistance (NAFTA-TAA) and the Trade Adjustment Assistance (TAA) Programs. Such assistance should prove to be particularly important in the near future as the U.S. textile and apparel industries adapt to the more liberalized trading environment created by NAFTA and the World Trade Organization's Agreement on Textiles and Clothing.

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# NAFTA, Agricultural Trade, and the Environment

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## Introduction

Over seven years after its implementation, NAFTA remains unique in that it is the only trade agreement to address environmental concerns explicitly in an accompanying agreement. This accord, known as the North American Agreement on Environmental Cooperation (NAAEC), outlines environmental objectives, such as the promotion of sustainable development, enhancing compliance with and enforcement of environmental laws and regulations, and promoting policies and practices to prevent pollution.

The existing literature about the environment, international trade, and economic development suggests that the economic development fostered by trade liberalization offers the prospect for substantial environmental improvement over the long run, especially for less-developed countries such as Mexico. In the short run, NAFTA is likely to have a combination of positive and negative effects on the environment, as producers select alternative techniques of production, increase or decrease the scale of production, and modify the crop and animal composition of their agricultural activities. In addition, the expansion of trade within North America is associated with increased traffic, congestion, and air pollution along certain transportation corridors. Ongoing investments in infrastructure offer the promise of alleviating these problems.

## The Environmental Impact of Trade Liberalization: Theory and Evidence

Economic theory tells us that trade liberalization increases wealth. Moreover, wealthier countries tend to be more willing and able to channel resources into environmental protection and to have higher environmental standards. Thus, a diverse set of environmental standards across countries should be expected to persist due to differences in country-specific attributes such as per capita income (Bhagwati, 1996). As long as per capita incomes vary across countries, diverse environmental preferences are likely to persist.

Higher income countries have greater resources to allocate not just towards consumer goods but also

towards pollution abatement. As such, freer trade and differential environmental preferences may result in the export of some pollution problems from developed countries (DC's) to less-developed countries (LDC's), as the latter group specializes in more pollution-intensive industries (Copeland and Taylor, 1994). Nonetheless, trade-induced increases in per capita income should create conditions under which all countries, including the LDC's, freely choose strengthened environmental standards.

Even if trade-induced income growth ultimately strengthens environmental regulations and enforcement, this begs the question of how trade liberalization affects short- and long-run environmental outcomes. In order to understand the economic processes underlying these outcomes, it is useful to decompose the environmental impact of trade liberalization into three general categories — a technique effect, a scale effect, and a composition effect (Cole, Rayner, and Bates, 1998):

**Technique Effect.** All else being equal, increasing per capita income tends to result in calls for increased regulation mandating cleaner technologies. Trade liberalization thus may have a technique effect as producers alter production methods to adopt either cleaner or dirtier production technologies.

**Scale Effect.** Empirical evidence has long linked open economies to economic growth (Edwards, 1992; Harrison, 1996). Increased output and scale of production resulting from trade liberalization, however, may generate additional pollution emissions and accelerate the depletion of natural resources.

**Composition Effect.** Trade liberalization may also affect the composition of output produced in an economy, as resources formerly devoted to protected inefficient industries will be utilized elsewhere.

These three effects may interact to create an inverted-U relationship between income and pollution. Named in honor of Simon Kuznets, who proposed a similar relationship between income and income inequality,

this hypothetical relationship is known as the environmental Kuznets curve (EKC) (World Bank, 1999). The argument is that when a country develops from an initially low level of income, the scale effect dominates, as there is increased demand for all inputs, including using the environment as a sink for waste. Rising incomes, however, increase the willingness to pay for environmental amenities. Regulations are enacted, forcing a shift to cleaner production processes, as the technique effect reduces harmful emissions and environmental damage. As resources are shifted out of protected polluting industries and rising incomes shift preferences to cleaner goods, the composition and technique effects eventually dominate the scale effect.

Figure F-1 illustrates this phenomenon in a stylized EKC for NAFTA countries. Although Stern, Common, and Barbier (1996) criticize the estimation and usefulness of the EKC, Grossman and Krueger (1995) provide empirical support of this hypothesis. They find that, for most pollutants, mean air and water concentrations increase as per capita GDP initially increases from a low level of income, but that concentrations begin to decline before per capita GDP reaches \$8,000 in 1985 dollars. Expressed in 1985 dollars, Mexican per capita GDP was \$3,124 in 1999, while Canadian and U.S. per capita GDP were \$14,173 and \$22,456, respectively.<sup>1</sup> Given that the per capita GDP's of the NAFTA countries cover a broad range, it is likely that the three countries lie along different points on the EKC.

## Trade Liberalization and Agriculture: Empirical Evidence

Only a few empirical studies specifically examine the environmental effects of agricultural trade liberalization, and even fewer studies focus on the NAFTA countries. While drawing general conclusions is difficult and speculative, the existing research does provide a few insights.

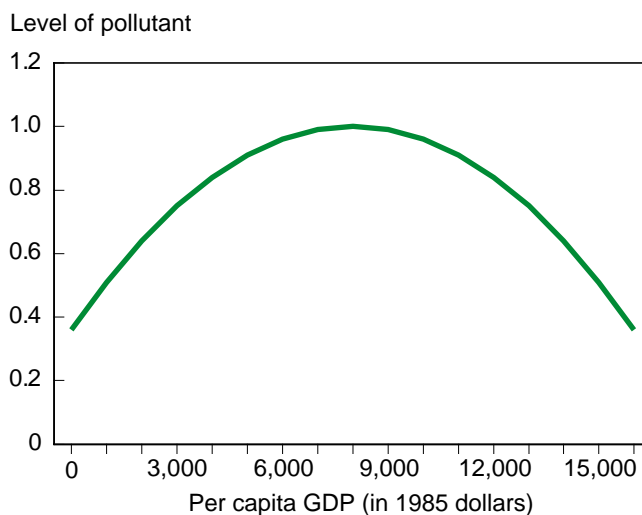
First, the relative importance of agricultural externalities<sup>2</sup> may differ according to a country's level of per capita income. For example, the prevalence of

<sup>1</sup> To express per capita GDP for 1999 in 1985 dollars, GDP data from World Bank (2001) were deflated using the implicit price deflator from U.S. Department of Commerce, Bureau of Economic Analysis (2001).

<sup>2</sup> An externality is a "cost or benefit that falls on third parties and is therefore ignored by the two parties to a market transaction" (McEachern, 1997, p. 523).

Figure F-1

### Stylized environmental Kuznets curve



Source: Economic Research Service, USDA.

*extensive* methods of agricultural production, in which output is increased by expanding the area planted, possibly to marginal lands, may be greater in poorer countries. In contrast, higher-income countries may be more likely to employ intensive methods, in which output is increased by expanding the use of inputs other than land.

Extensive and intensive methods are associated with different types of externalities. For example, soil erosion may be a relatively more important externality for extensive agriculture while nutrient and pesticide runoff is relatively more important under intensive agricultural practices. Agricultural trade liberalization may affect the overall level of environmental degradation, but it may also cause shifts between types of effects.

The intensities of fertilizer and tractor utilization are often thought to be indicative of the intensity of agricultural production. Interestingly, fertilizer usage has increased in both Canada and the United States since the implementation of the Canada-U.S. Free Trade Agreement (CFTA) in 1989, which suggests that agriculture is becoming more intensive in these two countries (fig. F-2). In contrast, fertilizer usage in Mexico has changed very little since NAFTA's implementation in 1994, except for a precipitous drop in fertilizer usage in 1995, on the heels of the peso crisis of December 1994. With respect to tractor utilization, there have been no major changes among the three NAFTA countries during the CFTA-NAFTA period (fig. F-3). However,

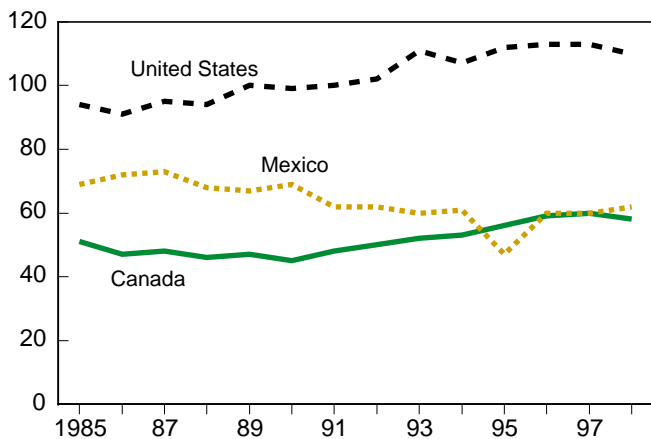
these data do not account for changes in input quality such as tractor size and fertilizer type.

Recent analysis by the OECD (2000) indicates that trade liberalization would cause agricultural prices to decline in countries that historically have pursued chemical-intensive agriculture. Lower output prices decrease the incentive to apply costly inputs, so environmental stress from pesticide runoff and ground-

Figure F-2

### Fertilizer usage in the NAFTA countries, 1985-98

Metric tons of fertilizer per 1,000 hectares

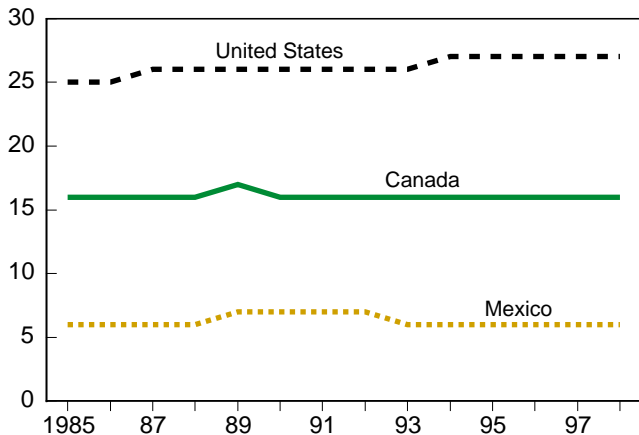


Source: Food and Agriculture Organization of the United Nations (2001). For each country, total fertilizer consumption is divided by the total amount of land devoted to arable and permanent crops.

Figure F-3

### Tractor utilization in the NAFTA countries, 1985-98

Number of tractors in use per 1,000 hectares



Source: Food and Agriculture Organization of the United Nations (2001). For each country, tractor utilization is divided by the total amount of land devoted to arable and permanent crops.

water contamination would be relieved in those countries. Conversely, in countries that are better able to accommodate increased agricultural intensity because pesticide and fertilizer usage historically has been low, there should be increased rates of chemical application. On the other hand, the externalities associated with extensive methods of production may decrease.

A number of researchers have employed sophisticated economic models to predict the environmental consequences of trade liberalization on agriculture in North America. For example, a detailed general equilibrium study of 22 agricultural sub-sectors in Mexico indicates that unilateral trade liberalization by Mexico would decrease both agricultural output and pollution, as measured by 13 indicators of water, air, and soil effluents. Overall Mexican real GDP, however, increases significantly (Beghin, Dessus, Roland-Holst, and van der Mensbrugge, 1997). Using a partial equilibrium model (a simplified model that presumes no income effects due to price changes) in conjunction with econometric analysis, Williams and Shumway (2000) evaluate the impact of NAFTA, economic growth, research investment, and farm policy. Real farm income is projected to increase in both the United States and Mexico, and dramatically so in the latter. Unlike previous studies, Williams and Shumway's input and output elasticity estimates lead to predictions that U.S. and Mexican fertilizer usage will increase substantially. In addition, their model predicts that U.S. pesticide usage will increase, while Mexico's pesticide usage will fall.

## The North American Agreement on Environmental Cooperation

In recognition of the potential benefits from the coordination of trade and environmental policies, the North American Agreement on Environmental Cooperation (NAAEC) was negotiated in 1993 as a side agreement to NAFTA. The NAAEC encourages and facilitates sound domestic environmental policies in conjunction with trade liberalization. In addition, it created the Commission for Environmental Cooperation (CEC), which promotes environmental objectives such as sustainable development and pollution abatement while encouraging "win-win" opportunities for both trade and the environment.

The CEC provides numerous opportunities for environmental organizations and other stakeholders to voice their concerns to policymakers. A recent

example is the symposium entitled “Understanding the Linkages between Trade and Environment,” held on October 11-12, 2000 in Washington, D.C.<sup>3</sup> By bringing environmental concerns before policymakers, these gatherings facilitate the coordination of trade and environmental policies and lessen potential conflicts between the two.

In addition to soliciting public input at symposia, the CEC reviews submissions from interested parties who claim that a NAFTA country is failing to enforce its environmental law. Although the CEC has no authority to force compliance, it may develop and publish a factual record if warranted in order to encourage reform. Submissions currently under review include an allegation that Mexico has failed to enforce its environmental laws that would have prevented a shrimp farm from, among other things, introducing a species of shrimp that spread disease to other fishery resources. The NAAEC also permits each NAFTA country to challenge the environmental enforcement effectiveness of any other NAFTA country before an arbitral panel that possesses the authority to impose monetary penalties. However, the actions that may be challenged are restricted to those characterized by a “persistent pattern” of non-enforcement. Furthermore, a member country will not be liable if the non-enforcement results from “bona fide decisions to allocate resources to enforcement in respect of other environmental matters determined to have higher priorities” (NAAEC). Though no suit has yet been brought before the arbitral panel, the NAAEC remains unique among trade agreements in its provision allowing one member country to challenge the effectiveness of another member country's environmental protections. Any assessments that levied would be paid into a fund established in the name of the CEC and expended to improve the environmental quality of the country complained against.

The CEC also conducts original research on the environmental effects of NAFTA. In particular, two of the CEC's three case studies examining the environmental impacts of NAFTA-induced changes in market structure focus on agriculture. By definition, case studies are not comprehensive works, but the topics were chosen because of *a priori* beliefs that these subjects have a strong relationship to NAFTA and the environment.

<sup>3</sup> Materials from the symposium are available at <http://www.cec.org/symposium/index.cfm>.

One agricultural case study examines feedlot production of cattle. It finds that trade liberalization under NAFTA has reinforced existing patterns of comparative advantage and concentrated the feedlot sector into larger operations in Kansas and southern Alberta. Although this concentration has the potential to cause nitrate contamination of groundwater because waste management problems are more severe on larger feedlots, this development may have a positive net environmental outcome. Specifically, there may be economies of scale in waste treatment facilities, and larger, more visible firms are more likely to adopt state-of-the-art technology in anticipation of government inspection and enforcement (Runge and Fox, 1999).

The other agricultural case study concerns Mexican corn production (Nadal, 1999). As corn producers in Mexico adjust to changing price dynamics, their responses could generate important environmental effects. Potential responses include the modernization of production techniques or the substitution of corn for other crops. Modernization involves capital-intensive production technologies such as irrigation, the intensive use of agro-chemicals, and the heavy use of mechanized equipment. Many of these technologies are water-intensive. Thus, their adoption could place increased pressure on water resources. Similarly, soil quality may be affected by more intense tillage practices.

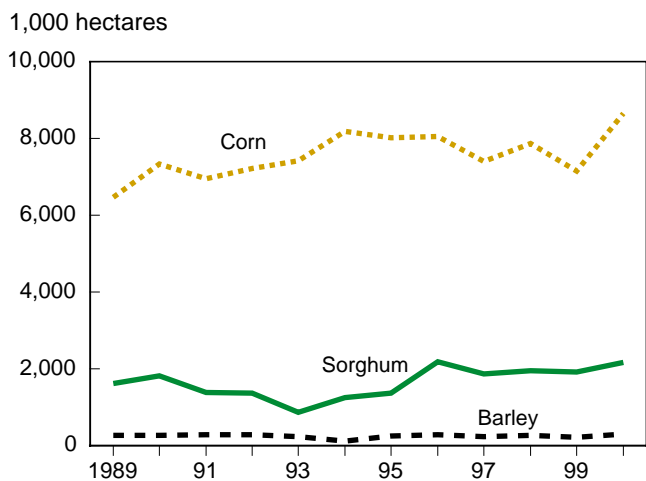
On the other hand, a shift from corn to feed grains such as sorghum or barley may have positive environmental outcomes, as plowing and water usage could decrease. Since the implementation of NAFTA, total area harvested in Mexico has remained fairly stable, but the area devoted to sorghum production has reached record levels and the area devoted to barley has increased slightly (fig. F-4). These increases in feed grains, however, have not come at the expense of corn production, which has fluctuated due to a series of droughts. Trade liberalization undoubtedly reinforces a shift to crops in which a country possesses a comparative advantage, but predicting this shift and its environmental impact poses a significant challenge. In the case of sorghum, the increase in area planted may have been driven by increased livestock production in Mexico.

Modernization may also involve the adoption of biotechnologies that reduce the need for pesticides and thus generate positive environmental outcomes. However, the study indicates some loss of genetic diversity, as farmers shift from local varieties of corn



Figure F-4

**Area harvested in Mexico of barley, corn, and sorghum, 1989-2000**



Source: Food and Agriculture Organization of the United Nations (2001).

to hybrids with higher yields. This loss has been limited by heterogeneous soil qualities, climates, and local pests, which degrade the performance of high-yield hybrids. Although the case study focuses on the environmental impacts of potential responses by Mexican corn producers, the incentives for crop substitution and the intensification of production practices would likely apply to many other crops as well.

**Environmental Concerns: The Effects of Trade and NAFTA's Rules**

Some environmental groups have argued that NAFTA's rules on investment, as specified in Chapter 11 of the agreement, are flawed. With a few exceptions, Article 1110 of Chapter 11 prohibits each NAFTA country from “directly or indirectly taking any actions that nationalize or expropriate the investment of an investor” from another NAFTA country. Fourteen environmental groups have criticized these rules and argued against the adoption of similar language in other multilateral agreements (Downs, 1999). Their concern is that NAFTA's rules allowing firms to sue member governments for compensation for “expropriation of an investment” limit a country's ability to enact and enforce strict environmental laws. A frequently cited case involves the Canadian government's revocation of restraints imposed on the importation and trade of MMT (methylcyclopentadienyl manganese tricarbonyl), a U.S.-made, allegedly toxic, gas additive. The revocation was made on July

20, 1998, after its manufacturer, Ethyl Corporation, filed a suit against the Canadian government under NAFTA's Chapter 11 provisions on investment (Baker & McKenzie, 1998). Although no Chapter 11 case has directly involved agriculture, the ongoing debate concerning the environmental and health impacts of genetically modified organisms suggests that this possibility is not implausible.

A related concern is that trade liberalization creates an incentive for countries to lure capital by lowering environmental standards, which in turn may cause other countries to respond in kind. In contrast to the static concept of “pollution havens,” this dynamic process is commonly referred to as the “race-to-the-bottom” hypothesis. According to the existing (albeit limited) empirical work, NAFTA has not encouraged a general weakening of environmental standards (Fredriksson and Millimet, 2000).

Another concern is that increased agricultural trade among the NAFTA countries may increase the risk of introducing harmful non-indigenous species (HNIS) and diseases to new countries and new geographic areas. An estimated 40 percent of the insect-pest species (e.g. Russian wheat aphids and Asian Gypsy moths) afflicting U.S. agriculture and 50-75 percent of the weed species (e.g. knapweeds and cheatgrass/medusahead) are not indigenous to the United States (U.S. Congress, 1995).

The costs of HNIS are undoubtedly significant, in terms of increased pesticide expenditures and altered if not irrevocably damaged ecosystems. However, the difficulty in measuring these costs makes it extremely challenging to determine what standards should be set for import screening. A standard of “zero entry” would be prohibitively expensive, while standards that are too lax could expose individual agricultural producers and the natural environment to unacceptable risks. Of course, HNIS can be introduced via non-agricultural trade and tourism as well.

To safeguard against HNIS, USDA's Animal and Plant Health Inspection Service (APHIS) operates agricultural quarantine inspections at international airports, seaports, and border stations. The important policy question then is whether current inspection standards and devoted resources are appropriate given the increasing level of trade among the NAFTA countries.

Agricultural trade is a significant component of overall NAFTA trade, and increased international commerce

likely involves increased transportation and fuel usage. Thus, expanded agricultural trade may contribute to increased emissions of pollutants. Economic integration often is concentrated in a few border corridors, resulting in hotspots of localized environmental stress, such as the high traffic areas in and around Laredo, Texas, and Detroit, Michigan (Sierra Club and Holbrook-White, 2000). A recent study of the border corridors of Vancouver-Seattle, Winnipeg-Fargo, Toronto-Detroit, San Antonio-Monterrey, and Tucson-Hermosillo concludes that NAFTA trade “contributes significantly to air pollution” in all five corridors (ICF Consulting, 2001: iv). The study identifies many opportunities to address these problems, including the use of cleaner-burning fuels and the alleviation of delays in border crossings through policy changes and investments in infrastructure.

## Conclusion

Agricultural trade liberalization under NAFTA is likely to have affected the environment in a variety of ways, some positive and others negative. As Canada, Mexico, and the United States continue to integrate economically, it is highly probable that there will be further composition effects, as price incentives concentrate industries in areas possessing a comparative advantage. Crop substitution, technological modernization, importation of harmful, non-indigenous species (HNIS), increased use of transportation, and the development of environmentally friendly products are other examples in which the expanded agricultural trade associated with NAFTA could have positive or negative effects on the environment.

Assuming that increased trade contributes to rising future incomes, there is every reason to believe that an increasing willingness to pay for environmental amenities will translate in the long run into increasingly stringent domestic environmental regulations and enforcement. As this process unfolds, the North American Commission for Environmental Cooperation (CEC) provides concerned individuals and organizations with new opportunities to raise environmental issues that policymakers might have otherwise overlooked. These activities facilitate the coordination of domestic environmental polices with trade-induced changes in environmental stress. Equally useful is that the activities organized by the CEC engage civil society in discussions of complicated transboundary issues that require international cooperation. Such cooperation could prove to be crucial in addressing

certain issues. For example, agricultural exporters can take actions to reduce the probability that HNIS will be introduced to new areas.

Although real challenges lie ahead, the North American Agreement on Environmental Cooperation (NAAEC) positions NAFTA as the most environmentally sensitive trade agreement to date. Since trade liberalization generally improves allocative efficiency and raises per capita incomes, the long-run prospects for environmental progress in all three NAFTA countries are generally positive.

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# Modal Choices in the Transportation of U.S.-Mexico Agricultural Trade

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## Delays Accompany Growth in U.S.-Mexico Trade

Between 1995 and 2000, U.S.-Mexico trade of all types more than doubled to \$247 billion, with over 4.2 million truck border crossings in 1999. In 2000, Mexico was the fourth largest market for U.S. agricultural exports (\$6.5 billion) and the third largest source of agricultural imports (\$5.1 billion). However, greatly increased volumes have been accompanied by significant border congestion, especially for trucks at principal ports of entry. Delays can range from several hours to a full day or more.

Congestion is exacerbated by the way in which truck cargoes now move across the U.S.-Mexico border. NAFTA's architects envisioned a transportation system in which trucks from each NAFTA country would be able to move freely within the three-country region. Canadian and U.S. trucks are allowed to move anywhere within Canada and the United States. In contrast, the United States delayed implementation of NAFTA's motor carrier provisions that provide Mexican trucking firms with greater access to the United States. The reasons cited for the delay included concerns about overweight equipment, truck and trailer condition, driver safety, language difficulties, and a lack of regulations defining the maximum hours in which a driver may work in a given period. On May 3, 2001, the United States issued proposed rules to implement those provisions, following a unanimous decision against the United States by a NAFTA Arbitration Panel. At this point in time, however, Mexican trucks are still limited to a "commercial zone" about 30 kilometers beyond the point of entry.

U.S.-Mexico trade also must comply with other requirements. Exports from the United States must be cleared by a U.S.-based Mexican customs broker. Agricultural commodities moving northbound must be inspected first by Mexican and then U.S. authorities, while agricultural commodities moving southbound must be inspected by Mexican agricultural authorities on the U.S. side of the border.

The inability of Mexican trucks to continue beyond the commercial zone to final destinations within the United States, coupled with the complexities of paperwork and inspections, has resulted in the development of a peculiar cross-border transportation system. Long-haul trucks drop their trailers at holding lots on the Mexican side of the border, where the load waits for paperwork and inspections to be completed. The trailer is then taken across the border by a special "drayage tractor," normally authorized to circulate only within the commercial zone. Finally, the trailer is dropped in a U.S. holding lot, where a U.S. long-haul tractor takes the trailer to its final destination.

Several studies have attempted to quantify the total delay costs along the entire U.S.-Mexico border. The most recent comprehensive study, completed in late 2000 by the Mexican Secretariat of Communications and Transport (Secretaría de Comunicaciones y Transport—SCT), placed this cost at \$77.4 million in 1999.<sup>1</sup> Although these studies differ in terms of their methodologies, they all yield the same general conclusion: delays at the U.S.-Mexico border result in significant economic costs. Are these delays instrumental in diverting cargoes from truck to other modes of transportation, such as rail or coastal shipping? And how do these modes compete?

Nearly 70 percent of northbound and 20 percent of southbound agricultural products moving across the U.S.-Mexico border are perishable goods with high unit values. Northbound traffic of agricultural products consists mainly of fresh and frozen fruits and vegetables, while southbound perishables consist primarily of chilled and frozen meats, poultry, and dairy products moving to large food processors and distributors. As they do within the United States, these commodities move largely by truck and are very resistant to diversion to other modes, such as ocean shipping or rail, despite the numerous difficulties described above.

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<sup>1</sup> Secretaría de Comunicaciones y Transport (SCT), *Impacto del Incremento del Trafico de Carga generado por el Comercio Exterior sobre la infraestructura de la Frontera Norte, Informe Final*, 2000, p. 76.

There are several reasons for this. First, transit times by truck are generally much shorter than transit times using more complex modal chains. A 4,000-kilometer truck haul from central Mexico to Atlanta, Georgia, takes about 4-5 days, even with possible border delays of up to 24 hours or more. Rail movements over the same route are not common, and it is difficult to estimate theoretical transit times for large volumes. Probably, these would take a minimum of 6-8 days, and possibly much longer. Truck-ship-truck movements may take 10 days, including waiting in port for vessels. Second, inventory costs are usually much lower when using truck, and there are fewer possibilities for damage, compared with using a combination of transportation modes. Third, the flexibility inherent in trucking allows for quickly targeted shipments to many destinations and rapid adaptation to changing demand patterns, something that is more difficult for other modes.

Per-mile operating costs for truck can be 2-3 times that of rail systems. Despite this, total logistics costs - that is, transport plus inventory costs - as well as costs of lost quality, can be much higher for rail than for truck. The SCT has studied total logistics costs for a variety of agricultural commodities moving between Nuevo Laredo and Mexico City, including fresh vegetables, dressed poultry, and chilled meat. Theoretical rail logistics costs for these commodities are between 2 and 3 times as high by rail than by truck.<sup>2</sup>

## The Improved Efficiency of Mexican Rail Carriers

Despite the strong position of trucking in the perishables market, Mexican rail carriers have become markedly more efficient since privatization and have been successful in attracting bulk commodities such as grain. Trains have become longer, crewing practices more cost-effective, and locomotives and rail cars are often the most modern U.S. models. Transit times on major traffic lanes have improved dramatically over the past decade. Also important is the high degree of coordination with U.S. railroads and the formation of important north-south corridors between central Mexico and the U.S. Midwest and other destinations. Together, these improvements spurred a near doubling

<sup>2</sup> Felipe Ochoa y Asociados, S.C., *Eficiencia de la Infraestructura en Corredores de Transporte, Caso: Mexico-Nuevo Laredo* (Secretaria Comunicaciones y Transporte, December 1998).

of trans-border rail volumes between the early and late 1990's.<sup>3</sup>

As Mexican rail carriers become increasingly similar to their U.S. counterparts, it is expected that they will share a common strength—the efficient movement of “unit trains” of bulk agricultural commodities. Unit trains usually contain 50 cars or more, often dedicated to a single commodity and shipper. These trains are normally loaded at large facilities and are destined to major customers capable of handling large volumes at their own unloading installations. Rail cars in such service may be controlled by the railway, the shipper, or both. The rail carrier normally handles line-haul transportation only, which serves to decrease its costs. Unit trains move through the rail network with a minimum of switching, which serves to decrease costs further and to make transit times lower and more reliable.

These new efficiencies have led to greater market penetration by rail in the movement of grains and oilseeds from the United States. Traditionally, these commodities have moved down the Mississippi Valley, mainly by barge, to Gulf Coast ports and then by ship to Mexican ports like Veracruz. From there, grains have traveled inland to Mexico City and other major destinations by rail. The low unit costs of Mississippi barging and ocean shipping, combined with very efficient terminal transfer processes within the United States, have made this somewhat complex modal chain attractive. Confidential interviews with Mexican transport firms revealed that combined ocean-rail rates may be as much as 10 percent lower than direct rail rates. While ocean transport is still the dominant mode, rail from the U.S. Midwest (largely unit trains) has been gaining steadily. Accurate statistics on the shares of total grain traffic corresponding to ship and to rail are difficult to obtain. It is generally accepted that rail's share was only about 10 percent prior to privatization. Current estimates of rail's share range from 20 percent nationally to higher percentages for grains bound to destinations in northern Mexico.

## Challenges Facing Intermodal Rail

Since their privatization, Mexican railways also increased development of intermodal services. Rail

<sup>3</sup> See Prentice et al. *Rail Harmonization in Mexico and North America: Implications for Agriculture* for an overview of changes in Mexican rail service.

intermodal transport involves a container or trailer moved by truck to a terminal where it is loaded on a specialized rail car, moved by rail to another terminal where it is unloaded from the rail car, and then moved by truck to the final destination. Railways have promoted intermodal transport as a more efficient alternative to conventional rail service and as a way to compete with trucking. The principle is that the economic gains of long-haul rail transport are sufficient to offset the trucking and terminal costs on both ends, producing total costs that are lower than a direct truck movement between origin and final destination. However, transit times are usually longer and less consistent than by direct truck. Intermodal transport works best when rail distances are long and trucking legs are short, such as from a Mexican auto engine factory to a U.S. vehicle assembly plant, or from a container terminal in Southern California to a distant inland city such as Chicago.

Coordination difficulties, a greater possibility of damage, and longer transit times in comparison to direct trucking usually make intermodal rail a poor choice for high-value perishables. Although the United States has a much more developed intermodal infrastructure than Mexico, intermodal rail and conventional rail each accounted for only 2 percent of domestic perishable movements within the United States in 1999, compared with 96 percent for trucking.<sup>4</sup> Intermodal and conventional rail traffic within the United States usually involves damage-resistant commodities that are relatively insensitive to time, such as potatoes and lettuce. This traffic generally originates in small areas of concentrated production, such as California's Imperial Valley, and serves large shippers with sophisticated distribution systems.

Since the Mexican case typically features smaller shippers and geographically dispersed sites of production, the chances of success for intermodal rail in Mexico are much lower than in the United States. While some intermodal rail shipments from Sinaloa to the United States began in the 1980's, ground has been lost to trucking due to rail service difficulties and the greater efficiencies associated with Mexican trucking. Thefts of copper generator cables and fuel from refrigerated containers also have been a concern. Intermodal ship-

ment of perishables generates little interest among Mexican shippers or railroads, and the immediate prospects for significantly increased transborder shipments of perishables by this mode appear poor.

In contrast, other commodities may eventually see greater use of intermodal rail. Likely candidates include identity-preserved grains and other commodities that are insensitive to time. Such shipments would be largely long-distance movements in which intermodal rail would have cost advantages over trucking and where consistency of service is less critical, compared with perishables. Success will depend on the construction of intermodal terminals in large Mexican population centers and the development of well-integrated trucking services. Smaller grain shippers in particular may find intermodal rail service more attractive than infrequent, larger shipments in conventional rail cars. Newer Mexican food processors lacking rail access may also find this option attractive.

## Recent Developments in Maritime Systems

Despite gains by railroads in shipping U.S. grains, Mexican ports and marine terminal companies are not standing still. In 1998, the Port of Veracruz was dredged from 31 to 36 feet. By 2003, the Port plans to dredge to a depth of about 40 feet from the harbor entrance to the grain terminals, possibly to be financed half by the Port and half by the private grain terminal operator, Terminales de Cargas Especializadas (TCE). The ultimate effects of this investment are likely to be subtle and complex. If the improvements materialize, Veracruz could easily accommodate Panamax grain ships, which should lower ocean shipping rates from U.S. Gulf ports by 15-20 percent, making these ports more competitive with the direct rail alternative. But dredging the Port of Veracruz will also lower ocean shipping costs for U.S. competitors in the world grain market, such as Canada and the European Union (EU).<sup>5</sup> Thus, while the market share of rail may erode as a consequence and marine trade may grow, it is not clear if U.S. grain and oilseed exports would gain overall.

In addition, associated transport costs at Veracruz may rise. Over 90 percent of grain imports are distributed

<sup>4</sup> USDA Agricultural Marketing Service, *Fresh Fruit and Vegetable Shipments by Commodities, States and Months, FVAS-4 Calendar Year 1999*.

<sup>5</sup> These findings are the result of vessel cost modeling by Seaport Consultants.

inland by rail. Rail and truck access to the port area is currently constrained by antiquated layouts of the rail yard and marine terminal, as well as by conflicts with truck traffic, which will become more problematic as grain ship and consignment sizes increase and as overall port volumes continue to grow. It is not clear how a landside modernization of road and rail access within Veracruz would be conducted now that the port is split among many private entities and since the port administration today lacks some of the authority of its state predecessor. At this point, the ultimate impact of dredging the Port of Veracruz is unclear. While ocean transport from all grain exporters should become more competitive with the direct rail alternative from the U.S. Midwest, port congestion and poor landside access may cause inland costs to rise.

Other maritime systems, such as the barging of grain cars, have had only mixed success. Rail cars from the U.S. Midwest are loaded onto barges at Gulf Coast ports and sent to Mexico. Lengthy transit times, the large weight of empty equipment (tare weight), and difficulties in providing backhaul cargoes have made these systems only intermittently profitable. Such barge systems seem best suited to areas with limited port facilities for handling ocean vessels and storing grain, or where direct rail service is erratic. In such instances, shipments can be delivered to a final destination much more quickly than through a small or inefficient deepwater port. Several barge services have been launched and discontinued in the past decade. Thus, it is not clear if eventually there will be a niche market for these services as overall trade volumes grow.

High-value Mexican exports have proven difficult to divert from direct trucking to ocean shipping, largely due to the need for lengthy truck hauls from Mexican production areas to Atlantic ports and then from U.S. Gulf Coast ports to major U.S. population centers in the East and upper Midwest. Total transport costs may be similar, but transit times by truck-marine-truck modal combinations are often double those for direct trucking, even given border congestion. These factors have combined to make maritime services for high-value goods moving across the Gulf of Mexico only intermittently successful. Thus, Veracruz is a principal export point for Mexican fruits and vegetables destined for Europe, but not for Mexican fruit and vegetable exports to the United States.

But other ports and maritime services could theoretically serve as alternatives to an increasingly congested U.S. border on certain trade lanes. One such port is Manzanillo, located on Mexico's southwest Pacific coast. Manzanillo is fairly close to the Bajio, an important agricultural region in south-central Mexico that produces mangos, avocados, and other high-value crops. Thus, there may be some long-term potential for north-south trade between Manzanillo and ports on the U.S. West Coast. Manzanillo was a small fishing and general cargo port until recently, when investors from Chile and other countries modernized the port. The aim of these investors is to make Manzanillo an important site for importing Chilean fruits during the Mexican off-season, as well as a modern container port for automotive and other manufactured goods from Asia. Manzanillo is also an important export point for Mexican melons and other fruits bound for Japan and other Asian markets.

Combined truck-ocean rates between the Bajio and California ports via Manzanillo were modeled by Seaport Consulting using vessel, terminal, and other costs. These rates were found to be about 25-35 percent less than the rates charged for direct truck service. However, transit times may be up to 3 times longer by sea than by direct trucking, and currently there is virtually no movement of perishables on this route. Should frequency improve and rates remain low, there may be opportunities to divert northbound and possibly southbound traffic, such as U.S. apples and stone fruit, from direct truck service.

This may especially be true in the case of California apples, which currently are not approved for importation into Mexico. Apples from San Joaquin County moving through the Port of Oakland and apples from Kern County moving through the Port of Long Beach to Mexico City should be very competitive with direct truck service. Both apple-growing areas are relatively close to major seaports, which minimizes trucking distances. Truck-ocean shipping of other products, such as stone fruit grown in the same areas, may also prove competitive with direct truck service.

In addition, there may be opportunities for products from the Bajio, such as mangos and melons, to move north via truck-ocean shipping to California. Containerized shipping, with regular schedules and the ability to handle small consignments, will probably have the edge over conventional refrigerated shipping, which requires a full vessel and in-port storage. It is



known that several shipping lanes are actively investigating this option.

In addition to transportation costs and transit times, there are other factors that contribute to the resiliency of existing routes and modes. Our interviews reveal that agricultural shippers in both Mexico and the United States strongly prefer dealing with established commercial and government contacts with whom they have good working relationships. They are hesitant to try more complex modal chains and new routes, even if costs may be somewhat lower.

