SOUTHERN AGRICULTURE IN A WORLD ECONOMY

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This is a series of trade leaflets entitled Southern Agriculture in a World Economy written as a result of the Southern Extension International Trade Task Force sponsored by the Southern Extension Marketing Committee, the Southern Extension Public Affairs Committee and the Southern Extension Farm Management Committee. Hal Harris, Clemson University; and G. A. Benson, North Carolina State University; served as task force co-chairs.

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SOUTHERN AGRICULTURE IN A WORLD ECONOMY

EXPORTING AGRICULTURAL PRODUCTS

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U. S. agriculture has always been heavily involved in world trade and this involvement will increase as world population increases and per capita incomes grow. Although the traditional farm commodities—soybeans, wheat, corn, rice—still account for three-fourths of U. S. agricultural exports, a wide variety of high-value products (HVP) are exported and these are growing in number and importance. As a share of the dollar value of U. S. agricultural and forestry exports, products such as beef, fresh fruits and vegetables, softwood lumber, and other HVPs represent almost one-half of the total. This fact sheet describes the “nuts and bolts” of exporting and is intended to help farmers and agribusiness firms gain a basic understanding of the process and to provide sources of additional assistance and information. The following topics are discussed:

1. Why Export?
2. Is there a Market for my Product?
3. Finding a Buyer
4. The Sales Contract
5. Getting Paid
6. Promotion and Market Development

Why Export?

Expanding world population and higher per capita incomes abroad should lead to greater export marketing opportunities, outweighing in the domestic market. Developing countries of the Third World represent future markets for U. S. agricultural exports. For some U. S. agricultural products, export markets already are crucial and for many others increased U. S. production will not be absorbed domestically and must be exported. So increased exports represent an opportunity for some and a necessity for others. Yet exporting has much in common with domestic marketing. Foreign customers expect to buy from a reliable supplier who provides quality products at competitive prices and has a commitment to good service.

However, exporting does pose some additional challenges. Language and cultural differences must be overcome in communications and business dealings. Foreign exchange rates; import regulations, requirements, and restrictions; transportation; and payment are other differences to contend with. To be successful, an exporter must make a firm, long-term commitment to export markets and must possess or be willing to acquire the necessary management skills and knowledge. In return for meeting these challenges, exporters have an opportunity to increase profits because of increased volumes produced and to reduce their dependence on a single market.

Is there a Market for my Product?

The world market is incredibly diverse but market research can narrow the field to the countries with the greatest potential. Vital information about market size, major competition, recent trends in consumption and economic growth, exchange rates, prices, transport costs, seasonal factors, distribution, product form, sanitary and health regulations, and political stability should be obtained. The Foreign Agricultural Service, USDA, the U.S. Department of Commerce, state departments of agriculture, state departments of commerce, the Cooperative Extension Service and others can help answer many of these questions.

Questions not answered by this broad market study can be addressed in a more detailed and specific market survey. Specific questions about quality, buyer specifications, packaging and labeling, consumer preferences, and terms of sale can be answered.

The market survey could be conducted by a trade association, such as the Southern U. S. Trade Association (SUSTA), a professional research firm or consultant, or other qualified organizations. It is important that the firm have first-hand knowledge about potential export markets.

The final step is to develop a specific business plan and an associated feasibility study to evaluate the impact of anticipated export sales on the operation and financial performance of the exporting firm under various scenarios. If the results are favorable then the nuts and bolts of exporting must be mastered.

Finding a Buyer

There are two basic approaches to exporting — direct and indirect. Direct exporting involves selling the product directly to the foreign customer through a company representative in another country who makes the sale to the foreign buyer. The risks are higher with direct exporting since the exporter is financially responsible for the entire process up to the final sale to the foreign customer.

Small scale or “new to export” (NTE) firms may find it easier and less risky to undertake indirect exporting, which involves using an export management company (EMC) or broker. The NTE firm sells to an EMC which in turn re-sells the product to foreign companies or customers. EMC’s may conduct market research and charge for their services only after a successful sale is made and usually operate on a commission. Export financing, documentation, and shipment are all handled by the EMC. Risk exposure is much lower for indirect export sales.

The Sales Contract

The export sales agreement is of prime importance. Some key elements in any export sales contract include: product definition, packaging and labeling requirements, currency to be used, and type of price quote. The product name, weight, quality, and grade should be specified, and other considerations may be included, such as procedures for dispute settlement and delivery instructions.

There are four main types of price quote or terms of sale, each with a different set of obligations. The F. O. S. (free alongside ship) quote specifies that the selling price includes cost of product plus export packing, inland freight to port of export, and risk of loss or insurance until cargo is accepted at the port and delivered to the dock. The F. O. B. (free on board) vessel quote indicates that the exporter assumes all responsibilities and costs up to and including placement of the cargo on the vessel. C. F. (cost and freight) includes cost of product plus transport costs to the port of import. The buyer is responsible for insuring the shipment. A price quote of C. I. F. (cost, insurance, and freight) means that the seller’s price includes cost of product plus the cost of marine insurance and transportation to the foreign port. Most new exporters prefer the F. O. S. or F. O. B. quote because there is less risk associated with them. C. F. and C. I. F. sales are normally made by larger, more sophisticated firms with expertise in managing ocean or air freight, insurance, and foreign exchange.

Getting Paid

Getting paid must be on the top of every exporter checklist. One of the first things to undertake, usually through a bank with an international department, is a credit check on potential customers. This may turn up some very useful information and warn of potential payment problems. Most foreign customers, properly verified, pose very little threat of payment default. Clearly there are risks of non-payment when doing business in areas where
ecomic stress, or social or political disorder exist. Insurance coverage is available if sales are made to those countries.

There are four basic methods of payment for export sales: cash in advance, letter of credit, documentary draft, and open account. Varying degrees of risk are associated with each method. The least risky is cash in advance but most buyers are reluctant to enter this type of agreement for obvious reasons.

An irrevocable, confirmed letter of credit is the safest method of payment. The importer's bank issues a line of credit in the amount of the sale. This credit is confirmed by the exporter's bank and verified by the foreign bank. Both banks guarantee payment and the exporter is paid when proper documentation is presented to the bank showing that the goods have been properly loaded and stored on the vessel. In many cases, payment is received even before the goods are shipped.

A documentary draft places responsibility for payment on the foreign bank. Sight and time drafts are most common. The importer pays his bank which in turn pays the exporter's bank. The foreign bank issues documentation allowing the importer to receive the shipment only after payment has been made to the bank.

The open account is the simplest but most risky method of payment and should not be used until a good trading relationship has been established with the buyer. Goods are shipped before the buyer makes payment to the foreign bank, and the seller has little protection against the buyer's failure to pay.

There are several forms of government and private credit insurance which can be used. These can be examined prior to making any sale by contacting the Foreign Agricultural Service of USDA.

Promotion and Market Development

USDA has been promoting agricultural products in foreign markets for over thirty years. Most efforts include industry and individual firm opportunities to present their products to potential customers. Major activities include food shows, trade fairs, product technical assistance, and trade and retail promotion. Key sectors of the foreign market such as wholesalers, brokers, and retailers are involved. Individual firms can receive assistance from agricultural attaches and foreign commercial officers in over 65 countries. Lists of products, buyers, and export contacts are available from the FAS of USDA. Fees are charged for most of these programs. Finally, the Market Promotion Program of the 1990 Farm Bill provides funds for product promotion in specific countries where U.S. products face unfair competition or have market potential.

Summary

Exporting requires commitment, international expertise, and considerable management skill. It is challenging and yet the probabilities of success are good if risks are effectively managed. Managing for tomorrow means developing a global perspective—becoming an insider in the international market. Learning about potential markets and the competition will position U.S. farmers and agribusinesses to capture global opportunities.

Useful Addresses

1. Foreign Agricultural Service
   U.S. Department of Agriculture
   Trade Assistance and Planning Office
   3101 Park Center Drive, Suite 1103
   Alexandria, VA 22303
   Tel: (703) 755-6001/6116
   Fax: (703) 755-6124

2. U.S. Department of Commerce
   International Trade Administration
   U.S. and Foreign Commercial Service
   Herbert C. Hoover Building
   Washington, D.C. 20220
   Tel: 1-800-343-4300

   600 Maryland Ave., S.W., Suite 510
   Washington, D.C. 20024
   Tel. (202) 554-9538

4. U.S. Small Business Administration
   1441 L Street, N.W.
   Washington, D.C. 20416
   Tel. 1-800-368-8835

5. State Departments of Agriculture

6. State Departments of Commerce

7. State Cooperative Extension Service

Further Reading


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POLICIES IMPACTING ON INTERNATIONAL TRADE OF U.S. PEANUTS

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Introduction
Peanuts rank third behind soybeans and cottonseed as one of the principal oilseeds in the world. About one-third of the world’s peanuts are produced in India, nearly one-fourth in the People’s Republic of China, and almost ten percent in the United States. However, the U.S. in the 1978 to 1987 period accounted for 20 percent to 50 percent of the world peanut trade (Table 1).

The U.S. share of world trade in 1978 and 1979 was about 50 percent. The severe drought and heat in 1980 reduced peanut production to the lowest level in 20 years, resulting in a 50 percent decrease in exports in calendar year 1981. World trade competitors including China, Argentina, and India captured an increased share of the world peanut trade. The U.S. has regained some of the export market in the 1980s, but the share has ranged from only 20 percent to 39 percent.

World trade in peanuts, after averaging one million metric tons (MT) in the early 1980s, increased to 1.2 million MT in 1986 to 1988. With this increase, the U.S. share of world trade decreased, while the share of trade for China and Argentina increased. Peanut export trade trends in the 1980s show the U.S. barely maintaining a constant share, with both China and Argentina increasing their share. The African countries as a total are continuing to decrease in importance. Even though India is the world’s largest producer of peanuts, it has not become a major competitor in world trade of peanuts.

Imports of U.S. peanuts by specific countries or regions show mixed trends. For the period 1978 to 1986 the U.S. was the major supplier of peanuts to Canada, with 90 percent or more in most years. However, in 1987 and 1988 the U.S. share decreased to near 50 percent (Table 2) with China becoming the major competitor. The U.S. share of peanuts in the western European market has remained fairly steady at around 40 percent. However, the U.S. appears to be losing its import share of peanuts in Japan, decreasing from above 45 percent to about 40 percent. Again, an increasing share is being imported from China.

World prices for peanuts show a close relationship among the exporting countries of the U.S., China, and Argentina. The world price is closely related to U.S. production (Table 3). A simple relationship for the 1983-84 to 1989-90 marketing years indicated that for an increase in U.S. peanut production of 100,000 MT, the price for U.S. peanuts in Rotterdam declined $72 per MT. For each $100 per MT change in the U.S. peanut price, the Chinese price changed $62 and the Argentina price changed $35 in the same direction.

Policy Issues
Individual country policies can influence the international peanut market. Intervention that limits world trade opportunities can create world supply and demand imbalances that may disrupt commodity prices (Fletcher and Carley 1989). The increasing level of government intervention throughout the world has led many countries to call for international agreements that limit or reduce the adverse effects of government intervention on international trade. This led to the Uruguay Round of international trade negotiations under the General Agreement on Tariffs and Trade (GATT).

Peanut farmers in the United States are concerned about the impact of GATT negotiations on their peanut enterprises. The proposal by the United States is to liberalize agricultural trade (i.e., free trade). The specific U.S. proposals affecting the peanut industry are (GATT Secretariat 1989):

1. Traditional forms of support directly tied to production and price levels would be phased out over a ten-year period.
2. All non-tariff import barriers would be converted to tariffs, and would be reduced over time.
3. Provide for reforms in sanitary and phytosanitary trade rules so that they are based on the use of sound scientific evidence.

The first proposal would eliminate the price support and domestic quotas for peanuts. The proposal states that policies to be phased out are those that have resulted in or are designed to result in domestic prices higher than prices prevailing on the world market. With a support price for domestic quota peanuts of $691 per short ton in 1990-91, farmer’s stock basis, the price for those peanuts on a delivered basis would be about $225 per MT. Including handling, shelling, and transportation costs would price such peanuts over $1,200 MT in western Europe. Thus, the U.S. price support policy for domestic quota peanuts results in a price generally well above world prices. The policy also limits production of domestic quota peanuts to specified levels in order for a farmer to receive the support price.

The second proposal would eliminate the U.S. import quota of peanuts. The import quota of 775 MT of peanuts annually is a non-tariff barrier. The U.S. proposal is to convert the non-tariff barrier to a bound tariff and ultimately reduce the tariff to zero or a low level. The existing non-quota tariff would be replaced with a tariff-rate quota. The initial quota for each commodity would be a level equivalent to 1) the level of imports existing in 1990 or some recent historical period, or 2) a negotiated minimum level of imports in the case of import prohibitions or virtual prohibitions. Tariffs within the quotas would be bound at agreed upon rates.

Import protection on imports outside the quota would be only in the form of bound tariffs. The proposals calls for the initial tariff rate to be based on the gap between world and domestic prices calculated on the basis of average prices for 1986-1988. This tariff rate can be expressed on an ad valorem or per unit basis. Thus, import access would be achieved by a progressive annual reduction of bound tariffs to final bound rates and an expansion of initial quotas by agreed minimum amounts during the transition period.

The third proposal regarding food safety harmonization simply means that all countries should use the same rules concerning food safety measures. The proposal recommends that GATT rules be changed to officially recognize scientific rulings by the Codex Alimentarius Commission for food safety concerns. For peanuts, the concern may be the aflatoxin level, based on scientific evidence, that may be approved for trading peanuts among countries.

Implications of U.S. GATT Proposals
Under the U.S. GATT proposals, the current agricultural policy for peanuts has two primary trade distorting features that would be slated for elimination. The import quota on peanuts severely restricts imports into the U.S. This policy probably would be a so-called "Red Light" policy that would be phased out over time (Rusin 1990). The price support and domestic production quota program is an output distorting policy that retards peanut production. This may be classified as a so-called "Yellow Light" policy since it has tended to distort production over time with its crop-specific quotas. However, peanut production has not been totally...
restricted since peanut farmers are permitted to produce all the
additional to they want to produce for the export market. The price
support-quota provisions would be phased out over time, also.

