Special Article

NAFTA's Impacts on U.S. Agriculture: Trade & Beyond

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NAFTA, the North American Free Trade Agreement, has generally benefited U.S. agriculture and related industries. U.S. agricultural trade with Canada and Mexico more than doubled during the 1990s, a development to which NAFTA contributed. Moreover, the agreement has established rules and institutions that mitigate potential trade frictions, promote foreign direct investment, and facilitate public discourse about environmental issues. Thus, NAFTA's effects on agriculture should be assessed not only in terms of trade impacts, but also for the trade, investment, and institutional reforms resulting from its implementation.

The adjustment to freer trade in North America has been relatively smooth. Most U.S. barriers to Canadian and Mexican exports were low prior to NAFTA, and dismantling of tariffs under the agreement is in general proceeding gradually. However, the U.S. dollar has tended to appreciate in real terms against the Canadian dollar since 1992. While this development is not the result of NAFTA, it has made U.S. farm exports more expensive to Canadian customers while making imports more affordable to U.S. consumers. In contrast, the real value of the U.S. dollar in Mexican *pesos* has tended to decline in recent years, gradually reversing the precipitous drop in the *peso's* value that occurred in late 1994 and early 1995. This increase in value of the *peso* has worked to the advantage of U.S. exports to Mexico.

NAFTA Has Increased Trade of Some Products

NAFTA, which took effect January 1, 1994, provides for the progressive dismantling of most barriers to trade and investment among Canada, Mexico, and the U.S. over the 14-year period ending January 1, 2008. The agreement 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, tariff elimination for agricultural products is nearly complete. For this reason, NAFTA's influence on U.S. agriculture to date should provide a good indication of the agreement's long-term impacts.

U.S. agricultural trade with Canada and Mexico has continued on an upward trend since NAFTA's implementation. While only a portion of this 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. The agreement has facilitated a reorientation of U.S. agricultural trade in which U.S. exporters and importers put greater focus on the NAFTA region. In 2001, 29 percent of U.S. agricultural exports were destined for either Canada or Mexico, and the two countries supplied 38 percent of U.S. agricultural imports. In 1990, these shares were 17 percent and 25 percent, respectively.

To examine NAFTA's trade impact, USDA's Economic Research Service estimated the trade changes resulting from CFTA and NAFTA for 38 commodities or commodity groupings, isolating the agreements' influence from population growth, changes in macroeconomic performance and exchange rates, unusual weather patterns, and other factors. For commodities subject to quotas or other quantitative restrictions before CFTA and NAFTA, the volume of trade during 1994-2000 was compared with previously allowed quantities. This assumed no over-quota trading except where analysts determined that previous limits were not enforced. For commodities subject to tariffs prior to CFTA and NAFTA, economic models and assessments by commodity trade specialists were used to estimate the impact of tariff changes.

This article is based on a recently released ERS Report, "Effects of North American Free Trade Agreement on Agriculture and the Rural Economy" (WRS-02-1, July 2002, www.ers.usda.gov/publications/wrs0201/). The report provides a commodity-level assessment of NAFTA's impact on U.S. agricultural trade with Canada and Mexico, and it evaluates the agreement's influence on investment and employment in agriculture and related industries. Other topics addressed by the report include the relationship between trade liberalization and the environment and recent developments in U.S.-Mexico transportation.

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. The current edition of the report reflects the research team's understanding of economic and policy developments through early 2001.

For most commodities, NAFTA's trade effect has been relatively minor, generating a small increase in U.S. exports to or imports from Canada or Mexico over what would have occurred without the agreement. For a handful of commodities, NAFTA's impact has been larger, with an increase of 15 percent or more in trade attributable to the agreement. This increase is particularly noticeable for products whose trade was severely restricted prior to CFTA and NAFTA.

U.S.-Canada **beef** trade has expanded substantially from the elimination of quantitative restrictions formerly imposed by both countries. In fact, U.S. beef exports to Canada may be twice as high as without CFTA and NAFTA. In addition, NAFTA tariff reductions have provided a moderate boost to U.S. beef exports to Mexico. Continued economic growth in Mexico should strengthen demand for this high-value product.