## Conclusion

Regardless of border congestion, it seems likely that perishables will continue to move by truck and will not be easily diverted to other modes. Rail service will probably continue to improve, as Mexican carriers become more modernized and better integrated with U.S. railroads. Intermodal rail is not likely to gain much high-value agricultural traffic, but it could eventually attract some containerized grains, but only if

service levels improve dramatically. As in the United States, rail carriers will probably focus on larger shippers moving unit trains of bulk agricultural commodities. Improvements at the Port of Veracruz should increase the competitiveness of ocean grain shipping from U.S. Gulf Coast ports, and these trade lanes and associated inland links from the Midwest should remain strong. But improvements in Mexican grain ports will also lower costs for U.S. competitors, such as Canada and the EU. Elsewhere, some alternatives to trucking may appear, such as coastwise Pacific services, if frequency becomes sufficient to be competitive.

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# Part II

## Detailed Commodity Assessment

### Livestock and Animal Products

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#### Cattle

##### **Policy Changes Resulting from NAFTA**

*United States.* Historically, U.S. tariffs on cattle entering from Canada and Mexico have been quite low. Purebred breeding cattle and cattle imported for dairy purposes were admitted duty-free, while other cattle were charged 2.2 cents per kilogram. Under CFTA, the United States began to gradually eliminate its tariffs on cattle imports from Canada. This process, originally intended to last 9 years beginning on January 1, 1989, was accelerated to completion by January 1, 1993. Under NAFTA, the United States immediately eliminated its duties on Mexican cattle on January 1, 1994.

*Canada.* Even before CFTA, Canada's import regime for U.S. cattle largely resembled the U.S. regime for Canadian cattle. Purebred breeding cattle and cattle intended for dairy purposes were admitted duty-free, while other cattle were charged 2.2 cents per kilogram. Under CFTA, the gradual elimination of Canadian tariffs on U.S. cattle was scheduled for the 9-year period that began on January 1, 1989. However, Canada accelerated this process to completion by January 1, 1993. Canada completely eliminated its duties on Mexican cattle upon NAFTA's implementation on January 1, 1994.

*Mexico.* In late 1992, Mexico raised its tariffs on non-breeding cattle from zero to 15 percent. Once NAFTA took effect in 1994, Mexico eliminated its tariffs on U.S. and Canadian cattle.

##### **Cattle Trade under CFTA and NAFTA**

The United States trades three basic classes of cattle with Canada and Mexico: cattle for slaughter, feeder calves, and purebred breeding cattle. Breeding cattle trade between the NAFTA countries has been free of tariffs for many years, even before 1989. Thus, CFTA

and NAFTA have not had a direct effect on trade in breeding stock.

Mexican and Canadian cattle tend to be leaner than cattle produced in the United States, although the reasons for this relative leanness vary between the two countries. Mexican cattle are considerably leaner than U.S. cattle, as Mexico does little grain-feeding of its cattle. Canada feeds its cattle much as the United States does, but Canada's grading system differs from that of the United States. The U.S. grading system rewards marbling, small flecks of fat mixed in the muscle, and Canada's does not. Moreover, USDA only grades beef carcasses in the United States, so animals that are killed and processed in Canada cannot receive USDA quality grades. Given the premiums that USDA Choice cattle and beef get in the United States, Canadian producers have a strong incentive to ship cattle to the United States so that, once slaughtered, they can meet USDA grade standards.

U.S.-Canada trade in slaughter cattle runs in both directions, although Canadian slaughter cattle exports to the United States are higher than the trade in the other direction. U.S. shipments of slaughter cattle to Canada have increased under CFTA and NAFTA, but the United States remains a substantial net importer of slaughter cattle from Canada. Because there were few impediments to U.S.-Canada slaughter cattle trade prior to 1989, little of the recent increase in this trade can be directly attributed to the two agreements. U.S.-Mexico slaughter cattle trade consists primarily of U.S. exports to Mexico. The year 1995 was one exception to this general pattern, as recession and drought in Mexico led to a large number of Mexican cattle being shipped to the United States for slaughter.

U.S. cattle exports to Mexico have continued to fluctuate under NAFTA, largely due to short-term changes in the U.S. and Mexican markets. For example, the peso crisis and subsequent recession in Mexico caused U.S. exports to drop to 14,641 head in 1995, a decrease of 89 percent from the previous year. Another

short-term fluctuation took place between 1999 and 2000, when U.S. cattle exports to Mexico climbed from 100,481 to 126,704 head. This increase appears to be linked to drought in the U.S. Southwest. Dry conditions led to more culling of cows than usual, and many of the additional culled cattle were shipped to Mexico. Although similar factors affected U.S. cattle exports to Mexico prior to NAFTA, year-to-year changes in Mexican policy created additional instability. Since NAFTA's implementation, the Mexican government has pursued a more stable beef and cattle import policy.

The general pattern of feeder-cattle trade is opposite that of slaughter-cattle trade. Slaughter cattle generally move south, with Canada exporting to the United States and the United States exporting to Mexico. The United States is a net exporter of feeder cattle to Canada and a net importer from Mexico.

As is the case with slaughter cattle, feeder cattle trade among the NAFTA countries changes greatly from year to year, mostly due to idiosyncratic factors. Mexican cattle exports to the United States have fluctuated within the same range under NAFTA as they did in the years immediately prior to the agreement. The Mexican recession in 1995 led to the shipment of about 1.6 million cattle out of Mexico. In contrast, Mexican exports to the United States remained under 1 million head each year during 1996-99, although they grew to more than 1.2 million in 2000. This increase is partly due to the same drought that boosted U.S. slaughter cattle exports. Feeder cattle were shipped north to U.S. feedlots, as there was insufficient pasture in Mexico.

NAFTA's effect on Mexican cattle exports to the United States appears to be small. Export levels are remarkably similar before and after the start of NAFTA. As is the case for U.S. slaughter cattle exports to Mexico, NAFTA's most important influence is probably its stabilization of Mexican trade policy.

Post-NAFTA agreements have had a major effect on U.S. feeder calf exports to Canada. In 1997, the United States and Canada started a program called the North-West Pilot Program. Under this program, U.S. feeder calves could be shipped to selected Canadian feedlots without going through the usual quarantine procedures. The diseases that Canadian authorities were most concerned about were blue tongue and anaplas-

mosis. As more feedlots signed on to this program, which is now called the Restricted Feed Cattle Program, U.S. cattle exports to Canada increased from around 40,000 head in 1996 and 1997 to 349,536 head in 2000.

### **Trade Issues**

*U.S. ITC Cattle and Beef Study.* The U.S. International Trade Commission (ITC) investigated the impact of NAFTA and URAA on the trade of slaughter cattle and beef, as well as the steps taken by the United States since 1994 to prevent the transshipment of cattle and beef through Mexico and Canada to the U.S. market. An ITC report entitled "Cattle and Beef: Impact of the NAFTA and Uruguay Round Agreements on U.S. Trade" was released on July 7, 1997. The report noted the policy changes in beef and cattle trade due to NAFTA and URAA, and it concluded that neither agreement had yet had a major impact on U.S. cattle markets.

*R-CALF Dumping and Countervailing Duty (CVD) Petitions.* In the fall of 1998, a group of U.S. cattle producers called the Ranchers-Cattlemen Action Legal Fund (R-CALF) filed a petition requesting that ITC investigate charges that Canada and Mexico were dumping cattle in the U.S. market at less than their fair market value. R-CALF also alleged that Canadian subsidies help that country's producers to sell cattle in the United States at a discount. The Record of Understanding (ROU) signed by Canada and the United States in December 1998 states that if one country imposes new duties on cattle trade, the other may re-balance certain commitments made under the ROU for the duration of the duty increase.

On January 19, 1999, ITC ruled 4-2 that there was evidence that Canadian cattle shipments pose a sufficient threat to U.S. industry to justify continuing the probes begun in December 1998 by the U.S. Department of Commerce (DOC). On May 11, 1999, DOC issued a preliminary determination that subsidies were not being provided to producers or exporters of live cattle in Canada. The final report issued in November 1999 found no evidence that Canadian cattle were being dumped into the U.S. market.

In its ruling dated January 19, 1999, ITC also concluded that there was "no reasonable indication of material injury or threat of material injury" to the U.S.

cattle industry due to cattle imports from Mexico.<sup>1</sup> For the period under investigation (1995-98), ITC found that Mexican cattle shipments were small in terms of both volume and their overall share of the U.S. market. Moreover, ITC determined that this trade had not significantly affected domestic prices and that it was unlikely that U.S. cattle imports from Mexico would increase substantially in the future.

*Northern Plains Truck Interceptions.* In September 1998, the Governor of South Dakota directed the South Dakota Highway Patrol to intercept commercial truck traffic carrying Canadian cattle, hogs, or grain. The governor's actions won at least tacit support from governors of 4 neighboring States and led to threats by Canada to take the matter before NAFTA or the WTO. Resulting negotiations culminated on December 4, 1998, with the signing of a 17-point Record of Understanding by cabinet members from both countries. Canada agreed to revise and simplify its animal health regulations governing imports, including its regulations on the importation of U.S. feeder cattle. In addition, the two countries agreed to increase their cooperation regarding cattle trade data and to work towards the harmonization of animal drug registrations.

### **NAFTA's Impact on Cattle Trade**

U.S.-Canada cattle trade has been influenced more by the exemption of Canadian beef from the U.S. Meat Import Law than by tariff changes. Cattle tariffs between the two countries were low before CFTA, and they were eliminated completely by 1993. However, the tariff reductions associated with CFTA might have had a greater impact on cattle trade if beef imports from Canada were still subject to the Meat Import Law. Under this law, the weight of imported cattle was used to calculate the next year's meat quota. Thus, higher imports of cattle in one year could lower the quota for the next year, as imported cattle weights were subtracted from domestic production.

When the Uruguay Round TRQ for beef was established, the effect of live cattle imports on production could not be considered as it had under the Meat Import Law. If Canada had been included in the TRQ,

<sup>1</sup> U.S. International Trade Commission, "Live Cattle from Canada and Mexico, Investigations Nos. 701-TA-386 (Preliminary) and 731-TA-813 (Preliminary), Determinations and Views of the Commission," USITC Publication No. 3155, February 1999, <ftp://ftp.usitc.gov/pub/reports/opinions/PUB3155.PDF>, p. 41.

Canada would have avoided the over-quota tariffs by shipping live animals to the United States for slaughter. This would have increased U.S. cattle imports by some 20-30 percent. Likewise, U.S. cattle exports to Canada would have increased if U.S. beef exports rose to a level at which Canada imposed its over-quota duty of 25 percent.

NAFTA's greatest influence on U.S.-Mexico cattle trade is its immediate elimination of Mexico's 15-percent duty on live cattle imports. This tariff elimination probably boosted U.S. cattle exports to Mexico by 18-33 percent in the first year of NAFTA. The peso devaluation in late 1994 and the subsequent recession in 1995 complicate the analysis of NAFTA's immediate effects. Also, before NAFTA was ratified, Mexico's beef and cattle policies changed frequently as policy objectives changed. Usually, the Mexican government followed policies designed to keep beef prices low, and the 15-percent duty imposed on cattle imports in 1992 was an unusual step in the opposite direction. Mexico's policies under NAFTA have been much more stable than its policies before the agreement, and this probably has led to increased levels of cattle trade in both directions.

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## **Beef**

### **Policy Changes Resulting from NAFTA**

*United States.* Under CFTA and NAFTA, the United States exempted both Canada and Mexico from the U.S. Meat Import Law. This exemption from quantitative restrictions on the shipment of fresh, chilled, or frozen beef was carried forward in calculating the TRQ's under the Uruguay Round. The United States also applies a tariff of 2 cents per pound on most types of imported beef. Under CFTA, this duty originally was to be eliminated over a 9-year period beginning on January 1, 1989. However, this process was accelerated to completion, and most U.S.-Canada trade in fresh, chilled, or frozen beef enjoyed duty-free status as of July 1993. Under NAFTA, the United States immediately eliminated its tariffs on Mexican beef on January 1, 1994.

*Mexico.* In late 1992, Mexico raised its beef tariffs from zero to 20 percent for fresh beef and 25 percent for frozen beef. Once NAFTA took effect, Mexico eliminated these tariffs for U.S. and Canadian beef.

Prior to NAFTA, Mexico also levied a 20-percent tariff on beef offal from Canada and the United States. This tariff is being phased out over the 9-year period that ends on January 1, 2003. For 2001, the tariff equals 8 percent.

*Canada.* Canada exempted both the United States and Mexico from its Meat Import Law and subsequent TRQ calculations. Canada phased out its tariffs on U.S. beef under an accelerated schedule, and it eliminated its tariffs on Mexican beef at the start of NAFTA.

### **Beef Trade under CFTA and NAFTA**

The low U.S. and Canadian tariffs that existed prior to CFTA did little to restrict U.S.-Canada beef trade. The Meat Import Laws of both countries were more important barriers to trade, and even these restrictions were non-binding during about half of the year. U.S. beef exports to Canada experienced little long-term growth during the 1990's. This trade equaled 87,480 metric tons in 2000, somewhat less than its 1991 level of 90,892 metric tons. In contrast, U.S. beef imports from Canada increased almost without interruption over the last decade, climbing from 81,138 metric tons in 1990 to 335,163 metric tons in 2000. The relative strength of the U.S. dollar has played an important role in this expansion.

Upon NAFTA's implementation, Mexico immediately eliminated its 20-percent tariff on U.S. (and Canadian) beef. As a result, U.S. beef exports to Mexico climbed from 39,444 metric tons in 1993 to 72,341 metric tons in 1994, an increase of 83 percent. However, this increase is far less dramatic when one remembers that Mexico had raised its tariff on all imported beef from zero to 20 percent at the end of 1992. In fact, the volume of this trade in 1994 was only 5 percent higher than the volume in 1992, prior to the tariff's implementation.

The recession that followed the peso crisis caused U.S. beef exports to Mexico to drop sharply in 1995, and exports did not recover fully until 1997. This trade has grown steadily since 1995, and its volume is now more than 2½ times greater than its pre-NAFTA levels. Much of this increase is due to continuing improvement in the Mexican economy. In 2000, U.S. beef exports to Mexico totaled 178,749 metric tons, with a value of \$531 million.

Mexico ships only a small amount of beef to the United States, and it is by far a net importer of beef

from the United States. Given the premium placed on higher-grading beef in the United States, it makes more sense for Mexican producers to sell calves to the United States for feeding than to ship beef.

### **Trade Issues**

Beef trade has been subject to trade disputes between the United States and Canada over the equivalency of inspections and among all three NAFTA signatories over charges of dumping. Mexican producers have charged that the United States has dumped beef in the Mexican market, while U.S. cattlemen have alleged dumping of cattle by Canadian and Mexican producers. Although none of these disputes have resulted in a major disruption of trade, both issues are irritants. In 1998, the Governors of several States in the Northern Plains resorted to stopping Canadian trucks in order to pressure Canada to limit shipments.

*Mexican Antidumping Investigation Against U.S. Beef.* An antidumping dispute with Mexico surfaced in June 1994, with charges that U.S. exporters engaged in discriminatory pricing practices between August 1993 and January 1994. After a brief investigation, the Mexican government published a preliminary finding showing some margin of price discrimination on the part of some U.S. packers, but not a threat of injury sufficient to justify the immediate imposition of antidumping duties. Before a final ruling was issued, the Mexican Confederation of Cattle Producers and the U.S. National Cattlemen's Association reached an understanding to improve communication between the two groups. Subsequently, the complaint was withdrawn.

However, charges were made once again in 1998 that the United States was dumping beef in Mexico. On August 1, 1999, Mexico announced antidumping tariffs that varied by company. U.S. beef exporters appealed these tariffs, and on October 10, 2000, Mexico published a set of revised antidumping tariffs for certain beef exporters. These duties range from zero to 80 cents per kilogram, depending on the company and the type of beef.

### **NAFTA's Impact on Beef Trade**

Calculating Canada's share of the quota under the U.S. Meat Import Law indicates that Canada would have had been allowed to ship 130 to 135 million pounds of beef (58,968 to 61,236 metric tons) in 1994. Actual shipments that year equaled 178,091 metric tons. Moreover, if the Uruguay Round's TRQ had applied to

Canada, that country would have been able to export only about 145 million pounds (65,772 metric tons) per year to the United States beginning in 1995. The average level of U.S. beef imports from Canada during 1995-2000 is roughly 4 times this amount, indicating substantially higher imports due to CFTA and NAFTA.

Similarly, the United States has benefited from the elimination of Canadian import restrictions. Although Canada had not invoked its Meat Import Act since 1985, it closely monitors beef imports from countries outside NAFTA. In 1993, Canada imposed a TRQ on boneless beef from countries other than the United States. The initial TRQ was set at 72,000 metric tons, with an over-quota tariff of 25 percent. The United States exported 67,000 metric tons, or 37 percent of Canada's boneless beef imports. Canada relaxed the rules associated with the TRQ in 1994, expanding the effective TRQ to 91,000 metric tons. Most of the boneless beef imported by Canada (and the United States) from countries outside NAFTA is cow and bull meat. This lean meat is used in the manufacturing of hamburger and other processed meats. The rules were relaxed to relieve pressure on this segment of the beef market.

In 1995, Canada replaced its Meat Import Act with a TRQ of 76,409 metric tons and an over-quota duty of 30.3 percent. Although the pre-Uruguay Round surcharge affected lower-value manufacturing beef, had the United States not been exempt from these restrictions, it is likely that between one-third and one-half of U.S. exports to Canada would have been subject to over-quota duties. This implies that CFTA and NAFTA may have doubled U.S. beef exports to Canada. Since 1989, the United States has maintained a 40- to 50-percent share of the Canadian import market, considerably above its 10- to 15-percent share before CFTA, when the United States was subject to Canada's Meat Import Act.

NAFTA's impact on U.S. beef exports to Mexico is more difficult to estimate. Mexico's beef tariff of 20 percent was eliminated with NAFTA. However, this tariff was imposed only in late 1992 and represented a major change in Mexican beef policy. The level of beef exports in 1992 prior to the 20-percent tariff is remarkably similar to the level in 1994, when the tariff was eliminated as part of NAFTA. Improvements in the Mexican economy have driven much of the recent growth in U.S. beef exports to Mexico. Despite coun-

tervailing duties on U.S. beef, these exports are expected to continue to grow.

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## Hogs

### ***Policy Changes Resulting from NAFTA***

*United States.* The United States does not levy tariffs on hog imports, nor did it do so immediately prior to CFTA and NAFTA. However, the United States did maintain a countervailing duty on Canadian hogs from 1984 to 1999 (see trade issues section).

*Canada.* Canada does not levy a duty on hog imports, a policy that predates CFTA.

*Mexico.* Prior to 1994, Mexico maintained a 20-percent duty on non-purebred hogs. Under NAFTA, this duty is being phased out over the 9-year period that ends on January 1, 2003. In addition, a safeguard TRQ was placed on imports. If imports rise above the levels specified by the TRQ, the duty reverts to the lower of the current most-favored-nation (MFN) or the pre-NAFTA level. This safeguard, initially set at 46,900 head for hogs under 50 kilograms and 324,300 for hogs greater than or equal to 50 kilograms, expands 3 percent each year. For 2001, the two safeguard thresholds equal 57,681 and 398,848, respectively. The safeguard provision expires on January 1, 2003.

### ***Hog Trade under CFTA and NAFTA***

With the exception of certain regions, Mexico is considered to be hog-cholera endemic, and any hogs exported to the United States are subject to a 90-day quarantine. This effectively precludes most hog imports from Mexico.<sup>2</sup> In addition, U.S. hog exports to Canada are extremely small in number due to disease problems - pseudorabies - in the United States. In 2000, this trade totaled 4,536 hogs, of which 2,005 were purebred breeding animals. Thus, North American hog trade consists almost exclusively of

<sup>2</sup> Hog cholera was eradicated from the United States in 1978, following systematic diagnosis, quarantine, destruction of infected herds, safe disposal, and cleaning and disinfection of affected premises. Hog cholera is caused by a virus that infects only swine. The disease spreads easily among swine of all ages, causing high fever, weakness, reddening of the skin, and high death rates in infected herds (McKean, p. 285).

Canadian exports to the United States and U.S. exports to Mexico.

In recent years, U.S. imports of live hogs from Canada have occurred along two main tracks, and the development of this pattern was independent of CFTA and NAFTA. The United States imports live hogs for slaughter, primarily from producers in western Canada and Ontario, but it also imports feeder pigs from Manitoba and Saskatchewan for finishing in the United States. Imports of both feeder pigs and slaughter hogs have increased significantly since 1992. In 2000, the United States imported 4.4 million live swine, compared with some 670,000 in 1992. The dramatic growth in imports is the consequence of expanding Canadian production capacity, lower CVD's, available slaughter capacity in the United States, and low feed prices.

Restructuring in the Canadian slaughter industry is ongoing and significant. One likely inducement of restructuring was the recent series of decreases in the CVD, which highlighted differences in the wage structures of the U.S. and Canadian slaughter industries. Lower wages in the U.S. slaughter industry allow U.S. packers to outbid Canadian packers for hogs. The higher wage structure in Canada has been a determining factor in the closure of several Canadian slaughter facilities over the past several years. In 1998, lower wage contracts were adopted in several major Canadian slaughter facilities, but work stoppages preceding contract ratification temporarily increased the flow of Canadian hogs to the United States.

In 2000, Maple Leaf Foods, Inc., opened a large, state-of-the-art facility in Brandon, Manitoba to slaughter and process hogs. The presence of such a plant in a prairie province validates the westward shift of the Canadian pork industry. Although this new facility increases Canadian slaughter capacity by more than 10 percent, Canada's ability to produce hogs will likely continue to exceed its capacity to slaughter and process them. Thus, the flow of Canadian hog exports to the United States is expected to continue at its present rate - over 4 million head per year - for the foreseeable future.

U.S. hog exports to Mexico largely depend on the health of the Mexican economy. This trade peaked just prior to the peso crisis and then dropped precipitously, from 123,430 hogs in 1994 to just 4,956 hogs

in 1995. Exports recovered slowly, reaching 40,637 hogs in 1996 and 38,769 hogs in 1997. Record low hog prices in the United States in 1998 boosted exports to 207,922 hogs, which in turn precipitated an antidumping action by the Mexican government (see trade issues section). Exports fell to 51,915 hogs in 2000, and it is anticipated that trade will remain at low levels as long as the antidumping measures are in place.

### **Trade Issues**

*Sunset Review of U.S. Countervailing Duty.* From 1984 to 1999, the United States maintained a countervailing duty (CVD) on Canadian hogs. However, policy changes in Canada prompted the U.S. Department of Commerce (DOC) to declare the CVD rate to be de minimis, or effectively zero, in September 1998. Following a Sunset Review of the CVD order, the DOC concluded that its revocation "would not be likely to lead to continuation or recurrence of a countervailable subsidy."<sup>3</sup> As a result, the CVD order was revoked, effective January 1, 2000.

*Regionalization of Hog Cholera Restrictions.* In 1994, Mexico officially requested that the United States recognize the states of Sonora, Sinaloa, Chihuahua, Baja California Sur, and Baja California Norte as low-risk regions for hog cholera in order to ship pork to U.S. markets. In 1995, Mexico added Yucatan to this list. In July 1997, a final rule recognizing Sonora to be free of hog cholera was published in the Federal Register. In October 1997, the United States published final rules that established procedures for recognizing regions and the levels of risk among regions with regard to U.S. importation of live animals and animal products.

*Regulation of Pseudorabies.* On December 3, 1998, Canada amended its Health of Animal Regulation to permit the importation of U.S. slaughter swine from certain States. This amendment exempts imported slaughter hogs from States with Stage IV or Stage V status under the U.S. Pseudorabies Eradication

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<sup>3</sup> Such Sunset Reviews are part of the commitments made by the United States in the Uruguay Round. The Uruguay Round Agreements Act revised the amended Tariff Act of 1930 by requiring that CVD orders be revoked after 5 years, unless revocation or termination would likely lead to a continuation or recurrence of a countervailable subsidy, and material injury to the domestic industry.

Program from undergoing disease testing and quarantine requirements.<sup>4</sup>

Although the new regulations allowed imports where they were prohibited in the past, they still strongly discouraged Canadian packers from importing U.S. hogs. Requirements that were deemed excessively onerous include truck washdowns, disposal of manure in the trucks and waterwash, reconfiguration of plant grounds to segregate U.S. hogs, and special bangle ear tags on U.S. hogs. Canadian packers also contested requirements to slaughter U.S. hogs within 4 hours after arriving at the plant and within 24 hours after arriving in Canada. In addition, these animals were to have traveled to Canadian slaughter plants along defined routes and within defined time frames.

On March 30, 1999, the Canadian Food Inspection Agency (CFIA) met with various Canadian stakeholders (including producer associations, packers, and meat industry officials) to explore various strategies to address their concerns. The challenge facing CFIA was to open the channels of trade without weakening the risk-protection aspects of the regulation.

New regulations amending the Health of Animals Act were published in the Canada Gazette on October 27, 1999. The regulations amended previous requirements for animals imported from U.S. States with Stage IV or Stage V classification with regard to truck washing, manure handling and disposal, veterinary supervision, and animal identification.

The new regulations have done little to induce U.S. hog exports to Canada. The minimal flow of this trade is more a consequence of price rather than policy, as U.S. packers typically offer higher prices for hogs than Canadian slaughter operations. In 2000, a total of 2,531 slaughter hogs and feeder pigs were exported to Canada.

*Mexican Antidumping Investigations.* In March 1993, a confederation of Mexican pork producers requested an investigation of alleged dumping by U.S. producers between May 1991 and May 1992. The investigation included live hogs as well as a variety of pork products.

<sup>4</sup> Pseudorabies is an acute, frequently fatal disease that affects a portion of the U.S. swineherd. The disease is caused by a herpes virus and is capable of causing a variety of clinical manifestations, including death in newborn and adult swine, and fetal death with abortion in pregnant swine (Thawley, Gustafson, and Ormiston).

In September 1993, the Mexican government found that there was evidence of dumping, with margins ranging from zero to 32 percent. The duties were held in abeyance until a determination was made as to whether the pork in question was injuring or threatening injury to the Mexican pork industry. On August 26, 1994, the Mexican Secretariat of Commerce and Industrial Promotion (SECOFI) found that there was no evidence of injury or threat of injury. The case was closed and no antidumping duties were levied.

On October 21, 1998, SECOFI initiated an antidumping investigation of U.S. hog exporters at the request of the Mexican Pork Producers' Council. On January 31, 1999, Mexico announced its plan to impose "compensatory" duties on U.S. hogs. The duty equals the difference between the export price and the "normal reference value" for production and marketing, fixed at \$1.08 per kilogram. Thus, the duty raised the U.S. export price to \$1.08 per kilogram. This duty remained in effect until June 1999, when it was re-specified to equal the fixed rate of \$0.351 per kilogram. On October 20, 1999, SECOFI issued its final decision, continuing the duty of \$0.351 per kilogram.

With U.S. slaughter hogs averaging 57 cents per kilogram (26 cents per pound) in January 1999, U.S. hog exports to Mexico are clearly at risk. The break-even price for U.S. hog producers is about 88 cents per kilogram (40 cents per pound). U.S. hog exports to Mexico averaged 17,327 hogs per month in 1998. In 2000, they averaged 4,326 per month, clearly showing the effects of the duty, and since September 2000, exports have remained below 700 per month. On October 10, 2000, the Mexican government initiated its first annual review of its antidumping action. The results of this review are still pending.

*Northern Plains Truck Interceptions.* In September 1998, the Governor of South Dakota directed the South Dakota Highway Patrol to intercept commercial truck traffic carrying Canadian cattle, hogs, or grain. These actions won at least tacit support from the Governors of 4 neighboring States across the northern tier and led to threats by Canada to take the matter before NAFTA or the WTO. Resulting negotiations culminated on December 4 with the signing of a 17-point Record of Understanding by cabinet members from both countries. Canada agreed to revise and simplify its animal health regulations governing imports, including its testing and quarantine restrictions on U.S. slaughter swine. In addition, the two



countries agreed to work towards harmonizing animal drug registrations.

### **NAFTA's Impact on Hog Trade**

The direct impact of CFTA and NAFTA on U.S.-Canada hog trade is fairly limited, but the two agreements have affected hog trade through several indirect channels. Canadian analysts believe that CFTA and NAFTA cleared the way for investment in the hog industry in western Canada. In addition, lower feed prices in Canada's prairie provinces (in part due to the elimination of Canadian rail subsidies under the Western Grain Transportation Act - WGTA) have increased the incentives for raising livestock there. There also has been significant growth over the past decade in the export of live hogs from Manitoba and Ontario, as U.S. packers have outbid packers in those provinces. With the exception of health restrictions, there are currently no U.S. barriers to Canadian hog imports.

With respect to U.S. hog exports to Mexico, Mexico's Safeguard TRQ may function to hold the number of hogs exported below what would have occurred in the absence of such restrictions. Likely as important, however, is the collective effect on exports of such factors as Mexican antidumping duties, domestic hog prices in the United States, the U.S.-Mexico exchange rate, and the varying growth rate of the Mexican economy.

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## **Pork**

### **Policy Changes Resulting from NAFTA**

*United States.* The majority of U.S. pork imports enter the country duty-free, but there are duties on several categories of processed pork, ranging from 1.2 cents per kilogram for sausages to 6.4 cents per kilogram for canned hams. Originally under CFTA, duties on Canadian pork were to have been phased out over the 9-year period that ended on January 1, 1998, but this schedule was accelerated to completion. U.S. duties on Mexican pork were eliminated at the start of NAFTA. However, some Mexican states are still considered to be hog-cholera endemic. Any pork imported from these states must be cooked and then sealed in air-tight containers.

*Canada.* Although CFTA called for Canadian duties on U.S. pork to be phased out over a 9-year period,

this process was accelerated to completion. Canada eliminated its duties on Mexican pork at the start of NAFTA, but any pork imported from Mexico must be cooked and then sealed in air-tight containers.

*Mexico.* Prior to 1994, Mexico levied a duty of 20 percent on most pork imports. Under NAFTA, the duties for Canada and the United States are to be eliminated gradually over the 9-year period that ends on January 1, 2003. A safeguard quota was placed on certain cuts of pork. If imports rise above that level, the duty reverts to the lower of the current MFN or pre-NAFTA levels. The safeguard, initially set at about 68,500 metric tons for all categories, expands 3 percent each year. The safeguard provision expires at the end of the 9-year transition.

### **Pork Trade under CFTA and NAFTA**

U.S.-Canada pork trade is now relatively free of trade barriers. Canadian exports generally move from Ontario and Quebec to the eastern United States, while U.S. processors primarily export hams to eastern Canada. The United States remains a net importer of pork from Canada, but U.S. pork exports to Canada experienced substantial growth during the last decade. Between 1990 and 2000, exports increased from 7,273 to 45,699 metric tons, with most of the growth occurring before 1997. In contrast, U.S. pork imports from Canada peaked at 200,752 metric tons in 1989 and then remained below 200,000 metric tons each year until 1998. In the last several years, imports have increased tremendously, from 188,355 metric tons in 1997 to 322,301 metric tons in 2000.

Since the implementation of NAFTA, U.S. pork exports to Mexico have grown from an annual average of 26,663 metric tons during 1989-93 to 49,372 metric tons during 1994-2000, while the average annual value of this trade increased from \$59 million to \$93 million. The volume of U.S. pork imports from Mexico continues to be extremely small due to disease problems in Mexico.

In the first year of NAFTA (1994), U.S. pork exports to Mexico grew dramatically, increasing 75 percent in volume and 63 percent in value. The greatest increase occurred in fresh, chilled, and frozen pork, although exports of prepared and preserved products also increased. In the wake of the peso crisis, Mexican demand for U.S. pork declined appreciably, causing exports to drop from 50,642 metric tons in 1994 to 20,962 metric tons in 1995.

Initially, lower-value pork products led the recovery in this trade. In 1996, U.S. exports to Mexico of prepared and preserved pork grew 27 percent in volume, while exports of fresh, chilled, and frozen pork continued to decline. Since then, higher-value products have registered the biggest increase in volume. Between 1996 and 2000, exports of fresh, chilled, and frozen pork climbed from 13,728 to 94,839 metric tons. Driven by continued economic expansion in Mexico, U.S. pork exports to Mexico have expanded at double-digit rates over the last 4 years. In 2000, this trade reached an all-time high of 109,223 metric tons, valued at \$197 million. Although the unit value of U.S. pork exports to Mexico is still relatively low, Mexico is the second largest foreign market for U.S. pork in terms of volume, following Japan.

### **Trade Issues**

*Health and Sanitary Issues.* As in the case of live hogs, U.S. health restrictions regarding hog cholera have led Mexican pork producers to complain that they are being unjustly prevented from exporting pork to the United States. Because the United States is committed to the regionalization of disease restrictions, USDA's Animal and Plant Health Inspection Service (APHIS) adopted rules in October 1997 that recognize regions, and levels of risk among those regions, with regard to the importation of animals and animal products. Moreover, in July 1997, the United States officially recognized the Mexican state of Sonora as being free of hog cholera.

### **NAFTA's Impact on Pork Trade**

CFTA and NAFTA have had a limited impact on North American pork trade. U.S.-Canada pork trade is relatively free of restrictions, while Mexico has reduced its tariffs on U.S. and Canadian pork from a pre-NAFTA level of 20 percent to 4 percent in 2001. While Mexico's tariff reductions have been an important contributing factor to the growth of U.S. pork exports to Mexico, the far more significant drivers of export growth have been the rapid recovery of the Mexican economy following its recession in 1995 and continuing economic growth since then.

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## **Poultry Meat**

### **Policy Changes Resulting from NAFTA**

*United States.* Prior to NAFTA, the United States imposed tariffs on poultry meat ranging from 2 to 10.6 cents per kilogram. Under CFTA, U.S. tariffs on Canadian poultry meat were to be gradually reduced over a 9-year period, beginning on January 1, 1989. As with other meats, the tariff reductions for poultry were accelerated to completion, and Canadian poultry now enter the United States duty-free.

Under NAFTA, the United States immediately eliminated its tariffs on Mexican poultry meat on January 1, 1994. However, all poultry products imported from Mexico must be cooked and sealed. The United States is in the process of determining whether parts of Mexico are free of both highly pathogenic avian influenza and exotic Newcastle disease. In May 1999, USDA issued a proposal to ease restrictions on the importation of poultry and poultry products from the Mexican states of Sinaloa and Sonora. Under the proposal, these imports would be subject to documentation that the poultry was indeed from those states and had not been in contact with exotic Newcastle disease. Also, since April 24, 2000, the United States has allowed processors in Sinaloa and Sonora to import live birds from the United States for slaughter and processing and then ship the processed parts back to the United States.

*Canada.* Prior to URAA, Canada's import quotas were tied to production decisions for its domestic supply controls. The import quota for broilers was set at 6.3 percent of the previous year's broiler production, and the import quota for turkeys was set at 2 percent of the current year's expected production. Under CFTA (and subsumed by NAFTA), the global quota allocations were increased to 7.5 percent for broilers and 3.5 percent for turkeys. Canada has also offered supplemental quotas, which in many cases raise imports well above the formal quotas. Under URAA, Canada converted its MFN quotas to a TRQ with a high over-quota tariff. Canada's new TRQ also includes poultry products, which had not been included in its previous global quotas.

*Mexico.* Prior to URAA, Mexico controlled poultry imports through import licenses and a 10-percent duty. Under NAFTA, a set of initial TRQ's totaling 95,000 metric tons was established on a variety of poultry

categories. Quantities above that amount initially were subject to over-quota duties ranging from 133 to 260 percent. The TRQ's expand 3 percent each year, and the over-quota tariffs are being phased out over the 9-year period that ends on January 1, 2003. To date, the Mexican government has chosen not to enforce its poultry TRQ's. Mexico's poultry imports from the United States, especially in parts and mechanically deboned meat (MDM), have greatly surpassed the duty-free levels set by the TRQ's.

### ***Poultry Trade under CFTA and NAFTA***

Prior to NAFTA, Canada had poultry production quotas and import limitations. These two policies make Canadian poultry meat prices higher than U.S. prices. The import controls were necessary to make the quotas an effective, price-increasing policy. The government had considerable discretion in setting quotas, and it was common for these quotas to be expanded using supplemental quotas. Even with supplemental quotas, Canadian prices were above U.S. prices.

Canada did not abandon its production quotas under NAFTA, but it did increase its import quotas. NAFTA did not alter Canada's basic mechanism for setting and allocating these quotas to Canadian importers. Canadian poultry meat imports were limited to set percentages of either the previous year's production or an estimate of current-year production. However, these quotas could be and often were expanded through the use of supplemental quotas. U.S. poultry meat exports to Canada were limited to these quotas.

Canada changed its poultry import scheme in response to URAA, replacing strict quotas with a TRQ with a restrictive, over-quota tariff rate. However, this policy change produces the same result: U.S. exports to Canada are limited to the quota. Twice since the implementation of NAFTA, Canada has changed how it allocates the quota among individual firms. On January 1, 1996, Canada made its first revision to its method of allocating import permits for chicken. The revised system established new allocation pools for each of the following categories of importer: processors, distributors, or food service. Participants might have either joined one of those pools or retained a fixed traditional import allocation.