Since the import quota for peanuts in the U.S. is so restricted, the
tariff quota would be replaced with a tariff-rate-quota
through probably a negotiated minimum level rather than based on the
1990 import level. The tariff rate for the negotiated import
quota would probably be the current rate for shelled peanuts of
three cents per lb., the rate on shelled peanuts for most favored
nations. The tariff rate for peanuts imported in excess of the
negotiated quota would be set at a rate higher than for import
quota, possibly the difference between the average U.S. support
price for peanuts and the world average price for U.S.
peanuts in Rotterdam. For 1986-1988, this average difference has
been estimated to be about 18 cents per pound of shelled peanuts,
or near $200 per short ton farmer's stock basis (USITC 1990).
This tariff rate would be reduced each year during the ten year
transition period.

Price supports and domestic production quota could be reduced
each year. The quota could be reduced in some proportion to the
increasing peanut import quota (Carley and Fletcher 1989). Such a
phasing out would allow peanut farmers, peanut buyer-sellers and
peanut users to adjust to a freer market oriented situation. It is
expected the GATT proposals would be adopted, it would mean that domestic
peanut prices received by U.S. farmers would decrease over time.
The severity of the decrease would depend on the kind of negotiated
policies and the speed of implementation.

Policies would be changed in other peanut producing-exporting
countries as well as importing countries. For example, the export
tax on peanuts in Argentina would be eliminated, production
subsidies in India would be eliminated, and the import quotas and
tariffs in Japan would be eliminated. For countries that are not
members of GATT, such as China, it is difficult to contemplate
what action may be taken by them.

In conclusion, the peanut industry in the U.S. has a big stake
in the GATT negotiation process, even though it may be considered
small relative to the feed grain or soybean industries. Peanuts are a
commodity that by law has been heavily protected in the
U.S. from foreign competition. Therefore, the commodity could
stand to lose more from trade liberalization. However, U.S.
peanut farmers can no doubt grow peanuts in competition with
most countries of the world, if all countries play by the same rules.

Many questions remain unanswered in the current GATT
proposals and resulting negotiations. For example, would the
two-tier pricing system and domestic quota be eliminated at once or
phased out? If phased out, what happens to additional peanuts and
how do such peanuts compete in the market, especially in the U.S.
domestic market? How would the relative peanut price differences
among the exporting countries be handled so the prices are
competitive? How will prices, as affected by quality differences,
be established? Many questions are of concern regarding the food
safety proposals and issues. All countries must be required to use
the same rules regarding allowable residues and chemicals that are
or are not acceptable to be used.

References


GATT Secretariat. 1989. Submission of the United States on Comprehensive
Long-term Agricultural Reform. Paper MTN submitted by the U.S.
Negotiating Group on Agriculture on Multilateral Trade Negotiations, the

Rungo, C. F. 1990. Agricultural Trade in the Uruguay Round: Into Final

of U.S. quotas on agricultural imports and analysis of competitive
conditions in U.S. and foreign markets for sugar, meat, peanuts, cotton and
dairy products." USITC Pub. 2726, Chap. 4.

Table 1. Percentage Distribution of Peanut Exports by Country, In
shell Basis, Calendar Year 1978-1989

<table>
<thead>
<tr>
<th>Year</th>
<th>U.S.</th>
<th>China</th>
<th>Argentina</th>
<th>India</th>
<th>Africa</th>
<th>Rest-of-World</th>
<th>World Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>percent</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>1978</td>
<td>50</td>
<td>3</td>
<td>11.1</td>
<td>1</td>
<td>30</td>
<td>11</td>
<td>1029</td>
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<td>1979</td>
<td>50</td>
<td>5</td>
<td>12.1</td>
<td>1</td>
<td>23</td>
<td>10</td>
<td>1009</td>
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<tr>
<td>1980</td>
<td>42</td>
<td>11</td>
<td>10.0</td>
<td>2</td>
<td>18</td>
<td>17</td>
<td>995</td>
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<td>1981</td>
<td>18</td>
<td>30</td>
<td>6.0</td>
<td>2</td>
<td>21</td>
<td>19</td>
<td>1142</td>
</tr>
<tr>
<td>1982</td>
<td>29</td>
<td>13</td>
<td>7.0</td>
<td>5</td>
<td>25</td>
<td>21</td>
<td>989</td>
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<td>1983</td>
<td>31</td>
<td>15</td>
<td>12.3</td>
<td>3</td>
<td>17</td>
<td>22</td>
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<td>1984</td>
<td>39</td>
<td>15</td>
<td>10.6</td>
<td>6</td>
<td>13</td>
<td>16</td>
<td>953</td>
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<td>10.4</td>
<td>4</td>
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<td>1989</td>
<td>31</td>
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<td>4</td>
<td>16</td>
<td>21</td>
<td>1185</td>
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Source: USDA - Foreign Agricultural Service data base.

Table 2. Percentage of Peanuts Imported from the U.S., by Major
Importing Area, Calendar Year, 1978-1988

<table>
<thead>
<tr>
<th>Year</th>
<th>Canada</th>
<th>Western Europe</th>
<th>Japan</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>percent</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1978</td>
<td>99</td>
<td>47</td>
<td>42</td>
</tr>
<tr>
<td>1979</td>
<td>99</td>
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</tr>
<tr>
<td>1988</td>
<td>50</td>
<td>32</td>
<td>36</td>
</tr>
</tbody>
</table>

Source: USDA - Foreign Agricultural Service data base.

Table 3. U.S. Production and Average World Prices, Edible Peanuts
Shelled Basis, Runner 40/50, Rotterdam CIF, U.S. Marketing Year

<table>
<thead>
<tr>
<th>Year</th>
<th>U.S. Production</th>
<th>U.S.</th>
<th>China</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>thousand metric tons</td>
<td>$/metric tons</td>
<td></td>
</tr>
<tr>
<td>1983-84</td>
<td>1495</td>
<td>1059</td>
<td>927</td>
</tr>
<tr>
<td>1984-85</td>
<td>1998</td>
<td>711</td>
<td>624</td>
</tr>
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<td>1985-86</td>
<td>1870</td>
<td>759</td>
<td>600</td>
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<tr>
<td>1986-87</td>
<td>1677</td>
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<td>668</td>
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<tr>
<td>1988-89</td>
<td>1805</td>
<td>827</td>
<td>735</td>
</tr>
<tr>
<td>1989-90</td>
<td>1810</td>
<td>830</td>
<td>754</td>
</tr>
</tbody>
</table>

Source: USDA and London Public Ledger. *August through May.

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and G. A. Bonoci, North Carolina State University, served as task force co-
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SRDC No. 140 International Trade Leaflet No. 2, August 1991
SOUTHERN AGRICULTURE IN A WORLD ECONOMY

SOYBEAN INTERNATIONAL TRADE ISSUES

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Soybeans and soybean products are the primary world oilseed crop in terms of both production and trade. Soybeans are an important crop for both direct human consumption and as an animal protein feed. During the decade of the 1980s, the world saw a major diversification in soybean suppliers with the emergence of South American production. Southern hemisphere soybeans provide an increasing market share harvested in the spring to counter-balance the U.S. crop in the fall.

World Soybean Production

World oilseed production during the years 1987-1990 averaged about 211 MMT. Soybeans accounted for about one-half of that with cottonseed, rapeseed, peanuts and sunflowerseed each accounting for between fifteen and nine percent. Soybean production has more than doubled since the early 1970s and has increased its share of world oilseed supplies as well. Palm oil, while not an oilseed, is an increasingly important source of vegetable oil, increasing to 11.1 MMT in 1990. Most palm oil is produced in Malaysia and Indonesia.

Four major countries dominate soybean production. In 1970-1972, the U.S. produced nearly 70 percent of all soybeans while the South American countries averaged about nine percent. During 1987-90, the U.S. had a production share of about 54 percent, Brazil had a share of about 17 percent, China had about 12 percent and Argentina about 10 percent. Paraguay, Canada and Italy account for most of the remainder. The U.S. share has been declining over the past fifteen years, while South American production has increased.

International Competition

There is considerable difference in production and marketing costs among the three major soybean exporting nations. Brazil and Argentina have a competitive advantage in soybean production and exporting relative to the U.S. These two nations have exploited this advantage to rapidly expand production and gain market share in international sales during the decade of the 1980s. A study comparing production and marketing costs during the mid-1980s found that average total costs were approximately $6.50 per bushel in the U.S. versus $6.04 per bushel in Brazil and $4.75 in Argentina (Table 1).

Argentina has the absolute production advantage. Argentine yields compare very favorably with U.S. yields and are above those in Brazil. The primary Argentine advantage lies in being able to produce high yields with low fertilizer and chemical costs. Land costs are also less than the other two countries. Regions within the U.S. with the physical capacity to double crop can produce soybeans at variable costs that are much closer to those estimated for Latin America. Provisions of the 1990 Food, Agriculture, Conservation and Trade Act allow for increased planting flexibility and more market determined price levels.

Southern U.S. soybeans may now become more competitive.

U.S. Soybean Production

U.S. soybean acreage has changed dramatically since 1970 when plantings were 43 million acres. Acreage reached a peak in 1979 when 71.4 million acres were planted. During the 1980s, planted acres have trended downward and steadied to a range of 53 to 61 million acres. Most of the decline in acreage has come from the Delta and Southeast states. Since 1979, soybean acres in the South have fallen by over 11.5 million. Corn belt soybean acreage has remained nearly steady since the late 1970s.

The U.S. has gradually lost its predominance as the major soybean producer. Currently the U.S. produces a little over one-half of all soybeans, while Brazil and Argentina have built up their production bases.

Trends in World Soybean Trade

World soybean trade has more than doubled since the early 1970s when an average of 13 MMT of soybeans were exported. By the late 1980s, soybean exports had risen to an average of about 28 MMT. The major exporters have been the U.S., Brazil and Argentina. The U.S. is the primary world soybean exporter, having a market share of about 70 percent. The current Brazilian and Argentine export market share of soybeans is about eight to nine percent each with Paraguay, China and the EC making up the rest.

The major importers have been the European Community, Japan, Taiwan and the USSR. During the crop years of 1985-1987, these nations imported the following shares of all soybeans imported: EC-12 nations 48 percent; Japan 17 percent; Taiwan seven percent and the USSR six percent.

Major U.S. soybean trading partners have remained steady over time but their relative purchasing shares have changed somewhat. The EC-12 nations purchased about 45 percent of U.S. soybeans throughout the 1980s. Japan also has a steady share of about 17 percent. Taiwan has emerged as a major growth market during the decade with imports from the U.S. tripling to about 13 percent by 1989. Areas where exports have declined include Eastern Europe and non-EC-12 Western Europe nations. The developing nations represent promising future market potential.

The U.S. has concentrated on exporting soybeans while other nations have emphasized exports of soybean meal and soybean oil. Typically the U.S. exports about one-half of its soybean crop either as soybeans or soybean meal. During the decade of the 1980s, the U.S. averaged exporting 20.4 MMT of soybeans. Brazil and Argentina averaged 2.3 and 2.1 MMT, respectively. The U.S. enjoyed an average export market share of 76 percent while the shares for Brazil were nine percent and Argentina eight percent.

Soybean Meal Trade Trends

U.S. soybean meal exports during the 1980s averaged 5.7 MMT. Early in the decade, the EC-12 nations purchased nearly 65 percent of all U.S. soybean meal exports. The remainder was split fairly evenly between Western Hemisphere and Eastern European destinations. By 1988, the EC-12 had sharply reduced U.S. soybean meal imports. U.S. exports were split nearly equally between EC-12, Western Hemisphere and all other destinations.

Brazil consistently exported more soybean meal than the U.S. and averaged eight MMT. Argentina rapidly moved into meal exporting during the 1980s. In the 1980 crop year Argentine meal exports were 0.4 MMT. By the 1989 crop year, Argentine meal exports were estimated to be 5.4 MMT. For the decade, the average was 2.6 MMT. The EC-12 nations are the third largest soybean meal exporting area. Their export volume remained fairly steady during the 1980s at an average of 4.6 MMT. Average soybean meal export market share are Brazil at 35 percent; U.S. at 25 percent, EC-12 at 20 percent and Argentina at 11 percent.

The major soybean meal importing region was the EC-12. Those nations imported an average of 52 percent of all soybean meal traded during the 1980s. That equals an average of 12.1 MMT, a good share of which was actually processed in European crushing facilities. Eastern Europe was the next largest group with an average of 3.6 MMT or about 16 percent of all trade. The Soviet Union was the next largest importer with an average of 1.8
Soybean Oil Trade Trends

Soybean oil trade patterns are somewhat different from those for meal. The EC-12 nations that produce about two percent of all soybeans are the major soybean oil exporting group. The EC-12 nations are the fourth largest soybean oil producing area yet they exported an average of 32 percent of all trade during the 1980s. Brazil had an average export market share of 24 percent based upon an 18 percent production share. The U.S. is the world’s largest soybean oil producer with an average production share of 39 percent and an export market share of 22 percent. The EC-12 nations export more than one-half of their soybean oil production. Brazil exports about one-third of her production while the U.S. exports only about 15 percent of production.

The leading soybean oil importing region is the EC-12 nations, which implies significant intemational trade within the EC-12 countries. The EC-12 nations are also buyers from the other major soybean oil exporters. The EC-12 import market share is 14 percent. The Soviet Union is the largest single importing nation, with a market share of only about five percent. The remainder of the import share is widely dispersed among many nations; however, Iran, India, and Pakistan are traditional major importers.

Policy Issues and International Trade

Both domestic and international policies have impacts upon the level of international soybean and soybean products trade.

Domestic Policies. The U.S. currently operates a price support system for soybeans in the form of a non-recourse loan program. The loan rate varied during the 1980s from $5.02 to $4.53 per bushel. Generally, annual average market prices have been above the loan rate although farmers have used the loan program heavily when prices were at or below the loan rate. There are no acreage restrictions or marketing controls applied to soybeans. However, efforts to control supplies and prices of feed grains and wheat have had an impact upon soybean production. Acreage limitations and relative price support levels making feed grain and wheat production relatively more profitable than soybeans may have had the effect of reducing soybean acreage in the U.S. In 1983 and 1989 new policy provisions allowed greater planting flexibility that resulted in slightly increased soybean acreages.

The Food, Agriculture, Conservation and Trade Act of 1990 increases planting flexibility for U.S. farmers, allowing them to respond more easily to price signals. Additionally, a marketing loan program with a loan rate of $5.02 per bushel was instituted to reduce the effect of U.S. price support activity supporting South American soybean prices. A more volatile market environment is likely to result, making profitable soybean production more uncertain for farmers in other nations. A marketing loan in combination with increased acreage flexibility would point to the potential for greater U.S. soybean production in the coming decade. In the South, the ability to shift acreage from feed grains to more profitable wheat and soybean double cropping scheme would be expected to increase regional production.