Because of animal health considerations, North American **hog** trade consists almost entirely of Canadian exports to the U.S. and U.S. exports to Mexico. Canadian hog exports to the U.S. increased from about 900,000 head in 1994 to 5.3 million head in 2001, due largely to Canada's elimination of grain transport and other agricultural subsidies, rather than to CFTA or NAFTA. Removal of subsidy assistance to grain and hog producers, in particular, provided a strong incentive for the local use of grain in livestock production, and it helped bring about an end to U.S. countervailing duties on Canadian hogs. U.S. hog exports to Mexico currently face a duty of 35.1 cents per kilogram, the result of a Mexican antidumping investigation in 1998 and 1999.

CFTA and NAFTA have had a small, positive impact on U.S. **pork** and **poultry** meat exports to Canada and Mexico, but the influence of other factors has been more powerful. Sustained economic growth in Mexico during the late 1990s boosted demand for U.S. pork and poultry, and both Canada and Mexico have shown flexibility in their application of quantitative restrictions on U.S. poultry.

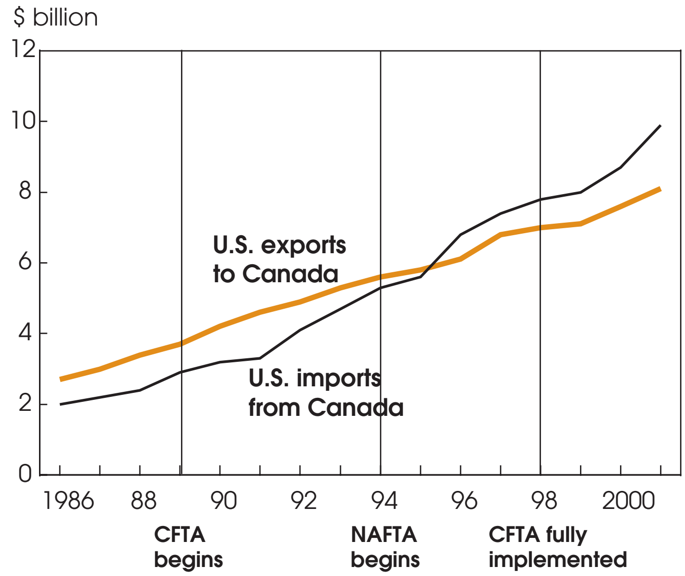
Mexico's import policy toward U.S. **corn** is more open than required by NAFTA, and a series of droughts limited Mexican corn production in past years. U.S. corn exports to Mexico in 2001 were more than three times their average volume during 1990-93. Although Mexico eliminated its seasonal tariff on U.S. **sorghum** as part of NAFTA, some Mexican livestock producers switched from sorghum to corn feed due to increased availability of U.S. corn. Still, sorghum is one of the major U.S. agricultural exports to Mexico.

The gradual elimination of tariffs on U.S.-Canada corn trade has facilitated increased volumes of trade in years when bad weather severely damaged the crop in one country but not the other. A prominent example of this occurred in 2001, when a drought in Canada led to the importation of 3 million metric tons (mt) of U.S. corn, compared with an annual average of just 890,000 mt during 1990-2000.

CFTA and NAFTA also gradually did away with tariffs on U.S.-Canada **wheat** trade. Although this reform has increased U.S. wheat *imports* from Canada by a large amount, its impact on U.S. wheat *exports* to Canada is negligible, reflecting both Canada's historic strength in wheat production and the long-term impact of Canada's various regulatory actions.

Canada and the U.S. continue to spar over the activities of the Canadian Wheat Board (CWB), and in February 2002, the Office of the U.S. Trade Representative (USTR) completed a Section 301 investigation of this subject, in which it concluded that the

U.S. Ag Trade With Canada Has Continued to Climb Since NAFTA. . .