Since 1999, Canada has allocated the chicken TRQ in the following fashion. Firms that imported chicken prior to the introduction of import controls in 1979 receive an allocation comparable to their initial share,

as do processors making chicken products that compete with non-controlled imports, such as TV dinners. Food service companies share an allocation of 2,500 metric tons on the basis of market share. The remainder of the TRQ is split 70/30 between processors (on the basis of market share) and distributors (on the basis of equal share). The new system is designed to increase the import allocation share of firms that contribute to employment and value-added activities in Canada, while eliminating allocations to firms that have not been actively involved in the chicken industry.

The expansion of import quotas has facilitated a marked increase in U.S. poultry meat exports to Canada. During the 1990's, this trade has more than doubled in volume, climbing from 51,192 metric tons in 1990 to 115,406 metric tons in 2000, while the value of this trade increased from \$125 million to \$243 million. Poultry meat imports from Canada are much smaller in volume but have increased substantially in recent years, from about 4,800 metric tons in 1995 and 1996 to 16,377 metric tons in 2000. Chicken accounts for much of this expansion. Between 1988 and 2000, U.S. chicken meat exports to Canada (fresh or frozen) increased from 24,130 to 86,662 metric tons, while the value of this trade increased from \$32 million to \$132 million.

As with other meats, U.S. poultry meat exports to Mexico have increased substantially under NAFTA. The value of this trade has climbed from an annual average of \$120 million during 1989-93 to \$216 million during 1994-2000, while the average annual volume has expanded from 103,032 metric tons to 214,375 metric tons. Much of this growth is due to continuing improvement in the Mexican economy, and sales generally have exceeded the within-quota levels of Mexico's TRQ's.

Mexico is the fourth largest U.S. export market for chicken meat, accounting for 7 percent of the total value of U.S. chicken exports in 2000. Exports of chicken meat have nearly doubled under NAFTA, increasing from an annual average of 61,007 metric tons during 1989-93 to 120,649 metric tons during 1994-2000. The average value of these exports increased from \$57 million to \$88 million across the same two periods.

Mexico is also the most important foreign market for U.S. turkey meat, accounting for 61 percent of export value in 2000. Turkey meat exports to Mexico have

nearly tripled under NAFTA, climbing from an average of 29,958 metric tons in 1989-93 to 82,976 metric tons in 1994-2000. The value of this trade expanded from \$42 million to \$105 million across the same two periods.

In contrast, U.S. turkey meat exports to Canada (fresh or frozen) have experienced substantial growth only in the last several years. After peaking at 2,478 metric tons in 1989, this trade averaged just 1,619 metric tons per year during 1990-95. Since 1996, annual export volume has surpassed the 1989 level, except in 1997. In 2000, U.S. turkey meat exports to Canada totaled 3,115 metric tons, with a value of \$10 million.

Mexican sausage manufacturers have argued successfully that charging over-quota rates on mechanically deboned poultry meat would put them at a price disadvantage by substantially raising the price of a major input. Imported sausage enters under a lower duty than poultry meat, and the Mexican poultry sector cannot supply sufficient quantities of low-priced mechanically deboned meat (MDM) to serve the domestic sausage industry. In response to this argument, the Mexican government has increased the within-quota quantities for certain kinds of poultry, thereby providing an additional impetus to U.S. poultry exports to Mexico.

### **Trade Issues**

*Canada's Poultry TRQ under URAA.* Canada's conversion of absolute quotas on poultry to a TRQ system under URAA resulted in a significant trade dispute between the United States and Canada. The United States argued that under NAFTA, neither country may impose higher tariffs on imports from the other country than agreed to under NAFTA. The United States also argued that each country must eliminate tariffs in accordance with NAFTA. Canada's view was that it had the right to convert non-tariff barriers to TRQ's under URAA and to apply those TRQ's to the United States under NAFTA. On December 2, 1996, a NAFTA panel issued its final report, finding that Canada's application of its new TRQ's to U.S. goods conforms with its NAFTA obligations. NAFTA's dispute settlement mechanism contains no appeal process.

*Sanitary Issues Concerning U.S.-Mexico Poultry Trade.* Discussions between Mexico and the United States are continuing as to how the concept of regionalism can be applied to Mexican poultry. Questions still to be resolved include the disease-free status of the Mexican states under consideration and the proce-

dures to be used to restrict interstate poultry shipments from Mexican states not declared to be disease-free.

On April 14, 1999, Mexico implemented a new rule requiring that all raw poultry imports, except those destined for further processing, have a certificate stating that they came from flocks free of avian influenza. The tests must be done within 15 days of slaughter.

Also, Sinaloa and Sonora may now import live poultry for slaughter and processing and then ship the meat back to the United States, under a rule issued by USDA on April 24, 2000. However, as of the end of 2000, no such import/re-export activities have taken place. While APHIS has approved the disease-free status of these two Mexican states, USDA's Food Safety Inspection Service (FSIS) has yet to approve any facilities there.

### **NAFTA's Impact on Poultry Trade**

It is difficult to assess the impact of CFTA and NAFTA on U.S. poultry exports to Canada. Had Canada strictly enforced its pre-NAFTA quotas of 6.3 percent of production for broilers and 2 percent for turkeys, U.S. poultry meat exports to Canada could have been 40-50 percent less than under the CFTA quotas. However, Canada has a history of offering supplemental permits to meet internal demand. While broiler exports declined between 1993 and 1996, they have since risen sharply. Broiler exports rose 16 percent in 2000 alone.

Although Mexico could have limited U.S. exports to its TRQ levels, it has been allowing larger in-quota imports than set under NAFTA. It is likely that this waiver would have occurred in the absence of NAFTA and URAA due to pressure from sausage manufacturers. In 2000, Mexico was the third largest market for broiler exports on a quantity basis and by far the largest export market for U.S. turkey products.

None of the policy reforms undertaken by the United States have had much effect on poultry imports from Canada and Mexico. The United States is one of the world's low-cost poultry producers and consequently imports very little poultry from any source.

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## Dairy

### **Policy Changes Resulting from NAFTA**

*United States.* For many years, the United States maintained a series of quotas on dairy products under Section 22 of the Agricultural Adjustment Act of 1932. Under CFTA and NAFTA, the United States eliminated its tariffs on Canadian dairy products over the 9-year period that ended on January 1, 1998, but it retained its quotas until the URAA took effect. Now, the United States maintains a system of TRQ's for dairy product imports, as it is entitled to do under the URAA and NAFTA.

Under NAFTA, the United States provided Mexico with a basket of TRQ's for dairy products, including several duty-free TRQ's, meaning that the within-quota amount enters duty-free. For milk powder, the initial quotas were 422 metric tons and 43 metric tons, depending on the type of powder. For cheese, the initial quota was 5,550 metric tons. Initially, the over-quota tariffs on milk powder ranged from 78 to 93.6 percent, and the tariff on cheese equaled 69.5 percent. Other products were assessed a tariff equal to the average of import protection during 1989-91. The TRQ's expand by roughly 3 percent each year over a 9-year period, and on January 1, 2003, the TRQ's and corresponding over-quota tariffs will be eliminated altogether. Under URAA, the United States replaced its quotas with a system of TRQ's and high over-quota duties. The market access granted to Mexico under NAFTA was incorporated into the URAA's TRQ's.

*Canada.* Prior to URAA, Canada maintained a system of import quotas and licensing requirements to protect its domestic supply management regime for dairy. Although Canada gradually eliminated its tariffs on U.S. dairy products under CFTA and NAFTA, most quotas and licenses remained in place until the implementation of URAA. Under that agreement, Canada converted its import quotas for dairy products to a series of TRQ's. These TRQ's were calculated on the basis of 5-percent minimum access for all dairy products, with some products receiving greater protection than others. Given the continuation of these quantitative restrictions, CFTA and NAFTA tariff reductions have offered few opportunities for the expansion of U.S. dairy exports to Canada. Moreover, Canada and Mexico agreed in NAFTA to exclude their bilateral dairy trade from trade liberalization.

*Mexico.* Prior to 1994, Mexico regulated its dairy imports by requiring import licenses. Tariffs tended to be modest, ranging from zero to 20 percent. Under NAFTA, Mexico provided the United States with duty-free access for 40,000 metric tons of milk powder, with an over-quota tariff of 48 cents per kilogram but not less than 139 percent ad valorem. The TRQ grows by 3 percent per year, and the over-quota tariff is being gradually eliminated over the 14-year period that ends on January 1, 2008. For 2001, the quota equals approximately 49,195 metric tons, and the over-quota tariff rate is 28.3 cents per kilogram but not less than 82.1 percent. The base tariff rate for other dairy products ranged from 20-40 percent. These tariffs are being phased out over the 9-year period that ends on January 1, 2003.

### **Dairy Trade under CFTA and NAFTA**

U.S.-Canada dairy trade has shifted a great deal in percentage terms from one year to the next. The United States has been a net exporter to Canada throughout the CFTA-NAFTA era. However, dairy trade between the two countries is a very small part of their total production and consumption. Thus, the large percentage fluctuations in trade have little significance.

U.S. dairy exports to Canada climbed from \$18 million in 1988 to \$217 million in 2000. Cheese and whey accounted for 15 percent and 16 percent of export value, respectively, in 2000. Between 1988 and 2000, U.S. cheese exports to Canada increased in value from \$6 million to \$32 million, while the volume expanded from 1,739 to 9,191 metric tons. Whey exports to Canada grew from \$3 million to \$35 million over the same period.

Over the 1988-99 period, U.S. dairy imports from Canada increased from \$22 million to \$185 million. However, this trade dropped to \$161 million in 2000, as Canada had to modify its dairy-pricing system in response to a WTO ruling that the system functioned as an export subsidy. U.S. cheese imports from Canada climbed from \$8 million in 1988 to \$28 million in 1999 and then declined to \$21 million in 2000. In volume terms, this trade expanded from 2,556 to 7,611 metric tons between 1988 and 1999, before dropping to 4,373 metric tons in 2000.

Imports of casein and casein mixtures dried up completely in 2000, although this trade exceeded \$1 million in 1989, 1990, and 1995. Fluid milk imports, including ultra-high temperature [UHT] pasteurized milk destined for Puerto Rico, have fluctuated greatly

under CFTA and NAFTA. These imports equaled \$16 million in 1999, but just \$9 million in 2000. Imports of butter and butterfat mixtures did not break the mark of \$1 million until 1997. This trade dropped from \$14 million in 1999 to \$8 million in 2000.

The United States maintains a surplus in its dairy product trade with Mexico, with exports of \$184 million and imports of \$21 million in 2000. However, this surplus has declined in recent years due to reduced sales of nonfat dry milk and increased imports of various dairy products from Mexico. U.S. dairy exports to Mexico peaked at \$252 million in 1993, the year immediately prior to NAFTA's implementation. Over the last several years, this trade has been in the neighborhood of \$180 million. The drop in export value is due to decreases in U.S. dairy export subsidies (mandated by URAA), declining international dairy prices, and other non-NAFTA factors.

Nonfat dry milk is the largest single category of U.S. dairy exports to Mexico, accounting for 29 percent of export value in 2000. Exports to Mexico of this product continue to fluctuate substantially under NAFTA, ranging from 2,030 metric tons in 1997 (with a value of \$3 million) to 61,363 metric tons in 1999 (with a value of \$88 million). This type of fluctuation in dairy trade with Mexico was common prior to NAFTA. U.S. nonfat dry milk exports fluctuate greatly as Mexico shifts between competing suppliers.

### **Trade Issues**

*Canada's TRQ's for Dairy Products.* Canada's conversion of its dairy quotas to TRQ's under URAA prompted a serious trade dispute with the United States. The United States argued that NAFTA prohibits its member countries from imposing import tariffs for other member countries that are higher than what is specified in the agreement. In addition, the United States argued that each member country must eliminate tariffs in accordance with NAFTA. Canada's view was that URAA gave it the right to convert non-tariff barriers to TRQ's and to apply those TRQ's to the United States.

On December 2, 1996, the NAFTA dispute settlement panel issued its final report, finding that Canada's application of its new TRQ's to U.S. goods conforms with its NAFTA obligations. Consequently, U.S. access to the Canadian market for dairy products remains unchanged. There is no appeal process in NAFTA's dispute settlement mechanism.

*Tariff Classification for Butteroil/Sugar Blends.* Since 1995, Canadian processors have been importing a blend of 49 percent butteroil and 51 percent sugar from various countries, including the United States. This blend is primarily used to produce ice cream. When taken separately, the two products face high import barriers. Butterfat imports face a TRQ, while a countervailing duty applies to sugar. Currently, there is neither a tariff nor a quantitative limit concerning how much of the butteroil/sugar blend may enter Canada, so imports have increased considerably. Dairy producers in Canada claimed that the Canadian government applied the wrong tariff classification when the product was first imported and that imports circumvent Canada's TRQ's for dairy products. On March 26, 1999, the Canadian International Trade Tribunal (CITT) ruled that imports of butteroil/sugar blends should not be reclassified under a different tariff line. Producer entities have filed an appeal, but the appeal has not yet been decided.

*Canadian Export Subsidy Case at the WTO.* In May 2001, Canada, New Zealand, and the United States reconvened before a WTO panel for hearings regarding Canada's measures to come into compliance with an earlier WTO ruling against Canada's dairy export regime. The original WTO panel ruled that Canada's Special Milk Classes constituted export subsidies under URAA and that Canada therefore was not meeting its reduction commitments.

During the hearings, New Zealand and the United States expressed their continued discontent with the new provincial dairy programs that Canada implemented in August 2000. Although Canada has modified its export program, the United States feels that the newly instituted measures share all of the critical elements that made the former special class system an export subsidy. The WTO Panel is expected to present their ruling by August 2001.

### **NAFTA's Impact on Dairy Trade**

CFTA and NAFTA have had little direct impact on U.S. dairy exports to Canada, as there was little change in dairy access under either agreement. On the whole, market access into Canada was limited by quotas and licenses prior to URAA and remains limited by prohibitive tariffs on over-TRQ quantities. There have been considerable year-to-year changes in U.S.-Canada dairy trade on a percentage basis. However, since the quantities traded between the two

countries are small, minor changes in volume and value produce large percentage changes in trade.

Although NAFTA has expanded U.S. access to the Mexican market, factors other than NAFTA have caused U.S. dairy exports to Mexico to decrease, compared with their level immediately prior to the agreement. Under URAA, the United States agreed to

cuts in export subsidies, and this has been a major factor in limiting U.S. dairy exports to Mexico. Mexico's TRQ's under NAFTA are not an impediment to U.S. dairy exports, as the United States only fills about 75 percent of Mexico's import quota for U.S. dairy products.

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# Grains, Oilseeds, and Related Products

## Corn

### Policy Changes Resulting from NAFTA

*United States.* Before NAFTA, the United States maintained tariffs of \$2.00 per metric ton on dent corn and \$9.80 per metric ton on non-seed corn other than dent. Under NAFTA, the United States immediately eliminated its tariffs on Mexican corn on January 1, 1994, and it continued to phase-out its tariffs on Canadian corn, as originally negotiated under CFTA. U.S. tariffs on Canadian corn were eliminated completely on January 1, 1998.

*Mexico.* Under NAFTA, Mexico immediately eliminated its import licensing requirement for corn and established duty-free TRQ's for the United States and Canada. Initially, the TRQ's were set at 2.5 million metric tons for the United States and 1,000 metric tons for Canada. These levels increase 3 percent each year during a 14-year transition, until the TRQ is eliminated on January 1, 2008. For 2001, the TRQ's are 3,074,685 metric tons for the United States and 1,230 metric tons for Canada.

Imports above the TRQ levels face an over-quota tariff that is being phased out over the transition period. In 1994, the over-quota tariff equaled the greater of 206.4 percent ad valorem or 19.7 cents per kilogram. For 2001, it is the greater of 127.1 percent or 12.1 cents per kilogram. However, Mexico generally has opted not to apply the over-quota tariff. Beginning on June 7, 2001, Mexico levied minor over-quota tariffs of 1 percent on yellow corn and 3 percent on white corn. These tariffs will remain in effect until the end of 2001.

*Canada.* Prior to 1989, Canada maintained import tariffs on corn ranging from 1.73 to 2.77 Canadian dollars per metric ton. Under CFTA and NAFTA, Canada gradually eliminated its tariff on U.S. corn over the 9-year period that ended on January 1, 1998.

### Corn Trade under CFTA and NAFTA

U.S. corn exports to NAFTA partners generally have been increasing under the agreement, but this trade continues to fluctuate in response to changes in corn production and the government policies of Canada

and Mexico (table I-1). For example, in 1996, Mexico suffered a severe drought and imported record amounts of U.S. corn, even in the face of high U.S. export prices.

Mexico has long been a major market for U.S. corn, with few imports from other suppliers. Trade has varied greatly over the years, in large part because of the impact of weather on Mexican production. However, Mexico's corn imports shrank to low levels during 1991-93, mainly due to Mexican agricultural policies that stimulated domestic corn production. Mexico's support prices for corn were well above international levels in the early 1990's, pulling planting area from other crops and into corn production. Moreover, Mexican trade barriers made it easier to purchase sorghum instead of corn.

U.S. corn exports to Mexico have exceeded the duty-free amount specified by the NAFTA TRQ in each year except 1997, when Mexican production increased and total consumption declined (table I-1). Feed use of corn in Mexico declined in 1996, and has not recovered through 2000. However, with reduced support

**Table I-1—U.S. corn exports to Mexico, 1989-2000**

Year	Quantitative level of the NAFTA TRQ	Actual exports	
		Volume	Value
	----- Metric tons -----		Million dollars
1989	n.a.	3,844,294	435
1990	n.a.	3,486,277	400
1991	n.a.	1,316,066	148
1992	n.a.	1,137,238	129
1993	n.a.	288,681	35
1994	2,500,000	3,054,111	340
1995	2,575,000	2,858,829	359
1996	2,652,250	6,314,387	1,003
1997	2,731,818	2,566,142	317
1998	2,813,772	5,245,670	590
1999	2,898,185	5,051,767	527
2000	2,985,131	5,194,328	511
Average, 1989-93	n.a.	2,014,511	229
Average, 1994-2000	2,736,594	4,326,462	521

n.a. = not applicable

Sources: For trade data, Foreign Agricultural Trade of the United States database; for TRQs, NAFTA Tariff Schedule of Mexico.



prices and increasing consumer demand for meat, U.S. corn exports to Mexico have stayed above 5 million metric tons per year since 1998.

The United States also trades smaller but significant amounts of corn with Canada. U.S. corn exports to Canada have increased in years when corn production in eastern Canada failed to keep pace with domestic demand. Strong demand in Canada, both for feeding and industrial processing, boosted these exports to 1.2 million metric tons in 1998. However, Canada harvested a record large corn crop in the fall of that year, so U.S. corn exports to Canada declined to 968,971 metric tons in 1999. With sharply reduced production and expanding animal numbers, these exports reached a record of nearly 1.5 million metric tons in 2000, with a value of \$126 million.

U.S. corn imports from Canada averaged 315,004 metric tons per year during 1992-96, but they slipped below 220,000 metric tons in 1997, 1998, and 2000, years of low Canadian production. Imports mainly move to corn deficit areas in the eastern United States and to Puerto Rico, where the Jones Act makes transport from U.S. origins prohibitively expensive.

### **Trade Issues**

In response to a complaint filed by the Manitoba Corn Growers Association, Canada's Commissioner of Customs and Revenue launched an investigation into the alleged injurious dumping and subsidization of certain U.S. corn on August 9, 2000. The investigation only concerns imports for use or consumption west of the Manitoba/Ontario border.

On November 7, 2000, the Commissioner made a preliminary determination of dumping and subsidizing and assessed a provisional duty of 1.58 Canadian dollars per bushel. Although the Commissioner's final determination in February 2001 reduced the combined dumping and subsidy amounts to 1.30 Canadian dollars per bushel, the provisional duty remained in effect until March 7, 2001. On that date, the Commissioner issued a final ruling that ended the case and the duties were refunded. Interestingly, the provisional duty had little effect on the volume of Canadian corn imports from the United States. Instead, its main impact was to divert imports to border crossings east of the Manitoba/Ontario border.

### **NAFTA's Impact on Corn Trade**

U.S. corn exports to Mexico are somewhat higher due to NAFTA than they would have been otherwise. However, the strong growth in these exports is primarily due to changes in Mexico's domestic agricultural policies and a series of severe droughts in Mexico.

Prior to NAFTA, Mexico made substantial changes in its domestic agricultural policies. While these were not mandated by the trade agreement, they have provided an important stimulus to U.S.-Mexico corn trade. First, in the early 1990's, the Mexican government ended its official prohibition of feeding corn to livestock. This ban, intended to protect the supply of the country's staple food grain, was so effective that sorghum had become Mexico's chief feed grain.

Second, the Mexican government reduced its very high price supports for corn in order to bring them more in line with U.S. and international prices. This ended a policy that distorted land use and inflated the costs of corn to users. As a result, the amount of arable land devoted to corn production fell, and prices have come down to more reasonable levels for industrial users and feeders.

CFTA and NAFTA have had a small, positive effect on U.S.-Canada corn trade in both directions. However, local availability of corn in eastern Canada has had a greater impact on trade than the two agreements.

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### **Sorghum**

#### **Policy Changes Resulting from NAFTA**

*United States.* Under NAFTA, the United States immediately eliminated its tariffs on Mexican sorghum on January 1, 1994.

*Mexico.* Under NAFTA, Mexico immediately eliminated its seasonal tariff of 15 percent on U.S. sorghum on January 1, 1994. Canada's improved access to the Mexican sorghum market under NAFTA is relatively meaningless since Canada does not produce sorghum in large quantities due to its cooler climate.

*Canada.* Under CFTA, Canada immediately eliminated its tariffs on U.S. sorghum on January 1, 1989. Under NAFTA, Canada did the same for Mexican sorghum on January 1, 1994.

## **Sorghum Trade under CFTA and NAFTA**

The experience of U.S. sorghum exports to Mexico under NAFTA may be divided into two periods: 1994-96 and 1997 to the present. During the first period, export volume decreased, despite Mexico's tariff elimination for U.S. sorghum. This decrease in trade is the product of developments in the Mexican corn sector. Mexican feed use of sorghum declined during 1991-94, as livestock producers started to use more corn as a feed grain. Once the Mexican government reduced its very high support prices for corn, the amount of land devoted to sorghum increased and sorghum production rebounded. As a result, Mexican feed use of sorghum has grown since 1995. Limited water supplies for irrigation also encourage a shift from corn to sorghum production.

As a result of increased domestic sorghum production and product switching in livestock rations in favor of corn, U.S. sorghum exports to Mexico declined from 3.6 million metric tons in 1993 to 3.4 million metric tons in 1994. Exports fell to 2.2 million metric tons in 1995 and 2.0 million metric tons in 1996, as U.S. corn exports to Mexico continued to exceed the TRQ. However, due to higher prices during 1994-96, the value of these imports changed less than the volume. In fact, the value actually increased in 1994 and 1996.

This trend reversed itself beginning in 1997, as prices declined and import volume increased. In 1999, Mexican imports of U.S. sorghum exceeded 4 million tons for the first time in 7 years. In 2000, these imports reached 4.7 million metric tons, nearly surpassing the record set in 1992. Mexico's feed manufacturers have purchased more U.S. sorghum because the product automatically enters Mexico duty-free and is not governed by a TRQ. In contrast, corn importers must obtain permission from the Mexican government to utilize the corn TRQ for Canada or the United States. In 2001, Mexico is likely to import less sorghum because of the small U.S. crop.

The United States also exports very small amounts of sorghum to Canada - less than 1 percent of corn's volume, the leading U.S. feed grain export to Canada. Under CFTA and NAFTA, U.S. sorghum exports to Canada have risen from 1,707 metric tons to an average of 4,121 metric tons during 1996-2000, but this trade remains small compared to corn.

## **Trade Issues**

In late 1996, the Mexican government's slow issuance of phytosanitary permits delayed U.S. sorghum exports

to Mexico. After consultations with suppliers, importers, and end-users, the government began to issue these permits in a more timely fashion.

## **NAFTA's Impact on Sorghum Trade**

Without NAFTA's elimination of Mexican tariffs on U.S. sorghum, U.S. sorghum exports to Mexico would probably have fallen further than they did during 1994-96. Had the reduction in tariffs not occurred, it is likely that sorghum would have been less price-competitive against corn and imports would have declined further as increasing quantities of feed corn were imported. However, if corn imports had not increased (partly as a result of NAFTA), then U.S. sorghum exports to Mexico would have been much higher during 1994-2000.

The elimination of Canadian tariffs on U.S. sorghum has helped the product to compete in the Canadian market, but transportation costs limit the potential growth of U.S.-Canada sorghum trade. Other U.S. feed grains are produced closer to the Canadian border, and sorghum's price discount is not usually enough to interest Canadian users.

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## **Barley**

### **Policy Changes Resulting from NAFTA**

*United States.* Under CFTA and NAFTA, the United States gradually eliminated its tariff on Canadian barley over the 7-year period that ended on January 1, 1996. Under NAFTA, the United States immediately eliminated its tariffs on Mexican barley on January 1, 1994.

*Mexico.* Prior to 1994, Mexico required the licensing of barley imports from Canada and the United States. In addition, Mexico's base tariff on barley was the greater of 128 percent ad valorem or 15.5 cents per kilogram, while its base tariff on malt was the greater of 175 percent ad valorem or 21.2 cents per kilogram.

Under NAFTA, Mexico immediately eliminated its import licensing requirement for U.S. and Canadian barley on January 1, 1994. In its place, Mexico created a duty-free TRQ for each country. For 1994, the TRQ's were set initially at 30,000 metric tons for Canada and 120,000 metric tons for the United States. These amounts increase by 5 percent each year, until the TRQ's are eliminated on January 1, 2003. For 2001, the TRQ

for the United States equals 168,852 metric tons, and the TRQ for Canada equals 42,213 metric tons.

Imports above these amounts face an over-quota tariff that is being phased out over the transition period. For 1994, the initial over-quota tariff for barley was set at the greater of 122.8 percent ad valorem or 14.8 cents per kilogram. For malt, the initial over-quota tariff equaled the greater of 168 percent ad valorem or 20.3 cents per kilogram. For 2001, the over-quota tariff for barley equals the greater of 48.6 percent or 5.8 cents per kilogram, while the corresponding tariff for malt equals the greater of 66.5 percent or 8 cents per kilogram. These tariffs are scheduled for complete elimination on January 1, 2003.

*Canada.* Under CFTA, Canada agreed to a 9-year elimination of tariffs on U.S. barley imports. Under Article 705 of CFTA, Canada agreed to remove its quantitative restrictions when the 2-year average of the level of U.S. Government support for barley is less than that of Canada's.

Canada required import licenses for U.S. barley and barley products until August 1, 1995, when it converted these licenses to TRQ's in accordance with URAA. Over-quota tariffs were initially set at more than 100 percent and then reduced by 36 percent over the 6-year period that ended on January 1, 2001. The within-quota tariff was eliminated on January 1, 1998.

### **Barley Trade under CFTA and NAFTA**

The United States imports significant amounts of malting barley from Canada, reflecting a trend that began in the late 1980's. This trade is driven by the relative strength of the U.S. dollar and a continued interest in diversified supplies, dating back to the North American drought of 1988. The largest U.S. brewer now contracts with Canadian farmers to grow U.S. barley varieties in Canada for use in the United States. Following a sharp drop in U.S. feed grain production in 1993 due to adverse weather, U.S. barley imports nearly tripled in 1994, reaching a record 1.9 million metric tons. These imports consisted largely of feed barley. Since 1994, imports generally have declined in volume. In 2000, this trade equaled 566,375 metric tons, with a value of \$75 million. Virtually all the barley imported by the United States comes from Canada.

U.S. barley exports to Mexico grew in volume during the first three years of NAFTA, climbing steadily from

78,058 metric tons in 1993 to 269,610 metric tons in 1996. This placed Mexico as the largest foreign market for U.S. barley, as sales to other markets slumped. Since then, competition from Canada has caused U.S. barley exports to Mexico to decrease. During 1997-2000, this trade averaged 112,673 metric tons per year. This level is favorable when compared to 1991-93, but it is less than the volume of trade in 1989 and 1990. Still, Mexico is the third largest foreign market for U.S. barley, following Saudi Arabia and Japan.

Mexico's barley imports are largely tied to the beer industry. Most U.S. barley exports to Mexico are used for malting. Rising beer production reflects both domestic and export demand, with Mexico supplying a substantial amount of beer to the United States. Mexico is the largest beer exporter to the United States, surpassing Canada in 1996 and Holland in 1997. However, the increase in U.S. malting barley exports to Mexico in 1994 and 1995 was accompanied by an overall drop in U.S. exports of malting barley. The expansion of malting facilities in Mexico brought about a partial shift in imports from barley malt to malting barley to be processed in Mexico.

### **Trade Issues**

*Canadian TRQ on Barley.* Under URAA, Canada converted its barley import license to a TRQ. The United States viewed the creation of the TRQ as a violation of NAFTA, since the agreement generally prohibits member countries from increasing tariffs or introducing new tariffs. Ultimately, Canada and the United States presented their arguments before a NAFTA dispute resolution panel. On December 2, 1996, the panel issued its final report, finding that Canada's application of the TRQ to U.S. goods conforms with its NAFTA obligations. However, in 1998, Canada agreed to eliminate the TRQ, setting the stage for increased U.S. barley exports to Canada. This trade topped 30,000 metric tons in 1999 and 2000, as product moved to feedlots near the border in Alberta and Saskatchewan. Still, these volumes are relatively small.

### **NAFTA's Impact on Barley Trade**

U.S. barley imports from Canada have been very large since 1994, but the impact of CFTA and NAFTA on this trade has been minor at best. The sharp rise in U.S. barley imports from Canada in 1994 was mainly the result of a feed grain shortage in the United States caused by flooding in the U.S. Midwest during 1993, not because of NAFTA.

NAFTA has had a small, positive impact on U.S. barley exports to Mexico, with guaranteed annual increases in the duty-free TRQ of 5 percent. In the absence of NAFTA, Mexico's import licensing requirement would have continued to limit barley imports for feed, but it is likely that Mexico's expanding beer industry would have encouraged the Mexican government to issue additional import licenses for malting barley.

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## Oats

### **Policy Changes Resulting from NAFTA**

*United States.* The United States already had a Most Favored Nation (MFN) tariff of zero on oats prior to 1989, and it has continued this policy under CFTA and NAFTA.

*Mexico.* Mexico applies an MFN tariff of 10 percent ad valorem on oats imports. Under NAFTA, Mexico is phasing out its tariffs on U.S. and Canadian oats over the 9-year period that ends on January 1, 2003. For 2001, the tariff equals 2 percent.

*Canada.* Canada already had an MFN tariff of zero on oats imports prior to 1989, and it has continued this policy under CFTA and NAFTA. Under Article 705 of CFTA, Canada ended its import licensing requirement for U.S. oats and oat products in 1989.

### **Oat Trade under CFTA and NAFTA**

The United States is the largest oats importer in the world, despite exporting small quantities to the NAFTA partners, and Canada is the largest oats exporter to the United States. U.S. oat imports from Canada are now substantially larger in volume than they were prior to CFTA, but this trade continues to experience sharp fluctuations from one year to the next. During the first 5 years of CFTA (1989-93), U.S. oat imports from Canada ranged from 296,272 to 984,515 metric tons, compared with 298,580 metric tons in 1987 and 417,567 metric tons in 1988. In 1994, this trade reached 1.1 million tons, the first time that U.S. oat imports from Canada had surpassed the mark of 1 million metric tons.

Historically, Finland and Sweden have been Canada's two main competitors in the U.S. market for imported oats. However, when Finland and Sweden joined the European Union (EU) in 1995, the amount of export

subsidies available for Scandinavian oats fell, opening the door for increased Canadian oat exports to the United States at the expense of European producers. In 1997, exports reached 1.5 million metric tons, establishing a new record. In 1998 and 1999, they dropped to about 1.1 million metric tons per year, as the EU provided increased competition. In 2000, reduced competition from the EU allowed Canadian oat exports to the United States to reach 1.4 million metric tons, with a value of \$117 million.

Today, the oats markets of Canada and the United States are more closely integrated than the markets of most other commodities. The removal of oats from the control of the Canadian Wheat Board in 1988 was an important step that has allowed free markets to evolve. The relative strength of the U.S. dollar has made purchases of Canadian oats more attractive, and Canada generally produces more consistent supplies of high-quality oats than the United States. While U.S. oats production has continued to decline, Canada's oats production has increase slightly in recent years. There is some evidence of more oats being grown in Manitoba, closer to the U.S. population centers. However, the major growing areas are in the more distant provinces of Alberta and Saskatchewan.

### **Trade Issues**

There have been no trade issues involving oats.

### **NAFTA's Impact on Oat Trade**

CFTA and NAFTA have not directly affected U.S.-Canada oat trade, because the U.S. tariff on oats from Canada and other sources was already set at zero. The increase in oat imports from Canada during 1994 and 1995 reflects longer-term trends of more integration of the countries' grain markets, especially with the removal of the Canadian Wheat Board (CWB) from oat trade. The United States has increasingly become a net importer of oats and, because of geographical proximity, an attractive market for Canada. The accession of Finland and Sweden to the EU accelerated this trend by limiting their ability to compete in the U.S. market.

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## Wheat

### **Policy Changes Resulting from NAFTA**

*United States.* Under CFTA, the United States phased out its tariffs on Canadian wheat over the 9-year period that ended on January 1, 1998. Under NAFTA, the United States gradually eliminated its tariffs for common wheat from Mexico over the 4-year period that ended on January 1, 1998, and it is doing the same for durum wheat from Mexico over the 9-year period that concludes on January 1, 2003. For 2001, the tariff for durum wheat equals 0.154 cents per kilogram.

*Mexico.* Under NAFTA, Mexico immediately eliminated its import license requirement for all wheat on January 1, 1994. In addition, Mexico is phasing out its tariff on U.S. and Canadian wheat over the 9-year period that ends on January 1, 2003, starting from a base of 15 percent ad valorem. For 2001, the tariff rate equals 3 percent.

*Canada.* Under CFTA and NAFTA, Canada gradually eliminated its import tariff on U.S. wheat over the 9-year period that ended on January 1, 1998. Under the provisions of CFTA's Article 705, Canada removed its import license requirement for U.S. wheat and wheat products in 1991.

### **Wheat Trade under CFTA and NAFTA**

North American wheat trade has grown erratically under CFTA and NAFTA, with weather playing an important role. U.S. wheat exports to Mexico averaged 1.6 million metric tons per year during 1996-2000, more than 3 times the average volume during 1989-94. U.S. wheat imports from Canada broke the mark of 1 million metric tons for the first time in 1992 and peaked at 2.4 million metric tons in 1994. Since then, imports have ranged from 1.5 to 2.2 million metric tons per year.

Mexico's total wheat imports and its wheat imports from the United States declined in the first year of NAFTA (1994) because favorable weather resulted in a large Mexican wheat crop. Two years of drought followed, reducing the Mexican crop and boosting imports, in spite of the Mexican peso crisis in late 1994 and its accompanying recession in 1995. Lower exports supplies in Canada also helped to strengthen U.S. wheat exports to Mexico in 1995. Both Canada and the United States provide export credit guarantees to Mexico. These guarantees helped sustain Mexican

wheat imports when foreign exchange might have been a constraint. Although NAFTA tariff reductions were implemented gradually, they helped to facilitate Mexican imports during the drought years of 1995 and 1996 and helped to mitigate the damage to Mexican import demand caused by the peso crisis.

Since 1996, Mexico's wheat area generally has remained lower than its level during 1982-95 because of the many alternative uses for irrigated land. As wheat consumption has grown with an improving economy, Mexico's total imports have reached record levels. However, competition between Canada and the United States has been intense, since Mexico is phasing out its tariffs on both Canadian and U.S. wheat as part of NAFTA. Year-to-year changes in Mexican wheat production also affect U.S. wheat exports to Mexico. As a result, U.S. wheat exports to Mexico have fluctuated over the last 5 years, ranging from 1.1 million metric tons in 1997 to 1.8 million metric tons in 1999. In 2000, this trade equaled 1.7 million metric tons, with a value of \$197 million.

Canada is the main source of U.S. wheat imports, being a surplus producer with low transport costs to much of the U.S. market. In 1994, U.S. wheat imports from Canada surged to 2.4 million metric tons, an increase of 36 percent over the previous year's level. This dramatic increase was caused primarily by weather-related events in Canada and the United States and not by CFTA and NAFTA. Wet weather at harvest time and disease damaged the quality of Canada's wheat crop in 1993, and since the 1992 crop was also of low quality, Canada's supply of feed wheat was exceptionally high. At the same time, summer flooding in the U.S. Midwest dramatically reduced the size of the U.S. corn crop. With feed wheat supplies unusually large in Canada and feed grain supplies tight in the United States, the stage was set for a surge in U.S. imports of Canadian wheat.