U.S. policies affecting soybean trade take two forms: export subsidies and export tariffs. Soybean oil is eligible for subsidies under the provisions of the Export Enhancement Program (EEP). Under the EEP, exporters are provided with generic commodity certificates allowing them to be compensated for selling products in specific markets at prices below those available in the U.S. Tariffs are applied to imports of foreign produced vegetable oils. They vary by the oilseed but currently the tariff on soybean oil is a 22.5 percent ad valorem.

International Policies. Brazilian government policy toward soybean production has been inconsistent over time. During the 1970s, soybean production was encouraged through the use of input subsidy programs, export controls and taxes. During 1985 and again in 1988, the policy emphasis was to slow expansion in soybean production and encourage production of corn. This was done by differential credit subsidy rates and minimum price programs favoring corn over soybeans. The emphasis is on exporting soybean oil and meal rather than soybeans. This policy has greatly contributed to Brazil’s becoming the world’s leading exporter of soybean meal.

Argentina provides little direct aid to soybean growers. Primary intervention is with export taxes, the level of which varies over time. As in Brazil, differential export tax rates favor the export of soybean meal and oil over soybeans.

The EC-12 nations support soybean production at prices far above world levels. Despite high domestic support rates, soybean production in the EC-12 provides only about one-tenth of soybean consumption and less than one percent of total oilseed needs.

Summary

U.S. dominance as the major supplier of soybeans and soybean products has been challenged. South American producers have a competitive advantage in leading products in both Europe and Asia. If trends in production and trade continue, U.S. world market share is likely to continue to erode. However, international wildcards, such as the political and economic change taking place in Eastern Europe and the Soviet Union, the GATT negotiations and bilateral agreements, could result in the U.S. maintaining or increasing its trade share in a growing world market.

| Table 1. Estimated Cost of Production for Full Season and Double Cropped Soybeans, Two U.S. Regions, Brazil and Argentina, 1990 Dollars. |
|---|---|---|---|
| Item | Southeast | Midwest | Brazil | Argentina |
| Full Season Production | | | | |
| Variable Costs | | | | |
| Fertilizer & Seed | 37.54 | 30.30 | 30.60 | 30.50 | 13.80 |
| Chemicals | 21.96 | 18.74 | 18.38 | 18.79 | 8.01 |
| Mechanical Costs | 48.00 | 39.91 | 39.60 | 40.00 | 16.90 |
| Labor | 12.11 | 17.70 | 17.20 | 17.29 | 7.70 |
| Interest on Op. Capital | 5.65 | 5.65 | 5.65 | 5.65 | 2.50 |
| Total Variable Costs | 101.97 | 100.65 | 100.40 | 100.60 | 45.90 |
| Fixed Costs | | | | |
| Machinery | 26.45 | 38.44 | 37.60 | 37.60 | 17.90 |
| Land | 28.66 | 73.32 | 73.32 | 73.32 | 31.80 |
| Miscellaneous | 8.09 | 8.00 | 8.00 | 8.00 | 3.50 |
| Total Fixed Costs | 53.00 | 117.32 | 115.92 | 115.92 | 55.30 |
| Marketing Costs | | | | |
| Marketing Costs | 9.35 | 9.20 | 9.20 | 9.20 | 4.20 |
| Total Costs | 174.52 | 228.24 | 227.72 | 227.72 | 107.50 |
| Estimated Ave. Yields | 27.25 | 35.00 | 35.00 | 35.00 | 27.00 |
| Cost per Bushel | 6.56 | 6.52 | 6.52 | 6.52 | 4.76 |
| Double Crop Wheat-Soybean Prod. | | | | |
| | | | | |
| Variable Costs | | | | |
| Fertilizer & Seed | 10.00 | NA | 47.60 | 47.60 | 13.30 |
| Chemicals | 26.05 | 10.00 | 7.60 | 7.60 | 2.60 |
| Machinery | 21.98 | 21.98 | 19.60 | 19.60 | 12.60 |
| Labor | 11.38 | 4.30 | 3.20 | 3.20 | 1.10 |
| Interest on Op. Capital | 5.65 | 5.65 | 5.65 | 5.65 | 2.10 |
| Total Variable Costs | 50.90 | 39.90 | 39.90 | 39.90 | 17.60 |
| Fixed Costs | | | | |
| Machinery | 24.00 | 16.20 | 16.20 | 16.20 | 7.00 |
| Land | 12.50 | 22.60 | 22.60 | 22.60 | 9.70 |
| Miscellaneous | 6.00 | 6.00 | 6.00 | 6.00 | 2.60 |
| Total Fixed Costs | 42.50 | 44.92 | 44.92 | 44.92 | 18.00 |
| Marketing Costs | | | | |
| Marketing Costs | 9.95 | 17.41 | 17.41 | 17.41 | 6.90 |
| Total Costs | 121.47 | 152.92 | 152.92 | 152.92 | 67.50 |
| Estimated Ave. Yields | 22.00 | 28.00 | 28.00 | 28.00 | 21.00 |
| Cost per Bushel | 6.46 | 6.13 | 6.13 | 6.13 | 4.77 |


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SOUTHERN AGRICULTURE IN A WORLD ECONOMY

HIGH-VALUE PRODUCT TRADE: Issues and Strategies for the 1990s

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Rapid growth in world trade of high-value food products (HVP) has captured the interest of firms trying to increase sales to foreign markets. Since the early 1960s, world HVP trade has expanded from $26 billion to more than $200 billion. Trade growth has been concentrated in consumer-oriented HVP's, not intermediate HVP's or bulk products. While U.S. exports of bulk products have increased to claim a major share of world trade, U.S. HVP exports have not kept pace (Figure 1). Many observers question the ability of U.S. agriculture to effectively compete for HVP markets. The purpose of this fact sheet is to explore some of these critical issues affecting trade in HVP's and to outline possible options and strategies to increase trade in the future.

High Value Markets and Competition

The U.S. lags behind the Netherlands, France, and West Germany in HVP exports. The European Community-12 (EC-12) accounts for 58 percent of trade in consumer-oriented HVP's, while the U.S. accounts for about seven percent. Other countries such as Argentina, Brazil, Australia, and New Zealand have become effective HVP exporters using product differentiation and niche marketing.

The largest markets for U.S. consumer-oriented HVP's in 1989 were Japan ($29.9 billion) and Canada ($1.1 billion). Other key markets were Hong Kong, West Germany, the United Kingdom, Taiwan, the Republic of Korea, and Singapore. Major markets for fresh/frozen red meat were Japan ($12.2 billion), Canada ($127 million), and Republic of Korea ($75 million). Major importers of U.S. fresh fruits and vegetables were Canada ($508 million) and Japan ($421 million). Processed fruit and vegetable exports to Japan were valued at $304 million.

Future Markets for HVP Exports: Developing countries presently purchase more than 40 percent of all U.S. agricultural exports. Although most of this trade is bulk products, greater economic growth among developing nations will lead to additional purchases of consumer-oriented HVP's, as evidenced by growing markets in South Korea, Taiwan, Hong Kong, and Singapore. With the continued emphasis on development and broad based income growth, developing countries represent the markets of the future for U.S. agriculture.

As market-oriented economies emerge in Eastern Europe, potential for HVP trade will increase. Competition for new markets will be keen, with the EC-12 attempting to supply many HVP food needs. While Eastern Europe represents a major potential HVP market, some countries will emerge as competitors in HVP trade, especially pork, grain products, and dairy.

U.S. food companies have found market penetration in the EC-12 difficult due to cultural differences and strong brand identification associated with European food products. It would be misleading to conclude that "once the barriers go down, all Europeans will be the same" (Wall Street Journal). Some products such as fresh fruits and vegetables may find easier market access as health and sanitary regulations are standardized.

Policies Affecting HVP Trade: HVP trade is often restricted by countries seeking to protect jobs and incomes. High tariffs, quotas, export and processor subsidies, and sanitary requirements are among the most common. EC-12 import barriers vary by commodity and product, but in 1987 these barriers probably cost the U.S. more than $400 million in lost sales. Although a net food importer, Japan has adopted a variety of trade barriers to achieve food self-sufficiency, selected commodities, and to support farm incomes. Barriers include high tariffs on wine, restrictive distribution channels for beef, and sanitary regulations on fresh vegetables and kiwifruit, and quotas for wheat flour and dairy products. With strong pressure from the U.S., Japan has liberalized trade restrictions, including the elimination of quotas on beef and fresh oranges. The U.S. has a number of barriers against the importation of HVP's. They are designed to protect domestic producers and to assure that U.S. farm programs are not threatened. To comply with GATT rules, tariff-rate quotas have been established for sugar imports and are often used for political purposes to favor one foreign sugar producer over another. Quotas have also been established for beef imports and for many dairy products. Quarantine restrictions have been used against foreign avocados. Grape, citrus, and some vegetable imports must comply with U.S. market order requirements, while high tariffs apply against many canned goods.

Critical Issues for the 1990s

Is the U.S. Competitive? While the U.S. may have higher labor costs than some countries, its efficient, well developed infrastructure and low cost raw materials add to the competitiveness of U.S. HVP exports. The major constraints to trade have been the somewhat unattractive increase in protectionism policies by major importers such as Japan and the use of high support prices, export subsidies, and variable levies by the EC-12 which has become a major exporter of meat, dairy, and other HVP's. These policies have both reduced total imports of value-added products and lowered the U.S. share in major import markets (Williams). Health and phyto-sanitary regulations also have been used as non-tariff barriers to protect markets in the EC-12, Japan, and other countries from import competition.

Results of GATT: Restrictions to HVP trade may be eased if the Uruguay Round of GATT negotiations are successful. Such a result would open the opportunity for substantial increases in U.S. HVP exports. It also would lead to an increase in U.S. imports of these products and a subsequent adjustment by affected U.S. producers.

Incentives for Exporting: Increasing the exports of HVP's may not be compatible with the interests of all food processors. Some firms may prefer direct foreign investment to exporting as a means of entering world trade. Handy and MacDonald analyzed the trading strategies of a large number of U.S. firms. Those firms capable of effective product differentiation tend to adopt

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Consumer-oriented HVP's include red meats, poultry and eggs, dairy, fresh and processed fruits and vegetables and juices, tree nuts,bakery goods and wines.

Intermediate HVP's include flour, vegetable meals and oils, feeds and fodder, live animals, hides, skins, animal and vegetable fats, seeds for planting, and other products.

Bulk products include wheat, coarse grains, rice, soybeans, cotton and tobacco.
direct foreign investment rather than exporting as a trade strategy, mainly to protect brand identification.

**Differences in Economic Impact.** The economic impact of changes in high VEP production is not always higher than that of bulk commodity changes. Policies that emphasize high value exports over bulk commodity exports may not generate the greatest economic return. Income and employment gains from increased production of meat products and livestock are considerably below those associated with field crops and vegetables. Increased exports of some field crops would have a greater economic impact than increasing exports of vegetables, poultry and livestock.

**Public and Private Options.**

**Public Options for HVP Trade.** One option for increasing economic returns to agriculture is to expand the proportion of high value exports on the premise that this will result in greater input use in the U.S. This premise may prove false if a high-value product with a low economic multiplier is substituted for a bulk commodity with a greater economic multiplier. Consequently, the promotion of U.S. exports needs to be selective and not aimed only at high value products.

Another option is to reinforce the strength of marketing orders and commissions by allowing collusion on export price decisions for industries selling to government monopolies or competing with marketing boards of other countries. A less controversial policy would be to strongly support the export role of marketing orders and commissions and back away from recent attempts by some administrators to weaken them. The objective of such policies is to establish an institutional environment that would attract some food processors away from direct foreign investment and toward exporting.

A final option is the strategy embarked upon by the U.S. government to convince GATT to move toward zero barriers and distortions to trade. While the goal may be utopian in a cynical and political world, the process of considering it could lead to improvements in the current system and could facilitate a further expansion of U.S. exports.

**Private Options for HVP Trade.** U.S. firms have several options for increased participation in HVP exporting. First, product differentiation is an important consideration, especially for "new to export" firms. While large companies may find cost or price competition a viable export option, "niche marketing" seems to be a more profitable option for smaller firms. This option can lead to the export of a high quality specialty product, priced at a premium for a unique market niche.

Export credit guarantees may provide a viable alternative for some firms. Under provisions of GSM-102 and GSM-103, U.S. companies can receive a government guarantee against failure or default by a foreign buyer's bank. USDA also provides information on trade leads, foreign import regulations, and other services to assist firms to effectively export their products.

The 1990 Farm Bill continued the export programs established by the Food Security Act of 1985. The Export Enhancement Program was continued and the Market Promotion Program expanded the activities of Targeted Export Assistance (TEA), to provide for broader market and product coverage.

**Summary.** Tariff and non-tariff barriers dominate world HVP trade. Because of these restrictions, U.S. firms have captured only a modest share of this rapidly expanding market for food products. Free trade resulting from the current Uruguay Round, combined with both public and private incentives for exporting, may lead to additional export marketing opportunities. Above all, effective competition on a global scale will depend on the ability of U.S. firms to adapt to fast-changing international market conditions.

**References.**


**Figure 1. World and U.S. High-Value Agricultural Trade, 1961-1988.**

![Graph showing world and U.S. high-value agricultural trade, 1961-1988.](image)

**Source:** USDA & FAO

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SOUTHERN AGRICULTURE IN A WORLD ECONOMY

ASSESSING U.S. BEEF EXPORT MARKETS

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The U.S. beef cattle industry has been downsized by one-third over the last 15 years. Declining domestic demand for beef, coupled with lower cattle prices and producer returns, has led to lower cattle prices and producer returns, eliminating both cattlemen and land from the beef industry. Per capita beef consumption in the U.S. has declined from 92 pounds in 1975 to 68 pounds in 1989. At the same time, cattle and calf inventories have fallen from 132 million head to 92.2 million head. Operations with beef cattle dropped from 1.4 million in 1975 to 950,000 in 1989. Idled or underutilized land cannot be economically returned to full beef cattle production without increasing demand for U.S. beef.

As the U.S. population ages and tends to eat less red meat, the increasing preference of consumers for healthy, balanced diets, indicates little opportunity to expand domestic beef demand beyond 75 pounds per capita in the near-term. If the U.S. beef cattle industry is to expand, it must seek customers beyond U.S. borders. Opportunities to export U.S. beef have increased in recent years. The purpose of this paper is to highlight factors affecting U.S. beef exports and to discuss prospects for increased trade in the future.