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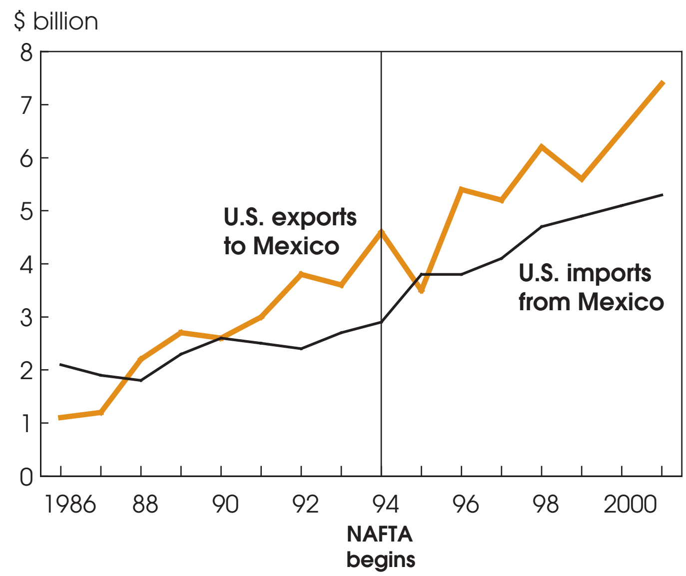

CFTA = Canada-U.S. Free Trade Agreement. NAFTA = North American Free Trade Agreement.

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CWB had "taken sales" from U.S. wheat farmers. In its finding, USTR outlined several measures that it would take to "level the playing field" for U.S. farmers, including the exploration of a possible dispute settlement case against the CWB in the World Trade Organization. Section 301 of the Trade Act of 1974, as amended, authorizes the Federal government to impose trade sanctions against foreign countries under certain conditions, including the violation of a trade agreement with the U.S. and the maintenance of "unjustifiable, unreasonable, or discriminatory" policies that restrict U.S. commerce. Section 301 investigations are conducted by USTR and may be initiated in response to a petition from an interested party or self-initiated by USTR.

The U.S. is currently the predominant foreign supplier of **rice** to Mexico, due largely to Mexico's strict phytosanitary standards which the U.S. meets but other major exporters do not. Should Asian rice exporters satisfactorily meet these standards, the U.S. tariff advantage under NAFTA would become extremely important to U.S. rice exporters. Rough rice accounts for the bulk of Mexico's rice imports. Currently, no major Asian rice producer allows this product to be exported, in an effort to preserve jobs associated with rice processing. Long grain milled rice from the U.S. has been subject to Mexican antidumping duties of up to 10.18 percent since June 2002. Shipments of this product make up about 10 percent of U.S. rice exports to Mexico.

NAFTA's impact on U.S.-Canada **oilseed** trade differs substantially from its impact on U.S.-Mexico trade in oilseeds. CFTA and NAFTA have increased two-way trade between Canada and the U.S. in processed oilseed products, particularly **vegetable oil**. In contrast, NAFTA has boosted U.S. **soybean** exports to Mexico, as expansion of the Mexican livestock industry has increased the demand for vegetable meal, which Mexico satisfies by crushing imported oilseeds.

The stock of U.S. direct investment in the Mexican food processing industry has increased by about two-thirds since NAFTA's implementation.

Creation of a tariff-rate quota (TRQ) for raw **peanuts** from Mexico has enabled that country to export substantial quantities of this product to the U.S. for the first time. In the last several years, Mexico also has begun to export **peanut butter and paste** to the U.S., but these products make up only a small proportion of U.S. consumption. U.S. imports of Canadian peanut butter are restricted by a TRQ, one of the few remaining tariff barriers between the U.S. and Canada.

To qualify for NAFTA tariff reductions, **textiles and apparel** traded among the NAFTA countries must be made from yarn and fiber produced by a NAFTA member. These provisions have enabled the U.S. textile and apparel industries to integrate more closely with their Canadian and Mexican counterparts. As part of this process, U.S. **cotton** exports to Canada and Mexico more than doubled in volume between 1993 and 2000, while apparel imports from Mexico and other countries increased.