U.S. wheat imports from Canada dropped to 1.5 million metric tons in 1995 and 1.3 million metric tons in 1996, as grain supplies on each side of the border returned to a more normal situation. Moreover, the 1-year TRQ and end-use certificates (EUC's) imposed in the latter stages of 1994 (see Trade Issues section) may have offset any stimulus to trade caused by reduced tariffs. Also, U.S. wheat imports from Canada continued to decline in 1996 because of limited supplies within Canada and because other export destinations offered higher returns than the U.S. market.

This was the result of a dramatic increase in world wheat prices in 1995/96.

Since 1997, U.S. wheat imports have been concentrated in the U.S. Northeast, where wheat producers from eastern Canada have a comparative transportation advantage over wheat growers in the western United States. During 1997-99, this trade averaged 2.1 million metric tons per year. In 2000, imports declined slightly to 1.8 million metric tons, with a value of \$227 million.

### **Trade Issues**

Of all the grains, wheat has experienced the most contentious trade disputes since the implementation of NAFTA.

*Tariff Rate Quota on U.S. Wheat Imports from Canada.* The sharp rise in U.S. wheat imports from Canada during the 1993/94 crop year, following several years of increasing imports, resulted in a request for a U.S. International Trade Commission (ITC) Section 22 investigation. The ITC determined that the increased imports of wheat, wheat flour, and semolina were materially interfering with USDA's price and income support programs and forwarded its recommendations for possible action to the President. These recommendations ranged from a strict import quota of 900,000 metric tons to various TRQ's.

In September 1994, Canada and the United States confronted this unfolding dispute by completing a Memorandum of Understanding (MOU) on Grains. Under the MOU, the United States established a temporary TRQ for the 12-month period running from September 12, 1994 to September 11, 1995. Access at the lower NAFTA tariff levels was limited to 300,000 metric tons for durum wheat and 1,050,000 metric tons for other wheat (excluding white winter wheat not produced in western Canada).

*Mexico's Countervailing Duty Investigation on U.S. and Canadian Wheat Imports.* On April 4, 1994, the Mexican government initiated a countervailing duty investigation on subsidized wheat imports from the United States and Canada. Mexico also began to subsidize flour millers that purchased domestic wheat. The subsidy was set at a value equal to the price difference between imported and domestic wheat. Austerity measures led to the cancellation of this subsidy in 1995. In March 1996, the Mexican Government terminated the investigation because the United States had stopped using the Export Enhancement Program (EEP)

and because Canada had eliminated the Western Grain Transportation Act (WGTA) on July 31, 1995. The WGTA was the only wheat export subsidy notified by Canada in the Uruguay Round negotiations.

*Karnal Bunt.* A fungal disease has presented challenges to the U.S. wheat industry. Karnal bunt is harmless to humans but can cause an unpleasant odor and taste in flour made from wheat that is highly affected by the disease. The fungus is spread by airborne spores that also can be carried on plants, soil, farm equipment, and vehicles.

The first discovery of Karnal bunt in the United States occurred in March 1996 in Arizona. Subsequently, the fungus was found in parts of California, New Mexico, and Texas. During 1999 and 2000, the fungus was not found in national surveys. However, wheat fields in several parts of Texas were found to be infected in June 2001. Currently, USDA and the Texas Department of Agriculture are working to address the problem, and a Federal quarantine has been imposed in areas where Karnal bunt was detected.

Canada's initial response to the 1996 discovery was to ban all imports and trans-shipments of U.S. durum wheat and all grain imports from the four quarantined States in order to ensure the integrity of the Canadian grain system. Although Canada only imports a small amount of U.S. wheat, approximately 1 million tons of U.S. wheat annually pass through the Canadian ports of the St. Lawrence Seaway system to third-country markets. Following bilateral negotiations with the United States, Canada agreed to permit in-transit shipments of U.S. wheat through the Seaway once again, beginning in early April 1996. In-transit shipments are those that do not stop at Canadian ports. Canada also allowed non-durum wheat from the United States to be transshipped through Canadian grain elevators and agreed to reassess its prohibition on durum wheat based on additional survey and sampling data provided by the United States.

Following the signing of a Record of Understanding on agricultural trade in December 1998, Canadian and U.S. authorities have worked to establish new phytosanitary requirements that adequately address the Karnal bunt problem while providing greater opportunities for U.S. wheat exports to Canada. As part of the Wheat Access Facilitation Program, approved growers in eligible States may ship wheat under a "Master Phytosanitary Certificate." With this certificate, each individual wheat shipment is not required to be tested,

as long as at least one sample per grower, per crop, is officially tested and found to be free of Karnal bunt spores. This program was implemented for Montana and North Dakota in 1999. In addition, Canada has applied a “regionalized” approach to the testing of U.S. wheat exports for Karnal bunt. As of April 1, 1999, Canada recognized 14 States to be free of Karnal bunt: Connecticut, Maine, Massachusetts, Michigan, Minnesota, Montana, New Hampshire, New Jersey, New York, North Dakota, Pennsylvania, Rhode Island, Vermont, and Wisconsin.

After the first U.S. discoveries of Karnal bunt, Mexico announced that it would prohibit the importation of wheat produced or stored in Arizona, New Mexico, California, and certain parts of Texas. Mexico will import U.S. wheat from non-quarantined areas if the grain is tested and certified to be free of Karnal bunt or, if produced within the quarantine area, fumigated with methyl bromide.

Karnal bunt has been detected in some areas of north-west Mexico since the late 1970's, long before the implementation of NAFTA. In 1983, the United States banned wheat imports from Mexico to prevent the introduction of the fungus. Article 722 of NAFTA established a Committee on Sanitary and Phytosanitary Measures. In the committee's June 1996 meeting, Mexico sought recognition from the United States that the Mexicali Valley region is free of Karnal bunt and eventually a protocol was established allowing some Mexican wheat to enter the United States.

*End-Use Certificates.* As a result of the Article 705 calculations under CFTA, Canada removed its import licensing requirement for U.S. wheat and wheat products in 1991. Subsequently, Canada required that U.S. wheat be accompanied by an end-use certificate (EUC) to ensure that Canadian variety controls and quality standards are maintained. The purpose of the U.S. EUC requirement is to prevent imports from benefiting from U.S. export programs. The United States will continue this requirement as long as Canada also maintains its EUC requirement.

The JCG examined the EUC requirements of both Canada and the United States and concluded that the requirements were cost-raising irritants to trade. As a result, the JCG recommended that both countries eliminate their EUC requirements. Unfortunately, Canada and the United States have not been able to agree upon a satisfactory replacement for the EUC's.

*Section 301 Case.* In response to a petition filed by the North Dakota Wheat Commission on October 23, 2000, the U.S. Trade Representative initiated a Section 301 investigation of certain trade practices of the Canadian Wheat Board (CWB). It is alleged that the CWB engages in unreasonable trade practices, both in the United States and in third countries, and that these practices have resulted in economic harm to U.S. wheat growers. According to the petition, the CWB has pricing flexibility not available to private wheat traders, which allows it to make standing offers to undersell U.S. wheat in certain markets, consistently offering to sell wheat at less than the market value.

### ***NAFTA's Impact on Wheat Trade***

Policy changes, including those associated with NAFTA, resulted in record wheat imports by Mexico in 1998, even though the tariff reduction was not large. The indirect effect of NAFTA on Mexico's wheat area may contribute significantly to increasing imports. Under NAFTA, U.S. wheat exports to Mexico have risen from 967,000 tons in 1993 to 1.7 million tons in 2000. The value of these exports jumped from \$143 million in 1993 to \$344 million in 1996, as U.S. prices gained strength due to tight supplies and strong demand, but with lower prices in 1997 and 1998 the value of wheat shipments has declined.

Tariff reductions under CFTA and NAFTA have contributed to increased U.S. wheat imports from Canada. The sharp rise in U.S. wheat imports from Canada in 1994 was mainly the result of weather-related events and not because of the two agreements. However, NAFTA has facilitated imports, as Canadian grain flows that used to run from west to east within Canada due to tariffs, quotas, and transportation subsidies, now move south to the United States, in keeping with the expectations of location economics.

Confronting uneven State enforcement of U.S. trade regulations, and asymmetrical wheat trade regulations, Canada and the United States negotiated an agreement in 1998 that improved U.S. access to Canadian markets and allowed for the careful monitoring of trade. However, U.S. wheat is not moving to Canada in any significant volume. During 1991-94, U.S. wheat exports to Canada averaged 21,250 metric tons per year, but they equaled only 496 metric tons in 2000 and just 20 metric tons in 1999.

Although U.S. wheat exports to Canada in the form of grain have been insignificant despite CFTA and

NAFTA tariff reductions, wheat product exports have continued to grow. Tariff reductions helped increase U.S. wheat product exports to Canada. Canada removed its import licensing requirement for U.S. wheat and wheat products in 1991 under the calculations of CFTA Article 705.

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## Rice

### **Policy Changes Resulting from NAFTA**

*United States.* Prior to 1995, the general U.S. tariff on imported rice ranged from 0.69 to 3.3 cents per kilogram, depending on the type of rice. Under the URAA, the United States reduced this tariff by 36 percent over the 6-year period that ended on January 1, 2001. For example, the MFN tariff for regular milled white rice dropped from 2.2 to 1.4 cents per kilogram. Under NAFTA, the United States is phasing out its tariff on Mexican rice over the 9-year period that ends on January 1, 2003.

*Mexico.* Before NAFTA, Mexico imposed import tariffs for the United States of 20 percent on brown and milled rice and 10 percent on rough and broken rice. In 1990, the tariff rate for milled and brown U.S. rice was raised from 10 percent to 20 percent in response to demands from Mexican millers who wanted to maintain a high mill utilization rate. Under NAFTA, Mexico is gradually lowering these rates to zero over the 9-year period that ends on January 1, 2003. For 2001, the tariff rates are 4 percent for brown and milled rice and 2 percent for rough and broken rice.

*Canada.* Under CFTA and NAFTA, Canada steadily reduced its tariffs on milled and semi-milled rice from the United States, until these tariffs reached zero on January 1, 1998.

Under URAA, Canada reduced its tariff for broken rice and whole or semi-milled rice from countries with MFN status from 5.51 to 3.53 Canadian dollars per metric ton over the 6-year period that ended on January 1, 2001. Canada's MFN tariff for 2001 is equivalent to about 2 percent of the average price of Thailand's high quality long grain rice (100 percent, Grade B).

Canada does not levy an import tariff on brown or rough rice. Canada produces no rice domestically, and Mexico does not export rice to Canada.

### **Rice Trade under CFTA and NAFTA**

U.S. rice exports to Canada and Mexico have increased 81 percent by volume and 54 percent by value since the inception of NAFTA, even though total U.S. rice exports have not exhibited any long-term growth. The volume of rice exports to Mexico in 2000 was more than three times the volume of rice exports to Canada. U.S. rice trade with Mexico has continued the general increase that was evident before January 1994 when NAFTA went into effect.

Before the mid-1980's, the Mexican government severely restricted the importation of rice through tariffs and quotas. Since 1982, Mexico has undergone phenomenal changes in its economic policy, becoming much more market-oriented. By the mid-1980's, the government began to phase out its protectionist policies and introduced major policy reforms to reduce the role of government in the economy. In 1986, Mexico joined the General Agreement on Tariffs and Trade (GATT) and subsequently reduced import tariffs and import requirements for many commodities as a first step to liberalizing trade. The combined effects of this unilateral trade liberalization and a drought were responsible for Mexico importing a record 189,000 metric tons (milled basis) of rice in 1989, with the United States as the sole supplier. In 2000, the United States exported more than 560,000 metric tons (product-weight basis) of rice to Mexico, making it the largest single-country foreign market for U.S. rice that year. On a milled-equivalent basis, over two-thirds of U.S. rice sales to Mexico are rough rice.

The United States currently has a virtual monopoly on rice trade with Mexico, primarily due to phytosanitary restrictions on Asian rice that Mexico enacted in 1993. During 1990-93, Mexico imported substantial quantities of Asian rice, but Mexico's crop was diminished by infestations believed to have come from rice imported from Asia. Citing fears of contamination from the Khapra beetle and other infestations, the Mexican government banned the importation of all Asian rice on September 20, 1993. The Khapra beetle was eradicated more than 40 years ago in the United States, and no known U.S. infestation currently exists.

In December 1996, Mexico dropped its absolute ban on Asian rice in compliance with the WTO. Asian rice access to Mexico is now subject to a detailed risk analysis of diseases and pests. Rice imports from Asia are impractical under these rules. Besides the United States, Argentina and Uruguay are the only other major foreign suppliers of rice to the Mexican market.



Per capita rice consumption in Mexico has risen slowly since the mid-1990's, reaching almost 13 pounds in 2000, but it is still less than half the U.S. level. Even today, Mexico has one of the lowest per capita consumption rates of any Latin American country, implying substantial room for growth. Rice generally has been the most expensive food grain in Mexico, with consumer prices increasing faster than those for other staple foods.

The United States is the largest supplier of rice to Canada, accounting for about 70 percent of Canada's annual imports. Thailand supplies most of the rest. Canada also purchases high-priced basmati rice from India and Pakistan and small quantities of high-quality japonica from Italy. Imports from these non-U.S. sources increased during the 1990's.

Canada's rice imports have exhibited noticeable growth since the late 1980's, after being nearly stagnant during the prior decade. U.S. rice exports to Canada reached a record 183,127 metric tons in 1999 and declined slightly to 179,954 metric tons in 2000, compared with less than 94,000 metric tons in 1988. More than half of these exports are high-quality, regular milled, long-grain white rice. Brown rice and parboiled rice each account for nearly 20 percent. Canada's imports of rough rice are negligible.

With no domestic rice production, Canada's import expansion can be traced primarily to population growth, the changing tastes of consumers, and the ethnic composition of recent immigrants. Although growth in per capita use has recently slowed, per capita consumption is now almost 18 pounds, more than twice the level estimated in 1985. Lower tariffs on U.S. rice under CFTA and NAFTA and on rice from other countries under URAA have slightly reduced the price of rice in Canada, likely accounting for a small share of the increase in rice consumption since 1989. However, the tariff on U.S. rice was not very high when CFTA went into effect - less than 2 percent of the price of imported U.S. rice - and overall, rice is an inexpensive food in Canada.

### **Trade Issues**

*Mexican Phytosanitary Requirements for Asian Rice.* On December 12, 1996, the Mexican government issued new import regulations that specified disease-free requirements for rice of Asian origin and required extensive quarantines for rice from some countries. While the new regulations have not yet directly opened the market to Asian rice, they potentially pave the way

for disease-free Asian varieties to enter Mexico. Asian access is subject to the presentation of a detailed pest risk analysis indicating that the applying country is free of certain pests and diseases. Although Thailand has long pressured Mexico on this point, there is no indication that any Asian country has presented the proper documentation as of yet.

*Mexican Detention of Railcars with U.S. Paddy Rice.* In November 1998, Mexican authorities detained a number of railcars containing U.S. paddy rice destined for Mexican mills, citing phytosanitary concerns. In early December 1998, the Mexican government released the railcars.

*Mexico Initiates Antidumping Investigation of U.S. Milled Rice.* In December 2000, the Mexican government began an antidumping investigation concerning long-grain milled rice from the United States. Mexican millers allege that U.S. long-grain milled rice is being sold to Mexican buyers at prices less than those prevailing in the United States for comparable products. Preliminary results of Mexico's investigation will be released in late June, indicating whether or not any antidumping duties will be applied to U.S. exports of long-grain milled rice.

### **NAFTA's Impact on Rice Trade**

Because Mexico's phytosanitary requirements effectively ban rice imports from Asia, NAFTA has had only a minor positive effect on U.S. rice exports to Mexico. However, without these strict phytosanitary standards, the tariff advantage enjoyed by the United States under NAFTA would be very important.

Given the unique U.S. position in the Mexican rice market, it is worthwhile to consider the potential impact on various classes of rice should Asian exporters find a way to satisfy Mexican phytosanitary concerns. In the market for milled rice, Thailand and Vietnam would likely have a price advantage over the United States, even when the transportation cost of shipping rice from Asia to Mexico is taken into account. However, other factors would favor U.S. milled rice over Asian rice. First, improvements in the transportation system to move rice from the United States to Mexico have increased the competitiveness of U.S. producers. Second, Mexican consumers seem to prefer the high quality and consistency of U.S. rice over lower-quality Asian rice and even high-quality Thai rice. Finally, U.S. rice can be shipped to Mexico in a much shorter time and in much smaller amounts

than rice from Thailand or Vietnam. However, if both the current ban and NAFTA did not exist, it is quite conceivable that Thailand and Vietnam would export substantial quantities of milled rice to Mexico at prices below the current U.S. level.

In the rough rice market, the United States would still be competitive, even if Asian exporters satisfactorily addressed Mexico's phytosanitary concerns. Several factors are responsible. First, neither Thailand nor Vietnam export rough rice, preferring to gain the value added from milling. In fact, no major rice-exporting country in Asia allows the shipment of rough rice. Although the major South American exporters export some rough rice, these shipments are currently quite small. Second, Mexico places a lower import tariff on rough rice than on milled rice. And third, Mexican millers prefer to import rough rice in order to maintain a high degree of mill utilization and to avoid competition with low-priced foreign milled rice.

However, with the upcoming elimination of Mexico's preferential tariff on rough rice in 2003, it is not obvious whether Mexico will continue to import primarily U.S. rough rice or shift to importing mostly milled rice, and if so, from which source. Although the United States would retain its transportation advantage, greater competition from South American exporters in the milled or rough rice market is possible, especially should the proposed Free Trade Agreement of the Americas (FTAA) be completed and implemented. Both Argentina and Uruguay currently ship small amounts of rice to Mexico.

The impact of CFTA and NAFTA on U.S. rice exports to Canada is quite small, probably less than 1 percent in volume. Continued tariff reductions under NAFTA have helped the United States remain the major rice exporter to Canada, and perhaps they have expanded U.S. sales to Canada by a very small amount. Although NAFTA gives the United States a price advantage over other exporters, most Asian rice exporting countries - except Thailand - currently ship rice of a quality lower than that favored in high-income countries. Rice shipped from Burma and Vietnam, as well as non-basmati rice from Pakistan and India, does not compete with U.S. rice in high-quality markets like Canada, and it is highly unlikely that such competition would have occurred in the absence of CFTA and NAFTA. With the United States already Canada's principal supplier of high-quality

long-grain rice, only a small share of expanding sales can be attributed to NAFTA.

However, Asian rice-exporting countries do possess a cost advantage over U.S. producers. If any of these exporters significantly improve the quality of their rice - by reducing the percent broken, improving their milling structure, or upgrading their drying, transporting, and packaging facilities - then NAFTA would become more important to maintaining the U.S. market position. Thailand already exports high-quality long grain rice as well as jasmine, its high-priced specialty rice. U.S. prices are generally well above prices for Thai rice of comparable quality. Packaging, marketing, quality, and lower transportation costs are likely more important to U.S. rice sales to Canada than the elimination of U.S.-Canada rice tariffs under CFTA and NAFTA.

For the U.S. rice sector, NAFTA's primary effects have been increased exports, slightly higher U.S. prices, and a fractional increase in production due to the higher prices. Since rough rice accounts for the bulk of the increase in U.S. exports, little if any expansion in mill employment has resulted from NAFTA. However, very small increases in employment resulting from greater handling and transportation may have resulted due to larger export volumes.

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## **Oilseeds and Oilseed Products**

### ***Policy Changes Resulting from NAFTA***

*United States.* Prior to 1989, the United States levied the following general tariffs on imported oilseeds and oilseed products:

Soybeans	zero
Soybean oil	22.5 percent
Soybean meal	0.3 cents per pound
Sunflower seeds	zero
Rapeseed	0.4 cents per bushel
Rapeseed meal	0.12 cents per pound
Canola oil	7.5 percent
Flaxseed	22 cents per bushel

Under CFTA, the United States immediately eliminated its tariffs for Canada on rapeseed, rapeseed meal, canola oil, and flaxseed on January 1, 1989.<sup>1</sup> Also, the United States phased out the tariffs on soybean oil and soybean meal over the 9-year period that ended on January 1, 1998.

Under NAFTA, the United States immediately eliminated its tariffs for Mexico on soybean meal, rapeseed, rapeseed meal, canola oil, and flaxseed on January 1, 1994. In addition, the United States is phasing out its tariff on Mexican soybean oil over the 9-year period that ends on January 1, 2003. For 2001, the soybean tariff rate is 2 percent.

*Mexico.* Prior to 1994, Mexico levied a seasonal tariff of 15 percent on U.S. soybeans. Under NAFTA, Mexico immediately reduced this tariff to 10 percent and narrowed the dutiable season from August 1-January 31 to October 1-December 31. In addition, Mexico is phasing out this tariff over the 9-year period that ends on January 1, 2003. For 2001, the seasonal tariff equals 2 percent.

Mexico also levied tariffs of 15 percent on soybean meal, 10 percent on crude soybean oil, and 20 percent on refined soybean oil before NAFTA. Under the agreement, Mexico is phasing out these tariffs for the United States, along with a tariff on minor oilseed meals and oils, over the 9-year period that ends on January 1, 2003. For 2001, the tariff rates equal 3 percent for soybean meal, 2 percent for crude soybean oil, and 4 percent for refined soybean oil.

*Canada.* Prior to 1989, Canada levied tariffs of 7.5 percent on soybean oil and 10 percent on other vegetable oils. Rapeseed, soybeans, soybean meal, and other meals entered duty-free. Under CFTA and NAFTA, Canada gradually eliminated the tariffs on soybean oil and other vegetable oils from the United States over the 9-year period that concluded on January 1, 1998. Under NAFTA, Canada immediately eliminated the same tariffs for Mexico on January 1, 1994.

<sup>1</sup> Canola seed is a variety of the oil crop rapeseed. Rapeseed oil is used in industrial applications such as lubricants, rubber, plastics, and nylon. Canola was bred to have much lower levels of toxic compounds in its oil and meal than conventional rapeseed, making the oil safe for food applications and the meal better for livestock feed. The U.S. Food and Drug Administration (FDA) approved the use of canola oil in the United States in 1985.

## ***Oilseed Trade under CFTA and NAFTA***

U.S. oilseed exports to Mexico climbed from 2.0 million metric tons in 1993 to 3.7 million metric tons in 2000, a gain of 89 percent. Over the same period, the value of these exports rose 62 percent to \$766 million. Soybeans comprise about 95 percent of U.S. oilseed exports to Mexico and account for nearly all the growth in these exports. Moreover, Mexico's share of U.S. soybean exports increased from 9 percent in 1993 to 13 percent in 2000, in both value and volume terms. In contrast, U.S. oilseed imports from Mexico are negligible and consist primarily of sesame seed.

The volume of U.S. oilseed exports to Mexico dropped 8 percent in 1995 in the wake of the peso crisis and subsequent recession. These difficult conditions sharply contracted consumer demand for poultry, pork, and dairy products, which in turn reduced crushing demand for oilseed meals used to feed Mexican livestock and dairy animals. As the Mexican economy recovered in 1996, U.S. oilseed exports to Mexico swelled 29 percent in volume, while higher prices raised export value by 54 percent.

During 1997-2000, U.S. oilseed exports to Mexico experienced moderate but sustained growth, with annual increases in volume ranging from 5 to 12 percent. However, as greater world supplies depressed oilseed prices, these exports declined in value from \$917 million in 1997 to \$727 million in 1999. In 2000, increased volume offset a decrease in price, boosting export value to \$766 million. Mexico also is importing a steadily increasing amount of Canadian rapeseed, which competes with U.S. exports.

New crushing facilities in Mexico have reduced the country's dependence on meal imports, even though U.S. soybean meal is increasingly affordable due to NAFTA's gradual elimination of Mexico's tariff on that product. Consequently, U.S. soybean meal exports to Mexico dropped from 365,433 metric tons in 1994 to 138,592 metric tons in 2000, a decrease of 62 percent. U.S. soybean meal still accounts for the bulk of Mexican protein meal imports, however.

Between 1993 and 1998, U.S. vegetable oil exports to Mexico doubled because of increasing consumption, declining tariffs, and larger U.S. supplies. The peso devaluation in December 1994 and short domestic oilseed supplies also hurt Mexican processors. Once the peso began to recover and tariffs for soybeans

declined, the health of Mexico's small domestic oil processing industry started to improve, making domestic processors more competitive with imported oils. Still, U.S. vegetable oil exports to Mexico equaled 430,279 metric tons in 2000, just 3 percent off the record set in 1998. In addition, the United States has gained a larger share of the Mexican vegetable oil market, as greater canola seed imports have supplanted imports of canola oil from Canada.

Between 1988 and 2000, U.S. oilseed and oilseed product exports to Canada increased from \$263 million to \$566 million. With the prominent exception of vegetable oils, this change generally is not attributable to CFTA and NAFTA, since many U.S. oilseeds and oilseed products entered Canada duty-free prior to CFTA.

U.S. soybean exports to Canada tend to fluctuate - sometimes wildly - depending on Canada's domestic harvest and crush margins. For instance, record Canadian crops of soybeans and rapeseed in 1994 dropped the volume of U.S. soybean exports to Canada by nearly 90 percent, compared with 1993. Improved crushing margins in Canada have encouraged greater U.S. soybean exports to Canada, with volumes of 327,027 metric tons in 1999 and 325,024 metric tons in 2000.

Canada is one of the largest markets for U.S. soybean meal, representing 10-15 percent of total U.S. exports. In response to rising Canadian exports and domestic consumption, U.S. exports to Canada have climbed gradually over the past several years, from 650,178 metric tons in 1996 to a record 808,865 metric tons in 2000. These exports were valued at \$161 million in 2000. This trade is well established, as Canada did not levy a tariff on U.S. soybean meal prior to CFTA. For instance, U.S. soybean meal exports to Canada equaled 706,539 metric tons in 1988, with a value of \$179 million.

U.S.-Canada vegetable oil trade is a major beneficiary of CFTA and NAFTA, and this trade is substantial in both directions. U.S. vegetable oil exports to Canada increased from 36,798 metric tons in 1988 to 314,930 metric tons in 2000. Canada's share of total U.S. vegetable oil exports (in volume) grew from 2 percent to 15 percent over the same period. U.S. vegetable oil imports from Canada (primarily canola oil) rose from 147,619 metric tons to 635,879 metric tons over the 1990-2000 period. In 2000, these imports were valued at \$322 million. The two major U.S. oilseed-

processing companies have plants in Canada and Mexico, but not a majority of capacity in either.

The United States is the largest importer of Canadian protein meals. Under CFTA and NAFTA, U.S. imports of oilseed meals - primarily canola meal - have increased more than five-fold, from 235,527 metric tons in 1998 to 1.2 million metric tons in 2000. By liberalizing vegetable oil trade, the expansion of oilseed crushing in Canada has generated more oilseed meals, which are primarily sold to cattle feedlots in the United States. In 2000, U.S. canola meal imports from Canada equaled 1.2 million metric tons, with a value of \$137 million.

The expansion of oilseed crushing in Canada has led to greater availability of Canadian canola meal and oil in the U.S. market. Despite a sharp reduction in Canadian canola production in 1996, U.S. imports of Canadian canola oils and meals, as well as rapeseed itself, have continued to grow. High prices for protein meal pushed U.S. canola meal imports close to 1 million metric tons in 1996 and 1997, and imports have exceeded this mark each year since. Even record U.S. canola acreages during 1996-98 could not ease the relatively tight U.S. vegetable oil market, encouraging greater imports of seed and oil from Canada.

The appreciation of the U.S. dollar vis-à-vis the Canadian dollar since 1998 also has facilitated larger volumes of imports. This appreciation has been coupled with much lower prices for protein meals, cutting the value of U.S. oilseed meal imports from Canada by 7 percent in 1998 and 20 percent in 1999. In 2000, imports rebounded to \$146 million (an increase of 9 percent), as increased volume offset a decrease in price.

### **Trade Issues**

There have been no major trade issues concerning oilseeds or oilseed products among the three NAFTA countries.

### **NAFTA's Impact on Oilseed Trade**

NAFTA's reduction of soybean tariffs increased U.S. soybean exports to Mexico only marginally above what would have occurred without the agreement. Instead, NAFTA's major influence on soybean trade is indirect. Lower barriers to U.S. feed grains have greatly expanded the Mexican feeding industry, thereby creating a much larger demand for protein meal and the imported soybeans needed to produce it. Mexican oilseed produc-

tion has plummeted under import pressure, although chronic pests and reduced government farm supports also have eroded the incentives for domestic production. NAFTA tariff reductions have done little to increase U.S. soybean meal exports to Mexico because of expanded Mexican crushing of U.S. soybeans.

In NAFTA's first 7 years, Mexico increased its share of edible oil that came from crushing imported oilseeds, a trend boosted by slightly greater tariff reductions for soybeans than for competing oils and meals. The majority of Mexican oil demand is now satisfied by oil crushed from imported oilseeds rather than imported oils. Still, NAFTA has modestly increased U.S. vegetable oil exports to Mexico above what would have occurred without the agreement.

CFTA and NAFTA have not had a major impact on U.S.-Canada trade in oilseeds and oilseed meals, mainly because this trade was quite liberal before CFTA. Much of the expansion in Canada's net trade is due to a larger surplus of canola meal (mostly used to feed cattle) and a deficit of soybean meal (mostly used to feed swine and poultry). Of all the oilseeds and oilseed products, CFTA and NAFTA have most affected U.S.-Canada trade in vegetable oil. The growth of this trade has modestly contributed to lower U.S. prices for domestically produced oilseeds. Between 1989 and 2000, Canadian vegetable oil output increased 0.9 million tons, while South American output expanded by 4.8 million and Southeast Asian output by 12.4 million. Therefore, gains in Canadian output have had a comparatively small impact on the world vegetable oil market. U.S. imports of Canadian vegetable oil are estimated to be 3-5 percent higher than what would have occurred without CFTA and NAFTA. The increase in U.S. vegetable oil exports to Canada as a result of CFTA is larger in proportionate terms but considerably smaller in absolute terms.

U.S. soybean crushing capacity expanded by 17 percent between 1993 and 1999, but employment in the U.S. oilseed crushing industry dropped from 10,700 in 1992 to 9,500 in 1997 (U.S. Bureau of the Census, 1997 *Economic Census*). Employment has steadily declined from 17,000 in 1980, which suggests an ongoing structural change in the industry—increasing automation—that is not related to NAFTA. In Canada, oilseed processing expanded sharply over the last decade as domestic oilseed production doubled. In 1987, Canada had a daily oilseed processing capacity of 6,850 metric tons. Today, there are 11 oilseed processing plants

in Canada with nearly 1,200 employees and an operating capacity of 16,865 metric tons per day.

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## **Peanuts and Peanut Products**

### ***Policy Changes Resulting From NAFTA***

*United States.* Prior to NAFTA and URAA, peanut imports were limited by quotas established under Section 22 of the Agricultural Marketing Act of 1932. Under NAFTA, the United States established a TRQ for Mexican peanuts (shelled/in-shell). The initial annual quota for 1994 was 3,377 metric tons, with over-quota tariffs of 120 percent for shelled peanuts and 186.1 percent for in-shell. The TRQ increases 3 percent each year, and the over-quota duties are scheduled to be phased out by January 1, 2008. For 2001, the TRQ equals 4,153 metric tons, and the over-quota tariffs are 81.4 percent for shelled peanuts and 123 percent for in-shell peanuts.

U.S. peanut butter imports from Canada are governed by URAA. Under the market access commitments of this agreement, the United States established a TRQ on imports of peanut butter/paste, with most allocated to Canada and Argentina. The Canadian portion of the TRQ is set at 14,500 metric tons. Under NAFTA, there are no quantitative restrictions on U.S. imports from Mexico of peanut butter/paste manufactured from Mexican-grown peanuts. However, the agreement's rules of origin stipulate that peanuts products imported from Mexico must be made from Mexican-grown peanuts in order to qualify for NAFTA benefits.

*Mexico.* Prior to 1994, Mexico had no tariff or quantitative restrictions on peanuts, but it did maintain a 20-percent tariff on peanut butter. Under NAFTA, Mexico is phasing out its tariff on U.S. peanut butter over the 9-year period that ends on January 1, 2003.

*Canada.* Canada has no restrictions or tariffs on peanut imports. However, prior to CFTA, it levied tariffs of 44.10 Canadian dollars per metric ton on peanut butter and 7.5 percent on peanut oil. Under CFTA and NAFTA, Canada gradually eliminated these tariffs for the United States over the 9-year period that concluded on January 1, 1998. Under NAFTA, Canada immediately eliminated its tariffs on peanut oil and peanut butter from Mexico on January 1, 1994.

## ***Peanut Trade under CFTA and NAFTA***

During 1994-2000, U.S. exports of peanuts and products to Canada and Mexico totaled over 900,000 metric tons on an in-shell basis, with a value of \$642 million. Raw peanuts accounted for the vast majority of these exports in both the Canadian and the Mexican cases. Of the 861,000 metric tons of raw peanuts shipped to these countries during this period, Canada purchased 70 percent. Although U.S. exports of peanut products to Canada and Mexico have increased under NAFTA, they accounted for only 5 percent of the volume and 10 percent of the value of U.S. peanut and peanut product shipments to these two countries during 1994-2000. Peanut butter and paste shipments totaled nearly 39,000 metric tons on an in-shell basis (\$39 million) over the 7-year period and accounted for 81 percent of total U.S. peanut product exports (62 percent of value).

U.S. imports of peanuts and peanut products from Mexico and Canada have increased under NAFTA. During 1994-2000, this trade totaled 249,000 metric tons on an in-shell basis, with a value of \$188 million. Thus, over the 7-year period since NAFTA's implementation, the United States has had a trade surplus of nearly 660,000 metric tons of peanuts and peanut products, with a net gain of \$455 million from peanut trade. Peanut products, primarily peanut butter and paste, make up the majority of U.S. imports in this category from Canada and Mexico. The United States imported a total of 212,000 metric tons of peanut butter and paste from Canada and Mexico during 1994-2000, accounting for 85 percent of total U.S. imports of such products.

In the first year of NAFTA (1994), U.S. peanut exports to Mexico (shelled and in-shell) equaled 26,004 metric tons, a 76-percent increase above the previous year's level. Exports remained at approximately this level during Mexico's recession-marred year of 1995. During 1996-99, exports held fairly steady, with an annual average of 38,580 metric tons. In 2000, this trade established a new record of 53,161 metric tons, with a value of \$33 million.

The TRQ that the United States established for Mexican peanuts enabled Mexico to export substantial quantities of raw peanuts to the United States for the first time. In 1994, these exports totaled 2,543 metric tons, compared with the initial TRQ of 3,377 metric tons. Despite the expanding TRQ, this trade has experienced both

increases and decreases from one year to the next. For example, exports dropped to 4,442 metric tons in 1999, a decrease of 21 percent compared with the previous year's level, as Mexico increased its shipments of peanut butter and paste. In 2000, Mexican raw peanut exports to the United States established a new record of 6,512 metric tons, with a value of \$4 million.

In July 1998, Mexico began to ship peanut butter/paste to the United States. (A small amount also was exported in 1994.) There are no quantitative limits on this trade, except that the product must be manufactured from peanuts grown in Mexico. In 2000, Mexico shipped 2,487 metric tons of peanut butter/paste to the United States, representing 13 percent of total U.S. imports. According to USDA's Foreign Agricultural Service, these imports are expected to grow in the future, as peanut butter/paste produced in Mexico enjoys a price advantage over U.S. product made with higher priced peanuts grown under the U.S. peanut program. Still, these imports are expected to supply only a small portion of U.S. consumption.<sup>2</sup>

Shelled or in-shell peanuts represent the majority of U.S. peanut exports to Canada. Since Canada produces no peanuts, imports are necessary to fill domestic demand. Between 1989 and 1992, U.S. peanut exports (shelled and in-shell) to Canada increased from 46,521 to 77,811 metric tons. During 1994-2000, these shipments averaged 86,141 metric tons per year on an in-shell basis.

During the first 9 years of CFTA and NAFTA, U.S. exports of peanut butter/paste to Canada increased from 127 metric tons in 1989 to 4,308 metric tons in 1997. Since then, exports have declined steadily, falling to 1,806 metric tons in 2000. Corresponding U.S. imports from Canada averaged 14,320 metric tons per year during 1995-2000, slightly less than the lower-tariff level specified by the U.S. TRQ.

### ***Trade Issues***

There have been no major disputes involving peanuts. However, a Section 22 action on peanut butter was considered in 1994, prior to implementation of the Uruguay Round TRQ and its application to Canada.

<sup>2</sup> U.S. Department of Agriculture, Foreign Agricultural Service, "Oilseeds: World Markets and Trade," February 2001, <<http://www.fas.usda.gov/oilseeds/circular/2002/01-02/febcoov.htm>>.

### **NAFTA's Impact on Peanut Trade**

Although NAFTA has had a direct impact on U.S.-Mexico peanut trade, other factors such as the peso devaluation and loss of access to credit by Mexican importers probably had a greater influence during the early years of the agreement. Since the implementation of NAFTA, U.S. peanut exports to Mexico have increased, but since Mexico had no tariff or other import restrictions on this trade prior to 1994, the increase cannot be directly attributed to the agreement.