U.S. Beef Trade

Post World War II global trade has been governed by the General Agreement on Tariffs and Trade (GATT). Through GATT, in 1988, the United States successfully negotiated a phase-out of Japan’s beef import quota system. The plan called for a three year expansion and eventual elimination of the Japanese beef import quota, followed by the implementation of a declining tariff. Since the 1988 agreement, U.S. beef shipments to Japan have doubled, reaching almost $1 billion in 1990. The U.S. now has 44 percent of a growing Japanese import market, up from only four percent in the mid-1970s.

One consequence of moving toward free trade is that U.S. cattlemen must face the eventual and inevitable elimination of the U.S. Meat Import Quota Law. At one time such a law was needed because few countries allowed beef imports. The United States was one of the few countries receiving significant supplies of imported beef. To keep the U.S. beef market from becoming a dumping ground for excess supplies, the Beef Import Quota Law was enacted in 1964 and later revised in 1979 to become counter-cyclical. The counter-cyclical amendment was designed so that beef import quotas would expand when U.S. cattle numbers and beef production declined and contract when more countries open markets, the U.S. beef industry will become less dependent upon the domestic market for growth and survival. However, access to other markets will most likely mean the U.S. will have to allow more access to our own markets for beef and other products. Without the meat import quota, however, U.S. cattlemen could become more vulnerable to foreign supplies of beef if the U.S. dollar gains strength relative to foreign currencies.

World Beef Trade

In 1989, the world’s leading beef exporters were Australia with 21.7 percent of the world market, followed by the EC-12 (19.1%), Brazil (13.2%) and New Zealand (10.6%). The U.S., with 7.6 percent of the world market, ranked sixth behind Argentina as a beef exporter. However, due to increased sales to Canada and South Korea, the U.S. moved up to rank as the third largest beef exporter in 1990. During that same year, over 63 percent of all U.S. beef exports went to Japan, followed by Canada with 17 percent, and South Korea with 6.4 percent. After joining the GATT in 1986, Mexico has emerged as the fourth largest market for U.S. beef, purchasing five percent of total U.S. beef exports in 1990.

The United States produces and consumes more beef than any other country (Table 1). In 1989, the U.S. produced 10.6 million metric tons (MMT) and consumed 11.2 MMT. The balance was imported. Only Argentina, with per capita consumption of 103 pounds, has a higher per capita beef consumption than the U.S. With 26.6 percent of world beef trade, the U.S. is the world’s largest beef importer. Major U.S. beef suppliers are Australia, with 37.6 percent of the U.S. import market, New Zealand (30.3%) and Canada (11.0%). EC-12 countries and Japan are the next largest importers, with 12.6 percent and 9.2 percent, respectively.

Assessing U.S. Beef Export Markets

Japan. In the past two years Japan has emerged as the major market for U.S. beef exports. Some argue that the growth of the U.S. share was due to a strong preference for U.S. grain-fed beef relative to other types of beef. Others argue there is evidence the Japanese beef quota system has been managed to favor U.S. beef. It is possible that some of both arguments are correct. Japanese prefer high quality, marbled beef and have the purchasing power to pay for it. The U.S. currently has an advantage in producing large quantities of high quality fed beef.

Japanese beef quotas were suspended on April 1, 1991. Japan’s quasi-government beef import regulatory agency, Livestock Industry Promotion Corporation (LIPC), will be gradually phased out. For the first time Japan’s beef wholesalers will be allowed to deal directly with world beef suppliers. With per capita consumption at only 12.9 pounds, Japan should increase imports rapidly as market prices fall and supplies of high quality beef increase. At least temporarily, the U.S. should have an advantage with its higher quality grain-fed beef, but there are few technology secrets in cattle feeding. As the Japanese tariff on imported beef is lowered from the current level of 70 percent to 50 percent on April 1, 1992, few barriers will prevent Australia, Argentina, Canada and the EC-12 from entering the fed beef market. However, the constraints limiting major non-U.S. competition for the Japanese market are high capital costs, tight feed grain supplies, competition with more profitable enterprises, and health and sanitary regulations.

South Korea. In the immediate future, South Korea holds promise as a major U.S. beef purchasing customer. The U.S. is negotiating with South Korea to expand their beef import quota. South Korea has the purchasing power to buy U.S. beef and presently consumes only seven pounds of beef per person each year. The South Korean government has agreed to move to full market liberalization with immediate expansion of beef import quotas. Australia presently supplies 66.7 percent of South Korea’s beef imports. The U.S. supplies 24.3 percent. It will be more difficult for the U.S. to gain market share from Australia as the Koreans prefer leaner beef, which Australia produces more cheaply with grass feeding.

European Community. Successful GATT negotiations and elimination of direct subsidies to beef producers must occur before the EC-12 becomes a major market for beef. In 1970, the EC was a beef deficit region, consuming more beef than produced. EC beef imports reached $400 million that year, but through the
use of high support prices and a variable levy system, the EC now exports $200 million in beef. Without the direct subsidies paid to beef producers, it is likely those countries could again become net importers of beef. Before the U.S. becomes successful in the EC beef market, however, European consumers must be convinced of the safety of U.S. supplies and informed about the merits of higher quality grain-fed beef. Presently, EC consumers prefer leaner beef than is predominately produced in the U.S. With increasing health awareness, a major change to grain-fed, marbled beef seems unlikely in the near term.

Eastern Europe and the Soviet Union. As economies and political systems restructure in Eastern Europe, interest is being directed to those countries as potential markets for beef. While presently facing shortages of hard currency with which to purchase imported goods, these countries also lack effective demand, or purchasing power to buy beef. Increases in beef consumption are likely to be limited by increasing consumer prices as subsidies are removed in many countries. Consumer incomes are unlikely to increase significantly until economic restructuring has had time to take effect. The USSR will likely seek new beef suppliers and may even import more beef in an attempt to increase living standards and reduce the pains of a restructuring economy. However, the Soviets may lack the basic infrastructure such as processing facilities, cold storage, and distribution channels to become major importers in the absence of additional capital investment. Any demand for U.S. grain-fed beef may be slow in developing. Other factors limiting the potential for U.S. beef sales will be the competitive advantage of EC meat exporters and the degree to which Eastern Europe and the USSR increase their own capacity to produce meat and meat products.

Conclusions
Free trade in beef is not yet a reality. Quotas, tariffs, health and food safety concerns still loom as barriers to trade. Expanding foreign markets for beef will require the U.S. beef industry to become more innovative, attuned to market needs, and an aggressive international marketer. Presently, the U.S. has command of the world’s grain-fed beef supplies, but that advantage can quickly erode. In order to compete as a world supplier of beef, the U.S. may need to supply a variety of beef products with varying qualities and costs of production.

Several factors may give the U.S. a competitive advantage in world beef trade. First, the U.S. is a premiere merchandiser, promoter and advertiser. Such campaigns can influence foreign consumers to buy more U.S. beef. Second, the U.S. has a good reputation in many other countries for having a safe food supply. As food safety becomes more of an issue worldwide, U.S. food products could experience greater demand. Third, historically, the U.S. has had fairly liberal trade policies, yielding the largest trade deficit in the world. Political pressures could be applied to increase the U.S. share of world beef markets. Finally, to increase demand for U.S. beef is a long-term endeavor. Any gains in the near-term will most likely come about by lowering trade barriers in other countries or by becoming more cost competitive on the world market.

This is one of a series of trade leaflets entitled Southern Agriculture in a World Economy written as a result of the Southern Extension International Trade Task Force sponsored by the Southern Extension Marketing Committee, the Southern Extension Public Affairs Committee and the Southern Extension Farm Management Committee. Hal Harris, Clemson University; and G. A. Benson, North Carolina State University, served as task force co-chairs.

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SRDC No. 143 International Trade Leaflet No. 5 August 1991
WORLD DAIRY PRODUCTS TRADE

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Geoff Benson
Extension Economist, North Carolina State University

Current Situation
The dairy industries in the U.S. and most developed nations are subsidized and heavily regulated. To protect domestic dairy programs, virtually all major dairy countries restrict imports. Less developed countries often lack the income to purchase large amounts of dairy products. Thus, most milk is consumed in the developed countries where it is produced. Only about five percent of world dairy production enters world trade, and much of this is in the form of subsidized exports from developed to developing nations.

The U.S. is basically self-sufficient in dairy. Commercial exports have generally not occurred because domestic prices have been supported above world prices. Imports are restricted by quotas. Exports have been small but variable ranging from 0.3 percent to 2.9 percent of production during the 1980s. Various types of cheeses are the major imports, including specialty cheeses from Europe. Casein and related milk protein are not subject to dairy import restrictions. Casein has a substantial price advantage over non-fat dried milk (NFDM) and is substituted for NFDM in many food products, including imitation cheese which has captured about seven percent of the U.S. cheese market.

Key Players
Milk production for the largest producing regions and countries is shown in Table 1. Production and exports of butter, cheese and milk powder for the three major dairy exporters, the U.S., European Community and New Zealand, are shown in Table 2. New Zealand is the world’s low cost producer and exports most of its production. U.S. and EC exports take place under a variety of subsidy and foreign aid programs. In fact, most of these exports come from government stocks and are shipped to other governments.

Policies and Policy Issues
The U.S. dairy price support program was established to provide income support and price stability for producers. The program has been revised periodically during its 40 year history. However, the basic approach remains the same. The support price is a farm level price but because milk is highly perishable, the program operates through manufactured product markets. The support price is converted to equivalent wholesale prices for butter, cheese and NFDM. The Commodity Credit Corporation (CCC), an agency of USDA, must buy any and all qualified products offered to it at these announced prices. Thus, farm prices are given an indirect floor.

Under the program the support price has usually been high enough to encourage surplus production, resulting in CCC purchases. Also, the support price has been above world prices, precluding commercial exports and making import restrictions necessary. Import quotas have limited imports to about two percent of U.S. production.

Export subsidies and concessory sales are also a feature of the U.S. dairy and other farm programs. Over the years, the most important has been PL-480, the Food for Peace Program. Under the Food Security Act of 1985 several new export programs were created, including the Export Enhancement Program, the Targeted Export Assistance Program and the Dairy Export Incentive Program. However, these new programs were used by the dairy industry only on a limited basis. The 1990 Farm Act continued authorization for subsidized dairy exports.

Dairy and trade policies of other countries differ widely. New Zealand. Exports are exempt from the country’s value-added tax. Farm interest rates are discounted by 20-25 percent from market rates. The New Zealand Dairy Board exports all dairy products and has subsidiaries worldwide, including the U.S. Producers are paid based on aggregate returns of the Board each season. The government guarantees NZDB borrowing for price stabilization, and recently wrote off approximately $300 million in long-term debt the NZDB had incurred.

The European Community. The heart of EC dairy policy is the Common Agricultural Policy (CAP), which is a system of domestic supports and variable import levies. The levy rises and falls to assure that EC-produced dairy products are always at a price advantage over imports. High prices in the 1980s triggered heavy surpluses, which were exported under subsidy. World markets became saturated and the EC realized it could no longer afford this expense. In 1984, quotas were placed on producer milk deliveries. Quotas have been cut gradually to reduce the EC’s surplus.

Canada. Canada has domestic support programs and restricts dairy imports by a number of means. The heart of its domestic program is a system of production quotas. Quotas for “industrial” (manufacturing) milk are administered by the national government. Quotas for fluid milk are administered by the provinces. Over-quota milk is subject to a heavy penalty, thus very little is marketed.

Japan. The Japanese dairy industry is about a tenth the size of the U.S. industry. The Japanese dairy market is one of the most protected in the world. The Japanese Livestock Industry Promotion Corporation controls imports and is involved in the procurement, storage and trade of products. The disparity between Japanese dairy prices and world prices has widened in recent years.

A measure of the relative amount of protection afforded producers in different countries has been developed, called Producer Subsidy Equivalent (PSE). The PSE attempts to measure the difference between support prices and what prices would be in the absence of the various support programs. For 1986, USDA estimated the PSE in New Zealand to be only 12 percent of the farm price. In the U.S. the subsidy was 59 percent of market price. The EC PSE was 66 percent, Canada was 81 percent, and Japan a whopping 110 percent. These PSEs give an indication of potential gainers and losers under freer trade. That is, the higher the PSE the greater the loss in producer support if policies and programs are eliminated.

International Issues and Alternatives
Several key and interrelated issues are under discussion. Paradoxically, the issues include continued or perhaps even increasing protectionism for the U.S. and world dairy industries, as well as the possibility of freeing up world dairy trade in the current GATT talks.

An important thing to remember with respect to freer trade in dairy products is that to genuinely move in that direction would require the domestic dairy programs of the U.S. and several other key players be changed radically. Dairy programs would not have to be eliminated, but they would at least have to be restructured to be more compatible with the notion of free trade. One proposal is “tarification.” Non-tariff trade barriers would be transformed into tariffs (import taxes) which then would be lowered gradually.
possibly until they were eliminated. A proposal to maintain farm income support without harming international trade is "decoupling." This concept refers to severing, or at least reducing, the connection between farm income supports and farmers' production decisions or prices. Direct payments to producers, such as through a target price mechanism would be a move toward decoupling. Decoupling alternatives represent a rather substantial change from current farm programs and have not drawn much political support. The 1990 Farm Act provides some "negotiating leverage" for the U.S. position in the GATT talks. For example there is a GATT snapback provision in the 1991 Farm Act that calls for increased export subsidies to retaliate against those of other countries if the negotiations fail. The possible results of the current or future GATT talks cover the full range, from small to substantial changes towards free trade in dairy, which would simply decoupling the current dairy programs. But even now pressure is growing for less market-oriented programs such as two-tiered pricing, which imply continued restrictions on imports. If free trade in dairy is achieved in the GATT, changes in U.S. dairy policy would be likely. These might include lower support prices, reduced export subsidies, higher allowable imports under Section 22 quotas, "tariffication" and perhaps adopting target price-deficiency payments or decoupled income supports.

A limited number of research studies suggest that freer trade in dairy would not represent a catastrophe for the U.S. industry, provided the transition occurred in an orderly manner. Of course, the consequences are affected by a myriad of considerations, many of which lie beyond dairy policy or dairy markets. New Zealand and Australian dairy farmers would gain from freer dairy trade. But even with low production costs, the output capacity of these two countries is limited. However, in the longer term under free trade there appears to be no reason why larger, similarly structured forage-based industries could not develop in countries like Argentina and Brazil. The U.S. industry probably has a competitive edge over Canada, but our position with respect to the EC is less clear cut. The high degree of uncertainty has led to resistance from the dairy industries of the developed nations toward changing policies.