NAFTA is gradually expanding duty-free quotas for U.S.-Mexico **sugar** trade, as the two countries move toward free trade in this commodity starting in fiscal year (FY) 2008. The formula for the quota on Mexican shipments to the U.S. is based on the difference between Mexico's projected production and projected domestic consumption, including an allowance for consumption of high-fructose corn syrup. As the quotas have expanded, Mexico's access to the U.S. sugar market has climbed from 7,258 mt prior to NAFTA to 116,000 mt in FY 2001. These imports, along with low world prices for sugar, pose challenges for the U.S. sugar support program.

CFTA and NAFTA have affected some aspects of North American **tomato** trade, but other factors have played a more prominent role. A price-floor agreement among principal Mexican and U.S. growers secured the suspension of U.S. antidumping duties on **fresh tomatoes** from Mexico from 1996 to 2002. The price-floor agreement ended in August 2002, after Mexican growers submitted written notice of their withdrawal, and the antidumping duties, which were based on a preliminary U.S. investigation, have since been imposed.

Increasing U.S. demand for high-quality tomatoes and the relative strength of the U.S. dollar have fostered the emergence of sizable Canadian exports of hydroponic tomatoes to the U.S. Between 1990 and 2000, Canadian exports of fresh or chilled tomatoes to the U.S. expanded from about 3,000 mt to more than 101,000 mt. In 2001, U.S. tomato growers initiated an antidumping case against Canadian producers of greenhouse tomatoes, and a Canadian trade organization filed a similar suit concerning fresh tomatoes from the U.S. Neither case resulted in the imposition of antidumping duties.

U.S. imports of **processed tomatoes** from Mexico have shifted in recent years from primarily tomato paste to increasing quantities of tomato juice and sauce, a change that is partially due to NAFTA tariff changes. As part of NAFTA, the U.S. immediately eliminated its tariff on Mexican tomato juice and ketchup in 1994, and is gradually phasing out its tariffs on other processed tomato products from Mexico. Tariff elimination under CFTA and NAFTA also has boosted U.S. tomato sauce exports to Canada.

CFTA and NAFTA also have influenced North American **potato** trade. Elimination of U.S. tariffs on fresh potatoes from Canada has provided a moderate boost to Canadian fresh potato exports to the U.S. But an expansion in Canadian potato production and processing and the strong U.S. dollar have played even greater roles in the growth of Canadian exports of frozen french fries to the U.S. Through Mexico's establishment of a transitional TRQ with a low preferential tariff for processed potatoes from the U.S., NAFTA has had a large, positive impact on U.S. processed potato exports to Mexico, particularly frozen french fries (see related story on page 8).

North American **fruit** trade provides many examples of NAFTA's impacts. U.S. grape and pear exports to Mexico expanded with the end of Mexican import licensing on grapes and the elimination of Mexico's tariff on U.S. pears, both the