Undoubtedly, NAFTA has increased U.S. peanut imports from Mexico up to the TRQ levels. In 2000, these imports were almost 5 times the level of total U.S. peanut imports in 1993. Attributing the entire increase to NAFTA would suggest that these imports are nearly 500 percent greater in volume (in comparison to a very low base) than what would have occurred without the agreement. The bulk of this growth took place in the

first 2 years of the agreement, when Mexican exports expanded to fill the amount permitted under the TRQ. The TRQ increases 3 percent per year, so future gains will be limited to that rate until the over-quota tariff falls enough to make Mexican peanuts competitive with domestic production.

CFTA and NAFTA have not affected U.S.-Canada peanut trade. The U.S. peanut program allows the export of surplus peanuts but requires that any peanut products exported from the United States must be manufactured from quota peanuts. Canada produces no peanuts, and its peanut butter/paste exports to the United States generally do not exceed the lower-tariff level associated with the URAA-specified TRQ.

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## Other Field Crops

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### Dry Beans

#### ***Policy Changes Resulting from NAFTA***

*United States.* Prior to 1989, the United States maintained import tariffs on dry beans ranging from 1.7 to 3.3 cents per kilogram. Under CFTA, U.S. duties on Canadian dry beans were to have been phased out over a 9-year period, but this process was accelerated and completed ahead of schedule. Under NAFTA, the United States immediately eliminated its tariffs on Mexican dry beans on January 1, 1994.

*Mexico.* Prior to 1994, Mexico restricted dry bean imports through import licenses. Under NAFTA, Mexico eliminated its licensing requirement and granted the United States a duty-free TRQ for common dry beans of 50,000 metric tons. Canada received a TRQ of 1,500 metric tons. The over-quota tariff for both countries was set initially at \$480 per metric ton, but not less than 139 percent ad valorem. From 1994 to 1999, this tariff was reduced by a total of 24 percent. Over the period 2000-08, it is being phased out in equal increments. Concurrently, the quotas expand 3 percent each year during the 14-year transition period. For 2001, the over-quota tariff equals \$283.73 per metric ton, but not less than 82.16 percent ad valorem.

*Canada.* Prior to 1989, Canada maintained duties ranging from 2.21 to 3.31 Canadian cents per kilogram on imported dry beans, depending on the type of bean. As part of CFTA, Canada agreed to phase out its tariffs on U.S. dry beans over a 9-year period. However, this process was accelerated and completed ahead of schedule.

#### ***Dry Bean Trade under CFTA and NAFTA***

The United States is a leading exporter of dry beans. In 2000, exports of such beans (excluding garbanzo beans, which are sometimes grouped with dry peas) totaled \$168 million, while imports (excluding garbanzo beans and guar seeds) equaled \$27 million. Traditionally, Canada has been a relatively minor market for U.S. dry beans, accounting for 2-3 percent of U.S. export value. However, Canada has experienced strong export demand (largely from the

European Union) since 1998. This boost in export demand created a supply gap in Canada in 1999, leading Canada to import a substantial quantity of low-priced U.S. beans. These purchases boosted Canada's share of U.S. dry bean exports to nearly 14 percent of volume in 1999. The following year, this share dropped back to 7 percent. Although the Canadian dry bean crop is much smaller than that of the United States, Canada is a strong competitor in the world market, traditionally exporting three-fourths of its annual production.

In contrast to Canada, Mexico historically has been a much more active, although highly variable, market for dry beans from the United States. During 1990-99, Mexico accounted for 21 percent of the value of U.S. dry bean exports, with the share ranging from just 5 percent in 1995 to 39 percent in 1998. Mexico accounted for 19 percent of U.S. dry bean export value in 2000. U.S. exports fell short of the TRQ in 1994 and 1995, but they exceeded it each year thereafter until 2000 due to a series of weather reversals (freezes and droughts) that limited Mexican production. In 2000, export volume to Mexico was just below the TRQ of 59,703 metric tons.

Dry beans are an important part of the Mexican diet, with per capita consumption averaging nearly 34 pounds - among the highest in the world. In contrast, per capita dry bean use is about 8 pounds in the United States, less than 2 pounds in Canada, and an estimated 8 pounds for the entire world. Because dry beans are a staple food in Mexico, imports rise in years of short domestic output.

Mexico is the world's sixth largest producer of dry beans, including both broad and round varieties. The United States is fifth. Most dry bean area in Mexico is not irrigated and thus susceptible to drought. In fact, drought-related shortfalls in production have occurred in each of the past 3 years. In 1998, the Mexican government authorized auctions of duty-free import permits over and above the NAFTA quota amount to cover a drought-related shortfall.

Excluding guar seeds, which are used largely for industrial purposes, imports accounted for about 4 percent of U.S. dry bean consumption during the 1990's - virtually unchanged from the 1980's. (Imports



were 5 percent of use in 2000.) In 2000, about 34 percent of the value of U.S. dry bean imports came from Canada. These imports primarily serve border areas of the United States. Reflecting the relative strength of the U.S. dollar, imports from Canada have been rising, averaging \$7 million during 1995-2000 - up 114 percent from 1990-94. Mexico accounted for about 13 percent of U.S. dry bean imports in 2000, with much of these imports serving niche markets. Imports from Mexico averaged \$3 million during 1995-2000, 4 times higher than in 1990-94.

### **Trade Issues**

The timing of Mexican auctions for NAFTA dry bean import permits has become a sore point to the U.S. industry over the past several years. During the first 7 months of 1999, Mexico failed to auction the permits for calendar year 1999, largely due to internal political reasons. This act of omission brought U.S. dry bean exports to Mexico to a virtual standstill. Moreover, it created a tremendous drag on the market, especially for growers and dealers of pinto and black beans, since these commodities were already in serious oversupply in the United States. Ultimately, an auction was held at the end of August to allocate 1999 import certificates for 48,000 metric tons of dry beans. The remaining permits for 9,963 metric tons of duty-free dry beans were assigned to a Mexican government agency that purchases food for social feeding programs.

In January 2000, the Mexican government announced that it would split the auctioning of NAFTA import permits into three separate occasions, each for one-third of the 59,703-metric-ton TRQ. The first auction was held in mid-February in which 19,901 metric tons of duty-free certificates for 2000 issued. Despite the original intention to hold three auctions, the final two auctions were combined into a single auction, originally scheduled for mid-August. However, this event was postponed until August 29, when the last 39,802 metric tons of permits were finally auctioned. The average bid was 1.15 pesos per kilogram (about \$5.60 per hundred-weight). This is about half the current grower price in the United States for several bean classes - including pinto and black beans, the most significant classes exported to Mexico. The first auction for 2001 import permits was held March 19, 2001, with permits for 15,374 metric tons of U.S. duty-free beans bringing a record-high average bid of 2.9 pesos per kilogram (\$13.75 per hundred-weight).

The continued escalation of bid prices on NAFTA auction certificates is causing concern in the U.S. dry bean industry. Depending on supply and demand, Mexican importers may be able to pass along some part of their permit costs to U.S. shippers, Mexican consumers, or both. Thus, high permit bids may translate into even more depressed market prices for U.S. shippers, and these prices already were hovering at or below break-even levels for most bean classes into 2001. In January 2001, the U.S. and Mexican governments conducted informal consultations on this topic.

### **NAFTA's Impact on Dry Bean Trade**

NAFTA has had little direct effect on dry bean trade, although the irregular timing of Mexico's auctions of import permits probably has had some influence on prices. When production shortfalls made it necessary to import dry beans during the past several years, the Mexican government issued import permits well in excess of the TRQ. This type of action is consistent with Mexico's historical import patterns. Although increased exports of dry beans to Mexico have occasionally helped to support dry bean prices in the United States, these exports were not the direct result of NAFTA.

NAFTA has facilitated and encouraged communications between member nations, which has helped to resolve disputes and to address industry concerns. Because Mexico is an important market for U.S. dry beans, any uncertainties caused by poor communication could have an adverse effect on the planting and marketing decisions of U.S. producers and the prices that they receive.

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## **Cotton**

### **Policy Changes Resulting from NAFTA**

*United States.* Under CFTA and NAFTA, Canada and the United States gradually eliminated their duties for each other on yarn and thread that qualify under the agreements' rules of origin, as well as for all fabric and apparel. This transition occurred over the 9-year period that ended on January 1, 1998.

Under NAFTA, the United States established a duty-free quota for Mexican cotton of 46,000 bales, two-and-one-half times Mexico's previous quota under Section 22 of the Agricultural Adjustment Act (7

U.S.C. 624). Prior to NAFTA, U.S. tariffs on cotton imports ranged from zero to 4.4 cents per kilogram. The NAFTA quota grows by 3 percent per year, and the tariff for over-quota shipments is being phased out over the 9-year period that ends on January 1, 2003. For 2001, the over-quota tariff is about 7 cents per kilogram, or 5 percent.

In addition, the United States reduced tariffs and expanded quota-free access for yarn, fabric, and apparel derived from yarn and fiber produced by a NAFTA country. The United States gradually eliminated its duties on 83-99 percent of Mexico's textile goods that satisfy NAFTA's rules of origin. This transition occurred over the 4-year period that ended on January 1, 1998. The United States also eliminated its import quotas for Mexican yarn and for fabric and apparel produced from yarn and thread from any NAFTA country.

*Mexico.* Prior to 1994, Mexico levied a 10-percent tariff on U.S. cotton. Under NAFTA, Mexico is phasing out this tariff over the 9-year period that ends on January 1, 2003. For 2001, the duty equals 3 percent.

On January 1, 1994, Mexico immediately eliminated its duties for key products of export interest to U.S. textile producers. Moreover, Mexico gradually eliminated its duties on 60-97 percent of U.S. textiles that meet NAFTA's rules of origin. This transition occurred over the 4-year period that ended on January 1, 1998.

*Canada.* Under CFTA and NAFTA, Canada and the United States gradually eliminated their duties for each other on qualifying yarn and thread and on all fabric and apparel over the 9-year period that ended on January 1, 1998. Quotas under the Multi Fiber Arrangement (MFA)<sup>1</sup> did not affect U.S.-Canada textile trade, so Canada made no policy changes in this area. Similarly, Canada did not levy an import tariff on cotton prior to CFTA and does not do so today.

### ***Cotton Trade under CFTA and NAFTA***

Mexico has become the world's largest importer of raw cotton, and almost all of these imports come from the United States. There is also significant two-way trade

<sup>1</sup> The MFA is a complex multilateral agreement that establishes quantitative restrictions for international textile and apparel trade. Under the World Trade Organization's Agreement on Textile and Clothing (ATC), these restrictions are now being dismantled.

in textile products, with the United States largely exporting fabric and other intermediate products and importing finished goods. Between 1993 and 2000, U.S. cotton exports to Mexico increased 155 percent, U.S. exports to Mexico of cotton textiles and apparel increased 479 percent, and U.S. imports of Mexican cotton textiles and apparel increased 756 percent. In 2000, the volume of U.S. cotton exports to Mexico reached 1.7 million bales, while exports and imports of cotton textiles and apparel equaled roughly 2 and 3 million bales, respectively.

Traditionally, Mexico has been an important producer and exporter of cotton, but Mexico's role as an exporter has diminished since the beginning of the 1990's. Since 1992, the United States has supplied at least half of Mexican cotton consumption. Mexico's textile industry possesses many new and modernized spinning units, which operate more efficiently with U.S. cotton than domestic Mexican cotton due to the characteristics of U.S. cotton, the location of the mills, and the nature of the new equipment in the mills. As a result, imports in the 2000/01 marketing year (August 1, 2000 to July 31, 2001) are expected to be more than 6 times the size of production, even though Mexican cotton production and, to a lesser extent, Mexican cotton exports have rebounded since the mid-1990's. Consumption is estimated to be about 1.9 million bales higher than production, with the United States virtually the sole import supplier.

U.S.-Mexico trade in cotton textiles also grew significantly during the 1990's, with a large deficit for the United States. During the late 1980's, Mexico began to liberalize its cotton and textile industries, and Mexico - along with the Caribbean Basin Initiative (CBI) countries - gained quota-free access to the United States for apparel and other products produced from U.S. fabric. Under NAFTA, Mexico's access to the U.S. market has surpassed that of the CBI countries, but CBI exports to the United States have continued to grow during the NAFTA era. The U.S. cotton textile trade deficit with Central America and the Caribbean now exceeds 1 million bales, compared with the pre-NAFTA average of 260,000, and trade in each direction is comparable to corresponding levels of U.S.-Mexico trade.

Cotton textile trade between Mexico and the United States was already large in both directions prior to NAFTA, but this trade has soared since the agreement's implementation, becoming perhaps the largest

cotton textile trading relationship in the world. U.S.-Mexico trade accounts for about 8 percent of world trade in cotton textiles, as NAFTA has permitted an increased division of labor between the two countries while the geographic proximity of the two countries allows producers to respond quickly to changing fashions. In 1998, Mexico became the largest net supplier of cotton clothing and textiles to the United States, and in 2000, the U.S. textile and apparel deficit with Mexico totaled about 1 million bales, compared with virtually no deficit in 1993. Note that U.S. raw cotton exports to Mexico also climbed more than 1 million bales between 1993 and 2000, essentially mirroring the changes in textile trade.

Canada's cotton consumption and imports have risen sharply since the advent of NAFTA. U.S. cotton exports to Canada, as well as U.S. textile trade with Canada, have grown steadily since NAFTA's passage, with large surpluses for the United States in both raw and processed products. Canada's cotton consumption and imports were essentially unchanged between 1987 and 1993, but since then cotton consumption has nearly doubled, and raw cotton imports from the United States have risen 80 percent. The United States is Canada's principal export market for textiles, and one of its largest sources of imports. The United States enjoyed a surplus in cotton textile trade with Canada of about 200,000 bales during the 1990's, and U.S. raw cotton exports to Canada rose from about 170,000 bales to 300,000 bales between 1993 and 2000.

### **Trade Issues**

There have been no significant trade disputes concerning cotton among the NAFTA countries. In 1998, Mexican cotton producers were concerned about an influx of imports from the United States under Step 2 of the U.S. Cotton Marketing Loan Program. The temporary surge ended in December 1998 when the Step 2 funds were exhausted for the year, and some of the U.S. cotton imported under this program was transhipped to other countries. Revisions to the operation of Step 2 mean that the 1998 surge is unlikely to be repeated.

Mexico is one of the few countries that provides domestic support to its cotton producers, but these payments are small, suggesting that any related trade distortions are also small. During the 2000/01 marketing year, the combined value of payments under PROCAMPO (*Programa de Apoyos Directos al Campo*—Program of Direct Support to the

Countryside), technical assistance, and a program of emergency payments in its second year was about \$16 million.

### **NAFTA's Impact on Cotton Trade**

NAFTA has led to a significant increase in U.S. cotton exports to Mexico, as Mexico's textile industry has grown through access to the U.S. market. Preferential trade rules and technological advances favoring quick responses by apparel producers to consumer trends have allowed Mexico to capture much of the increase in U.S. apparel imports that might have otherwise gone to Asian exporters. Since Mexico's textile industry uses U.S. cotton to a far greater extent than Asian firms, U.S. export opportunities have grown. Furthermore, some U.S. textile capacity has transferred to Mexico, shifting domestic U.S. cotton consumption into exports. The result has been an increase in the U.S. share of world cotton trade, the elevation of Mexico to the world's largest importer, and a relatively constant level of U.S. cotton production despite a large increase in apparel imports.

While NAFTA has substantially improved Mexico's access to the U.S. market, CBI countries - with the same access as pre-NAFTA Mexico - have continued to increase their textile exports to the United States. Furthermore, the timing of changes in U.S.-Mexico textile trade has been strongly correlated with changes in exchange rates.

While the Uruguay Round Agreement on Textiles and Clothing (ATC) still would have increased Mexico's access to U.S. textile markets had NAFTA not been implemented, the effect would have been much smaller. Although the ATC eliminates Multi-Fiber Arrangement quotas, it permits countries to retain the most critical import restrictions until 2005. Under NAFTA, the United States eliminated its duties on the vast majority of Mexican textiles as of January 1, 1998. It is also likely that the commitment to trade liberalization represented by NAFTA provided greater assurance for investment in textile capacity, increasing the volume of cotton textile trade among the three NAFTA countries.

NAFTA did little to affect U.S. imports of raw cotton. While Mexico's quota under NAFTA is larger than its earlier Section 22 quota, it is substantially smaller than other U.S. cotton import quotas. During marketing years 1995-99, the NAFTA TRQ allowed Mexico to export an average of 51,000 bales per year duty-free,

and Mexico's average fill rate for this TRQ was 15 percent. U.S. quotas for the rest of the world under URAA averaged 245,000 bales, with a fill rate of 12 percent. However, the Food, Agriculture, Conservation, and Trade Act of 1990 created a mechanism that opened even larger quotas for any country during the infrequent periods that price differentials favor importing into the United States. During marketing years 1995-99, these quotas averaged 2.4 million bales, with a fill rate of 10 percent.

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## **Sugar and Sweeteners**

### ***Policy Changes Resulting from NAFTA***

*United States.* Prior to CFTA and NAFTA, Mexico and Canada each had a share of the U.S. sugar import quota, which began in 1982. Under this quota, Canada paid the “low” duty of 0.66 cents a pound on refined beet sugar, and a similar duty was waived for Mexico under the Generalized System of Preferences. Under CFTA, the quantity provisions of the U.S. quota system continued to apply to Canadian sugar, although duties on within-quota sugar were gradually reduced, reaching zero on January 1, 1998.

In 1990, the United States unilaterally converted its absolute sugar import quota to a TRQ system, after a GATT panel ruled against the absolute quota in a case brought by Australia. A second-tier tariff of 16 cents a pound was established to apply to quantities above the TRQ's first level. The United States interpreted CFTA to mean that the second-tier tariff could not be applied against Canada. Thus, from January 1990 through December 1994, Canadian sugar entered the United States freely, paying only the low CFTA duty. These imports from Canada were small relative to the size of the U.S. market and did not seriously disrupt the U.S. sugar program.

When the Uruguay Round Agreement on Agriculture (URAA) was implemented in 1995, Canada became subject to the most-favored-nation (MFN) over-quota tariff of approximately 16 cents a pound. The CFTA tariff applies to shipments within the quota. As a result of an agreement reached with Canada, 10,300 metric tons of the refined sugar TRQ and 59,250 metric tons of the TRQ for certain sugar-containing products

maintained under “Additional U.S. Note 8 and Chapter 17 to the Harmonized Tariff Schedule of the United States” is allocated to Canada. Because Canada does not produce raw cane sugar, it is not given a share of the larger TRQ for raw cane sugar.

*Mexico.* The following description of Mexican access to the U.S. market also applies to U.S. access to the Mexican market.

Mexico's access to the U.S. sugar market depends on Mexico's “projected net surplus production,” which is defined as projected production minus projected domestic consumption. Projected net surplus production is calculated using a formula that stipulates that high fructose corn syrup (HFCS) should be included only in the portion of the calculation pertaining to consumption. Thus, projected Mexican sugar production has to exceed projected Mexican consumption of both sugar and HFCS for Mexico to be considered a net surplus producer.

From Fiscal Year (FY) 1994 to FY 2000, Mexico was entitled to duty-free access for sugar exports to the United States in the amount of its projected net surplus production, up to a maximum of 25,000 metric tons, raw value. If Mexico was not a net surplus producer, it still enjoyed duty-free access for 7,258 metric tons, raw value—the “minimum boatload” amount authorized under the U.S. TRQ.

In September 1996, the United States determined that Mexico was projected to be a net surplus producer of sugar in FY 1997. Thus, the United States gave Mexico a duty-free quota of 25,000 metric tons, raw value, that could be shipped as either raw or refined sugar. Mexico's duty-free access for FY 1998 through FY 2000 also was 25,000 metric tons, raw value.

From FY 2001 through FY 2007, Mexico has duty-free access to the U.S. market for the amount of its projected net surplus production, up to a maximum of 250,000 metric tons (raw value), with minimum duty-free access equal to the “minimum boatload.” For FY 2001, Mexico's duty-free access is 116,000 metric tons, including 7,258 metric tons (raw value) under the TRQ, 2,954 metric tons (raw value) of refined sugar and an additional 105,788 metric tons (raw value) (the quantity which the United States committed to provide Mexico under NAFTA). Of this total, 113,046 metric tons (raw value) may be shipped as either raw or refined sugar. NAFTA envisioned Mexico and the United States as one sweetener market by FY 2008,

with sugar and corn sweetener free to be sold in the other market without restriction.

In 1999, Mexico installed a TRQ system, with a second-tier tariff for other countries that is equal to the U.S. second-tier tariff. Sugar tariffs between the United States and Mexico declined 15 percent over the first 6 years of NAFTA, and are scheduled to go to zero by FY 2008. For FY 2001, the second-tier raw cane sugar tariff is 10.58 cents a pound, and the refined sugar tariff is 11.21 cents a pound.

Mexico's barriers to sugar-containing products have been converted to TRQ's, and the associated second-tier tariffs will decline to zero over 10 years. U.S. refiners that ship sugar to Mexico under the U.S. Refined Sugar Re-Export Program receive MFN treatment; NAFTA provides no special benefit for re-export sugar because it is not considered to be of U.S. origin. However, NAFTA does allow for reciprocal duty-free access between the United States and Mexico for refined sugar made from raw sugar produced in the other country.

*Canada.* As a result of CFTA, the Canadian tariff on U.S. sugar was 0.11 cents a pound, refined basis, in 1997, and became zero in 1998. Canada made no changes in its sugar trade policies as a result of NAFTA.

### **Sugar Trade under CFTA and NAFTA**

U.S. sugar imports from Mexico and Canada continue to be restricted by the U.S. TRQ for sugar, but Mexico's access under the TRQ has expanded significantly, from a historical "minimum boatload" of 7,258 metric tons (raw value) prior to NAFTA to 116,000 metric tons (raw value) in FY 2001. In FY 1999, Mexico exported 27,954 metric tons of raw and refined sugar to the United States within the raw and refined sugar TRQ's. In addition, Mexico exported a small amount of raw cane sugar (about 5,000 short tons, raw value) to the United States at the higher, over-quota tariff level.

U.S. sugar imports from Canada were under quota from FY 1982 to FY 1990, ranging from 10,000 to 30,000 tons per year. From FY 1991 to FY 1994, U.S. sugar imports from Canada averaged about 40,000 tons a year, as Canadian sugar was relatively unrestricted and paid only a low duty. In FY 1996, the United States allocated 10,300 metric tons of the refined sugar TRQ to Canada, and Canada continues to

export refined sugar to the United States under the portions of the refined sugar TRQ that are open to all countries. In FY 2000, Canada exported close to 11,000 metric tons of refined sugar to the United States. Additional shipments to the United States are subject to the second-tier (prohibitive) MFN duty.

U.S. sugar exports to Canada and Mexico have largely taken place under the U.S. Refined Sugar Re-Export Program. This program covers raw sugar that has been imported from another country, refined in the United States, and re-exported in an equivalent amount. Prior to FY 1995, U.S. sugar exports to Canada averaged about 100,000 tons a year. These exports have declined to almost zero since the Canadian government imposed antidumping duties in late 1995.

Mexico was a net importer of sugar in the early 1990's. The United States exported 219,000 metric tons of sugar to Mexico in FY 1991 and 97,000 metric tons in FY 1992. Since FY 1993, Mexico has become largely self-sufficient in sugar, and U.S. exports to Mexico fell to 27,347 metric tons in FY 1996 and 10,960 tons in FY 2000.

### **Trade Issues**

*Canadian Antidumping Investigation of Sugar Imports.* On November 6, 1995, the Canadian International Trade Tribunal (CITT) ruled that sugar imports from the United States, certain countries in the European Union, and Korea were being dumped in Canada. Antidumping duties ranging from 69-85 percent ad valorem were imposed on U.S. companies, effectively eliminating most U.S. sugar exports to Canada. On November 3, 2000, Canada renewed these duties for imports of refined sugar from the United States and certain European countries. Canada's antidumping margins, which range from 41-46 percent, will remain in place. Antidumping margin is the difference between the price sought in the importing country and the normal value of the product in the exporting country.

*Sugar Re-Export Negotiations.* In November 1996, the United States and Canada held consultations regarding a Canadian claim that continued use of the U.S. Sugar-Containing Products Re-Export Program by U.S. exporters to Canada was a violation of Article 303 of NAFTA. Under this program, U.S. producers may obtain sugar at the (lower) world price if they can demonstrate the re-export of a like amount of sugar in products within 2 years. Canada claims that this

program amounts to a duty drawback or deferral and is prohibited under NAFTA.

The United States and Canada reached an agreement on September 8, 1997, in which Canada would not challenge the use of the program. The United States agreed to allocate to Canada its historical share of refined sugar and sugar-containing products in two TRQ's, but overall Canadian access to U.S. TRQ's remains unchanged.

Under the agreement, the United States allocates 10,300 metric tons of the in-quota quantity of the U.S. TRQ for refined sugar (raw value) that is a product of Canada, beginning in FY 1998. In addition, the United States allocates 59,250 metric tons of the in-quota quantity of its TRQ for sugar-containing products that are the product of Canada. This allocation is measured in the commercial weight of the products. Typically, these products are dry crystal mixes, cake decorations, and confections. The total TRQ for this category is 64,709 metric tons.

In addition, Canada is permitted to compete for any quantity of the refined sugar TRQ that is not allocated among supplying countries and is not reserved for specialty sugar. This competition occurs regardless of whether Canada's allocated share for the year in question has been filled. The settlement also allows the United States to transfer any unused quantity of Canada's allocation for sugar-containing products to the portion of that TRQ that is not allocated among supplying countries, if Canada informs the United States that it cannot fill its share.

*Mexican Retaliation for Broomcorn TRQ Affects HFCS.* On December 12, 1996, the Mexican government announced increases on import duties on various U.S. products to compensate for the damage caused to Mexico when the United States raised its tariffs on Mexican broomcorn brooms. Included in the list were certain corn sweeteners: HFCS-42 (tariff line items 1702.40.01 and 1702.40.99), HFCS-55 (1702.60.01), and crystalline fructose (1792.50.01). Mexican duties on these items were increased from 10.5 percent to 12.5 percent, effective December 13, 1996. Under NAFTA, the tariff on these items was scheduled to drop from 10.5 percent in 1996 to 9 percent in 1997.

In December 1998, the United States removed a safeguard measure meant to protect the U.S. broomcorn broom industry from Mexican imports. As a result, Mexico dropped its retaliatory duties on U.S. HFCS

and other U.S. agricultural products and the 12.5-percent ad valorem duty was reduced to the NAFTA-specified rate of 6 percent.

*Mexican Antidumping Investigation of U.S. HFCS.* In January 1997, Mexico's National Chamber of Sugar and Alcohol Industries, the association of Mexico's sugar producers, filed a petition in which it claimed that U.S. corn wet millers were exporting HFCS to Mexico at less than fair value. Mexico's Secretariat of Commerce and Industrial Promotion (Secretaría de Comercio y Fomento Industrial - SECOFI)<sup>23</sup> initiated an antidumping investigation in the following month. In June 1997, SECOFI responded by imposing temporary tariffs on two grades of U.S. HFCS. The temporary tariffs, ranging from \$66.57 to \$175.50 per metric ton, applied to shipments from Cargill Inc., A. E. Staley Manufacturing Co., CPC International Inc., and Archer Daniels Midland Co. After further investigation, SECOFI made the duties permanent in January 1998 at a level between \$63.75 and \$100.60 a ton for HFCS-42 and between \$55.37 and \$175.50 a ton for HFCS-55.

During 1998, SECOFI investigated a charge made by the Mexican sugar industry that HFCS-90 was being imported to avoid the antidumping duties on HFCS-55. After a 7-month investigation, SECOFI determined that this was the case and imposed compensatory duties, effective September 8, 1998, on certain HFCS imports from the United States (tariff lines 1702.50.01, 1702.60.01, 1702.60.02, and 1702.60.99). Imports from A.E. Staley Manufacturing Co. are charged \$90.26 a metric ton, and imports from Archer Daniels Midland Co. are charged \$55.37 a metric ton.

In February 1998, the U.S. Corn Refiners' Association (CRA) asked for review proceedings of Mexico's antidumping actions under Chapter 19 of NAFTA. By late 1998, all five members had been named to the NAFTA panel. After the fifth panelist named by Mexico is accepted by the United States, the panel will review the legal briefs filed by CRA and SECOFI.

Parallel to actions undertaken under NAFTA, the Office of the U.S. Trade Representative (USTR) announced its intention on May 8, 1998, to invoke a WTO dispute proceeding in order to challenge

<sup>23</sup> Mexico's new presidential administration, which took office on December 1, 2000, has since reorganized SECOFI and renamed it the Secretariat of Economy (Secretaria de Economía).

Mexico's actions. USTR has made two formal requests for the formation of a WTO panel. Mexico blocked the first request. The second was made on November 25, 1998, and could not be blocked by Mexico. USTR argued that Mexico's antidumping measure on U.S. exports of HFCS is not consistent with the WTO Antidumping Agreement. This agreement requires that injury to an entire industry be examined and not just to part of it. USTR argued that the Mexican government did not properly establish injury to its entire domestic sweetener industry as a result of the alleged dumping.

The WTO dispute settlement panel made public its final report on January 27, 2000. The panel agreed with the U.S. position that Mexico did not properly establish injury. The panel further found that Mexico had not properly determined that there was a likelihood that HFCS imports from the United States were likely to increase, as would be required to establish the threat of injury when there is not current injury. The WTO adopted the ruling of the dispute settlement panel on February 25, 2000. The panel found Mexico in violation of the WTO Antidumping Agreement and required that Mexico correct its antidumping order by September 22, 2000. Mexico decided not to appeal the adverse ruling.

On September 20, 2000, the Mexican government published a final resolution in which it concluded that it was correct in imposing final antidumping duties and justified their continuation. Mexico argued that its domestic sugar industry was harmed by HFCS imports from the United States. On October 12, the United States presented a written request for review of Mexico's compliance with the WTO ruling of February 25, 2000. The WTO's Dispute Settlement Body approved the U.S. request on October 23, 2000. The WTO dispute settlement panel has 90 days to report whether the measures taken by Mexico comply with WTO rules, but the panel has the option of requesting more time to make a determination, if necessary.

In May 1998, USTR initiated an investigation under Section 302 of the Trade Act of 1974, as amended (the Trade Act), in response to a petition by the CRA, alleging that the Mexican government had denied fair and equitable market opportunities to U.S. HFCS exporters. The CRA argued that the Mexican government had encouraged and supported an agreement between representatives of the Mexican sugar and soft drink bottling industries to limit purchases of HFCS by the soft drink bottling industry. On May 15, 1999,

USTR concluded its formal investigation phase without determining legally that the Mexican government's alleged practices were actionable under Section 301 of the Trade Act. However, USTR noted that its investigation had raised enough questions about the actions of the Mexican government to warrant further examination and continued consultation on issues related to HFCS trade.

*Mexican Challenge to the Validity of the Side Agreement.* The Mexican government disputes the validity of an Exchange of Letters in November 1993 between the U.S. Trade Representative (USTR) and SECOFI. This Exchange of Letters, which is sometimes referred to as a "Side Agreement" or a "Side Letter," modified NAFTA's original provisions pertaining to sugar and HFCS. The U.S. Government maintains that the Side Agreement is part of NAFTA, while Mexican officials claim that there are several versions of the Side Agreement, none of which have been approved as part of NAFTA by the Mexican Legislature. Moreover, Mexico maintains that its version of the Side Letter does not count HFCS consumption in the formula that defines net surplus exporter status and does not limit exports to 250,000 metric tons per annum during FY's 2001-07. Under its interpretation, Mexico has been entitled to export its total net surplus production to the United States on a duty-free basis since October 2000.

On March 12, 1998, SECOFI asked for NAFTA consultations on the validity of the Side Agreement. Because no agreement was forthcoming, Mexico formally requested on November 15, 1998, that a NAFTA Commission meet to resolve the issue. Under NAFTA, the Commission has several options to resolve the issue, none of which are binding unless agreed to by both parties. If the Commission cannot resolve the dispute within 30 days after it has convened (or another time period agreed to by both parties), either party may request the establishment of an arbitration panel to adjudicate the issue.

SECOFI broke off almost two years of negotiations with the United States on August 17, 2000, and asked for the formation of a NAFTA panel to arbitrate disputes over the amount of sugar Mexico can export to the United States beginning October 1, 2000.

### ***NAFTA's Impact on Sugar Trade***

U.S. sugar trade is largely governed by a TRQ system whose origins predate NAFTA. However, one key

NAFTA provision governing U.S.-Mexico sugar trade has had a marked effect on U.S. imports under the TRQ's. During FY's 1994-99, if Mexico was projected to be a net surplus producer, it received duty-free access to the U.S. market for the amount of its surplus, up to a maximum of 25,000 tons. In the first 2 years of NAFTA, Mexico filled its original allocation of 7,258 tons, which would have been allocated regardless of NAFTA. Having been projected to be a net surplus producer for FY 1997, Mexico was permitted to ship 25,000 tons of sugar duty-free to the United States, 17,742 tons more than its original allocation. Beginning in FY 2001, Mexico has duty-free access to the U.S. market for the amount of its surplus sugar production, as calculated using the Side Agreement's formula, up to a maximum of 250,000 tons. Thus, Mexico's access to the U.S. market for sugar has expanded from 7,258 metric tons prior to NAFTA to 116,000 metric tons in FY 2001.

With regard to U.S.-Canada sugar trade, the United States interpreted CFTA as meaning that Canadian sugar in excess of the TRQ's first-tier quantity could enter under the low CFTA tariff rather than the TRQ's

prohibitive second-tier tariff. As a result, Canadian sugar exports to the United States rose to about 40,000 tons a year during 1990-94. Almost all of this sugar came from a single beet sugar factory in Manitoba, one of two such facilities in Canada. During this period, the price of refined sugar in the United States was 25-50 percent higher than in Canada.

NAFTA granted no further concessions to Canada on sugar. Instead, U.S.-Canadian sugar trade has been strongly affected by URAA and by antidumping duties. Each country's actions have limited the ability of the other to ship increasing quantities of sugar. U.S. companies are forced to pay antidumping duties ranging from 69-85 percent. Canadian sugar exporters must pay higher duty rates on over-quota shipments to the United States. The Manitoba beet sugar factory mentioned above was closed in early 1997, with the loss of the U.S. market cited as the cause of the closure.

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# Vegetables

## Fresh Tomatoes

### Policy Changes Resulting from NAFTA

*United States.* Prior to 1995, the general U.S. tariff on imported tomatoes equaled 3.3 cents or 4.6 cents per kilogram, depending on the tariff season (table K-1). In accordance with the Uruguay Round Agreement on Agriculture (URAA), the United States gradually lowered these rates to 2.8 cents and 3.9 cents per kilogram, respectively. These reductions were phased in over the 6-year period that ended on January 1, 2001.

Under the Canada-U.S. Free Trade Agreement (CFTA), which was subsumed into NAFTA, the United States phased out its tariff for fresh tomatoes from Canada over the 9-year period that ended on January 1, 1998.

Under NAFTA, the United States gradually eliminated its tariff for Mexican tomatoes imported during the periods of July 15 to August 31 and September 1 to November 14. These reductions occurred over the 4-year period that ended on January 1, 1998.

In addition, the United States is phasing out its tariffs for Mexican tomatoes imported during the tariff seasons March 1 to July 14 and November 15 to the last day of February. This gradual elimination is taking place over a period of 9 years and 2 months. During this transition, a TRQ is in effect. Imports within the quota are charged the reduced tariff specified by NAFTA. Over-quota imports are charged the lower of the MFN tariff in effect before NAFTA and the MFN rate in effect at the time of the over-quota trade.

In the first year of NAFTA (1994), the quota for March 1 to July 14 was 165,500 metric tons, and the quota for November 15 to the last day of February was 172,300 metric tons. These quotas increase at an annual rate of 3 percent during the transition. For the 2000/01 season, the quotas were 197,616 and 205,735 metric tons, respectively.

For March 1 to July 14, the TRQ and associated tariffs will end on January 1, 2003. For November 15 to the last day of February, the under-quota tariff will be eliminated on January 1, 2003, and the quantitative restriction and corresponding over-quota tariff will end on March 1, 2003.

NAFTA also includes a “snapback” provision, negotiated under CFTA, that allows the United States to re-impose MFN tariff levels for Canadian tomatoes until 2008 under certain price and acreage conditions. These conditions have not been satisfied to date.

Cherry tomatoes receive separate tariff treatment under NAFTA. The tariff for Mexican cherry tomatoes for December 1 to April 30 was eliminated immediately on January 1, 1994. The base tariff on cherry tomatoes from May 1 to November 30 is 3.3 cents per kilogram. This tariff was phased out for Mexico over the 4-year period that ended on January 1, 1998.

*Mexico.* Prior to 1994, Mexico imposed a tariff of 10 percent on fresh tomatoes from the United States. Under NAFTA, Mexico matches U.S. tariffs and transition periods for tomatoes. During the transition, the duty assessed on U.S. imports may not exceed Mexico's pre-NAFTA duty.