The recent U.S.-Canada Free Trade Agreement may prove to be prophetic for the current GATT round. Early in the U.S.-Canada negotiations, dairy was largely excluded because of opposition by the industries of both countries and the complexity brevity brought about by the very different dairy programs. The absence of free trade within the boundaries of some countries, Canada and Australia for example, shows how difficult it is to reach agreement at a negotiating table involving more than 100 countries. However, having brought agriculture fairly and squarely into the GATT discussions suggests the debate will continue in future rounds, irrespective of the outcome of the current round.

Table 1. Milk Production, Major Dairy Countries, 1989.

<table>
<thead>
<tr>
<th>Country</th>
<th>Production (MMT)</th>
<th>Percent of World Production</th>
</tr>
</thead>
<tbody>
<tr>
<td>European Community (EC)</td>
<td>108.9</td>
<td>25.1</td>
</tr>
<tr>
<td>USSR</td>
<td>108.1</td>
<td>24.9</td>
</tr>
<tr>
<td>U.S.</td>
<td>65.4</td>
<td>15.1</td>
</tr>
<tr>
<td>Eastern Europe</td>
<td>44.0</td>
<td>10.1</td>
</tr>
<tr>
<td>Italy</td>
<td>23.0</td>
<td>5.3</td>
</tr>
<tr>
<td>Brazil</td>
<td>13.2</td>
<td>3.0</td>
</tr>
<tr>
<td>Mexico</td>
<td>9.0</td>
<td>2.2</td>
</tr>
<tr>
<td>Canada</td>
<td>7.5</td>
<td>1.7</td>
</tr>
<tr>
<td>New Zealand</td>
<td>6.5</td>
<td>1.5</td>
</tr>
<tr>
<td>Australia</td>
<td>4.0</td>
<td>0.9</td>
</tr>
<tr>
<td>Other</td>
<td>35.9</td>
<td>8.3</td>
</tr>
<tr>
<td>World Total</td>
<td>435.5</td>
<td>100.0</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Product</th>
<th>U.S.</th>
<th>EC</th>
<th>New Zealand</th>
<th>World Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Butter (MMT)</td>
<td>Prod.</td>
<td>% of Total</td>
<td>Prod.</td>
<td>% of Total</td>
</tr>
<tr>
<td>United States</td>
<td>577</td>
<td>9</td>
<td>251</td>
<td>24</td>
</tr>
<tr>
<td>EC</td>
<td>1,689</td>
<td>26</td>
<td>1,204</td>
<td>48</td>
</tr>
<tr>
<td>New Zealand</td>
<td>248</td>
<td>4</td>
<td>124</td>
<td>1</td>
</tr>
<tr>
<td>World Total</td>
<td>2,511</td>
<td>40</td>
<td>1,436</td>
<td>50</td>
</tr>
<tr>
<td>Cheese (MMT)</td>
<td>Prod.</td>
<td>% of Total</td>
<td>Prod.</td>
<td>% of Total</td>
</tr>
<tr>
<td>United States</td>
<td>68</td>
<td>12</td>
<td>7</td>
<td>2</td>
</tr>
<tr>
<td>EC</td>
<td>327</td>
<td>19</td>
<td>428</td>
<td>10</td>
</tr>
<tr>
<td>New Zealand</td>
<td>171</td>
<td>26</td>
<td>230</td>
<td>8</td>
</tr>
<tr>
<td>World Total</td>
<td>766</td>
<td>12</td>
<td>850</td>
<td>8</td>
</tr>
</tbody>
</table>

*Million Metric Tons.

WORLD TRADE IN FOREST PRODUCTS

John H. Syne  Forest Resources Lecturer, Clemson University

World Trade in Forest Products

World trade in forest products has a long history and is finally reaching a level of significant importance. Forest products, because of their bulk, weight and low value relative to shipping costs, had received little attention in the world market prior to 1960. Since 1960, world trade in forest products has steadily increased to almost $91 billion in 1988.

Forest cover about 25 percent of the world’s land area and contain 304 billion cubic meters of growing stock. While these forests are widely distributed geographically, trade is of major importance in relatively few countries. About half of the world’s wood is harvested for fuel, which is not important in world trade. The important commodities in world markets are industrial products, which include (ranked by value) paper, lumber, wood pulp, paperboard, logs and plywood.

Most trade in forest products is between developed regions. North America and Northern Europe are major exporters. Canada, Scandinavia and the U.S. account for more than half of total exports, yet own only one-sixth of the world’s timber stocks. Western Europe is the largest importer, with about half of total imports, followed by North America and the Far East.

U.S. Forest Products Trade

The U.S. is the largest producer and consumer of forest products. During the past 25 years, its share of world forest product exports has increased to 13 percent. The U.S. now ranks third among exporters, behind Canada (22 percent) and Scandinavia (20 percent). A comparison of exports to domestic production shows the U.S. at eight percent, Canada at 72 percent, and Scandinavia at 60 percent.

Two major factors influence U.S. forest products trade: (1) the dollar’s value against foreign currencies, and (2) domestic demand for forest products. The U.S. has been a net importer of forest products during the 1980’s (Table 1). In general, trade deficits increased and decreased in concert with the dollar’s relative value against major world currencies.

Table 1. U.S. Trade Balance in Forest Products ($ Billions)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Exports</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Solid Wood Products</td>
<td>3.7</td>
<td>2.8</td>
<td>3.0</td>
<td>5.3</td>
</tr>
<tr>
<td>Pulp &amp; Paper Products</td>
<td>5.9</td>
<td>5.5</td>
<td>4.2</td>
<td>7.5</td>
</tr>
<tr>
<td>TOTAL</td>
<td>9.6</td>
<td>8.3</td>
<td>7.2</td>
<td>12.8</td>
</tr>
<tr>
<td>Imports</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Solid Wood Products</td>
<td>3.3</td>
<td>4.2</td>
<td>5.2</td>
<td>5.2</td>
</tr>
<tr>
<td>Pulp &amp; Paper Products</td>
<td>5.8</td>
<td>6.4</td>
<td>7.2</td>
<td>10.7</td>
</tr>
<tr>
<td>TOTAL</td>
<td>9.1</td>
<td>10.6</td>
<td>12.4</td>
<td>15.9</td>
</tr>
<tr>
<td>Trade Balance: Wood</td>
<td>0.4</td>
<td>(1.4)</td>
<td>(2.2)</td>
<td>0.1</td>
</tr>
<tr>
<td>Trade Balance: Paper</td>
<td>0.1</td>
<td>(0.2)</td>
<td>(3.0)</td>
<td>(3.2)</td>
</tr>
<tr>
<td>TOTAL</td>
<td>0.5</td>
<td>(2.3)</td>
<td>(5.2)</td>
<td>(3.1)</td>
</tr>
</tbody>
</table>

Southern U.S. Forest Products Exports. In value terms, timber is the leading agricultural crop in six Southern states and is among the top three crops in all 13 Southern states. Among industry groups, forest industries rank first or second in most Southern states. The South produces one-third of the nation’s softwood lumber, almost half of the hardwood lumber, three-fifths of the plywood and two-thirds of the wood pulp produced in the U.S.

Southern forest products account for almost one-third of the value of U.S. forest product exports. Southern forest product exports reached $3 billion in 1988, averaging an annual growth rate of 11 percent (6 percent real growth rate) over the past 20 years. Western Europe, followed by Asia and Latin America are the South’s major world market regions. Table 2 summarizes major exports of Southern forest products and their destinations.

Table 2. 1988 Exports of Major Southern Forest Products

<table>
<thead>
<tr>
<th>Product</th>
<th>Value ($ Millions)</th>
<th>Primary Markets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pulp</td>
<td>1,780</td>
<td>Europe, Far East, So. Amer.</td>
</tr>
<tr>
<td>Paperboard</td>
<td>725</td>
<td>Far East, Europe, Caribbean</td>
</tr>
<tr>
<td>Hardwood Lumber</td>
<td>273</td>
<td>Far East, Europe</td>
</tr>
<tr>
<td>Softwood Lumber</td>
<td>198</td>
<td>Europe, Caribbean</td>
</tr>
<tr>
<td>S. Pine Plywood</td>
<td>144</td>
<td>Europe, Caribbean</td>
</tr>
<tr>
<td>Hardwood Logs</td>
<td>69</td>
<td>Europe, Far East</td>
</tr>
</tbody>
</table>

Competitive Issues. The Southern forest products industry benefits from a vast and largely privately owned timber resource, modern, efficient manufacturing plants, and access to several large port facilities. The timber resource is adequate for future domestic and export market needs, with numerous softwood and hardwood species that can be used for a large variety of products. Despite these advantages, the industry’s two major segments (pulp and paper and solid wood products) differ in their competitive capabilities.

The Southern pulp and paper industry has positioned itself to be a strong global competitor in future years. The industry is concentrated in a few large producers with a long history of successful international marketing. The industry has steadily invested in new technologies, so its costs have risen more slowly than those of its major international competitors.

In contrast, the solid wood products sector has a large number of relatively small firms with limited international marketing experience. Since most Southern firms have sold exclusively in domestic markets, their typical approach to exporting is to sell the same domestic products, grades and sizes to foreign customers. This reluctance to adapt products to foreign demand has limited export growth and market penetration. By themselves, most Southern firms lack a suitable product mix and the capital, management, and marketing resources to mount a successful international marketing strategy.

Domestic and International Policy Issues

The U.S. forest industry faces enormous barriers in world markets, including tariffs, subsidies, restrictive building codes, import quotas, and import licensing. On the other hand exporters of forest products to the U.S. confront virtually no obstacles. The U.S. forest products industry, while facing freer but more equitable trade.

While backing the U.S. Government’s pursuit of lower trade barriers through bilateral and multilateral negotiations, the industry feels the elimination of exchange rate policies that are used by countries to gain trade advantages should also be negotiated. The
successful end of the current talks for a North American Free Trade agreement should increase forest products trade between the U.S. and Canada and Mexico. Another major issue is the internal integration of the European Community (EC) in 1992. This will make the EC's industry more competitive in intra-EC transactions. It also means U.S. exporters will face a standardized set of rules in the EC, plus an increasing demand for forest products.

Key Decisions, Issues, Summary

The Southern forest products industry has experienced several years of increasing exports, primarily of pulp and paper products. Solid wood products exports have also increased, but they account for only about 25 percent of the South's forest products exports.

Southern pulp and paper manufacturers have established successful, global marketing strategies and face growing world demand for their products. The industry will, however, face tough competition especially from newly industrialized countries. Overall, the South's pulp and paper industry is positioned to be a strong competitor, but it must continue to aggressively improve technological and marketing capabilities to maintain its global position.

Most of the Southern solid wood products industry has yet to recognize the importance of foreign markets to its future survival and economic viability. This industry segment must overcome its negative export bias and view international markets as attractive, long-term opportunities. Marketing will be the key to open doors in foreign markets for the solid wood products sector. This includes looking beyond the industry's traditional products—logs, lumber, veneer, chips—to producing value-added products for specific world market niches.

Fluctuating currency exchange rates have become significant determinants of international competitiveness. With the dollar's declining value since 1985, U.S. exporters have enjoyed a substantial price advantage in many markets. One major question facing U.S. firms is their ability to remain competitive in world markets if the dollar appreciates.

As Southern forest industries become part of a larger, more integrated global economy, their markets will be increasingly influenced by world developments. Changes in world economic conditions, trade arrangements, competitive positions and the dollar's value will influence exports, imports and domestic prices as well. Changes will create both problems and opportunities for Southern forest products producers. To minimize the problems and take advantage of new opportunities, the Southern forest products industry must strive to anticipate change, and enhance its competitiveness through product flexibility and lower costs.

This is one of a series of trade leaflets entitled Southern Agriculture in a World Economy written as a result of the Southern Extension International Trade Task Force sponsored by the Southern Extension Marketing Committee and the Southern Extension Farm Management Committee. Hal Harris, Clemson University; and G. A. Benson, North Carolina State University, served as task force co-chairs.

Editors for the series were C. Farr Rosson, III, Texas A&M University; G. A. Benson, NCSU; and Emily McClain, Clemson University.

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SRDC No. 148 International Trade Leaflet No. 7 August 1991
RICE TRADE IN A CHANGING WORLD

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Eugene Johnson, Extension Economist, Louisiana State University

The decade of the 1980s saw substantial changes in U.S. and world rice markets. As the green revolution began to slow in pace, growth in world consumption gained on world production. Increasing weather variability around the globe has resulted in greater production variability for rice as well as most other crops. Population growth and production are increasingly occurring in different countries or regions, leading to larger trade sales from countries with excess supplies to countries where production growth is having a more difficult time keeping pace with growing demand.

Rice and other food crops such as wheat will continue to compete for market share of world demand as relative prices continue to adjust in response to changing supply and demand conditions. New product development, new alternate uses for rice and rice by-products, and product proliferation have had a substantial impact on increasing per capita consumption in the U.S. and elsewhere.

Production/Consumption

During the 1970s, world rice production grew at a faster but more erratic pace than world consumption. During much of the 1980s, this trend was reversed as world consumption outpaced world production. World production for 1990/1991 is forecast at 349.9 million metric tons (MMT), slightly greater than world consumption, which is forecast at 346.4 MMT. However, world consumption exceeded world production in three of the last six years, and U.S. total use has exceeded U.S. production for five of the last six years. As a result, world and U.S. stocks-to-use ratios have dropped to 16.7 percent and 15 percent, respectively, indicating a tightening carryover situation.

World rice area harvested, which expanded at an average rate of 1.317 million hectares per year during the 1960s and early 1970s, has expanded at a rate of only 0.137 million hectares per year since 1978. U.S. acreage has actually decreased since 1980-1981 as a result of U.S. farm programs and their efforts to reduce the level of U.S. government stocks and move toward a more free market-oriented system of trade.

Weather variability increased during the 1980s in many countries around the world, resulting in greater crop production variability and a greater need for trade. Long range meteorological forecasts indicate the pattern of increased weather and production variability could last well into the mid-1990s. At the current lower levels of carryover stocks around the world, continued production variability could result in much greater price volatility.

World Trade

After being very erratic during much of the 1980s, world export trade finally surpassed its 1980 high and set a new record during the 1988/1989 marketing year at 14.94 MMT. Much of this record business came about as countries rebuilt stocks depleted between 1985 and 1987. World export trade during the 1989/1991 marketing year is expected to be lower, at approximately 12.54 MMT.