NAFTA Has Substantially Affected Trade of Some Commodities

	Annual average of actual trade					Estimated change in trade volume due solely to NAFTA[1]
	Value (US$ million)		Volume (1,000 units)			
Selected commodities	1990-93	1994-2000	1990-93	1994-2000	Units	
U.S. exports to Canada						
Beef and veal	349	317	82	92	Mt	Increase—High
Wheat products[2]	22	48	27	66	Mt	Increase—High
Cotton (including linters)	62	91	42	60	Mt	Increase—Medium
Processed tomatoes	71	109	NA	NA	NA	Increase—Medium
U.S. exports to Mexico						
Rice	41	87	161	386	Mt	Increase—High
Dairy products	151	160	NA	NA	NA	Increase—High
Cotton (including linters)	102	341	80	234	Mt	Increase—High
Processed potatoes	10	37	12	40	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	4,322	Mt	Increase—Medium
Oilseeds	401	739	1,662	2,953	Mt	Increase—Medium
Beef and veal	149	306	50	106	Mt	Increase—Medium
Sorghum	402	336	3,687	3,073	Mt	Decrease—High
U.S. imports from Canada						
Wheat (excluding seed)	136	268	1,109	1,920	Mt	Increase—High
Wheat products[2]	38	98	72	185	Mt	Increase—High
Beef and veal	260	638	111	264	Mt	Increase—High
Corn	21	31	218	268	Mt	Increase—Medium
Fresh and seed potatoes	51	77	274	380	Mt	Increase—Medium
Processed potatoes	51	209	92	322	Mt	Increase—Medium
Cattle and calves	741	857	1,063	1,185	Hd	Decrease—High
U.S. imports from Mexico						
Wheat products[2]	4	14	6	22	Mt	Increase—High
Cattle and calves	388	300	1,144	965	Hd	Increase—High
Peanuts (shelled and in shell)	*	3	*	4	Mt	Increase—High
Sugar (cane and beet)	1	17	2	49	Mt	Increase—High
Fresh tomatoes	264	470	322	608	Mt	Increase—Medium
Processed tomatoes	15	16	NA	NA	NA	Increase—Medium
Cantaloupe	40	47	120	136	Mt	Increase—Medium

1. Estimates reflect changes in trade volume during 1994-2000 due solely to CFTA and NAFTA and are based on assessments of ERS analysts. High = change of more than 15 percent; Medium = change of 6 to 15 percent, compared with absence of CFTA and NAFTA. 2. Includes flour, bulgur wheat, starch, gluten, and uncooked pasta. *Negligible. Mt = Metric tons. Hd = Head. NA = Not available
Source: Based on *Foreign Agricultural Trade of the United States* data for August 2002, USDA.

Economic Research Service, USDA

result of NAFTA. Mexico's transitional TRQ for fresh apples from the U.S. has had a large, positive impact on U.S. apple exports to Mexico, but a minimum-price arrangement forged by the Mexican government and the U.S. apple industry in order to suspend Mexican antidumping duties has worked to limit this trade. On the U.S. import side, NAFTA tariff reductions have provided a moderate stimulus to Mexican shipments of cantaloupes to the U.S. These shipments had decreased during the mid-1990s due to weather-related damage in some producing areas in Mexico.

NAFTA Has Facilitated Investment & Aggregate Employment

NAFTA's rules concerning foreign direct investment (FDI) strengthen the rights of foreign investors to retain profits and returns from their initial capital 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.

The stock of U.S. direct investment in the Mexican food processing industry has increased by about two-thirds since NAFTA's implementation, reaching $3.8 billion in 1999. Much of this

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investment is concentrated in highly processed products such as pasta, confectionery items, 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 $5.8 billion in 1999. But unlike FDI in Mexico, U.S. FDI in Canada is geared more towards the handling and processing of grains.

Mexican firms also increased their investments in U.S. food companies. In 1999, Mexican FDI in the U.S. processed food industry equaled $1 billion, compared with just $306 million in 1997. Mexican companies own U.S.-based firms engaged in bread baking, tortilla making, corn milling, and the manufacture of Mexican-style food products, just to name a few examples.

In contrast, the stock of Canadian direct investment in the U.S. processed food industry dropped from $6.7 billion in 1998 to about $1.0 billion in 1999, following the liquidation of a major company's assets. This reduction is a sharp departure from the first several years of NAFTA, when Canadian FDI in the U.S. processed food industry grew from $5.1 billion in 1993 to $7.6 billion in 1997, exceeding the U.S. presence in Canada.

By increasing opportunities for U.S. exports and encouraging a more efficient allocation of economic resources, NAFTA has likely had a small, positive influence on the overall level of U.S. agricultural employment. But this impact is difficult to detect, in part because many aspects of U.S. agricultural production are capital intensive, and in part because factors other than NAFTA have driven many of the employment changes. Employment in crop production has changed very little overall since NAFTA's implementation, while employment in livestock production has decreased, reflecting technological change and consolidation in the hog industry and drought and poor range conditions in the cattle industry.