**Table K-1—U.S. tariff rates for imported fresh tomatoes**

Tariff Season	General level prior to 1995	General level as of January 1, 2001	Level for Canadian product as of January 1, 1998	Level for Mexican product for 2000/01 growing season
<i>Cents per kilogram</i>				
November 15 to Last Day of February	3.3	2.8	zero	Under quota (205,735 metric tons): 0.66 Over quota: 2.8
March 1 to July 14	4.6	3.9	zero	Under quota (197,616 metric tons): 0.92 Over quota: 3.9
July 15 to August 31	3.3	2.8	zero	zero
September 1 to November 14	4.6	3.9	zero	zero

Rates listed do not apply to cherry tomatoes.

*Canada.* Prior to 1989, the seasonal Canadian tariff on imported tomatoes was 5.51 Canadian cents per kilogram, but not less than 15 percent ad valorem. Under CFTA and NAFTA, this tariff decreased 10 percent per year, until it fell to zero on January 1, 1998. NAFTA includes a “snapback” provision, negotiated under CFTA, that allows Canada to re-impose MFN tariff levels until 2008 under certain price and acreage conditions.

### **Fresh Tomato Trade under CFTA and NAFTA**

Imports constitute a large proportion of U.S. domestic tomato consumption, and Mexico is the main source of these imports. In 2000, U.S. imports of fresh tomatoes equaled 730,063 metric tons, with Mexico accounting for 81 percent. This share is even higher during the winter months. However, Mexico's share has eroded steadily since 1994, when it stood at 95 percent. Most of the lost market share has gone to greenhouse/hydroponic tomatoes from Canada and the Netherlands.

Despite its declining market share, Mexico has filled its winter and spring quotas for the United States every year since 1995. On average, U.S. fresh tomato imports from Mexico have increased under NAFTA. During 1994-2000, these imports averaged 607,779 metric tons per year with an average value of \$470 million, compared with 335,083 metric tons and \$256 million during 1989-93. Imports reached 734,053 metric tons in 1997, their highest level under NAFTA. Since then, unfavorable weather in Mexico and low prices in the United States have caused imports to decline. In 1999, imports dropped to 615,064 metric tons, with a value of \$490 million. In 2000, imports fell even further to 589,954 metric tons, with a value of \$412 million.

During the winter season, Florida tomato marketing is governed by Federal Marketing Order Number 966, which mandates minimum size and grade standards. Section 8(e), an amendment to the Agricultural Marketing Agreement Act of 1937, provides that if a commodity listed in the section is regulated by a Federal marketing order that imposes regulations regarding grade, size, quality, or maturity, then the same or comparable requirements may be imposed on imports of that commodity. Thus, Federal regulations concerning Florida tomatoes govern Mexican tomatoes as well. Winter-season tomatoes from Mexico - but not roma, cherry, or greenhouse tomatoes - are inspected at the border by USDA's Agricultural Marketing

Service for quality, condition, and size. All loads are inspected, and on average, about 1 percent of the containers in each load is inspected. Less than one-half of one percent of the inspected shipments fail to meet the standards.

The United States exports a small amount of fresh tomatoes to Mexico, and this trade often fluctuates greatly from one year to the next due to conditions that usually are not NAFTA-related. For instance, bad weather hampered Mexican production in 1997, so U.S. exports to Mexico surged to 17,596 metric tons, compared with 2,560 metric tons in 1996. As Mexican production recovered in 1998, exports fell to 4,789 metric tons. Very low prices across the U.S. vegetable industry boosted exports to 5,837 metric tons in 1999. In 2000, Mexican producers experienced adverse weather conditions once again, and U.S. exports surged to 27,423 metric tons, the highest level during 1989-2000. Exports were valued at \$4 million in 1999 and \$22 million in 2000.

Canada is the major export market for U.S. fresh-market tomatoes, accounting for 89 percent of such exports during 1996-2000. For the United States, Canada has been a relatively steady, mature market over the past decade, and CFTA and NAFTA have had little effect on this trade, largely due to Canada's short growing season which gives them little option but to import, and the United States is the closest supplier. In 2000, U.S. fresh tomato exports to Canada equaled 144,950 metric tons, up from 110,771 metric tons in 1988 and 137,444 metric tons in 1999. Much of the recent gain reflected a slump in U.S. shipping-point prices. Exports were valued at \$104 million in 1999 and \$121 million in 2000.

U.S. fresh tomato imports from Canada have increased under CFTA and NAFTA, from a mere 2,115 metric tons in 1988 to 101,390 metric tons in 2000. In value, these imports increased from \$2 million to \$161 million. As a result, Canada's share of the U.S. import market has expanded from less than 1 percent in 1988 to 14 percent in 2000. The majority of these tomatoes come from a burgeoning greenhouse/hydroponic tomato industry centered largely in Ontario and, to a lesser extent, British Columbia.

### **Trade Issues**

In April 1996, the Florida tomato industry charged Mexico with selling tomatoes in the U.S. market at prices below fair market value, thus materially injuring

the domestic industry. In response, the U.S. Department of Commerce (DOC) initiated an antidumping investigation. On October 28, 1996, DOC announced an agreement with principal Mexican producer/exporters to settle the dispute, and on November 1, 1996, DOC suspended the investigation. DOC had made a preliminary determination that fresh tomatoes from Mexico were likely to sell in the United States at less than “fair value.” As long as the suspension agreement is honored, the antidumping investigation remains suspended.

The original 5-year suspension agreement (which was revised in 1998) established a reference price, or minimum price, covering most fresh Mexican tomatoes exported to the United States. After rebates, discounts, and so on, the net price of Mexican tomatoes is not allowed to fall below the reference price, originally set at \$5.17 per 25-pound box, or 20.68 cents per pound. This price represents the lowest average monthly price for fresh-market tomatoes from Mexico observed at the U.S.-Mexico border during the base period of 1992-94.

On August 6, 1998, DOC and fresh-market producer/exporters from Mexico agreed to amend the suspension agreement to include more Mexican growers, especially those in Baja California. Producers in Baja California were unhappy with the original floor price because it was too high for them to compete effectively with growers in California, where production costs are lower than in Florida. Growers in Baja California produce for the summer and early fall, roughly the same season as producers in California.

The amended agreement specifies two time periods, each with its own floor price. This change acknowledges differences between the shipping season in Florida and Sinaloa and the shipping season in California and Baja California. From October 23 to June 30 (the Florida/Sinaloa season), the minimum price for Mexican fresh-market tomatoes was raised to \$5.27 per 25-pound box (\$0.2108 per pound). From July 1 to October 22 (the California/Baja California season), the minimum price decreases to \$4.30 per box (\$0.1720 per pound).

The agreement required that producer/exporters representing at least 85 percent of traded tomato volume be signatories. The agreement does not cover non-signatories. U.S. Customs examines tomato shipments from non-signatories to ensure that product from signatories is not included. Greenhouse cocktail tomatoes are

exempt from the agreement since they are viewed as a separate market from field-grown tomatoes. In the suspension agreement, cocktail tomatoes are defined as greenhouse tomatoes, generally larger than cherry tomatoes but smaller than roma or common round tomatoes, that are harvested and packaged on the vine for retail sale.

There was strong compliance with the agreement through 1998, but the price never fell to the level of the reference price for more than a few days at a time during this period. In 1999, tomato prices were low for extended periods, forcing Mexican producers to restrict export volume in order to prevent prices from falling below the reference price. The suspension agreement comes up for its 5-year “sunset” review in October 2001. As required by the 1994 Uruguay Round Agreements Act, the DOC and the U.S. International Trade Commission (ITC) must conduct reviews no later than 5 years after an antidumping or countervailing duty order is issued. In these reviews, the DOC will determine whether revoking the order would likely result in a continuation or recurrence of dumping or subsidies, while the ITC will determine whether such a revocation would cause material injury to the domestic industry.

On March 28, 2001, a group of U.S. greenhouse tomato producers filed a petition with the ITC alleging dumping of greenhouse tomatoes by Canada in the U.S. market. The ITC has started an investigation to decide if there is a reasonable indication that the U.S. industry is injured or under threat of injury by the selling of greenhouse tomatoes from Canada at less than normal value.

### ***NAFTA's Impact on Fresh Tomato Trade***

U.S. tariffs were not an important impediment to fresh tomato imports before CFTA and NAFTA. Tariff rates for tomatoes prior to the two agreements were specified in fixed dollar amounts and eroded in value over time as the general price of tomatoes increased. In 1993, the weighted-average ad valorem tariff was 4.0 percent during the winter season and 5.3 percent during the rest of the year. Thus, tariff changes to date have been relatively small, and other factors have had a greater impact on tomato trade.

U.S. fresh tomato imports from Mexico increased 47 percent in volume between 1993 and 2000. Holding other factors constant, ERS estimates that NAFTA tariff changes increased these imports by some 8-15

percent above what would have occurred without the agreement. Had only the URAA tariff changes been implemented, this increase would have been less than 10 percent. When imports increased in 1995 and 1996, the higher, over-quota tariffs seemed to do little to slow import growth. Changes in this trade have been due mostly to factors other than NAFTA, such as the peso devaluation in December 1994, relatively favorable weather in Mexico compared with Florida, and technological improvements in Mexican production.

Between 1988 and 2000, U.S. fresh tomato imports from Canada increased 4,694 percent in volume (from a very small base), but factors other than CFTA and NAFTA are primarily responsible for this surge. Based on average import prices (higher than prevailing field-grown prices) and the timing of many shipments (outside the regular Canadian growing season), the majority of these imports appear to be greenhouse/hydroponic varieties. The surge in imports appears to reflect increasing U.S. demand for high-quality, higher-priced tomatoes (due to changing tastes and relative prosperity during the 1990's) and the strong U.S. dollar.

U.S. fresh tomato exports to Canada increased 5 percent in volume between 1993 and 2000. Considering only NAFTA tariff changes, ERS estimates suggest that these exports are 14-18 percent higher than they would have been without the agreement. With just URAA tariff changes, these exports would have increased just 6 percent. Clearly, factors other than tariff reductions are influencing U.S.-Canada tomato trade. Noteworthy examples are U.S. weather conditions, industry promotion programs, and the rapid development of Canada's greenhouse industry.

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## Processed Tomatoes

### *Policy Changes Resulting from NAFTA*

*United States.* Prior to 1995, the United States levied general duties on processed tomato products ranging from 7.5 percent to 14.7 percent (table K-2). Under URAA, the United States reduced these duties by 15 percent over the 6-year period that ended on January 1, 2001.

Under CFTA and NAFTA, the United States gradually reduced its duties on Canadian processed tomatoes by 10 percent per year, starting on January 1, 1989, until these tariffs fell to zero on January 1, 1998.

Upon NAFTA's implementation, the United States immediately eliminated its tariffs on tomato juice and ketchup from Mexico. Also, the United States immediately established a new, lower tariff base of 11.5 percent for Mexican tomato purees, pastes, and sauces. The United States is phasing out its duties on processed tomato products from Mexico over the 9-year period that ends on January 1, 2003.

*Mexico.* Prior to 1994, Mexico's duty on imported tomato paste was 20 percent. Under NAFTA, Mexico lowered its duties on U.S. processed tomato products to match U.S. levels.

*Canada.* Prior to 1989, Canada levied a tariff of 13.6 percent on U.S. processed tomatoes and 15 percent on ketchup and other tomato sauces from the United States. Under CFTA and NAFTA, Canada gradually eliminated these tariffs over the 9-year period that ended on January 1, 1998.

**Table K-2—U.S. tariff rates for selected processed tomato products**

Product	General level prior to 1995	General level as of January 1, 2001	Level for Canadian product as of January 1, 1998	Level for Mexican product for 2001
Tomato ketchup	7.5 percent	6.375 percent	zero	zero
Tomato juice	0.3 cents per liter	0.255 cents per liter	zero	zero
Tomatoes, whole or in pieces, and preserved otherwise than by vinegar or acetic acid	14.7 percent	12.495 percent	zero	2.9 percent
Tomato purees, pastes, and sauces (HS Chapter 20)	13.6 percent	11.56 percent	zero	2.3 percent
Tomato sauces (HS Chapter 21)	13.6 percent	11.56 percent	zero	2.7 percent

HS = Harmonized Schedule of Tariffs.

Source: Economic Research Service, USDA. Tariff rates for Mexican product are drawn from the NAFTA tariff schedule of the United States.

## **Processed Tomato Trade under CFTA and NAFTA**

The United States is a net exporter of processed tomato products. In 2000, exports totaled \$224 million, while imports were \$96 million. The U.S. is also the world's largest producer of tomatoes for processing (with about 45 percent of world output) and one of the top five exporting countries. About 95 percent of production takes place in California, with some 37 canning and dehydrating plants in the central valley of California.

Imports accounted for nearly 3 percent of U.S. tomato product consumption in 2000, compared with 7 percent in 1999. Low inventories and a short crop in 1998 led to a sharp increase in imports in 1999.

Exports absorbed about 6 percent of processing tomato supply in 2000 - down from 7 percent in 1998 but above the 5-percent average of the 1990's. After posting strong growth in the early and mid 1990's, per capita use of processed tomato products in the United States has declined to about 72 pounds (on a fresh-weight basis) in 2000 - the lowest level since 1989.

U.S.-Canada trade in processed tomato products is substantial, while U.S.-Mexico trade is much less significant. This is partially explained by the similarity of the U.S. and Canadian diets. U.S. processed tomato exports to Canada totaled \$107 million in 2000. This equals 48 percent of all U.S. exports in this category. Tomato sauce accounted for 50 percent of U.S. exports to Canada, and tomato paste accounted for 30 percent. Corresponding imports from Canada equaled \$30 million. Thirty-one percent of total U.S. processed tomato imports in 2000 were from Canada.

Rising U.S. ketchup imports from Canada are the most notable change in U.S.-Canada processed tomato trade under CFTA and NAFTA. Between 1989 and 2000, these imports jumped from 1 metric ton to 39,476 metric tons, and their value climbed from a mere \$3,261 to \$21 million. As a result of this growth, ketchup accounted for 69 percent of U.S. processed tomato imports from Canada in 2000. Much of this increase is due to the changing business strategies of a major U.S. manufacturer.

U.S. exports to Mexico of processed tomato products totaled \$25 million in 2000 - an increase of 178 percent above the 1993 level. Four product classes accounted for more than 90 percent of this trade: tomato juice (27 percent), sauces (23 percent), paste (21 percent), and ketchup (21 percent). Exports to Mexico make up 11

percent of total U.S. processed tomato exports. The sudden peso devaluation in December 1994 and the accompanying economic downturn hindered U.S. exports to Mexico, particularly in 1995.

U.S. processed tomato imports from Mexico equaled \$22 million in 2000. Four product classes accounted for 93 percent of this trade: tomato juice (34 percent), tomato powder (25 percent), tomato paste (18 percent), and tomato sauce (16 percent). The relatively small share corresponding to tomato paste is somewhat deceiving, as trade in this product fluctuates greatly from one year to the next. For instance, paste imports from Mexico surged from 8,350 metric tons in 1998 to 21,484 metric tons in 1999, largely due to a small U.S. crop of processing tomatoes in 1998. Following a record U.S. crop in 1999 and the accumulation of burdensome stocks, imports dropped to 6,194 metric tons in 2000. Bulk tomato paste is the main ingredient for tomato-based sauces and tomato juice, and most of this paste enters during the spring to supplement the needs of U.S. tomato product manufacturers.

### **Trade Issues**

There have been no NAFTA-related trade disputes involving processed tomatoes.

### **NAFTA's Impact on Processed Tomato Trade**

Between 1994 and 2000, U.S. processed tomato imports from Mexico were relatively minor. Paste imports were strong in both 1994 and 1999, as U.S. processors experienced spring-season shortages caused by smaller tomato crops the previous fall. The United States had excess supplies of tomato paste throughout most of the 1990's.

Over the past 3 years, tomato product imports from Mexico have branched out from primarily tomato paste into tomato juice and sauce. Tomato juice imports from Mexico were non-existent until 1996 and did not exceed \$1 million until 1998. By 2000, these imports were valued at \$7 million. Similarly, tomato sauce imports were minor until 2000, when they reached \$4 million. The United States does not levy a tariff on tomato juice from Mexico, and U.S. tariffs on Mexican tomato sauce range from 2.3 to 2.7 percent.

Ignoring other changes that have taken place since 1993, tariff changes from NAFTA and URAA are estimated to have increased U.S. processed tomato imports from Mexico by 10 percent above what would have occurred otherwise. Had only the URAA tariff changes

been implemented, the increase would have been about 2 percent. Variations in crop production have an important impact on U.S.-Mexico processed tomato trade.

Between 1993 and 2000, U.S. tomato paste exports to Canada declined 5 percent in volume, while U.S. tomato sauce exports to Canada expanded in volume by 50 percent. CFTA and NAFTA tariff reductions probably contributed to the latter increase. With the exception of sauces and ketchup, U.S. exports of processed tomato products to Canada have not risen substantially since 1993. Tomato product exports expanded 23 percent in volume between 1993 and 2000, but the value of this trade increased by just 6 percent. However, since 1988, the value of U.S. tomato product exports to Canada has risen 50 percent to \$30 million. Declining prices caused by large U.S. supplies restrained the gain in value. Without considering other factors, ERS estimates suggest NAFTA and URAA tariff changes alone increased these imports by 34 percent above what would have occurred otherwise. Had only URAA been implemented, the increase attributable to tariff changes would have been 10 percent.

As mentioned above, rising U.S. ketchup imports from Canada are the most notable change in U.S.-Canada processed tomato trade under CFTA and NAFTA. The increase in this trade is primarily due to the changing business strategies of a major manufacturer. Its behavior was likely influenced by the relative strength of the U.S. dollar and the elimination of ketchup duties between Canada and the United States.

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## Bell Peppers

### **Policy Changes Resulting from NAFTA**

*United States.* Prior to 1995, the general U.S. tariff on bell peppers was 5.5 cents per kilogram. Under URAA, the United States gradually lowered this tariff to 4.7 cents per kilogram over the 6-year period that ended on January 1, 2001.

Under CFTA and NAFTA, the United States eliminated its tariff on Canadian bell peppers on January 1, 1998, following a 9-year transition period.

Under NAFTA, the United States is gradually eliminating its tariffs on Mexican bell peppers as well. The

tariff for the June-October season was phased out over the 4-year period that ended on January 1, 1998, and the tariff for the November-May season is being eliminated over the 9-year period that ends January 1, 2003. For 2001, the tariff rate for the November-May season is 1.1 cents per kilogram.

*Mexico.* Prior to 1994, Mexico imposed a duty of 10 percent on bell peppers. Under NAFTA, Mexico gradually eliminated this tariff over the 4-year period that ended on January 1, 1998.

*Canada.* Prior to 1989, the seasonal tariff on bell peppers was 4.41 Canadian cents per kilogram but not less than 10 percent. Under CFTA and NAFTA, Canada reduced its tariff on U.S. bell peppers by 10 percent a year until it reached zero on January 1, 1998.

### **Bell Pepper Trade under CFTA and NAFTA**

Trade is an important component of the U.S. fresh bell pepper market. In 2000, imports accounted for about 20 percent of U.S. consumption, while approximately 7 percent of U.S. production was exported. Seventy-two percent of these imports came from Mexico, and 13 percent came from Canada. Per capita use of bell peppers in the United States climbed 25 percent over the period 1994-2000 to 8.1 pounds.

During 1994-2000, U.S. imports of Mexican bell peppers averaged 136,827 metric tons per year, compared with 91,457 metric tons during 1989-93. Meanwhile, the average annual value of this trade increased from \$79 million to \$125 million. The sudden devaluation of the Mexican peso in December 1994, along with a 20-percent decline in Florida production in 1995, had a dramatic impact on this trade. Imports climbed to 116,173 metric tons in 1995, an increase of 20 percent above the 1994 level. In 1999, imports reached a record 156,068 metric tons, up 54 percent from 1993. In 2000, imports equaled 143,097 metric tons, with a value of \$135 million.

U.S. imports of Canadian bell peppers have increased dramatically under CFTA and NAFTA, and these imports are expected to continue rising due to the growing popularity of greenhouse-grown product. Imports equaled 26,017 metric tons in 2000, compared with just 1,343 metric tons in 1989. The value of these imports increased from \$2 million to \$49 million over the same period. At least one-third of these imports now come from greenhouse/hydroponic facilities.

Peppers from such facilities are priced 2 to 3 times higher than field-grown varieties.

U.S. export data for fresh peppers include all types of peppers (e.g., bell, pimento, and chile peppers), but most of this trade consists of bell peppers. Canada is the primary export market for U.S. fresh peppers, accounting for 98 percent of export volume in 2000. Exports to Canada have increased under CFTA and NAFTA, even as imports from Canada have grown. In 2000, U.S. fresh pepper exports to Canada reached an all-time high of 69,741 metric tons, valued at \$66 million. In contrast, they equaled 41,671 metric tons in 1988, with a value of \$34 million.

### Trade Issues

In March 1996, Florida growers, joined by growers from several other States and the Florida Department of Agriculture, petitioned the ITC for economic relief against import surges of fresh tomatoes and bell peppers under U.S. trade law. On July 2, 1996, the ITC found that imports of these commodities were neither a substantial cause nor a threat of serious injury to the fresh tomato and bell pepper industries of the United States.

### NAFTA's Impact on Bell Pepper Trade

Although U.S. bell pepper imports from Mexico increased 41 percent in volume between 1993 and 2000, it is unlikely that NAFTA is the most important factor affecting this trade. The tariff elimination for Mexican bell peppers is proceeding gradually, with an annual tariff reduction of less than 1 percent for the December-May season. Before NAFTA, the average ad valorem U.S. tariff on Mexican bell peppers was 7.43 percent. Rising consumer demand, the relative strength of the U.S. dollar, and adverse weather conditions in U.S. production areas in some periods more likely explain the growth in U.S. bell pepper imports from Mexico.

A similar analysis applies to imports from Canada. Between 1989 and 2000, U.S. imports of Canadian bell peppers increased 1,838 percent in volume, but this trade was fairly small before CFTA. Tariff elimination between Canada and the United States occurred gradually, and the relative strength of the U.S. dollar, increased consumer demand, and adverse weather conditions have played more prominent roles in the growth of this trade than CFTA and NAFTA.

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## Fresh-Market Cucumbers

### Policy Changes Resulting from NAFTA

*United States.* The general U.S. tariff on fresh-market cucumbers varies by season. Prior to 1995, tariff rates ranged from 3.3 cents to 6.6 cents per kilogram (table K-3). Under URAA, the United States gradually reduced these tariffs over the 6-year period that ended on January 1, 2001.

Under CFTA and NAFTA, the United States reduced its tariffs on Canadian cucumbers by 10 percent a year, until the tariffs fell to zero on January 1, 1998.

Under NAFTA, the United States eliminated duties on Mexican cucumbers for the two lowest tariff seasons: December to February and July to August. The December-February season is a time of low domestic production, and the July-August season is one of low import volume. For the seasons with the higher tariffs, duties are being gradually eliminated. The March-May and October-November tariffs are being phased out over the 14-year period that ends on January 1, 2008. For 2001, these tariffs equal 3.3 cents per kilogram. The June-September tariffs were gradually eliminated over the 4-year period that ended on January 1, 1998.

**Table K-3—U.S. tariff rates for imported fresh-market cucumbers**

Trade season	General level prior to 1995	General level as of January 1, 2001	Level for Canadian product as of January 1, 1998	Level for Mexican product for 2001
<i>Cents per kilogram</i>				
March 1 to May 31	6.6	5.6	zero	3.0
June 1 to June 30	6.6	5.6	zero	zero
July 1 to August 31	3.3	1.5	zero	zero
September 1 to September 30	6.6	5.6	zero	zero
October 1 to November 30	6.6	5.6	zero	3.0
December 1 to Last Day of February	4.9	4.2	zero	zero

Source: Economic Research Service, USDA. Tariff rates for Mexican cucumber are drawn from the NAFTA tariff schedule of the United States.

NAFTA also includes a “snapback” provision, negotiated under CFTA, that allows the United States to reinstitute MFN tariff levels until 2008 for Canadian cucumbers, under certain price and acreage conditions.

*Mexico.* Prior to 1994, Mexico's tariff on imported cucumbers was 10 percent. Under NAFTA, Mexico is matching the U.S. seasonal tariffs and phase-out schedule, except that Mexico's transition period lasts 9 years.

*Canada.* Prior to 1989, Canada's seasonal tariff on fresh cucumbers (not for processing) was 4.96 Canadian cents per kilogram, but not less than 15 percent. Under CFTA and NAFTA, the tariff declined 10 percent a year, until it reached zero on January 1, 1998. A “snapback” provision remains in place under certain price and acreage conditions until 2008.

### **Cucumber Trade under CFTA and NAFTA**

Thanks to salad bars, new varieties, and increased interest in health and nutrition, U.S. per capita use of cucumbers increased 47 percent during the 1990's to 6.9 pounds. About 39 percent of domestic use is imported, with the majority coming from Mexico (90 percent in 2000). In fact, almost all cucumbers in the U.S. market are from Mexico during the months of December, January, and February. This large reliance on imports is due in part to low domestic production during the winter months. Cucumbers suffer injury at temperatures below 50 degrees, which is not an uncommon weather occurrence in Florida during the winter. Overall, Mexico supplied 90 percent of U.S. import volume in 2000, while Canada supplied 7 percent. In 1993, these shares were 90 percent and 2 percent, respectively. Roughly half of the cucumbers imported from Canada are produced in hothouses.

Only 3 percent of U.S. fresh cucumber supply is exported. In 2000, Canada purchased 90 percent of these exports, while Mexico bought 7 percent. Under CFTA and NAFTA, U.S. cucumber exports to Canada increased from 6,761 metric tons in 1988 to 22,542 metric tons in 2000, while the value of this trade climbed from \$2 million to \$22 million.

During 1994-2000, the United States imported an annual average of 283,031 metric tons of Mexican cucumbers, compared with 179,230 metric tons during 1989-93. The average annual value of these imports increased from \$73 million to \$119 million across the

same two periods. Of all the winter vegetables, cucumbers had the highest pre-NAFTA ad valorem tariff, 19.6 percent during the highest tariff season.

Reflecting low prices in the United States for most vegetables, the average import value for fresh Mexican cucumbers declined 16 percent in 1999 to 17.7 cents per pound. Despite these low prices, imports from Mexico reached a record 314,462 metric tons in 1999, an increase of 2 percent over the previous year. In 2000, imports decreased slightly to 312,307 metric tons, with a value of \$150 million. U.S. cucumber exports to Mexico are small and variable.

The increasing popularity of hothouse-produced, European-type cucumbers is likely an important factor behind the 5-fold increase in the volume of fresh-market cucumber imports from Canada since 1994. In 2000, this trade reached a record 22,542 metric tons, with a value of \$ 22 million. Reflecting the presence of hothouse product, the average unit value for fresh cucumbers from Canada - 45 cents per pound - was nearly twice that for all fresh cucumber imports.

### **Trade Issues**

There have been no trade disputes involving cucumbers.

### **NAFTA's Impact on Cucumber Trade**

Between 1993 and 2000, U.S. imports of Mexican cucumbers increased 53 percent in volume. Holding other factors constant, tariff changes under NAFTA and URAA are estimated to have increased U.S. imports of Mexican cucumbers by about 3 percent above what would have occurred otherwise. Had only the URAA tariff changes been implemented, this increase would have been less than 1 percent. Other factors, such as the peso devaluation and adverse weather conditions, account for much of the observed changes in U.S.-Mexico cucumber trade. Between 1992 and 1998, U.S. cucumber exports to Canada decreased steadily in volume from 36,501 metric tons to 22,654 metric tons. In 1999 and 2000, exports rebounded to 23,441 metric tons and 25,578 metric tons, respectively. Factors besides the gradual elimination of tariffs, such as adverse weather conditions in the United States, the relative strength of the U.S. dollar, and the growth of greenhouse production in Canada, are influencing cucumber trade with Canada.

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## Squash

### **Policy Changes Resulting from NAFTA**

*United States.* Before 1995, the general U.S. tariff on squash was 2.4 cents per kilogram. In accordance with URAA, the United States gradually lowered this tariff to 1.5 cents per kilogram over the 5-year period that ended on January 1, 2001.

Under CFTA and NAFTA, the United States reduced its tariff on Canadian squash by 10 percent per year until January 1, 1998, when the tariff was eliminated.

Under NAFTA, the United States made several changes in its tariffs on Mexican squash. First, the United States phased out the tariff for the July-to-September season over the 4-year period that ended on January 1, 1998. Second, the United States is gradually eliminating the tariff for the more sensitive season of October to June over the 9½-year period that ends on June 30, 2003. For this transition, the United States established an initial TRQ of 120,800 metric tons. The volume of the TRQ increases at an annual rate of 3 percent over the transition and is set at 144,242 metric tons for the 2000/01 season (October 1, 2000 to June 30, 2001). For 2001, the over-quota tariff equals 1.5 cents per kilogram, and the within-quota tariff equals 0.4 cents per kilogram. The under-quota tariff will be eliminated on January 1, 2003, while the TRQ and corresponding over-quota tariff will disappear on June 30, 2003. Finally, NAFTA contains a “snapback” provision, negotiated under CFTA, that allows the United States until 2008 to re-institute the MFN tariff for Canadian squash, under certain price and acreage conditions.

NAFTA includes chayote squash in a separate category from other squash. Prior to 1994, the United States imposed a tariff of 12.5 percent on Mexican chayote. This tariff was eliminated immediately upon NAFTA's implementation on January 1, 1994.

*Mexico.* Mexico immediately eliminated its 10-percent duty on U.S. squash upon NAFTA's implementation on January 1, 1994.

*Canada.* Prior to 1989, Canada levied an ad valorem tariff of 5 percent on U.S. squash. Under CFTA and NAFTA, this tariff declined 10 percent a year, until it fell to zero on January 1, 1998.

### **Squash Trade under CFTA and NAFTA**

Imports supply about one-third of U.S. squash consumption. The United States receives practically all of its fresh squash imports (98 percent in 2000) from Mexico. A minor amount, less than 1 percent each, comes from Panama and Canada. About 80 percent of U.S. squash imports arrive between November and April. This squash competes primarily with product from Florida.

As mentioned earlier, NAFTA places chayote in a different category from other squash. Costa Rica is the dominant foreign supplier of chayote to the United States, with an 81-percent share of the U.S. import market in 2000. Mexico's share equaled 18 percent, with exports to the United States totaling 4,238 metric tons and valued at \$1.6 million.

USDA began to collect national production data for squash in 2000. Georgia, California, and Florida are the leading producers of domestic squash. Most of the import competition takes place during the months when Florida is the primary domestic source. About half of Florida's squash crop is marketed during March, April, and May. Per capita use of fresh-market squash in the United States is estimated to be 4 pounds and held fairly steady during the 1990's.

U.S. squash imports from Mexico averaged 134,752 metric tons per year during 1994-2000, compared with 79,910 metric tons during 1989-93. Across the same two periods, the average annual value of these imports increased from \$52 million to \$89 million. In the first two years of the TRQ, (October 1, 1994 to June 30, 1995, and October 1, 1995 to June 30, 1996), 81 percent and 87 percent of the quota was filled, respectively. Since then, the quota has been filled every year. Imports from Mexico were 148,210 metric tons in 1999 and 148,476 metric tons in 2000, well above the quota level. These imports were valued at \$99 million and \$111 million, respectively. Low prices in the United States discouraged imports in 1999 and 2000. U.S. squash exports to Canada are not reported as a separate category.

### **Trade Issues**

There have been no trade disputes involving squash.

### **NAFTA's Impact on Squash Trade**

Between 1993 and 2000, the volume of U.S. imports of Mexican squash increased 66 percent. Before NAFTA, the United States imposed an average ad

valorem equivalent tariff on Mexican squash of 5.21 percent. Ignoring other developments since 1993, ERS estimates suggest that NAFTA and URAA tariff changes together would have increased imports from Mexico by only 1 percent. Had only the URAA tariff changes been implemented, the change in imports due to tariff changes would have been even smaller.

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## Eggplant

### **Policy Changes Resulting from NAFTA**

*United States.* Prior to 1995, the general U.S. tariff on eggplant was 2.4 cents per kilogram during the December-to-March season and 3.3 cents per kilogram during the rest of the year. Under URAA, the United States gradually lowered these tariffs to 1.9 cents per kilogram for the December-to-March season and 2.6 cents per kilogram for the rest of the year. These reductions were phased in over the 6-year period that ended on January 1, 2001.

Upon NAFTA's implementation on January 1, 1994, the United States immediately eliminated its tariffs on Mexican eggplant for the December-to-March and July-to-September seasons. Tariffs for the two remaining seasons, April to June and October to November, are being phased out over the 9-year period that ends on January 1, 2003. In addition, an initial TRQ of 3,700 metric tons was established for the April-to-June season. The volume of the TRQ increases at an annual rate of 3 percent during the transition and stands at 4,551 metric tons for 2001. Over-quota volume is charged the lower of the pre-NAFTA rate and the current MFN rate. For 2001, the within-quota rate is 0.6 cents per kilogram, and the over-quota rate is 2.6 cents per kilogram.

*Mexico.* Mexico immediately eliminated its 10-percent duty on U.S. eggplant upon NAFTA's implementation on January 1, 1994.

*Canada.* Prior to 1989, Canada did not levy a tariff on eggplant. This policy has remained unchanged under CFTA and NAFTA.

### **Eggplant Trade Since NAFTA**

Trade is important to the U.S. fresh eggplant market. Per capita consumption of eggplant in the United States has increased since the mid-1990's and now

averages about 0.8 pounds per year. During the 1990's, about 40 percent of the eggplant consumed domestically was imported (37 percent in 2000). The majority of these imports came from Mexico. However, Mexico's share of the U.S. import market has eroded somewhat, falling from 99 percent to 93 percent in volume terms between 1993 and 2000.

U.S. imports of Mexican eggplant experienced little growth during the 1980's and early 1990's but have trended higher under NAFTA. During 1994-2000, imports averaged 29,504 metric tons per year, compared with 17,529 metric tons during 1989-93. Across the same two periods, the average annual value of imports grew from \$13 million to \$21 million.

After reaching a record high in 1998, low U.S. vegetable prices and erratic weather in Mexico caused imports to decline by 15 percent in 1999 to 30,667 metric tons. In 2000, imports reached 36,018 metric tons, nearly surpassing the record of 1988. The value of this trade in 2000 was \$22 million. Since NAFTA's implementation in 1994, the eggplant quota has been completely filled every year.

During the 1990's, an average of 13 percent of U.S. eggplant supply was exported, compared with 9 percent in 2000. About 99 percent of U.S. exports go to Canada, with minor amounts going to Mexico.

### **Trade Issues**

There have been no trade disputes involving eggplant.

### **NAFTA's Impact on Eggplant Trade**

Eggplant imports from Mexico have risen tremendously since the advent of NAFTA, with a 101-percent increase in volume between 1993 and 2000. Before NAFTA, the average ad valorem equivalent U.S. tariff on Mexican eggplant was 5.69 percent. Ignoring the influence of other factors, ERS estimates suggest that NAFTA and URAA tariff changes would have increased U.S. imports of Mexican eggplant by 4 percent above what would have occurred otherwise. Had only URAA been implemented, tariff changes would have increased this trade by less than 1 percent. Increased demand associated with the rising popularity of ethnic cuisines in the United States and the peso devaluation help to explain the increase in eggplant imports from Mexico.

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## Snap Beans

### **Policy Changes Resulting from NAFTA**

*United States.* Prior to 1995, the general U.S. tariff on fresh-market snap beans (not reduced in size) was 7.7 cents per kilogram. In accordance with URAA, the United States gradually reduced this tariff to 4.9 cents per kilogram over the 6-year period that ended on January 1, 2001.

Under CFTA and NAFTA, the United States reduced its tariff on Canadian snap beans by 10 percent a year, until the tariff was eliminated on January 1, 1998. A “snapback” provision for Canada is included until 2008.

Under NAFTA, the United States phased out its tariff on Mexican snap beans for the June-to-October season over the 4-year period that ended on January 1, 1998. The tariff for the November-to-May season is being phased out over the 9-year period that ends on January 1, 2003. For 2001, this tariff is set at 1.5 cents per kilogram.

*Mexico.* Prior to 1994, Mexico levied a tariff of 10 percent on fresh snap beans from the United States. This tariff was eliminated immediately upon NAFTA's implementation on January 1, 1994.

*Canada.* Prior to 1989, the seasonal tariff on snap beans was 4.41 Canadian cents per kilogram, but not less than 10 percent. Under CFTA and NAFTA, this tariff declined 10 percent a year, until it reached zero on January 1, 1998.

### **Snap Bean Trade under CFTA and NAFTA**

Since 1993, U.S. per capita consumption of fresh-market snap beans increased 40 percent, to 2.1 pounds in 2000—the highest level since 1964. The United States was a net exporter of fresh-market snap beans during the 1990's. On average, 9 percent of domestic use was supplied by imports - the same as during the 1980's. About 11 percent of supply was exported, up from 8 percent in the 1980's.

More than three-fourths of imports enter during the winter season (December to April), supplementing production in Florida. As measured by shipment volume, Mexico's share of the entire U.S. fresh snap bean market averaged 31 percent during the 1997-99

winter seasons. Since peaking at 37 percent in 1997, Mexico's share of the U.S. market declined in both 1998 and 1999.