Export competition increased during the 1980s as countries found themselves trying to expand export business while total trade was slowing little to no growth. As a consequence, adjustments took place among exporting nations concerning the relative market share they were able to capture in various regions of the world.

Major Exporters

Thailand, the world's number one rice exporting nation, has continued to strengthen its dominant market share of world rice export business. During the 1980s, Thailand's export share grew at a strong, consistent pace, rising from 23 percent in 1980/1981 to the high of 40 percent in 1988/1989. Thailand's continued growth as an exporter is in part due to their rapid growth as a producer while domestic consumption has grown at a much slower pace. Continuing technological advancements and capital improvements, such as producers drilling water wells for irrigation of the dry season crop, have allowed them to continue to expand production.

The second largest exporter of rice in the world continues to be the U.S. The U.S. lost world market share during the early 1980s but has managed to stabilize it at around 18-19 percent in the late 1980s. U.S. farm policy during the mid-late 1980s has kept between 25 percent and 35 percent of rice base acreage out of production, limiting supplies available for export. At the same time, domestic use has continued to grow at a good pace, demanding a larger share of total U.S. production.

A new major player in rice export trade in the late 1980s and possibly the 1990s is Vietnam. During the early 1980s, while continuing to recover from the war years, Vietnam became a net exporter of 0.1 to 0.2 MMT of rice per year. Due to policy changes in the late 1980s concerning land tenure and export trade, and a drop in domestic consumption, exports rose dramatically to 1.4 MMT in 1989. While this was a tremendous one-year change, 1990 and 1991 exports have continued at the higher level and are expected to see further growth in the future. Vietnam exports a lower quality rice, and as a result, their expanded export business has been with countries that normally trade with Thailand. This has resulted in extra price competition for Thailand and as a result, for other exporters as well, since the Thai price is a major determinant of the world price. Current research indicates the cost of production in Vietnam is even lower than that in Thailand, which should help them in their quest to continue growing as a world exporter.

Major Buyers

Thailand continues to sell the majority of its rice in the Asian and African markets due in part to the quality and variety of the rice it produces. In calendar year 1989, 48 percent of Thailand's exports were sold to other Asian countries and 22 percent were sold in Africa. These are the markets where Vietnamese rice exports will provide competition for Thai exports due to the similar qualities and prices of their rice.

The U.S. will likely continue to lose ground in these export markets on a price basis as it has through the 1980s. The higher quality U.S. rice was regaining some exports in the Middle East, prior to the invasion of Kuwait by Iraq. In recent years, Iraq was the largest export market for U.S. rice, and the trade embargo imposed after the Iraqi invasion of Kuwait represents a loss of approximately 400,000 tons. U.S. exports to Europe and to countries in the Western Hemisphere have also increased during the 1980s. With the political changes now taking place in Eastern Europe, it is also possible that rice exports could have substantial growth potential in that region in the 1990s.

Policy Issues and International Trade

Domestic and international policies will have a major influence on the direction of rice trade in the 1990s. They will play a major role in determining what countries will be involved and at what levels they will participate.

Domestic Policy. U.S. domestic policy has had, and will continue to have, a major impact on the U.S. rice market and the role of U.S. exports in world trade. U.S. exporters, still during the early 1980s as the result of a strong U.S. dollar and a loan rate that supported U.S. prices at levels too high to be competitive in world markets. U.S. carryover/use ratios increased from 11 percent in 1980 to 62 percent in 1983. As a result, changes were implemented in the Food Security Act of 1985 in an attempt to make U.S. rice prices more competitive in world markets by lowering the U.S. loan rate and implementing a marketing loan...
program. As a requirement to participate in the loan program, producers have held between 25 percent and 35 percent of their rice acreage out of production each year. This has significantly reduced potential U.S. rice production and consequently, the supplies available for the export market. Domestic policies in other countries have also impacted world trade. Vietnam has made several recent policy changes that have resulted in a dramatic increase in production and export potential.

Dramatic political changes appear to be underway in Eastern Europe and the USSR. Consumers in these countries have suffered from shortages of consumer goods, including food supplies, for many years. As these countries move toward more democratic and capitalistic systems, they will demand large quantities of food items such as rice. Most of these countries are short of cash and will need grants and aid from the U.S. and other exporting countries before their food needs can become effective demand.

**International Policy.** The current round of GATT (General Agreement on Tariffs and Trade) negotiations are still in process. In these talks, the U.S. is advocating a multilateral move to free trade. This would mean reductions in trade distorting barriers such as price and income supports, export subsidies, import tariffs, quotas, etc.

A move could have a substantial effect on the world rice market, especially in countries like Japan, Taiwan and Korea, all of which have high levels of domestic rice protection. Such a policy would also very likely mean lower returns to U.S. rice producers as price and income support programs were dismantled. Under such a scenario, it is also likely that prices would become much more volatile. The negotiation process to this point has been slow and steady. Many countries view their rice policies as much a matter of national security as a matter of income support for their producers.

**Summary**

World rice production and consumption have been in a much closer balance during the 1980s. While acreage expansion and gains in productivity associated with the green revolution are lower, growth in population and world consumption continue. World consumption exceeding production in three of the last six years, carryover stocks have been reduced to lower levels.

If trends in population growth and productivity continue into the 1990s, it is likely that world trade will expand to move rice from areas of increasing production to areas of increasing demand. Much of any expansion in trade in Asia and Africa will undoubtedly be captured by the lower cost producing countries such as Thailand and Vietnam. International trade and domestic policies will be very important factors in the 1990s. Although the current round of GATT negotiations may end without an agreement to phase out all barriers to free trade, they have already had a substantial impact on many trading partners.

**Figure 1. World Total Rice Exports (1970-1990)**

**Figure 2. World Rice Production and Consumption (1970-1990)**

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SOUTHERN AGRICULTURE IN A WORLD ECONOMY

WORLD TRADE IN PORK

Emmet Rawn Professor, University of Tennessee

Current Situation
Worldwide the production of pork and pork products is greater than any other meat except fish. Pork production is highly concentrated as five regions produce over 85 per cent of world supplies: China, the European Community (EC-12), Eastern Europe, the United States, and the Soviet Union (USSR). Among these regions, 63 per cent of production occurs in China, the U.S., the USSR, West Germany and Poland.

World pork production has increased six percent since 1980, but nearly 80 per cent of this increase occurred in China, the largest producer with 34 per cent of world production in 1990. U.S. pork production tends to cycle. Over the last decade, production peaked at 7.5 million metric tons (MMT) in 1980 and then declined to a low of 6.3 MMT in 1986. Production has since expanded to an estimated 6.9 MMT in 1990, or 11 per cent of world production.

Hog production in the Southern Region amounts to only about 15 percent of the U.S. swine inventory, with most of the remaining production located in the North Central Region. In the U.S., pork production is moving towards the North Central Region and its lower feed costs and newer, larger packing plants.

Who Trades in Pork?
Pork trade is a very small seven percent of total production, with most pork consumed in producing countries. Since pork is a perishable, high-valued product, imports depend upon high consumer incomes and well-developed distribution systems to support consumption any distance from production. These factors, plus the fact that pork demand in many countries is limited by religious bans against consumption, have constrained pork trade to only a few regions.

In 1989 five importers accounted for 95 percent of world imports and five exporters supplied about 91 percent of world exports.

Imports

Japan (26.0%)
U.S. (20.5%)
USSR (13.9%)
Hong Kong (10.9%)
EC-12 (8.7%)

Exports

EC-12 (23.2% to non-EC)
Japan (13.6%)
E. Germany (12.4%)
China (11.2%)
Taiwan (1.2%)

Locational advantages strongly determine world trade flows. The U.S. has a transportation disadvantage in major markets such as Japan, the USSR, the EC, and Hong Kong, relative to other suppliers. For example, Hong Kong’s pork imports come primarily from China; the USSR imports from Eastern Europe and China; Japan from Taiwan; and the EC from other EC countries. Canada has the largest share of the U.S. pork export market.

Other than Canada with 51 percent of the U.S. pork export market, the U.S. has two other main suppliers, Denmark (22.0%) and Poland (13%). Canada also exported about one million slaughter hogs and feeder pigs to the U.S., or about 1.2 percent of U.S. slaughter. Imports of hogs and pork to the U.S. amount to about seven percent of U.S. consumption. Though the U.S. is a net pork importer, some U.S. pork reaches international markets.

The U.S. has some export advantages such as relatively cheap feed at stable prices plus an industry free of hoof-and-mouth disease. Disease-free producing countries restrict unprocessed pork imports from countries with hoof-and-mouth disease. This prohibits unprocessed pork exports from China and Eastern Europe in some markets, including the U.S.

In Japan imports account for about 20 percent of consumption. The Japanese market requires specific cuts of high-quality pork; both Denmark and Taiwan tailor a product specifically for Japan. Taiwan’s geographic and cultural closeness strengthen its position in the Japanese pork import market. The U.S. has begun shipping chilled pork by air freight to Japan to better compete with Taiwan. New Japanese investments in the U.S. pork packing industry may also increase future U.S. pork exports to Japan.

Policy Issues Affecting Trade

Other than sanitary restrictions on imports into disease-free countries from areas with hoof-and-mouth and other diseases, the world pork market is affected by a variety of policies including import and export tariffs, price supports, and other governmental trade controls. Government intervention in pork production and trade varies between centrally planned economies such as China, the USSR, and Eastern Europe and the more market-oriented countries of the EC-12, Canada, Japan and the U.S.

In both China and the USSR, the government controls pork import and trade, some pork prices and slaughter facilities. Thus, governmental control of marketing and distribution is high. In the USSR, the government is responsible for about 65 percent of Soviet production. Because of this high level of government control, pork sector productivity and quality tend to be low in centrally-planned economies relative to other major producing regions. To a lesser extent, these inefficiencies exist in some areas of Eastern Europe, now under market-oriented reform.

In contrast to the USSR and China, policies in the market-oriented economies have a smaller influence on pork production and trade. Canada has zero or low tariffs on pork imports for example, but producers benefit from transportation subsidies. The U.S. has relatively low tariffs on pork products. Government support includes tariffs, direct and indirect producer support, plus a small amount of pork exports are subsidized. While the U.S. does not directly subsidize producers, there is a significant indirect subsidy through feed grain and related policies that both lower and add stability to feed prices.

Japan prefers to maintain some level of production self-sufficiency through producer support prices and variable levies to keep pork imports from entering at low world prices and depressing domestic production. The EC-12 has similar policies that affect production and trade through import tariffs via monetary compensatory amounts (MCAs) which equate prices across regions. In addition, the EC-12 uses intervention stocks and export subsidies to control domestic supplies.

In 1990 the EC-12 banned imports of pork from the U.S., alleging that U.S. packing plants did not meet EC-12 sanitation requirements. Under current international trade laws, individual countries are allowed to establish their own sanitary and health regulations regarding trade. The past decade has seen an increase in the use of these types of non-tariff barriers to regulate trade.
What lies ahead?

Proposals by the U.S. and other countries to move towards freer world trade in agricultural products are now being negotiated through the General Agreement on Tariffs and Trade. If an international agreement is reached, in addition to removing trade impediments, domestic support programs which distort production would be reduced and sanitary regulations standardized.

Much of the protection and support given to producers in the EC-12 and Japan encourages pork production that might otherwise not take place. Research by the USDA suggests if policies that distort world production and trade were reduced, pork production in the EC-12 and Japan might decline; world trade would increase, with U.S. pork producers benefiting slightly. World trade would remain constrained by religious practices, and trade would still be largely determined by market closeness.

In addition to a possible GATT agreement, the U.S. has initiated trade talks for a U.S.-Mexico Free Trade Agreement. Such an agreement would likely boost U.S. pork exports. Mexico absorbed about 18 percent of U.S. pork exports in the 1988/1989 trade year, compared to around one percent for the EC-12. A free-trade agreement should stimulate Mexico's economy and the incomes of the Mexican people, indirectly increasing the demand for meat such as pork.

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World Livestock Situation, FL & P 4-90, October 1990.
The decade of the 1980s saw substantial changes in U.S. and world feedgrain markets. In contrast to the tremendous growth in demand of the previous decade, the 1980s experienced a flattening demand and increasingly volatile production. Weather and government policies were major factors influencing coarse grain markets throughout the 1980s. In the coming decade, industrial and food uses of grains will be important components of market demand as new uses for grain products are developed. Wheat and other feed sources will compete with corn, grain sorghum, oats, and barley as relative prices continue to adjust to changing supply and demand conditions. Political and economic developments in the USSR, Eastern Europe, China, South Africa, and the European Community (EC) will play major roles in the U.S. and world feedgrain markets.

Current Situation
Since passage of the Food Security Act of 1985 (FSA85), the U.S. has pursued a policy designed to enhance U.S. competitiveness in world markets and reduce the level of stocks carried over from year to year. This policy, coupled with major droughts across much of the U.S. grain producing areas, has dramatically reduced stock levels and provided for somewhat higher grain prices.

February 1991 projections suggest the 1990/1991 marketing year will see U.S. ending stocks decline for the fourth straight year. The U.S. feedgrains carryover/use ratio is forecast at 16.3 percent for 1990/1991, while world carryover/use is forecast at 14.6 percent, the lowest since the mid 1970s, with the exception of 1983.

U.S. corn production during 1990/1991 is expected to be 201.5 million metric tons (MMT), up from 191.1 MMT in 1989 due to an expansion in planted acres and improved yields. Total use is forecast at 203.7 MMT. U.S. grain sorghum production is expected to decrease in 1990/1991 to 14.5 MMT from 16.6 MMT in 1989/1990. Total use, forecast at 16.8 MMT, is expected to exceed production and further reduce ending stocks. The carryover/use ratio is expected to drop to 19.3 percent, down from the recent high of 100 percent during the 1986/1987 marketing year.

Trade
The 1970s saw tremendous growth in U.S. exports of feedgrains. U.S. world market share climbed from 40 percent in 1970 to more than 78 percent in 1979. In the early 1980s this trend reversed. With a strengthening dollar, U.S. exports declined, and in 1985 world market share had dropped to 33 percent. The current U.S. World market share is about 54.8 percent.