Two manufacturing sectors related to agriculture—textiles and apparel—have experienced a definite decline in employment since implementation of NAFTA. The reduction began in the 1970s and most likely would have continued in NAFTA's absence. By encouraging the development of a more integrated textile and apparel industry within North America, the agreement has expanded textile and apparel trade among the NAFTA countries and increased productivity in the U.S. textile and apparel sectors. But this development has been accompanied by further reductions in U.S. textile and apparel employment.

Resolving Trade Frictions In the NAFTA Era

Sanitary and phytosanitary measures. By "locking in" key trade and investment reforms, the agricultural sectors and governments of NAFTA partners have been able to devote greater attention to resolving conflicts related to sanitary and phytosanitary (SPS) measures. Some initiatives on these measures have taken place within the trilateral NAFTA Committee on SPS Measures. In addition, producers in each NAFTA country have worked to formulate and meet higher quality standards. Inspection and approval of product quality at the regional level, and in some instances at the level of individual producers, have opened the door to new markets across international borders. Resulting developments include:

- imports of avocados to the U.S. from certain approved growers in the Mexican state of Michoacán;
- U.S. recognition of the Mexican states of Sonora and Yucatan as having a low risk of transmitting hog cholera;
- Mexico's lifting of its ban on citrus from Arizona and certain 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.

With continuing integration of U.S. and Mexican railway systems, intermodal rail (truck-rail-truck) may handle increased traffic in containerized grains.

Trade remedies. Trade growth and liberalization can generate conflicts. Agricultural producers in each NAFTA country have been involved in a number of disputes, many of which concern antidumping and countervailing-duty measures against imports regarded as harmful to domestic industry. NAFTA arbitration panels currently are looking at two agricultural cases concerning Final Antidumping Duty Determinations by Mexico. One panel is addressing U.S. exports to Mexico of high-fructose corn syrup; the other is dealing with 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 U.S., and Mexican exports of fresh cut flowers to the U.S.

Transportation issues. Mexico successfully brought a case before a NAFTA arbitration panel concerning U.S. delays in implementing the agreement's provisions for cross-border trucking. In response, the U.S. is establishing a safety inspection and certification system for Mexican trucks entering the U.S. to be administered by the U.S. Department of Transportation's Federal Motor Carrier Safety Administration. This will allow Mexican trucks to continue to U.S. destinations without reloading their goods to U.S. trucks, which has been a bottleneck hampering trade and causing congestion. Several studies have quantified total delay costs along the entire U.S.-Mexico border, with the most recent comprehensive study placing these costs at $77.4 million in 1999. This estimate would have been even higher if increases in air pollution associated with traffic congestion at the borders had been taken into account.

Further development of the Mexican transportation system will influence the modes of transportation that are used in U.S.-Mexico agricultural trade. With continuing integration of U.S. and Mexican railway systems, intermodal rail (truck-rail-truck) may handle increased traffic in 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. But improvements in Mexican ports may also lower transportation costs for U.S. competitors.

Environmental concerns. NAFTA appears to have 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. The notion that NAFTA has encouraged a general weakening of environmental quality and protection has been refuted by a comparative study in 2000 of the environmental regulations of border and nonborder states.

Among NAFTA's 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 policymakers, these gatherings have facilitated coordination of trade and environmental policies and lessened potential conflicts.

Formal NAFTA mechanisms represent only a small part of the dispute resolution 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 disputes over grapes and cattle, producer groups in Mexico and the U.S. worked jointly to resolve regulatory incompatibilities that were at the root of the disagreement.

By facilitating increased trade and investment among Canada, Mexico, and the U.S., NAFTA is enabling agricultural producers throughout North America to benefit more fully from their relative strengths and to respond more efficiently to changing economic conditions. Each NAFTA country has participated in the expanded agricultural trade and FDI 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 can lead to a more prosperous, more integrated North American economy. AO

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For more information

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