U.S. snap bean imports from Mexico averaged 16,646 metric tons per year during 1994-2000, compared with 11,426 metric tons during 1989-93. Over the same period, the average annual value of these imports increased from \$13 million to \$21 million. Part of the gain in Mexican imports under NAFTA is attributable to the peso devaluation in December 1994, which made it easier for hand-picked Mexican snap beans to compete with machine-harvested product from Florida.

Imports grew steadily in volume between 1994 and 1997 and then declined in 1998 and 1999, due partly to lower yields in Mexico and larger U.S. output (especially in Florida). In 2000, imports equaled 20,673 metric tons - a record high - with a value of \$23 million. Responding to strong demand, domestic fresh snap bean production reached its highest point since 1951.

Although imports from Mexico generally have increased under NAFTA, Mexico's share of total U.S. snap bean imports has declined slightly, from 94 percent during 1989-93 to 91 percent during 1994-2000. Canada has picked up much of this lost share, with its share rising from 5 percent to 7 percent across the same two periods.

Total U.S. snap bean exports increased 69 percent in volume between 1993 and 2000, but this development is largely due to increased sales to the Dominican Republic and not to NAFTA. Exports to the Dominican Republic surged from 17 metric tons in 1994 (and zero in 1993) to an average of 11,651 metric tons during 1998-2000.

Still, Canada is the top foreign market for U.S. snap beans, with a 66-percent share of U.S. export volume in 2000. Exports to Canada increased from 14,000 metric tons in 1990 (and 3,681 metric tons in 1989) to 20,971 metric tons in 2000. The value of this trade increased from \$14 million to \$21 million between 1990 and 2000. Export volume grew steadily during 1998-2000, after experiencing little to no growth during 1995-97.

### **Trade Issues**

There have been no trade disputes involving snap beans.

## **NAFTA's Impact on Snap Bean Trade**

Between 1993 and 2000, U.S. fresh-market snap bean imports from Mexico increased 92 percent, with much of this gain occurring in 1995. Prior to NAFTA, the average ad valorem equivalent U.S. tariff on Mexican snap beans was 8.04 percent. According to ERS estimates, NAFTA and URAA tariff changes would have increased U.S. snap bean imports from Mexico by 6 percent above what would have occurred otherwise. Had only URAA been implemented, this increase would have been only 3 percent. Other factors - such as weather, the peso devaluation, and rising demand for fresh snap beans—likely account for the majority of the change in trade.

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## **Fresh and Processed Potatoes**

### **Policy Changes Resulting from NAFTA**

*United States.* Prior to 1995, the United States imposed a general tariff of 0.77 cents per kilogram on all fresh and seed potatoes, 17.5 percent on frozen potatoes, and 10 percent on frozen french fries, potato chips, and other prepared potatoes. Under URAA, the United States gradually reduced these tariffs over the 6-year period that ended on January 1, 2001. As a result, the general tariff now equals 0.50 cents per kilogram for fresh and seed potatoes, 14 percent for frozen french fries, 8 percent for other french fries, and 6.4 percent for potato chips and other prepared potatoes.

Under CFTA, the United States implemented many tariff reductions with respect to Canadian potatoes. On January 1, 1989, the United States immediately lifted its tariffs on fresh yellow (Solano) potatoes, seed potatoes, potato chips and other prepared potatoes, and yellow frozen french fries from Canada. In addition, the United States gradually eliminated its tariffs for Canada on frozen potatoes, other fresh potatoes, and other frozen french fries over the 9-year period that ended on January 1, 1998.

Under NAFTA, the United States made similar tariff reductions for Mexico. Tariffs on fresh yellow (Solano) potatoes, seed potatoes, potato chips and other prepared potatoes, and yellow frozen french fries from Mexico were immediately eliminated on January 1, 1994. After a 4-year transition period that concluded on January 1, 1998, the United States eliminated its

tariffs for Mexico on frozen potatoes, other fresh potatoes, and other frozen french fries.

CFTA allows the United States to implement a “snapback” provision on fresh potatoes from Canada, but only until 2008. Given certain conditions, the United States has the discretion to re-institute the tariff level (0.50 cents per kilogram) associated with most-favored-nation (MFN) status, the rate that applies to most countries outside of NAFTA. To date, the United States has not exercised its “snapback” option for fresh potatoes.

*Mexico.* Prior to 1994, Mexico imposed tariffs of 15 percent on frozen potatoes and 20 percent on dried potatoes, frozen french fries, and other prepared potatoes from Canada and the United States. In addition, Mexico required import licenses for fresh potatoes.

Under NAFTA, all tariffs on processed potatoes from the United States and Canada are being phased out over a 9-year period that ends on January 1, 2003. In addition, Mexico eliminated its import license requirements for Canadian and U.S. fresh potatoes and instituted a TRQ in their place. With an import permit (in conjunction with the TRQ) and a phytosanitary permit, fresh potatoes may be exported to Mexico, but the potatoes must be treated with a sprout inhibitor to ensure that they cannot be used as seed.

Under the TRQ for fresh potatoes, the United States initially received a duty-free quota of 15,000 metric tons. This amount increases at an annual rate of 3 percent during the 9-year transition period. For 2001, the duty-free quota is 18,448 metric tons. Initially, over-quota imports were assessed a tariff of \$354 per metric ton, but not less than 272 percent. For 2001, the over-quota tariff equals \$134 per metric ton, but not less than 103.3 percent ad valorem.

Mexico's processed potato industry is also protected by TRQ's, but the over-quota tariff is Mexico's MFN rate of 20 percent. In 1994, the TRQ's for processed potatoes were 1,800 metric tons for frozen potatoes, 200 metric tons for dried potatoes, 3,100 metric tons for frozen french fries, and 5,400 metric tons for other prepared potatoes. These quotas grow at an annual rate of 3 percent. For 2001, the quotas are approximately 2,214 metric tons for frozen potatoes, 246 metric tons for dried potatoes, 3,813 metric tons for frozen french fries, and 6,641 metric tons for other prepared potatoes.

*Canada.* Prior to 1989, the general Canadian tariff on fresh and seed potatoes was 7.72 Canadian dollars per

metric ton, and the tariff on frozen french fries and other prepared potatoes was 10 percent. Under CFTA and NAFTA, Canada phased out its tariffs on U.S. potatoes and potato products, until they reached zero on January 1, 1998.

### **Potato Trade with Mexico**

Between 1989 and 1993, U.S. fresh potato exports to Mexico grew from 4,910 metric tons to 17,409 metric tons. Although the volume of these exports fell slightly in 1994 and 1995, they rose substantially over the next 4 years to 37,380 metric tons in 1999. In 2000, exports declined to 30,776 metric tons. U.S. exports to Mexico of fresh potatoes have exceeded the TRQ in each year since NAFTA's implementation. The United States imports virtually no fresh potatoes from Mexico (none since 1993).

U.S. exports to Mexico of frozen french fries also have increased under NAFTA. In 1993, exports equaled 8,540 metric tons. In 1994, this total jumped to 13,216, and by 2000, exports had grown to 31,199 metric tons.

Potato chip exports to Mexico have fluctuated under NAFTA but generally have trended upward. These exports averaged 8,777 metric tons per year during 1994-2000, compared with 2,584 metric tons during 1989-93. During the 4 years prior to NAFTA (1990-93), the United States imported an average of 1,528 metric tons of potato chips from Mexico. Since then, the United States has only imported a small amount of chips from Mexico, and only in 3 years: 1994 (448 metric tons), 1997 (0.34 metric tons), and 2000 (0.56 metric tons).

### **Potato Trade with Canada**

U.S. exports to Canada of fresh and seed potatoes have been substantially higher in volume under CFTA and NAFTA than they were during the 5 years immediately prior to CFTA. Exports averaged 126,272 metric tons per year during 1989-91 and 235,809 metric tons during 1992-2000, compared with just 43,094 metric tons during 1984-88. Exports in 2000 equaled 249,822 metric tons.

U.S. exports of frozen french fries to Canada averaged 17,843 metric tons per annum during 1996-2000, more than double the average of 6,713 metric tons for 1991-95. Much of this increase is attributable to Canada's decision in December 1995 to relax its strict packaging and labeling rules for U.S. frozen french fries sold to the Canadian food service sector. However,

with the rapid expansion of the Canadian french fry processing industry over the past several years, U.S. fry exports to Canada sagged somewhat in 1999 and 2000 and are likely to be negatively affected in the coming years. During 1996-2000, U.S. potato chip exports to Canada averaged 18,938 metric tons per year, up from an average of 9,710 metric tons during 1991-95.

U.S. fresh and seed potato imports from Canada have varied substantially under CFTA and NAFTA, ranging from a low of 181,990 metric tons in 1992 to a high of 480,961 metric tons in 1998. The annual average for 1996-2000 was 411,847 metric tons, 44 percent above the 1989-95 average. In 2000, imports equaled 365,287 metric tons.

Potato chip imports from Canada have increased significantly in the last three years. Imports equaled 2,177 metric tons in 1998 and 4,721 metric tons in 1999, and 17,121 metric tons in 2000. In each of these years, the volume of trade exceeded the cumulative total of 1,519 metric tons that occurred during the first 9 years following CFTA's implementation (1989-97).

Except for a small decrease in 1989, U.S. frozen french fry imports from Canada have increased steadily under CFTA and NAFTA, from 45,985 metric tons in 1988 to 480,060 metric tons in 2000. This expansion corresponds to a compound annual growth rate of 24 percent.

### **Trade Issues**

*Antidumping Duties on U.S. Potatoes.* Since 1984, Canada has imposed an antidumping duty against U.S. fresh potatoes imported into British Columbia. Potatoes imported between May 1 and July 31 are not subject to the duty. The Canadian International Trade Tribunal (CITT) reviewed the antidumping duties in 2000, and decided that the duties would continue for another 5 years. The Tribunal concluded that if the duties were rescinded, U.S. potatoes would enter British Columbia in high volumes at "dumped prices" that would injure the domestic industry in that province. CITT considers "dumped prices" to be significantly below "normal" prices for potatoes, as calculated by the Canadian Customs and Revenue Agency.<sup>1</sup>

<sup>1</sup> The complete ruling may be read on the CITT website at [ftp://ftp.citt.gc.ca/doc/english/Dumping/Reviews/Orders\\_Reasons/rr99005e.pdf](ftp://ftp.citt.gc.ca/doc/english/Dumping/Reviews/Orders_Reasons/rr99005e.pdf).

*Outbreak of Potato Wart on Prince Edward Island.* On January 2, 2001, Canada requested NAFTA Consultations with the United States with respect to U.S. restrictions on imports of potatoes from the province of Prince Edward Island (PEI), following the discovery of a potato wart outbreak on October 26, 2000. Potato wart is a soil-borne fungus that produces lesions on potatoes, rendering them unmarketable. The Canadians believe that they have substantially proven through scientific sampling of soil that this outbreak is an isolated problem and that PEI potatoes are free of the fungus and thus safe to export. Trade sources estimate that PEI potato producers have suffered about \$15 million in damages. The United States buys almost 10 percent of the annual PEI potato crop. In 1999, about 96,000 metric tons of PEI potatoes were destined for the United States. On April 30, 2001, the United States resumed imported PEI potatoes from the 2000 crop year, following months of discussions with Canadian officials on measures aimed at mitigating the risk of spreading the potato wart fungus.

### **NAFTA's Impact on Potato Trade**

U.S. exports of fresh and processed potatoes to Canada and Mexico have benefited from CFTA and NAFTA. Increased potato trade with Mexico has primarily been unilateral, with the United States making significant gains in the export of processed potato products, particularly french fries. Fresh exports to Mexico are limited by a TRQ that is relatively large, compared with the TRQ's for processed potato products. As these restrictions are gradually eliminated, U.S. exports to Mexico should continue to increase. The United States imports little to no potatoes or potato products from Mexico despite the elimination of tariffs on these products.

U.S.-Canada potato trade has increased in both directions under CFTA and NAFTA, with Canada gaining more exports than the United States. Increased imports of fresh and processed potatoes from Canada have occurred for several reasons in addition to the two agreements. First, Canadian potato production has expanded greatly, with six record crops in the last 7 years. Second, the Canadian processing industry has experienced rapid growth, particularly in the provinces of Manitoba and Alberta. Some of this growth is the result of direct investment by U.S.-owned companies. Lamb-Weston owns a plant in Alberta, and the J.R. Simplot Company is building a plant in Manitoba, scheduled for completion in 2002. Third, the Canadian dollar is relatively weak, having depreciated 20 percent vis-a-vis the U.S. dollar over the period 1989-

99. Imports, particularly of frozen french fries, are likely to increase over the next several years as the Canadian processing industry continues to expand.

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## **Frozen Broccoli and Cauliflower**

### **Policy Changes Resulting from NAFTA**

*United States.* Prior to 1995, the general U.S. tariff on frozen broccoli and cauliflower was 17.5 percent. Under URAA, the United States decreased this tariff to 14 percent over the 6-year period that ended on January 1, 2001.

Under CFTA and NAFTA, the United States phased out its tariff on Canadian frozen broccoli and cauliflower over the 9-year period that ended on January 1, 1998.

Under NAFTA, the United States immediately lowered its base tariff on frozen broccoli and cauliflower from Mexico to 15 percent. This tariff is being phased out over the 9-year period that ends on January 1, 2003.

*Mexico.* Prior to 1994, Mexico levied a 15-percent tariff on frozen broccoli and cauliflower from the United States. Under NAFTA, these tariffs are being phased out over the 9-year period that ends on January 1, 2003.

*Canada.* Prior to 1989, Canada imposed a 20-percent tariff on frozen broccoli and cauliflower from the United States. Under CFTA and NAFTA, this tariff declined 10 percent a year, until it fell to zero on January 1, 1998.

### **Frozen Broccoli and Cauliflower Trade under CFTA and NAFTA**

When NAFTA was implemented, Mexico was already the dominant player in the U.S. market for frozen broccoli and cauliflower. During 1989-93, Mexico supplied 91 percent of U.S. frozen broccoli imports and 93 percent of its frozen cauliflower imports. However, Mexico's share of U.S. frozen broccoli imports declined from 89 percent in 1993 to 82 percent in 2000, as lower-cost product from Guatemala increased its market share from 11 percent to 16 percent. Meanwhile, Mexico's share of U.S. frozen cauliflower imports remained fairly constant, dropping slightly from 90 percent to 89 percent over the same period. Guatemala

is also the second largest source of U.S. frozen cauliflower imports, with a share of 7 percent in 2000.

In 1992, the United States imported 156,058 metric tons of frozen broccoli from Mexico - the highest volume before NAFTA. Since the agreement's implementation, imports have surpassed this level only once - in 1996, with a volume of 158,779 metric tons. However, U.S. frozen broccoli imports from Mexico generally have been larger under NAFTA in both volume and value terms. During 1994-2000, imports averaged 144,048 metric tons per year with an average annual value of \$91 million, compared with 120,823 metric tons and \$80 million for 1989-93. In 2000, imports equaled 137,272 metric tons, with a value of \$99 million. Poor weather conditions and pest problems have hampered Mexican production over the past several years.

U.S. imports of frozen cauliflower from Mexico reached 26,620 metric tons in 1994. Since then, imports have not regained this level, due to production problems and reduced demand in the United States. Per capita use of frozen cauliflower in the United States has declined by nearly half since the late 1980's, after peaking at 0.9 pounds. In 1999, imports from Mexico reached 20,148 metric tons, their highest level since 1994, with a value of \$16 million. In 2000, they equaled 18,053 metric tons, with a value of \$15 million. On average, U.S. imports of frozen cauliflower from Mexico have been smaller under NAFTA. During 1994-2000, imports averaged 19,270 metric tons, with an average value of \$17 million, compared with 22,571 metric tons and \$14 million during 1989-93.

### **Trade Issues**

There have been no trade disputes involving frozen broccoli and cauliflower.

### **NAFTA's Impact on Frozen Broccoli and Cauliflower Trade**

Between 1993 and 2000, U.S. imports of frozen broccoli from Mexico increased 3 percent in volume, while

corresponding imports of frozen cauliflower dropped 17 percent. Considering only the impact of NAFTA and URAA tariff changes, ERS estimates suggest that U.S. imports of frozen broccoli and frozen cauliflower from Mexico would have increased by 6 percent and 3 percent respectively above what would have occurred otherwise. Had only URAA been implemented, tariff changes would have accounted for a 1-percent increase in frozen broccoli imports from Mexico and an increase of less than 1 percent in frozen cauliflower imports from Mexico.

Production difficulties in Mexico and changes in consumer demand are likely to have had a greater impact on U.S.-Mexico frozen broccoli and cauliflower trade than NAFTA tariff changes. Between 1988-90 and 1998-2000, per capita consumption of frozen broccoli in the United States remained unchanged. On the other hand, the introduction of various convenient fresh-cut products helped to drive per capita consumption of fresh-market broccoli up 59 percent over the same period. Accordingly, fresh broccoli imports from Mexico increased 254 percent in volume between 1993 and 2000. Between 1988-90 and 1998-2000, U.S. per capita consumption of frozen cauliflower dropped 27 percent. Per capita consumption of fresh cauliflower - 3 percent of which is imported—declined 19 percent over the same period.

Although small relative to Mexican volume, U.S. imports of frozen broccoli and cauliflower from Canada have increased substantially under CFTA and NAFTA. This is likely due to the elimination of tariffs between Canada and the United States and the strong U.S. dollar. Between 1989 and 2000, frozen broccoli imports from Canada jumped by 2,135 percent (from a very low base) to 2,308 metric tons, while frozen cauliflower imports increased 335 percent to 6,929 metric tons. U.S. export data are not reported separately for frozen broccoli and cauliflower.

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# Fruits and Fruit Juices

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## Fresh Citrus

### **Policy Changes Resulting from NAFTA**

*United States.* Before the Canada-U.S. Free Trade Agreement (CFTA), the general U.S. tariff on fresh oranges was 2.2 cents per kilogram. For fresh grapefruit, the general tariff was 2.2 cents per kilogram from August through September, 1.8 cents per kilogram during October, and 2.9 cents per kilogram during the rest of the year. The general tariff on limes was 2.2 cents per kilogram.

In accordance with the Uruguay Round Agreement on Agriculture (URAA), the United States decreased its tariff on fresh oranges and grapefruit by 15 percent and its tariff on fresh limes by 20 percent. These reductions took place over the 6-year period that ended on January 1, 2001. The tariff now equals 1.9 cents per kilogram for fresh oranges and 1.8 cents per kilogram for limes. In addition, the United States reduced its seasonal tariffs for grapefruit under URAA. These tariffs fell to 1.9 cents per kilogram for August 1 to September 30, 1.5 cents per kilogram for October, and 2.5 cents per kilogram for November 1 to July 31.

Under CFTA, which was subsumed into NAFTA, the United States gradually reduced its tariffs on fresh oranges and fresh grapefruit from Canada over a 9-year period, until they reached zero on January 1, 1998. Under NAFTA, the United States immediately eliminated its tariff on Mexican oranges during the June-November period, and it phased out the December-May tariff over the 4-year period that ended on January 1, 1998. For Mexican grapefruit, the United States immediately eliminated the August-September tariff on January 1, 1994, and it is phasing out the other tariffs over the 9-year period that ends on January 1, 2003.

*Mexico.* Prior to 1994, Mexico levied a tariff of 20 percent on fresh oranges, grapefruit, and limes. Under NAFTA, Mexico immediately eliminated its tariffs on oranges, tangerines, and limes from the United States on January 1, 1994. Mexico imposes a seasonal tariff on grapefruit similar to that of the United States.

*Canada.* Prior to 1989, Canada had no tariff on fresh citrus. This policy has continued under CFTA and NAFTA.

### **Fresh Citrus Trade Since NAFTA**

The United States is a net exporter of fresh oranges and grapefruit and a net importer of limes. Almost all U.S. lime imports originate in Mexico. Historically, U.S. exports of fresh citrus to Mexico have been quite small and variable. During the 1990's, Mexico accounted for less than 1 percent of total U.S. citrus exports.

In 2000, the United States shipped 8,860 metric tons of fresh oranges and tangerines to Mexico, up 1,577 percent from very low levels in 1993. Export value in 2000 was \$5 million, about 1 percent of total fruit and vegetable exports to Mexico. In 1998, the United States exported 369 metric tons of grapefruit to Mexico, up 361 percent from 1993 and valued at \$122,991. However, increasing Mexican grapefruit production reduced this trade in 1999 and 2000. Under NAFTA, U.S. grapefruit exports to Mexico have ranged from 75 metric tons in 2000 to 1,735 metric tons in 1995.

In the first years of NAFTA, Mexico allowed citrus imports only from producing areas in California that are not regulated for fruit fly. In January 1996, the United States and Mexico finalized a phytosanitary protocol to allow the export of citrus products from producing areas in Texas that are not regulated for fruit fly. The ban on Arizona citrus was lifted in 1997. Florida is still trying to gain approval for exports of its citrus fruits to Mexico.

U.S. imports of fresh citrus from Mexico consist mostly of limes. In 2000, these imports were valued at \$54 million, about 3 percent of total fruit and vegetable imports from Mexico. Fresh citrus imports from Mexico reached 211,197 metric tons in 1999, a 92-percent increase from 1993, but slipped to 191,697 tons in 2000. Imports of fresh limes, grapefruit, and oranges must meet U.S. marketing order minimum requirements.

U.S. lime consumption has more than doubled since the 1980's, but domestic production has decreased. Lime-bearing area in Florida began declining from a high of 7,300 acres in the 1982/83 growing season



(October 1, 1982 to September 30, 1983). After Hurricane Andrew in August 1992, this area fell to 1,900 acres in 1993. During the 1993/94 and 1994/95 seasons, U.S. lime production accounted for only 3 percent of domestic consumption. Replanting slowed substantially after a high rate of activity immediately following the hurricane. Production, however, has been increasing slowly. In 1999/2000, domestic production of 44 million pounds accounted for 12 percent of consumption.

Mexico is the main supplier of limes to the U.S. market, accounting for 99 percent of total U.S. lime imports in 2000. Imports from Mexico have grown steadily over the last decade and first exceeded U.S. production in 1991. Part of the increase in this trade is due to the decline in U.S. production following Hurricane Andrew. In 1993, the first full year after the hurricane, imports from Mexico were up 37 percent from the 1990-91 average. Imports of Mexican limes have continued to increase under NAFTA. Between 1993 and 2000, they increased 74 percent to 179,002 metric tons in 2000.

Except for limes, Mexican fresh citrus from areas other than Sonora must be treated for fruit flies before shipment to the United States. Methyl bromide is the primary treatment. Citrus from the fruit-fly-free areas of Sonora requires only a certificate from the Mexican government that notes the place of origin. New protocols for treatment available under certain circumstances for other citrus fruits are being discussed, as producers search for cheaper and less damaging treatment processes. Mexican producers are currently experimenting with treating fresh citrus in a hot air chamber before shipment to the United States. Mexico has proposed a systems approach that includes trapping pests as an alternative to spraying. This proposal is under review. Limes are resistant to fruit flies, and no treatment is required before export to the United States.

Canada is a mature market, representing about one quarter of all U.S. fresh citrus exports in the 1990's. U.S. orange and grapefruit exports to Canada are relatively stable but sensitive to the U.S.-Canada exchange rate. During 1994-2000, U.S. orange exports to Canada averaged 174,911 metric tons per year, down slightly from an average of 180,457 metric tons during 1990-93. U.S. grapefruit exports to Canada have averaged 63,961 metric tons under NAFTA (1994-2000), compared with 68,536 metric tons during 1990-93. Although trade data occasionally show U.S. imports

from Canada, these are thought to be re-exports of specialty citrus purchased elsewhere.

### **Trade Issues**

There have been no trade disputes involving fresh citrus. However, Florida has been unable to gain export approval for its citrus fruits under Mexico's phytosanitary standards.

### **NAFTA's Impact on Fresh Citrus Trade**

NAFTA has helped facilitate the resolution of concerns regarding phytosanitary barriers. Elimination of these barriers probably will have a greater impact on U.S. exports of fresh oranges and grapefruit than tariff reductions, since the barriers limit U.S. exports from Florida, a major citrus producer.

Lime imports continue to increase, following a trend that was well established before NAFTA. Ignoring other changes that have occurred since 1993, tariff changes under NAFTA and URAA are estimated to have boosted U.S. lime imports from Mexico by 2 percent above what would have been otherwise. Had only URAA been implemented, tariff changes would only account for an increase of less than 1 percent. The long-term decline in the Florida industry, accelerated by Hurricane Andrew, has had a greater impact on U.S. lime trade than NAFTA's tariff reductions.

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## **Orange Juice**

### **Policy Changes Resulting from NAFTA**

*United States.* Prior to 1995, the most-favored-nation (MFN) tariff on frozen concentrated orange juice (FCOJ) was 35.02 cents per single-strength equivalent (SSE) liter. With URAA, the United States gradually reduced this tariff by 15 percent over the 6-year period that ended on January 1, 2001. Now, the general tariff equals 29.72 cents per SSE gallon.

Under the U.S. tariff-rate quotas (TRQ's) established by NAFTA, about 40 million SSE gallons of FCOJ and about 4 million gallons of single-strength orange juice (SSOJ) may enter the United States from Mexico each year at preferential tariff rates, while over-quota imports are subject to higher tariff rates (table L-1). All U.S. tariffs on Mexican orange juice are to be phased out

**Table L-1—U.S. orange juice imports from Mexico and transitional restrictions on that trade under NAFTA**

	Imports of frozen concentrated orange juice (FCOJ)							Imports of single-strength orange juice (SSOJ) subject to TRQ**					
	Total orange juice imports		Actual trade		TRQ	Within-quota tariff	Over-quota tariff (or tariff, if no TRQ)	Actual trade		TRQ	Within-quota tariff	Over-quota tariff (or tariff, if no TRQ)	
	Value	Volume	Value	Volume				Value	Volume				Value
	<i>Million dollars</i>	<i>Gallons</i>	<i>Million dollars</i>	<i>Gallons</i>	<i>Gallons</i>	<i>Cents/gallon</i>	<i>Gallons</i>	<i>Million dollars</i>	<i>Gallons</i>	<i>---Gallons---</i>		<i>Cents/gallon</i>	
1989	57.5	45,260,660	45.3	36,220,405	n.a.	n.a.	35.02	10.4	7,510,257	n.a.	n.a.	20.06	
1990	88.6	63,415,487	66.0	44,910,918	n.a.	n.a.	35.02	15.3	14,053,696	n.a.	n.a.	20.06	
1991	45.0	49,459,231	41.5	46,596,260	n.a.	n.a.	35.02	3.5	2,862,971	n.a.	n.a.	20.06	
1992	7.0	6,603,425	6.2	5,835,119	n.a.	n.a.	35.02	0.8	766,982	n.a.	n.a.	20.06	
1993	14.3	20,986,762	13.8	20,359,095	n.a.	n.a.	35.02	0.5	625,693	n.a.	n.a.	20.06	
1994	43.1	45,984,971	40.6	43,670,048	40,081,647	17.51	34.14	2.4	2,293,509	4,071,140	10.03	18.72	
1995	62.7	68,869,050	57.5	63,728,818	40,081,647	17.51	33.26	5.2	5,104,734	4,071,140	10.03	17.39	
1996	54.8	49,812,801	50.2	46,236,628	40,081,647	17.51	32.39	4.5	3,559,284	4,071,140	10.03	16.05	
1997	42.6	51,062,993	39.5	48,397,517	40,081,647	17.51	31.51	3.1	2,659,340	4,071,140	10.03	14.71	
1998	65.3	67,945,071	63.6	66,640,599	40,081,647	17.51	30.64	1.6	1,285,479	4,071,140	10.03	13.37	
1999	49.4	48,730,322	44.6	45,545,282	40,081,647	17.51	29.76	4.2	2,708,507	4,071,140	10.03	12.04	
2000	39.8	43,586,246	37.6	42,312,290	40,081,647	17.51	29.72	2.2	1,266,104	4,071,140	10.03	10.70	
2001	--	--	--	--	40,081,647	17.51	29.72	*	--	--	End of quantitative restrictions	n.a.	9.36
2002	--	--	--	--	40,081,647	17.51	29.72	*	--	--	n.a.	n.a.	8.03
2003	--	--	--	--	40,081,647	17.51	29.72	*	--	--	n.a.	n.a.	6.69
2004	--	--	--	--	40,081,647	17.51	23.81	--	--	--	n.a.	n.a.	5.35
2005	--	--	--	--	40,081,647	17.51	17.86	--	--	--	n.a.	n.a.	4.01
2006	--	--	--	--	End of quantitative restrictions	n.a.	11.91	--	--	--	n.a.	n.a.	2.68
2007	--	--	--	--	n.a.	n.a.	5.95	--	--	--	n.a.	n.a.	1.34
2008	--	--	--	--	n.a.	n.a.	Duty-free	--	--	--	n.a.	n.a.	Duty-free

\*As mandated by the Uruguay Round Agreement on Agriculture (URAA)

\*\*Several tariff lines corresponding to SSOJ are not subject to the TRQ. In most years, the volume of this trade is relatively small

n.a. = not applicable

All volumes are expressed in single-strength equivalent (SSE) gallons.

Sources: For trade data, Foreign Agricultural Trade of the United States database; for TRQs, NAFTA tariff schedule of the United States.

over the 14-year period that ends on January 1, 2008. For 2001, the within-quota tariff for FCOJ equals 17.51 cents per SSE gallon, while the over-quota tariff equals 29.71 cents per liter. This over-quota rate is slightly lower than what NAFTA originally specified, due to U.S. reductions in its MFN tariffs under URAA. Both the within-quota and over-quota tariffs for SSOJ equal 9.36 cents per gallon for 2001. Since the over-quota tariff has fallen to the same level as the in-quota tariff, the over-quota rate applies to all SSOJ imports from Mexico and the TRQ for that product is no longer in effect. In addition, all Mexican citrus juice exported to the United States must be made entirely of fruit produced in the NAFTA countries, in accordance with the agreement's rules of origin.

NAFTA includes a snapback provision to protect U.S. producers from sudden surges in FCOJ imports from Mexico. If imports exceed a certain volume and if the domestic price falls below a certain level, the MFN tariff rate is automatically re-instated. The volume threshold is set at roughly 70 million SSE gallons for 1994-2002 and about 90 million SSE gallons for 2003-07.

The definition of the price threshold is far more complex. If for 5 consecutive days, the daily closing price of FCOJ on the New York futures market falls below the most recent 5-year average of the market's monthly closing price of FCOJ for the month in question, the price threshold is triggered. This calculation, however, excludes the highest and lowest monthly closing averages for the 5-year period. The price trigger has been met several times, but the volume threshold has never been met. Thus, the snapback provision has not been put into effect.

Under CFTA and NAFTA, the U.S. tariff for Canadian orange juice fell to zero on January 1, 1998, following a 9-year period of gradual reductions.

*Mexico.* Prior to 1994, Mexico levied a tariff of 20 percent on imported orange juice. Under NAFTA, Mexico is generally matching U.S. tariff changes for each tariff line over the 14-year transition period. However, Mexican tariffs on U.S. orange juice may not exceed their pre-NAFTA level of 20 percent. As part of this transition, Mexico instituted TRQ's of about 194,000 SSE gallons for FCOJ and about 34,000 gallons for SSOJ. The TRQ for FCOJ expires on January 1, 2006, and the TRQ for SSOJ ended on January 1, 2001.

*Canada.* Prior to 1989, bulk FCOJ entered Canada duty-free, but retail-ready orange juice was subject to a tariff of 3 percent. Under CFTA and NAFTA, the tariff for U.S. orange juice was reduced 10 percent per year, until it reached zero on January 1, 1998.

### **Orange Juice Trade under NAFTA**

Most of the U.S. orange juice supply is from Florida. After several hard freezes during the 1980's, Florida's production plummeted and imports increased. As the industry rebuilt, reliance on imports declined. In the 1999/2000 production season, imports accounted for 20 percent of the FCOJ consumed in the United States, compared with 40 percent during 1985/86 to 1989/90.

The freezes of the 1980's also damaged the Mexican citrus industry. Like their counterparts in Florida, Mexican producers expanded production to warmer areas further south during the rebuilding process. As prices were high following the freezes, Mexico invested heavily in the citrus industry. Between 1980 and 1995, the country's orange-producing area increased from 350,000 to 765,700 acres. However, much of the new production area is in small holdings, and yields are often much lower than in the older production regions. High production costs and interest rates have slowed the planting of orange acreage. Some growers have found it advantageous to plant other crops, such as limes, in place of oranges.

Mexican processing facilities also increased in number during the 1980's, although most Mexicans consume fresh oranges or prepare juice from fresh oranges at home rather than buy prepared orange juice. The Mexican FCOJ market is a residual market, and almost all juice is exported. While processors buy most of their oranges on the market, some are now beginning to plant orange groves to ensure adequate supply. In 1989/90, processed utilization reached more than 60 million SSE gallons of orange juice.

In the early 1990's, Mexico appeared poised to expand its orange juice exports. However, as Florida's citrus industry recovered from the freeze and world prices declined, Mexican opportunities in the U.S. market also declined. Mexican exports to the United States averaged 52 million SSE gallons per year during 1989-91 but equaled less than 7 million SSE gallons in 1992 and about 21 million SEE gallons in 1993. Under NAFTA, this trade has continued to fluctuate while experiencing little growth. During 1994-2000, exports averaged 54 million SSE gallons - just 2 percent above

the 1989-91 level. In 2000, this trade totaled 44 million SSE gallons, with a value of \$40 million.

Mexican exports to the United States of both FCOJ and SSOJ have fluctuated under NAFTA, and it is difficult to discern a general trend in this trade. So far, Mexico's FCOJ exports to the United States have filled the TRQ for that product every year, and this trade came fairly close to the volume threshold of the snap-back provision in 1995 and 1998. In 1995, Mexican orange juice exports to the United States were unusually high due to exceptionally good production and quality in Mexico during the 1994/95 growing season. In 1998, Mexico's share of the U.S. market increased at the expense of Brazil. In contrast, Mexico filled the SSOJ quota only once - in 1995 - during the 7-year existence of that TRQ.

Once small in volume, Mexican orange juice imports from the United States have grown substantially in recent years, from 763,972 SSE gallons in 1997 to 3.7 million SSE gallons in 2000. However, the previous pattern of trade was one of high variability, so it remains to be seen whether the recent expansion in trade is a lasting development. Nevertheless, Mexican imports of U.S. FCOJ exceeded the TRQ in 1996, 1998, 1999, and 2000, and corresponding imports of SSOJ always filled the quota during the 7-year existence of the TRQ for that product.

The volume of U.S. orange juice exports to Canada has changed little under CFTA and NAFTA. Exports equaled 47 million SSE gallons in 2000, compared with 48 million SSE gallons in 1990. However, the structure of this trade has changed profoundly, reflecting Canada's elimination of its tariff on retail-ready orange juice from the United States and technological changes in the packaging and marketing of orange juice. Between 1990 and 2000, FCOJ exports to Canada dropped from 47 million to 3 million SSE gallons, while SSOJ exports climbed from 1 million to 45 million SSE gallons. In contrast, the United States imports relatively little orange juice from Canada, but this trade also has expanded, from 384,456 SSE gallons in 1989 to 1.8 million SSE gallons in 2000.

### **Trade Issues**

There have been no trade disputes involving orange juice.

### **NAFTA's Impact on Orange Juice Trade**

Early ERS estimates suggested that NAFTA and URAA tariff reductions would have a limited impact on U.S. orange juice imports from Mexico. So far, developments have borne out this prediction, and the average annual volume of this trade during 1994-2000 was just 2 percent higher than in 1989-91. However, the potential for increased imports from Mexico always remains, should U.S. growers or other foreign suppliers experience production problems. With respect to U.S. orange juice exports to Canada, CFTA and NAFTA have helped to shift the composition of this trade from FCOJ to SSOJ.

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### **Fresh Apples**

#### **Policy Changes Resulting from NAFTA**

*United States.* Prior to 1989, all apples entered the United States duty-free. There has been no change in this policy under the Canada-U.S. Free Trade Agreement (CFTA) and NAFTA.

*Mexico.* Prior to 1994, Mexico imposed a tariff of 20 percent on fresh apples. Import licenses were eliminated in 1991. As part of NAFTA, Mexico established a tariff-rate quota (TRQ) for U.S. apples. The TRQ was initially set at 55,000 metric tons, somewhat below pre-NAFTA levels, but it increases at an annual rate of 3 percent. The within-quota tariff is being phased out over the 9-year period that ends on January 1, 2003. Over-quota apples enter at the lower of Mexico's most-favored-nation (MFN) duty in 1993 (20 percent) or the MFN rate in effect when the over-quota apples are imported.

Phytosanitary certificates are required to export U.S. apples to Mexico due to concerns regarding oriental fruit moth and apple maggot. Both pests can inflict major damage to apple crops, as their larval stages feed on the flesh of the fruit and cause the fruit to rot internally. Most countries accept U.S. systems approaches for pest management as adequate protection against the threat of apple maggot. However, Mexico requires cold treatment for its imported fruit. At the beginning of the shipping season, Mexican inspectors examine the storage/treatment facilities to

ensure that temperature probes are approved and properly calibrated. After the cold treatment is over, treatment records are reviewed. Apples destined for Mexico are treated either at 32 degrees Fahrenheit for 40 days or at 37.9 degrees Fahrenheit for 90 days.