World coarse grain trade is expected to decline in 1990/1991 to 93.7 MMT, down from 111.6 MMT in 1989/1990. Most of the drop is due to lower USSR imports of feedgrains and an increased use of wheat for feeding purposes as wheat becomes more price competitive. Despite this decline, however, many market analysts forecast the 1990s as a major growth period for feedgrain exports. Political changes in Eastern Europe and the USSR could result in an overall increase in demand as consumers are given the opportunity to purchase commodities in a more market-oriented environment.

Major Exporters
The U.S. continues to be the world's major exporter of coarse grains. U.S. coarse grain exports were estimated at 69.75 MMT in 1989/1990, and forecast at 51.4 MMT in 1990/1991. This represents substantial export volume despite two recent years of drought. Much of the growth in exports and world market share since 1985 was due to farm program policies specified in the FSA85. Major objectives of the FSA85 included aligning U.S. prices with world prices, reducing excess stocks and redefining export markets. By lowering loan rates and providing export subsidies, the U.S. has successfully regained much of the market share lost in the early 1980s.

Argentina is also a major coarse grain exporter. However, its world market share decreased from a high of 17.0 percent in 1970 to 9.8 percent in 1989. Although market share peaked in 1970, export volume did not peak until 1980. The decrease in coarse grain exports is linked to a shift from coarse grain production to cattle and soybean production.

Canada, whose main coarse grain is barley, also fared well during the 1970s. Exports increased from 0.6 MMT in 1968 to a high of 7.45 MMT in 1981. Canadian exports, however, did not increase as fast as total world exports. As a result, world market share peaked in 1971 at nine percent and trended down to about four percent in 1980. During the 1980s, Canadian coarse grain exports were quite volatile, with volume ranging from 7.45 MMT in 1981 to 3.45 MMT in 1988. Most analysts believe their exports will continue to be highly variable.

Australia, a major exporter of both barley and grain sorghum, has fluctuated between about one percent and 5.5 percent of world market share over the last 30 years. Exports rose from 9.46 MMT in 1967 to 6.19 MMT in 1984, but large swings in exports have occurred and to occur as a result of variability in climatic conditions.


Thailand, a major corn producer, increased its exports of coarse grains fairly consistently throughout the 1960s, 1970s, and early 1980s, peaking at 3.94 MMT. Exports of coarse grains dropped off to some extent in recent years as acreage shifted to rice production.

South Africa has been a sporadic coarse grain exporter. This is largely due to extreme weather variability. Exports have ranged from 5.0 MMT in 1980 to 0.01 MMT in 1983 and back to 5.0 MMT in 1988. It is expected that their annual export volume will continue to fluctuate widely.

Major Importers
The Pacific Rim continues to be a major buyer of U.S. coarse grain. Japan is the number one or two importer of coarse grain in the world and has been a consistent market for U.S. sales over time. The Republic of Korea and Taiwan have also been steady customers in recent years. These countries are all expected to increase imports as broad based income growth leads to increased consumption.

The USSR and Eastern Europe are seen as two areas with tremendous growth potential in the 1990s. The USSR was the world's largest importer of coarse grain in 1988/1989 and 1989/1990 but is a less consistent importer than Japan. Much of their import variability stems from erratic weather patterns from year to year. USSR imports are expected to be 11.5 MMT in 1990/1991. In the long run, the USSR and Eastern Europe could become export competitors if new infrastructure is developed and post collective agriculture leads to expanded production.

Mexico was an important and growing import market for coarse grains in the last decade. In 1989, Mexico was the second
largest market for U.S. grain sorghum. This trend is expected to increase through the 1990s.

**Domestic Policy**

Domestic policy will continue to play a major role in determining the level and competitiveness of U.S. coarse grain production and exports. U.S. exports fell during the early 1980s as a result of a strong U.S. dollar and loan rates that supported U.S. prices at levels above world prices. Since FAO, U.S. prices have become more competitive, resulting in a larger U.S. export market share. In addition, carryover stocks have been dramatically reduced. The extend to which this can continue will be largely determined by provisions of the 1990 Farm Bill, which is designed to maintain price competitiveness in world markets and provide U.S. producers with more planting flexibility.

**International Policy**

The current round of the General Agreement on Tariffs and Trade (GATT) negotiations is still in progress. In these talks, the U.S. and a number of other countries are advocating a multilateral move toward free trade. This would mean the elimination of trade distorting barriers such as price supports, export subsidies, import tariffs, quotas, etc. Such a move could have a substantial impact on the world coarse grain trade for both importing and exporting countries. It is likely that prices would become more variable as governments exert less control over domestic production and over imports and exports of grain. The potential U.S./Mexico Free Trade Agreement could also have a significant impact on feed grain trade and movement, especially in the Southern U.S. Further research needs to be conducted to determine potential changes in the levels and direction of trade.

**Summary**

World coarse grain trade continued to grow in the 1980s but at a slower pace than exhibited in previous decades. World

![Figure 1. World Coarse Grain Production and Consumption, (1970-1990)](image)

**Figure 2. World Coarse Grain Exports (1970-1990)**

Production, while continuing to trend higher in the 1980s, has increased substantially in variability. This has been due, in large part, to major shifts in U.S. farm policy and increasing worldwide weather variability.

With world coarse grain consumption expected to outpace production for the fourth straight year, world ending stocks are down to levels not seen since 1975. This becomes an even greater concern given the potential growth in demand (in the short run) that may come from the USSR and Eastern Europe as a result of their changing political and economic structure. International trade negotiations and domestic policies will be very important factors in determining the direction of coarse grain trade in the 1990s. Although the current round of GATT may end without an agreement to phase out all barriers to free trade, it seems clear that the specific rules of grain trade are likely to change in coming years.

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SRDC No. 148 International Trade Leaflet No. 10 August 1991
SOUTHERN AGRICULTURE IN A WORLD ECONOMY

WORLD TRADE IN AQUACULTURE

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Robert S. Fomeroy
Extension Agricultural Economist, Clemson University

Current Situation

Aquaculture is one of the most dynamic agricultural sectors in the world and the U.S., with rapid growth and diversification. World demand for aquatic products is increasing rapidly, outpacing production from marine fisheries. Many species are being harvested at or near maximum levels, while others are declining due to overfishing, pollution, or habitat disturbance. Aquaculture offers a sustainable means of increasing fish and seafood supplies in the decade ahead. World aquacultural production has increased from 7.3 million tons in 1975 to an estimated 16.5 to 17 million tons in 1990, supplying more than 15 percent of the world's fish and seafood. Asia is the largest producing region. In 1988, China accounted for 43 percent of world production followed by Japan and Korea (Table 1). The United Nation's Food and Agriculture Organization predicts that aquacultural production will increase at about 5.5 percent annually to reach 24.2 million tons by the year 2000. By then, aquaculture will supply over 25 percent of the world's fish and seafood.

Table 1. Value of World Aquaculture, 1988

<table>
<thead>
<tr>
<th>Country</th>
<th>Value in billion $'s</th>
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<tr>
<td>China</td>
<td>7.9</td>
</tr>
<tr>
<td>Japan</td>
<td>4.6</td>
</tr>
<tr>
<td>N.&amp; S. Korea</td>
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<tr>
<td>Philippines</td>
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<td>Thailand</td>
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</table>

In the U.S., marine fisheries landings have been relatively stable while total fish and seafood consumption increased 24 percent in the 1980s. Consumption per capita grew from 12.8 pounds to a record 15.9 pounds from 1980 to 1989. Even though the U.S. is the world's largest exporter of fish and seafood, we remain the second largest single importer after Japan.

To meet the rapid growth in demand during the 1980s, the U.S. trade deficit in fish and seafood more than doubled, increasing from $2.5 to $5.3 billion from 1982 to 1989. If domestic landings and demand follow current trends, marine fisheries can only supply 25 percent to 30 percent of U.S. demand by the year 2000. This means that 70 percent to 75 percent of demand will be from increased imports and domestic aquacultural production.

Aquacultural expansion has displaced some imports, dampening the rise in the fish and seafood trade deficit. Yet differences between products imported and those produced competitively at home limits the ability of aquacultural products to replace imports.

U.S. Aquaculture

During the 1980s, U.S. aquaculture production increased at an annual rate of 20 percent, the fastest growing agricultural sector. During 1975 to 1989, production expanded from 78,000 tons to 431,000 tons. Four species account for 80 percent of U.S. production: catfish, crawfish, trout, and salmon. Most industry growth has been in catfish production, concentrated in the South (Figure 1).

Relatively low resource opportunity costs (land, water, and labor), plus good climate and institutional support in the South, have been conducive to the development of a diversified aquaculture industry valued (on-farm) at $350 million in 1989. Production occurs in fresh, brackish, and salt water areas, and catfish remains the most important species. Other fish and shellfish species are also cultured such as trout, tilapia, hybrid striped bass, shrimp, crawfish, hard clams, bivalves, tropical fish and alligators.

Markets for Southern Aquacultural Products: The U.S. continues to be Southern aquaculture's best market due to strong demand, product familiarity, declining or variable natural harvests, and ease in marketing. Aquaculture's share of the fish and seafood market is highly dependent upon consumer preferences and product price as most aquacultural products compete directly with commercial landings and indirectly with poultry and red meats.

As world aquaculture expands, domestic producers will face increased competition from imports. About 85 percent of aquaculture production occurs in developing countries where aquacultural exports are becoming an important source of foreign exchange and production has diversified to encompass higher-valued export species such as shrimp and salmon.

While domestic markets are strong and expanding, international markets for U.S. aquacultural products exist or could be developed. Since most products are high-valued, international market potential is concentrated in affluent countries of Western Europe, Scandinavia, and Japan. The dollar's decline in value against major world currencies has improved the competitiveness of U.S. products, but a declining dollar can also benefit developing country exporters whose currencies may have dovetailed with the dollar.

The greatest export potential lies in species and product forms that substitute for fish and seafood traditionally consumed, vary across countries. Non-traditional species such as catfish may require extensive promotional and educational campaigns to develop overseas markets, especially where food consumption habits are conservative. The U.S. repeatedly exports small quantities of aquaculturized catfish and crawfish. But since trade data does not separate wild from aquacultural products, aquaculture's share of U.S. fish and seafood trade is unknown.

Aquacultural products from all sources have an advantage in export markets over traditional fishery products since greater control over quality, size, quality and growing environment exist, making it easier to meet specific import market requirements. In addition, U.S. producers have some advantages due to their ability to produce a wide variety of species, the availability of quality feed, plus a highly developed infrastructure and distribution system. Despite these advantages, the interest in developing aquacultural export industries is spreading rapidly worldwide, and developing country producers face lower resource costs such as land and labor.

Issues Affecting International Markets

One of the most important developments in U.S. aquaculture has been the industry's recognition as an agricultural sector. As a result, the industry benefits from the reporting, research, and assistance programs of Federal and State agencies, including the USDA and the Department of Commerce's National Marine Fisheries Service (NMFS). The USDA offers many free or low-cost export promotion programs for use in building international markets. Among other activities, the NMFS identifies trade problems and issues and works with the USDA in other fishery programs. Currently the most prominent U.S. policy issue is
mandatory seafood inspection which may be instituted early this decade. The aquaculture industry supports inspection since it may boost demand by increasing consumer confidence in product safety. Imports must also meet the same standards as domestic products, so inspection may protect U.S. markets from imports of poor quality. Despite the potential benefits of inspection, a great deal of uncertainty exists about its impact on markets for individual species.

International Trade and Policy Issues

Since few countries are self-sufficient in fish and seafood, trade is relatively unrestricted when compared to other foods. Currently, most fish and seafood trade restrictions are in tax or tariff form, but include prohibitions on live product imports in some regions. Restrictions on live products will likely increase as world aquaculture expands.

A multilateral trade agreement in the Uruguay Round of the General Agreement on Tariffs and Trade would have increased world aquacultural trade by lowering tariffs and standardizing health and sanitary regulations worldwide. The net effect of such trade reforms on U.S. markets is uncertain since countries would be reducing trade barriers simultaneously.

Key Decisions, Issues, and Summary

U.S. and Southern aquaculture faces many challenges as it continues to grow and diversify. Past expansion has improved marketing and production expertise, and led to infrastructural development that supports future growth and provides stability. However, environmental and resource use conflicts will increasingly influence where and how aquacultural production occurs.

Although demand for aquatic products will continue to outpace supply from marine fisheries, U.S. aquacultural products must still compete with natural harvests and imports. Market pressures will force the industry to stay competitive through increased efficiency, productivity, and flexibility to changing consumer preferences.

Since growth will be demand driven, research must be oriented towards meeting market-specific needs, not just improving productivity. Decisions about which species to produce and how fast to expand must be made. Technology transfers rapidly and the industry will face increasingly competitive markets. Early adopters tend to benefit most from new technology, so U.S. producers must evaluate and exploit technology as it develops.

On the bright side, the industry benefits from past experience plus research investments in genetics, technology, and marketing. Continued Federal and State support for research and investment in aquaculture is necessary to help the industry meet the challenges ahead.

U.S. Private Aquaculture Production
1980-1988

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SRDC No. 148 International Trade Leaflet No. 11 August 1991

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<th>Year</th>
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<th>Trout</th>
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<td>100</td>
<td>50</td>
<td>400</td>
</tr>
<tr>
<td>1982</td>
<td>300</td>
<td>100</td>
<td>200</td>
<td>100</td>
<td>600</td>
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<td>1984</td>
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<td>200</td>
<td>400</td>
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<tr>
<td>1985</td>
<td>600</td>
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<td>500</td>
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<tr>
<td>1986</td>
<td>700</td>
<td>300</td>
<td>600</td>
<td>300</td>
<td>1000</td>
</tr>
<tr>
<td>1987</td>
<td>800</td>
<td>350</td>
<td>700</td>
<td>350</td>
<td>1100</td>
</tr>
<tr>
<td>1988</td>
<td>900</td>
<td>400</td>
<td>800</td>
<td>400</td>
<td>1200</td>
</tr>
</tbody>
</table>

Note: Other includes Baitfish, Oysters, Clams, Prawns, etc.
Source: ERS, Nat. Marine Fisheries Serv.
Current Situation

The South is the major U.S. poultry producing region. In 1989 the southern region states produced over 60 percent of the value of U.S. poultry (broilers, eggs, turkeys, and mature chickens). On a product basis, the South supplied roughly 77 percent of the broilers, 42 percent of the eggs, and 36 percent of the turkeys produced in 1989. Thus, international poultry trade may be more important to the South than to other regions of the U.S.