Due to this requirement, most U.S. apples exported to Mexico are marketed later in the season, when much of the Mexican harvest has already been sold. The 40-day treatment carries a greater risk of damage to the fruit, but it is attractive from a marketing perspective. Exports to Mexico must also be free of plant debris and soil. There is a maximum average tolerance of 2 leaves per box, which is more problematic for Golden Delicious apples than for Red Delicious apples. This requirement is unique to Mexico.

Currently, U.S. apple exports to Mexico are limited to apples from Washington State, Oregon, California, Idaho, Colorado, Utah, Michigan, New York, Pennsylvania, Virginia, and West Virginia, with the exception of any area regulated for fruit flies of quarantine importance. Within these areas, only storage/treatment facilities that have been inspected and cleared by Mexican phytosanitary officials may take part in the export program, which is expensive to producers. To date, only producers in Washington, Oregon, and Idaho have participated. Producers in these States are able to spread the costs of inspection over a large volume of apples. The Northwest apple industry is charged for the cost of the Mexican inspectors, who are in residence during the entire shipping season to monitor the program. The industry collects money from shippers throughout the season to pay for the phytosanitary requirements.

In November 1998, Mexico agreed to end its supervision of this inspection program. The State of Washington's Department of Agriculture and USDA's Animal and Plant Health Inspection Service (APHIS) will supervise the program, beginning with the 2001 harvest.

*Canada.* Prior to 1989, Canada did not levy a tariff on U.S. apples, and this policy has remained unchanged under CFTA and NAFTA. Canada generally restricts bulk sales in large, nonstandard containers such as bins or trucks, which makes trade more difficult for U.S. producers. Sales of apples in containers over 25 kilograms are prohibited, unless the Canadian government grants an easement. In October 1997, the Canadian Food Inspection Agency (CFIA) initiated a 2-year trial allowing inter-provincial shipments and imports of bulk fresh apples in bins with a net weight of up to

200 kilograms. In addition, the CFIA removed all weight restrictions for apples destined for processing. The test market for bulk fresh apples is still valid until the regulatory package is incorporated into the Fresh Fruit and Vegetable Regulation. The test market for processing apples was discontinued on April 27, 1998.

### ***Apple Trade under CFTA and NAFTA***

The United States is a net exporter of apples. In 2000, Mexico accounted for 19 percent of U.S. apple exports, and Canada purchased 13 percent. While Canada's share has been fairly constant under NAFTA, Mexico's share has slipped from a high of 21 percent in 1994. In 2000, U.S. apple exports to Mexico equaled \$102 million, 14 percent of total fruit and vegetable exports to that country. In the same year, U.S. apple exports to Canada totaled \$66 million, 4 percent of U.S. fruit and vegetable exports to Canada.

Mexico was far and away the largest market for U.S. apples in the 1999/2000 marketing season. U.S. exports to Mexico were almost double the volume of exports to Canada and Taiwan, the next largest foreign customers for U.S. apples. Mexico's removal of its import licensing requirement in 1991 was the first step towards increasing U.S. apple exports. As a result, U.S. apple exports to Mexico grew dramatically, from 12,027 metric tons in 1990 to 108,380 metric tons in 1993. In 1994, exports rose 29 percent to a record 153,003 metric tons. U.S. apple prices were quite low in 1994 due to a record crop, which helped to boost Mexican demand.

In 1995, U.S. apple exports to Mexico fell to 74,370 metric tons, as Mexican demand collapsed amidst various economic problems. Exports increased somewhat in 1996 and 1997, as economic conditions improved. However, this trade totaled only 87,837 metric tons in 1997, still below 1993 levels. Mexico imposed antidumping duties in September 1997, which reduced exports in the fall of that year. In March 1998, Mexico replaced these duties with a minimum price floor. U.S. apple exports to Mexico dropped another 22 percent in 1998, to 68,918 metric tons. Further reductions in the minimum floor price boosted exports to 132,105 metric tons in 1999 and 185,200 metric tons in 2000.

U.S. apple exports to Canada have increased under CFTA and NAFTA, even though this trade was duty-free prior to the two agreements. During the first 2 years of CFTA, exports grew substantially, from

47,101 metric tons in 1988 to 80,191 metric tons in 1990. Trade expanded at a slower pace during 1992-96, with exports ranging from 71,901 metric tons in 1992 to 82,449 metric tons in 1994. Over the last 4 years (1997-2000), exports have been relatively constant, averaging 91,304 metric tons per year.

U.S. apple imports from Canada have varied widely under CFTA and NAFTA, ranging from 37,193 metric tons in 1994 to 78,661 metric tons in 1996. During 1998-2000, this trade averaged 40,731 metric tons, reflecting the record-large U.S. apple crop in 1998 and above-average crops in 1999 and 2000. The United States imports few apples from Mexico.

### **Trade Issues**

*Canadian Antidumping Investigation.* U.S. Red Delicious apples faced antidumping duties in Canada from 1989 until February 8, 2000 when the antidumping duty on Red Delicious apples was revoked. The original antidumping case expired in early 1994, but growers filed a new complaint. In October 1994, Revenue Canada made a preliminary determination that dumping was occurring and imposed temporary duties on Red and Golden Delicious apples from the United States. The final determination in January 1995 concurred with the preliminary finding. The Canadian International Trade Tribunal (CITT) found that there was material injury to the Red Delicious apple industry but not the Golden Delicious industry, so the antidumping duty on Golden Delicious apples was dropped. It is too early to tell how much the lifting of the antidumping duty has affected U.S. exports to Canada.

*Mexican Antidumping Investigation.* On March 6, 1997, Mexico initiated an antidumping investigation against U.S. apples. The Secretariat of Commerce and Industrial Promotion (SECOFI) made a preliminary determination of dumping and imposed a preliminary, compensatory import duty of 101.1 percent on Red and Golden Delicious apples, effective September 1, 1997. On March 19, 1998, the U.S. apple industry and SECOFI signed an agreement suspending this duty, and the U.S. industry agreed to comply with a minimum-price scheme. This minimum price is based on the 3-year weighted average of the Washington Growers Clearing House Association's freight-on-board price for those 2 varieties. Starting in 1999, the minimum price is adjusted every November 1, using the average of the 3 previous crop years. The

minimum price for 2001 (set in November 2000) is \$11.48 per standard 42-pound carton.

*Alleged Non-Compliance with U.S. Labor Law.* Mexican unions, along with the International Brotherhood of Teamsters, the United Farm Workers of America, and the International Labor Rights Fund, have filed a complaint against the U.S. apple industry, mainly in Washington State. The complaint alleges that the Washington apple industry does not comply with U.S. labor laws. The Teamsters and United Farm Workers are currently cooperating in efforts to unionize Washington fruit warehouse and fieldworkers. Many laborers in the Washington apple industry are Mexican or of Mexican descent.

This complaint marks the first time that Mexico has used the provisions of the North American Agreement on Labor Cooperation (NAALC)—NAFTA's labor accord—to allege violations of U.S. labor law. To deal with such complaints, the NAFTA labor accord specifies a lengthy 10-step process that offers numerous opportunities for the government against which a complaint is filed to resolve the issue satisfactorily. However, the accord provides for the imposition of stiff penalties, should this fail to happen. If a final ruling in the apple labor complaint should go against the United States, the U.S. Government could be fined and the U.S. apple industry could lose NAFTA tariff concessions.

The first hearing took place in Mexico City on December 2, 1998, before the Mexican National Administrative Office of the Labor Secretariat. This hearing led to the signing of a joint declaration by the U.S. Department of Labor (DOL) and the Mexican Secretariat of Labor and Social Welfare on May 18, 2000, to carry out ministerial consultations on this issue in accordance with the provisions of the NAALC. Hopefully, these consultations will result in the satisfactory resolution of the complaint.

Under the joint declaration, officials of both governments will meet to exchange information regarding the role of Federal and State agencies in the protection and promotion of the rights of migrant workers in the United States and to explore potential avenues of cooperation regarding the protection of migrant workers. In late May, DOL hosted a government-to-government session in Washington, D.C. to provide Mexican government officials information about the application of U.S. law. Topics that are to be discussed include union organizing and bargaining rights, the elimination of employment discrimination, minimum conditions of employment, and occupational safety

and health. In addition, DOL conducted public outreach sessions at various sites within the United States to educate migrant agricultural workers about their rights in the workplace, as well as public forums regarding agricultural-worker issues.

Discontent with the Mexican Inspection Process. Shippers in Washington State were unhappy with the cost of the phytosanitary inspection process. In 1998, they refused to sign the financial plan that authorizes payment for the Mexican inspectors in their State. There were no apple shipments to Mexico from October 1 until early November, when Mexico agreed to end its supervision of the phytosanitary program. Mexico and the United States agreed to a transition from Mexican inspectors to supervision by the State of Washington's Department of Agriculture and APHIS representatives, beginning with the 2001 harvest. Officials from both countries are continuing to iron out the details of this transition.

### **NAFTA's Impact on Apple Trade**

NAFTA is one of several factors that boosted U.S. apple exports to Mexico over the last decade. Mexico's lifting of its import licensing requirements in 1991 was a major development, and continuing economic growth in Mexico following the painful recession of 1995 certainly has helped U.S. exporters. Resolving phytosanitary issues with Mexico ought to further boost this trade. However, a number of factors have worked to limit U.S. apple exports to Mexico, including antidumping duties and the minimum price arrangement described above.

CFTA and NAFTA have not had a direct influence on U.S.-Canada apple trade, since this trade was free of tariffs prior to the two agreements, although Canada did impose antidumping duties on U.S. Red Delicious apples from 1989 to February 2000.

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## **Fresh Pears**

### **Policy Changes Resulting from NAFTA**

*United States.* The United States does not impose a tariff on fresh pears during the months of April, May, and June. Prior to 1995, the general U.S. tariff for other months was 1.1 cents per kilogram. Under the Uruguay Round Agreement on Agriculture (URAA),

this tariff was gradually reduced to 0.3 cents per kilogram over the 6-year period that ended on January 1, 2001.

Under NAFTA, the United States immediately eliminated its import tariff on fresh Mexican pears on January 1, 1994. With CFTA and NAFTA, the U.S. tariff on Canadian pears declined 10 percent per year until January 1, 1998, when it fell to zero. Under certain price and acreage conditions, the United States and Canada may implement a snapback to MFN tariff rates. This authorization expires in 2008.

*Mexico.* Prior to NAFTA, Mexico levied a tariff of 20 percent on U.S. pears. Under NAFTA, this tariff was immediately cut to 15 percent on January 1, 1994. The remainder of the tariff was phased out over the 4-year period that ended on January 1, 1998.

For U.S. pears to enter Mexico, a USDA phytosanitary export certificate must be obtained from APHIS. Before issuing this certificate, APHIS must confirm that oriental fruit moth and plum curculio, two pests that feed on the fruit, are not present. In addition, it must ensure that the pears come from Washington State, Oregon, or California and are not produced in areas regulated (quarantined) for fruit flies of quarantine importance. Shipments must be substantially free of leaves (a limit of 2 leaves per box) and debris. U.S. pear exports to Mexico are not required to be examined by Mexican inspectors in the United States.

*Canada.* Before CFTA, Canada levied a seasonal tariff on fresh pear imports of 3.31 cents per kilogram, but not less than 12.5 percent ad valorem. This tariff was imposed during the marketing season, but it could not be in effect for more than 24 weeks during any 12-month period ending March 31. For the purposes of the tariff, Canada was divided into three regions, and the timing of the tariff differed according to region. Under CFTA and NAFTA, the tariff declined 10 percent per year until it fell to zero on January 1, 1998.

### **Pear Trade under CFTA and NAFTA**

The United States is a net exporter of pears. In 2000, Canada purchased 28 percent of U.S. pear exports, and Mexico bought 50 percent. In that year, the United States exported \$42 million of pears to Mexico, 6 percent of total U.S. fruit and vegetable exports to Mexico.

U.S. exports of fresh pears to Mexico began to grow rapidly in the late 1980's. From 1989 to 1993, these exports expanded from 20,784 to 38,653 metric tons. In 1994, they increased 68 percent to a record 65,112 metric tons. U.S. pear production for the fresh market reached record levels that year, and U.S. prices were very low, which probably contributed to strong Mexican demand.

In 1995, U.S. pear exports to Mexico dropped 61 percent, largely due to the recession that followed the peso crisis. Following 2 years of reduced exports, exports began rising in 1998 to a new high of 82,332 metric tons in 2000. Mexican pear exports to the United States are very small in number.

U.S. pear exports to Canada have increased during the CFTA-NAFTA era. Exports climbed from 51,093 metric tons in 1989 to 80,191 metric tons in 1990 and then ranged from 71,901 to 84,229 metric tons during 1991-96. Over the last 4 years (1997-2000), this trade has averaged 91,304 metric tons per year. U.S. pear imports from Canada are small in comparison. Between 1989 and 2000, they ranged from 68 to 837 metric tons.

### **Trade Issues**

There have been no trade disputes involving fresh pears.

### **NAFTA's Impact on Pear Trade**

Despite NAFTA tariff reductions, U.S. pear exports to Mexico fell sharply in 1995 due to the painful recession that followed the Mexican peso crisis of December 1994. However, this trade increased substantially with sustained improvements in the Mexican economy and the elimination of Mexico's tariff on U.S. pears. In 2000, U.S. pear exports to Mexico equaled 82,332 metric tons, 26 percent higher than in 1994, when Mexico cut its tariff on U.S. pears from 20 to 15 percent, and more than double their 1993 level.

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## **Fresh Peaches**

### **Policy Changes Resulting from NAFTA**

*United States.* Peaches enter duty-free from December through May. At other times, imports are subject to a tariff. Before URAA, the general tariff was 0.4 cents per kilogram. Under URAA, the United States gradually reduced this tariff to 0.2 cents per kilogram over the 6-year period that ended on January 1, 2001.

Under NAFTA, the United States eliminated its duty on Mexican peaches. With CFTA and NAFTA, the tariff on fresh peaches from Canada declined 10 percent a year until it fell to zero on January 1, 1998. The United States and Canada each have a snapback to MFN tariff levels until January 1, 2008.

*Mexico.* Prior to 1994, Mexico charged a tariff of 20 percent on fresh peaches from the United States. Under NAFTA, Mexico immediately cut this tariff to 15 percent. The remainder of the tariff was phased out over the 4-year period that ended on January 1, 1998.

*Canada.* Prior to 1989, Canada charged a seasonal tariff of 6.61 Canadian cents per kilogram, but not less than 12.5 percent ad valorem, on U.S. peaches. The seasonal tariff applied during a specified period, which could not exceed 14 weeks in any 12-month period ending March 31. Under CFTA and NAFTA, this tariff declined by 10 percent a year until it fell to zero on January 1, 1998. Until January 1, 2008, Canada is entitled to invoke a snapback duty under special circumstances regarding import prices and Canadian peach production areas.

### **Fresh Peach Trade under CFTA and NAFTA**

U.S. export data include fresh peaches and fresh nectarines in the same category. In 2000, the United States exported \$10 million of these fresh fruits to Mexico, 1.4 percent of total U.S. fruit and vegetable exports to Mexico. The volume of this trade reached 15,497 metric tons in 2000, just 4 percent shy of the 1994 record and up 147 percent from 1993. Fresh peach exports in 2000 consisted entirely of fruit destined for the fresh market.

In 1991, the United States exported 14,587 metric tons of fresh peaches and nectarines to Mexico, a record that lasted until 1994. In 1992, Mexico required methyl bromide fumigation of imported peaches



because of concerns about oriental fruit moth, and this trade dropped to 9,023 metric tons. During NAFTA's first 7 years (1994-2000), exports averaged 13,505 metric tons per year, surpassing the 1991 level in 1994, 1997, 1998, and 2000.

A portion of U.S. fresh peach exports to Mexico is utilized for processing. During the first 5 years of NAFTA (1994-98), the share of peaches destined for Mexico's fresh market plummeted from 79 percent of total U.S. exports of fresh peaches to 25 percent.

Methyl bromide fumigation has had a serious and lasting impact on U.S. peach and nectarine exports to Mexico. This treatment not only adds to the cost of the product, but it also lowers the quality and durability of the fruit. In 1995, the Mexican government required that its representatives be in residence in the United States to monitor the fumigation process, which further increased costs. In 1998, all U.S. peach exports to Mexico came from California. Producers in other States are eligible for the export program, but it is not profitable enough for them to participate. Not all producers have access to methyl bromide fumigation facilities. An area must have sufficient volume to justify the cost of having Mexican representatives in residence to monitor the fumigation process.

In 1997, Mexico accepted a systems approach for fresh peaches from California, as an alternative to methyl bromide fumigation. After finding a single oriental fruit moth in a regulatory inspection in July 1997, Mexico cancelled the program in 1998. Subsequent negotiations between U.S. and Mexican officials in 1999 and 2000 led to the continuation of the systems approach during the 1999 and 2000 seasons. After declining in 1998 and 1999, U.S. fresh peach exports to Mexico increased to 15,497 metric tons in 2000, an increase of 42 percent over the previous year's level. Although the systems approach has boosted U.S. peach exports, it is costly for U.S. growers and shippers.

In 1987, the U.S. cling peach industry began to export fresh peaches to Mexico City for processing there. Cling peaches are used almost exclusively for canned peaches. In 1992, the industry began shipping to a new canning facility just south of the U.S.-Mexico border. U.S. exports to Mexico of fresh peaches destined for canning increased every year from 1993 through 1998, with the exception of 1996. Even in 1995, when most exports to Mexico were affected by declining

consumer demand, exports of fresh peaches for canning continued to rise.

U.S. cling peach exports to Mexico for canning ended abruptly in 1999. In November 1998, Mexico dropped a preliminary compensatory duty of 43.51 percent on Greek canned peaches after finding no evidence of dumping of Greek canned peaches. The current duty for canned peaches from Greece is 23 percent. This lower duty coupled with the already low price of Greek peaches encouraged the Mexican firm to drop its processing of peaches and to import canned peaches from Greece instead.

Mexico exports few peaches to the United States, and this trade takes place almost exclusively during April. Currently, exports are limited to those from the fruit-fly-free zone in Sonora. These exports are highly variable. During 1989-93, Mexican exports of fresh peaches and nectarines to the United States ranged from 37 to 197 metric tons. During 1994-2000, they averaged 128 metric tons per year, ranging from zero in 1994 to 283 in 1998.

U.S. exports of fresh peaches and nectarines to Canada averaged 45,874 metric tons per year during 1989-2000 and equaled 50,134 metric tons in 2000. Through 1998, U.S. peach exports to the Canadian province of British Columbia had to be fumigated with methyl bromide, but no Canadian inspectors reside in the United States to monitor the inspection process. For the 1999 season, a pilot program was developed for shipping peaches and other stone fruit to British Columbia under a systems approach that does not require fumigation. Imports from Canada are much smaller in volume and highly variable, ranging from 187 metric tons in 1994 to 3,110 metric tons in 1990 and averaging 607 metric tons per year during 1989-2000.

### ***Trade Issues***

Aside from the phytosanitary problems discussed above, there have been no trade disputes involving peaches.

### ***NAFTA's Impact on Peach Trade***

NAFTA tariff reductions have had a positive effect on U.S. peach exports to Mexico, but other factors have had a greater impact. First, the opening and closing of a peach-canning plant just south of the U.S.-Mexico border exerted a tremendous influence on this trade. Peach exports destined for processing increased 784

percent from 1993 to 1998 and then ended abruptly in 1999, with the closing of the plant.

Second, Mexico's phytosanitary requirements have raised the costs for U.S. producers and shippers, making fresh peach exports to Mexico from some parts of the United States uneconomical. However, the implementation of a systems approach for California peaches appears to have boosted U.S. peach exports to Mexico. Considering only peaches destined for the fresh market, U.S. exports to Mexico fell 22 percent between 1993 and 1998, but this trade almost recouped its 1994 high of 16,227 metric tons in 2000.

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## **Avocados**

### ***Policy Changes Resulting from NAFTA***

*United States.* Prior to 1995, the United States levied a general tariff of 13.2 cents per kilogram on avocados. Under URAA, this tariff was reduced to 11.2 cents per kilogram over the 6-year period that ended on January 1, 2001. Under NAFTA, the United States is reducing its tariff on Mexican and Canadian avocados over the 9-year period that ends on January 1, 2003. For 2001, the U.S. tariff for Mexican avocados equals 2.6 cents per kilogram.

*Mexico.* Prior to 1994, Mexico's general tariff on avocado imports was 20 percent. Under NAFTA, the tariff for U.S. avocados is being phased out and will reach zero on January 1, 2003.

*Canada.* Prior to 1989, Canada did not impose a tariff on avocado imports. There have been no changes in this policy under CFTA and NAFTA.

### ***Avocado Trade under CFTA and NAFTA***

From 1914 to 1993, the United States prohibited fresh avocado imports from Mexico due to phytosanitary concerns. Since 1993, Mexico and the United States have implemented a series of measures designed to permit freer trade in fresh avocados while adequately addressing phytosanitary concerns. In July 1993, the United States began to allow Mexico to ship fresh avocados to Alaska year-round. Then, on January 31, 1997, APHIS approved a rule that allows the importation of Hass avocados from certain growers in the Mexican state of Michoacán to certain parts of the

United States during the months of November through February. Approved U.S. destinations for this trade are the District of Columbia and 19 States east of the Mississippi River: Connecticut, Delaware, Illinois, Indiana, Kentucky, Maine, Maryland, Massachusetts, Michigan, New Hampshire, New Jersey, New York, Ohio, Pennsylvania, Rhode Island, Vermont, Virginia, West Virginia, and Wisconsin. The months from November through February were selected because cold weather in the approved destinations would likely kill any pests that slipped through pest control safeguards. This time period precedes the peak harvest of California Hass avocados. The first imports under the new regulations began in November 1997.

### ***Trade Issues***

Under the APHIS systems approach, Mexican avocado imports must meet stringent pest-control requirements in production, packing, and transportation to minimize the risk of introducing pests to the United States that could threaten the health of U.S. avocado groves. Mexican producers apply a country-of-origin sticker to each avocado, indicating the phytosanitary number of the packinghouse and a statement that distribution be limited to the approved destinations. Avocados entering the United States are shipped in sealed refrigerated vehicles. In the first year of the program, no pests of concern were found in groves approved for the export program. However, there have been a few compliance problems since 1997. A small portion of Mexican avocados shipped to the authorized destinations was later shipped outside the restricted area. The volume of Mexican avocados out of compliance was estimated to be less than 1 percent of Mexican exports in 1999 and 2000. Firms found guilty may be fined up to \$250,000, but most cases have been settled. With the lack of pest interception thus far, the Mexican government has requested to expand market access to additional northern-tier states that do not contain host material for any avocado-specific pests and have climatic conditions that do not support the establishment of fruit flies. They also have requested to extend the shipping season.

### ***NAFTA's Impact on Avocado Trade***

In 2000, the United States imported \$21 million of fresh avocados from Mexico, less than 1 percent of total U.S. fruit and vegetable imports from that country. In the first 12 months of the export program (November 1997 through February 1998), U.S. imports of fresh avocados from Mexico totaled 6,031 metric tons, about 20 percent of the volume of Hass

avocados shipped from California during the same period. In calendar year 2000, imports from Mexico equaled 13,135 metric tons, more than double that amount. Mexican avocados have claimed an increasing share of U.S. avocado imports, 20 percent in 2000 compared with 6 percent in 1992. Also, total U.S. avocado imports have increased from 3 percent of total avocado supplies in 1992/93 (utilized domestic production plus imports) to 32 percent in 1999/2000. Meanwhile, U.S. avocado exports to Canada dropped from 5,310 metric tons in 1993 to 790 metric tons in 2000, as the relative strength of the U.S. dollar makes Mexican avocados more attractive to Canadian importers.

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## **Grapes**

### ***Policy Changes Resulting from NAFTA***

*United States.* In accordance with URAA, the United States gradually reduced its tariffs on grapes over the 6-year period that ended on January 1, 2001. Currently, the MFN tariff is zero during April, May, and June, \$1.80 per cubic meter from July 1 to February 14, and \$1.13 per cubic meter from February 15 to March 31.

Under CFTA, the United States gradually reduced its tariff on Canadian grapes 10 percent a year, until it fell to zero on January 1, 1998. Under certain conditions, the United States has the option of implementing a snapback to MFN tariff levels. This provision expires on January 1, 2008. Under NAFTA, the United States immediately eliminated its tariffs on Mexican grapes on January 1, 1994.

*Mexico.* Prior to 1994, Mexico levied a tariff of 20 percent on imported grapes and required import licenses for fresh table grapes. Under NAFTA, Mexico eliminated the import licenses and replaced them with tariffs. The tariff for October 15 to May 31 was immediately eliminated on January 1, 1994. The tariff for the rest of the year is being reduced from 20 percent to zero in equal increments over the 9-year period that ends on January 1, 2003. For 2001, the tariff for the June 1 to October 15 period is 4 percent. Currently, imports from the United States must originate in areas of California without fruit-fly quarantine.

*Canada.* Prior to 1989, Canada imposed a seasonal tariff of 2.21 Canadian cents per kilogram on grapes. Under CFTA, the tariff declined 10 percent a year until it fell to zero on January 1, 1998. Snapback provisions apply until January 1, 2008. Under NAFTA, Canada gradually eliminated its seasonal tariff on Mexican table grapes over the 4-year period that ended on January 1, 1998.

### ***Grape Trade under CFTA and NAFTA***

The United States is a net importer of grapes. Most grape imports come from Chile during the U.S. off-season. Mexico is the second largest source of imports and generally ships grapes to the United States during May and June, with smaller amounts in early July. Imports from April 20 through August 15 must meet the standards of a California grape marketing order that establishes minimum maturity requirements. In 2000, U.S. grape imports from Mexico totaled \$142 million, 6 percent of total U.S. fruit and vegetable imports from Mexico.

The California grape industry ships fresh table grapes from June through January, but the volume in June is very small. In 2000, Canada was the largest export market for U.S. grapes, Hong Kong was second, and Mexico was third. That year, U.S. grape exports to Mexico were valued at \$38 million, 5 percent of total U.S. fruit and vegetable exports to Mexico. Exports to Canada equaled \$113 million, 4 percent of total U.S. fruit and vegetable exports to that country.

U.S.-Mexico trade in table grapes has increased steadily in both directions since 1989. In 1993, the U.S. and Mexican governments agreed to new phytosanitary standards for grape trade. U.S. exports to Mexico climbed from an average of 5,125 metric tons during 1991-93 to an average of 31,698 metric tons during 1998-2000. U.S. imports from Mexico also rose in the 1990's. Imports averaged 93,142 metric tons per year during 1998-2000, compared with 40,419 metric tons during 1991-93.

U.S. exports of table grapes to Canada have generally decreased since 1990. These exports fell from an average of 112,105 metric tons per year during 1991-93 to an average of 88,841 metric tons per year during 1998-2000. U.S. imports of Canadian grapes are small and erratic. They grew to 5,910 metric tons in 1999, but dropped back to 4,447 metric tons in 2000. Most imports from Canada enter in September.

## **Trade Issues**

*Mexican Labeling Rule.* In 1997, the Mexican government issued a rule concerning the labeling of grapes. In addition to domestic Mexican labeling, the rule required a country-of-origin label in Spanish for imported grapes. Initially, Mexico required U.S. shippers to apply the label, an idea that California shippers strongly resisted. Eventually, the rule was revised to allow either the U.S. shipper or the Mexican importer to apply the label. The grape industries in California and Sonora worked together to get this rule revised.

*U.S. Antidumping Petition.* On March 30, 2001, the Desert Grape Growers League and its producer-members filed a petition asking that the U.S. International Trade Commission (ITC) conduct an antidumping investigation under Section 731 of the Tariff Act of 1930 regarding spring table grapes from Chile and Mexico. The ITC rejected the petition.

### **NAFTA's Impact on Grape Trade**

Prior to 1994, Mexican grapes entered the United States duty-free from April through June. NAFTA eliminated tariffs for the rest of the year, making this trade duty-free year round. During 1989-93, Mexican grape exports to the United States during the July-to-March period averaged only 5 percent of annual exports. During the first 5 years of NAFTA (1994-98), that trade constituted 17 percent of the total. In 1999 and 2000, that share fell back to 7 percent and 5 percent, respectively, of U.S. table grape imports from Mexico.

The opening of trade under NAFTA, specifically Mexico's end of its licensing requirement, was very important to U.S. grape exporters. Eliminating the Mexican tariff on U.S. exports during the fall also helps the U.S. industry, as do aggressive market promotion efforts.

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## **Cantaloupe**

### **Policy Changes Resulting from NAFTA**

*United States.* Prior to 1995, the United States levied a general tariff of 20 percent on cantaloupe during the period of August 1 to September 15 and 35 percent during the rest of the year. However, from the mid-1980's through 1992, the United States frequently

exempted fresh cantaloupe imported between January 1 and May 15 from the applicable general tariff. Under URAA, the United States gradually reduced its general tariffs on cantaloupe to 12.8 percent for August 1 to September 15 and to 29.8 percent during the rest of the year. These reductions occurred over the 6-year period that ended on January 1, 2001.

Under CFTA and NAFTA, the United States gradually reduced its tariff on Canadian cantaloupe by 10 percent a year, until the tariff reached zero on January 1, 1998. NAFTA includes a snapback to MFN tariff levels under certain conditions until January 1, 2008.

Under NAFTA, the United States is phasing out its tariff on Mexican cantaloupes imported during the period from August 1 to September 15. This transition is occurring over the 9-year period that ends on January 1, 2003. The tariffs for May 16 to July 31 and September 16 to November 30 are being gradually eliminated over the 14-year period that ends on January 1, 2008. The tariff for December 1 to May 15 was immediately eliminated on January 1, 1994. For 2001, the tariffs for May 16 to July 31 and for September 16 to November 30 equal 16.33 percent, and the tariff for August 1 to September 15 equals 4 percent.

*Mexico.* Prior to 1994, Mexico levied a 20-percent tariff on imported cantaloupe. Under NAFTA, Mexico is matching or exceeding the pace of the U.S. phase-out of its seasonal tariffs. Upon NAFTA's implementation, Mexico immediately eliminated its tariffs on U.S. cantaloupe for December 1 to May 15 and for August 1 to September 15. The tariffs for the rest of the year are being gradually eliminated over the 9-year period that ends on January 1, 2003. For 2001, the tariffs for May 16 to July 31 and for September 16 to November 30 equal 4 percent.

*Canada.* Canada did not levy a tariff on cantaloupe prior to 1989, and this policy has remained unchanged under CFTA and NAFTA.

### **Cantaloupe Trade Since NAFTA**

The United States is a net importer of cantaloupe. During the 1990's, imports have averaged 24 percent of supply, compared with 13 percent during the 1980's. This increase is due to stronger off-season demand for fruits and vegetables, some of which is linked to the popularity of fruit and salad bars. Per capita use of cantaloupes reached 11.8 pounds per person in 1998,

up from 9.2 pounds in 1990 and 5.8 pounds in 1980. For cantaloupe and other melons, this expanded off-season demand can only be served by imports. While growth in domestic production kept pace with population growth during the 1980's and 1990's, imports increased 156 percent.

Almost all cantaloupe imports enter the United States between November and June. During this period, Mexico is a major supplier. In 2000, Mexico accounted for 27 percent of U.S. cantaloupe imports and was the only source of these imports during June and July. The nations of the Caribbean Basin Initiative (CBI) accounted for almost all of the remaining 73 percent. Cantaloupe from CBI countries enters the United States duty-free.

Cantaloupe imports from Mexico generally have increased since NAFTA's implementation but have only reached levels common to the early 1990's in the last several years. In 1992 and 1993, some cantaloupe-producing areas in Mexico suffered adverse weather conditions, and it took several years for the industry to recuperate. The United States imported 68,275 metric tons of Mexican cantaloupe in 1993 and a record 196,968 metric tons in 1999, compared with the previous record of 163,641 metric tons in 1991. In 2000, imports dropped to 136,064 metric tons, with a value of \$49 million.

U.S. cantaloupe exports to Canada have increased almost without interruption under CFTA and NAFTA. In volume terms, these exports have increased from 27,602 metric tons in 1989 to 67,890 metric tons in 2000, while the value of this trade has climbed from \$7 million to \$29 million. Canada accounted for 96 percent of total U.S. cantaloupe exports in 2000.

### **Trade Issues**

There have been no trade disputes involving cantaloupes.

### **NAFTA's Impact on Cantaloupe Trade**

U.S. tariffs on cantaloupes for the periods of May 16 to July 31 and September 16 to November 30 are being phased out over a 14-year period. This is the longest transition period specified by NAFTA. Between 1993 and 2000, Mexican cantaloupe exports to the United States increased 99 percent, but exports were extremely low in 1993 due to bad weather in Mexico and relatively low in 2000. NAFTA and URAA tariff changes alone were expected to increase

these exports by 17-25 percent. Had only URAA been implemented, these exports were predicted to increase by 5 percent. The large increase in Mexican exports is primarily due to the recovery of the Mexican cantaloupe industry.

Between 1993 and 2000, U.S. cantaloupe exports to Canada increased 35 percent in volume. Holding other factors constant, NAFTA and URAA tariff changes were expected to increase these exports 4-7 percent. Had only the URAA tariff changes been implemented, these exports would have increased 1 percent.

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## **Watermelon**

### **Policy Changes Resulting from NAFTA**

*United States.* Prior to 1995, the United States levied a general tariff of 20 percent on watermelons. Under URAA, the United States gradually decreased the tariff for December 1 to March 31 to 9 percent and the tariff for the rest of the year to 17 percent. These reductions occurred over the 6-year period that ended on January 1, 2001.

Under NAFTA, the tariff for the main U.S. production period (May 1 to September 30) is being phased out over the 9-year period that ends on January 1, 2003. The tariff for the rest of the year was eliminated immediately on January 1, 1994. For the May-September period, the United States introduced a TRQ, initially set at 54,400 metric tons for 1994. The quota grows 3 percent over the 9-year transition period and then is eliminated altogether. Over-quota imports from Mexico are subject to the lower of the MFN rate in place on July 1, 1991, or the current MFN rate. For 2001, the TRQ for the May-September period is 66,905 metric tons, and the over-quota tariff equals 4 percent.

Under CFTA and NAFTA, the United States reduced its tariff on Canadian watermelon 10 percent per annum until the tariff was eliminated on January 1, 1998. A snapback provision to MFN tariff levels applies to U.S.-Canada watermelon trade under certain conditions until January 1, 2008.

*Mexico.* Before NAFTA, Mexico levied a 20-percent tariff on watermelons. With NAFTA, this tariff is limited to the same period (May 1 to September 30) as

the U.S. tariff. The Mexican tariff is to be phased out over the 9-year period that ends on January 1, 2003. For 2001, the tariff equals 4 percent.

*Canada.* Canada had no tariff on watermelon prior to 1989. This policy has remained unchanged under CFTA and NAFTA.

### **Watermelon Trade Since NAFTA**

Since NAFTA's implementation in 1994, Mexico has supplied 92 percent of U.S. watermelon imports. Imported watermelon dominates the U.S. market from October through April, but imports from Mexico are largest during April and May when the U.S. season is just getting underway. In 2000, U.S. watermelon imports from Mexico equaled 107,821 metric tons, with a value of \$48 million.

Mexican watermelon production suffered a decline in the early 1990's, with exports to the United States reaching a low of 81,763 metric tons in 1992. Over the next 5 years, exports increased steadily, peaking at 209,372 metric tons in 1997. Since then, this trade has declined steadily to its current level in 2000. Mexican exports to the United States during the months of the TRQ (May to September) have never filled the quota, and in 1999 and 2000, Mexican exporters completely avoided shipping watermelons to the United States during the months in which the TRQ is in force. Canada exports few if any watermelons to the United States.

The catalyst for this import growth is stronger demand in the U.S. market. During 1994-98, U.S. per capita

watermelon consumption averaged 13 percent higher than during 1989-93. This increase partially reflects strong industry promotion, but it may also be due to greater availability of new seedless watermelon varieties, which appear to be popular with consumers.

Under CFTA and NAFTA, U.S. watermelon exports to Canada have increased almost without interruption, with 97 percent of all U.S. watermelon exports went to Canada during 1989-2000. Over this period, U.S. watermelon exports increased in volume from 37,882 metric tons to 130,365 metric tons, while the value expanded from \$5 million to \$35 million over the same period. The expansion of this trade is particularly noteworthy, since this trade was duty-free long before the implementation of the two agreements. Very little U.S. watermelon is exported to Mexico, generally less than 1 percent of the U.S. crop.

### **Trade Issues**

There have been no trade disputes involving watermelons.

### **NAFTA's Impact on Watermelon Trade**

Between 1993 and 2000, U.S. imports of Mexican watermelon increased 122 percent in volume, but in 1993, the United States imported an unusually small volume of watermelons. There are no discernible impacts on producers due to NAFTA, since most import volume occurs during the U.S. off-season.

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