Poultry exports are small relative to production or U.S. exports of other, non-meat agricultural commodities. In 1989, about 5 percent of U.S. broilers and only about one percent of egg and turkey production were exported. Poultry exports have fluctuated, but generally increased since the mid-1980s. In 1989 U.S. poultry exports totaled over $270 million, while imports were only a little over $135 million. The U.S. should remain a net poultry exporter, but future trade flows depend in part on trade and production policies that affect world poultry markets.

World poultry production has more than doubled from 1975 to 1990, increasing from 15.7 million metric tons (MMT) to 35.7 MMT. As a bulky and somewhat perishable product, only about 7 percent of world production is traded. The U.S. has been the largest producer, with 10.7 MMT and about 30 percent of the market in 1990 (Figure 1). Other major producers include the European Economic Community (EC-12), the Soviet Union (USSR), Eastern Europe, and Brazil. Poultry production has also expanded in China, Thailand, and Japan, mostly driven by world demand growth.

The major U.S. poultry exports are broilers and eggs. Minor commodities are also traded such as processed meats, baby chicks, feathers, turkeys, and mature chickens. Poultry meat comprised 71.6 percent of the value of poultry exports in 1989. Of this percent, 83 percent was broiler meat, primarily chicken parts (Table 1). This is particularly fortunate for U.S. exporters since U.S. consumers prefer breasts, leaving dark meat parts, which are preferred in many regions of the world, available for export.

U.S. Trading Partners and Competitors

The EC-12 is both the largest exporter and importer of poultry (Figures 2 and 3). However, ignoring internal trade, the EC-12 exports only 80 percent as much poultry as the U.S. Other countries with strong poultry exports include Brazil, Thailand, Hungary and China.

Japan is the world’s largest single importer at an estimated 335 thousand metric tons in 1990 (Figure 3). Saudi Arabia, the USSR and Hong Kong are also major importers. Roughly half of U.S. poultry exports go to Asia (Table 2). Japan is the U.S.’s largest single buyer, purchasing over $173 million or 24 percent of our 1989 poultry exports. Other important markets for the U.S. are Mexico, Canada, the Caribbean nations, and recently the Middle East and the USSR. The USSR had only imported poultry from East European countries, primarily Hungary until 1989 when the Soviets purchased large quantities of U.S. broiler meat.

Competition from other countries is centered in specific geographic regions. Competition for Middle East markets has come primarily from EC-12 producers, but also from Brazil. Now that political barriers have been relaxed in Eastern Europe and the USSR, opportunities for trade may increase but EC-12 producers have a locational advantage in these markets.

The USSR is not a very efficient poultry producer and domestic production has not kept pace with demand growth. U.S. exports to the USSR remain constrained by the country’s lack of hard currency and credit riskiness, plus relatively high U.S. poultry prices. By accepting rubles for payment, Hungary has been an attractive supplier of Soviet poultry imports.

U.S. poultry imports are primarily eggs from Canada and feathers from Europe and Asia. Egg trade has depended on relative prices near the U.S./Canada border and Canadian production levels.

Policy Considerations

International policies affecting poultry markets vary widely but are generally directed at supporting producers. For example, Canada has low import tariffs on poultry products (12.5 in 1989), but limits imports at 7.5 percent of production via quota. Japan provides various forms of producer assistance, but has rather low import tariffs (10% to 14%). The EC-12 uses a variable levy which forces non-EC-12 imports to enter at prices comparable to high domestic prices. Consequently, the EC-12 produces more poultry than it consumes and is forced to subsidize exports.

To compete with subsidized EC-12 exports, the U.S. began subsidizing poultry exports under the Export Enhancement Program (EEP) in the late 1980’s targeting markets where the EC12 subsidizes poultry exports. In 1987, about 26 percent of U.S. broiler meat exports were sold through the EEP, with small amounts sold in 1989 and 1990 as well.

U.S. poultry producers benefit indirectly from policies that have lowered feed costs, a major production input, but they may be harmed indirectly by U.S. trade policies that affect feed grain production costs of our competitors.

Brazilian poultry exports are taxed directly and also indirectly by the country’s overvalued exchange rate since 1986. During the early 1980’s, Brazilian exporters benefited from a devalued exchange rate and subsidized feed sales. Brazil’s exports have increased 2600 percent since 1975.

What’s Ahead for the U.S. Poultry Industry?

Increases in domestic poultry meat consumption should protect the U.S. industry from adverse world market developments since trade is such a small percentage of domestic poultry production and consumption. The world outlook is for expanding markets, production and trade and also for increased competition.

Reductions in trade barriers should spur increases in import demands for poultry products. Trade negotiations under the GATT and U.S. budget constraints may eliminate the EC-12 and U.S. export subsidies in the decade ahead.

Opportunities to export poultry products to the Pacific Rim countries will grow as economic growth in this region continues at a rapid pace. Hong Kong, Japan, Singapore and Taiwan are all good markets for U.S. poultry but also for the competition, especially in Japan. New Japanese investment in the Thai and Chinese poultry industries will increase their exports to Japan.

During the 1980s, Thailand’s share of Japan’s poultry imports increased 50 percent at the expense of U.S. exports. Japan prefers deboned and further processed poultry for which Thailand has a competitive advantage over the U.S. due to low labor costs and low transportation costs. Brazil’s exports to Japan have increased in recent years and the two countries have close cultural ties.

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*Milt Madison provided helpful comments and criticism on this manuscript.

*Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, and Virginia.
U.S. exporters may benefit from freer North American trade with two of its largest export markets, Canada and Mexico. Under the U.S.-Canada Free Trade Agreement, Canada's import tariff will be gradually eliminated by 1998; trade will still be limited by import quotas. If the proposed U.S. Mexico Free Trade Agreement becomes a reality, import demand for meats such as poultry is expected to increase because of lower tariffs plus faster economic growth due to increased trade.

![Figure 1. World Poultry Production 1975-90](image1)

![Figure 2. World Poultry Exports 1975-90](image2)

Table 1. U.S. Poultry Products Exported - 1989

<table>
<thead>
<tr>
<th>Product</th>
<th>$ mil.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Broilers</td>
<td>453.0</td>
<td>63.0</td>
</tr>
<tr>
<td>Eggs</td>
<td>90.7</td>
<td>12.6</td>
</tr>
<tr>
<td>Live Poultry</td>
<td>81.6</td>
<td>11.3</td>
</tr>
<tr>
<td>Feathers, Turkeys, and other meats</td>
<td>94.5</td>
<td>13.1</td>
</tr>
</tbody>
</table>

Table 2. U.S. Poultry Export Destinations - 1989

<table>
<thead>
<tr>
<th>Geographic Area</th>
<th>$ mil.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asia (exc. Japan)</td>
<td>199.3</td>
<td>27.7</td>
</tr>
<tr>
<td>Japan</td>
<td>173.4</td>
<td>24.1</td>
</tr>
<tr>
<td>Canada</td>
<td>101.6</td>
<td>14.1</td>
</tr>
<tr>
<td>Caribbean</td>
<td>87.8</td>
<td>12.2</td>
</tr>
<tr>
<td>Mexico</td>
<td>66.9</td>
<td>9.3</td>
</tr>
<tr>
<td>Europe</td>
<td>42.9</td>
<td>6.0</td>
</tr>
<tr>
<td>Other</td>
<td>48.4</td>
<td>6.6</td>
</tr>
</tbody>
</table>

This is one of a series of trade leaflets entitled Southern Agriculture in a World Economy, written as a result of the Southern Extension International Trade Task Force sponsored by the Southern Extension Marketing Committee, the Southern Extension Public Affairs Committee and the Southern Extension Farm Management Committee. Hal Harris, Clemson University; and G. A. Benson, North Carolina State University; served as task force co-chairs. The series is under the direction of A. W. Drennan, Texas A&M University; and W. F. Folse, LSU University.

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SOUTHERN AGRICULTURE IN A WORLD ECONOMY

BREEDING CATTLE AND GENETIC MATERIAL EXPORTS

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Extension Economist, Texas A&M University

Robert B. Schwart
Extension Economist, Texas A&M University

Current Situation
U.S. exports of breeding cattle, semen and embryos for beef and dairy cattle were valued at $128 million in 1988. Dairy cattle represented 39 percent of the total, while beef cattle accounted for 27 percent, semen 29 percent, and embryos five percent. Major customers for U.S. breeding cattle and genetic material were Canada, Mexico, Central and South America and the European Community (EC). The EC is especially important for dairy cattle semen exports, representing over 58 percent of the purchases from the United States.

Breeding Cattle Exports
Live cattle exports in 1988 were valued at nearly $85 million, with dairy cattle accounting for about 40 percent of the total value (Table 1). Over 49,000 dairy cows were exported, while beef cow exports were under 11,000 head.

Breeding Cow Exports. Dairy cow exports increased steadily from 1982 to 1988 (Table 2). In 1982, the U.S. exported 11,320 dairy cows for breeding purposes, and by 1988 that number had expanded four fold to 49,348 head. However, the average price per head declined by almost one-third over the same period to $1000. Much of the increase in dairy cow exports can be attributed to the U.S. Dairy Termination Program (DTP) which went into effect in April 1986. Producers electing to participate in the program were required to sell their entire milking herd for export or slaughter. Consequently, dairy cattle exports more than doubled from 1984-88.

During most of the 1980s, Mexico was the major market for U.S. dairy cow exports. In 1982 just over one-fourth of all U.S. dairy cattle exports, 5,307 head, went to Mexico. In 1985 Mexico purchased 25,461 dairy cows from the U.S., representing two-thirds of all export sales. This share declined to 30 percent in 1988, accounting for 14,987 dairy cows. Other major markets were Indonesia, Turkey, and Venezuela which together accounted for 42 percent of all U.S. dairy cow exports in 1988. Japan, Taiwan, Peru, and South Korea represented about 12 percent.

Breeding Bull Exports. U.S. beef bull exports exceeded dairy by 15,000 head in 1988, accounting for nearly $23 million. A total of 6,166 dairy bulls were exported, valued at $10.5 million, that had been exported from the U.S. The number of dairy bulls exported, though fairly small, has been increasing over the past seven years (see Table 1). Canada, Mexico and Japan were the major customers for U.S. dairy bulls.

Cattle Semen Exports
The National Association of Animal Breeders (NAAB) surveyed association membership during 1988 to determine member exports, the value of their dairy and beef cattle exports, and the destination of these exports. Total exports of dairy semen reached $59 million, with over $23 million sold to the EC. Other major markets were in Canada and Mexico, South America, and Asia. Beef semen exports were valued at only $1.1 million in 1989, compared to $1.6 million in 1988. Over $750,000 in export sales were made to Canada, Mexico, and South America.

Cattle Embryo Exports
The Foreign Agricultural Service-USDA has limited data for the number and value of embryo export sales. Table 4 shows the value of exports by major destination for 1987 and 1988. The top five buyers were all members of the European Community with French embryo imports being the greatest. Brazil and other countries made significant purchases in 1988.

There is no direct identification of the types of embryos exported, but the data on the sources and destinations, it is likely most of the embryos exported are dairy types, primarily Holstein, Wisconsin, Pennsylvania, Missouri and Texas account for 72 percent of the 12,867 embryo export certificates issued in 1988.

Competitive Advantage Issues
Being competitive in international markets with breeding stock and genetic material involves a number of factors including: (1) recognized genetic material with superior performance; (2) objective information that quantifies genetic superiority; (3) a wide pool of genetic material that can meet needs in various markets; (4) the knowledge and the skilled technicians to perform such practices as embryo transfers (ET) and capacity to train others to perform these functions; (5) continued research and development to maintain recognized leadership in genetic transfer technology and objective selection information systems; and (6) an export infrastructure that facilitates health evaluation, quarantine, transportation, and transfer of technical expertise. One critical value-added service required for ET technology is the training of technicians to perform transfer procedures and technical assistance at each phase of the process.

The U.S. has an advantage internationally in some dairy and some beef breeds. Genetic material is produced under a variety of production environments. Performance evaluation systems are well respected. These factors contribute to the ability of U.S. cattlemen to meet the market demands for different genetic material in many countries.

One of the primary limitations on the transfer of semen and embryos is the potential for transfer of cattle diseases. Bluetongue, anaplasmosis, bovine leukemia and brucellosis (brucella abortus) are all diseases which can cause problems for U.S. exports of breeding stock and genetic material. Australia and New Zealand have some of the more rigid standards that have to be met for live animal, semen or embryos. These rigid requirements may be justified for these island countries with heavy economic dependence on livestock enterprises.

New Technologies. Future markets for U.S. exports of cattle genetic material will be dependent on the advancement in technologies including ET, sexed embryos and embryo cloning, which allows for mass production of animals that are genetic duplicates. Biotechnology applications offer the potential to add genetic resistance to disease and other favorable attributes. Advancement in procedures to sex semen could improve the export market for semen. Improved performance evaluating techniques will speed the selection of livestock to meet specific market and environmental needs. The capacity to train specialists to carry out ET in importing countries is an important capability necessary for market development and implementation of new genetic technologies.
Summary
The international market for high-quality breeding stock is growing. While live animals have been the primary product shipped in the past, genetic material is taking on added importance. Frozen embryos will increasingly substitute for live animal exports and will spread the international transfer of genetic material at a substantially lower cost. With sexed and even cloned embryos, ET could become a very important substitute for artificial insemination over the next five to 10 years. Continued progress in ET methods, lowering of costs and new ways to prevent transfer of diseases, will make live animal exports increasingly less important, but expand the global market for embryos and semen.

Table 1. U.S. Exports of Live Breeding Cattle, 1988

<table>
<thead>
<tr>
<th></th>
<th>Head ($000)</th>
<th>Value ($000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beef Cattle</td>
<td>21,006</td>
<td>22,870</td>
</tr>
<tr>
<td>Bulls</td>
<td>10,925</td>
<td>12,255</td>
</tr>
<tr>
<td>Females</td>
<td>31,931</td>
<td>35,126</td>
</tr>
<tr>
<td>Dairy Cattle</td>
<td>6,166</td>
<td>10,458</td>
</tr>
<tr>
<td>Bulls</td>
<td>49,348</td>
<td>49,394</td>
</tr>
<tr>
<td>Females</td>
<td>55,514</td>
<td>49,852</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


Table 2. U.S. Exports of Dairy Cows for Breeding, 1982-88:
Number of Animals, Value per Animal, and Total Value.

<table>
<thead>
<tr>
<th>Year</th>
<th>Number</th>
<th>$/head</th>
<th>Total ($000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1982</td>
<td>11,320</td>
<td>1,543</td>
<td>17,465</td>
</tr>
<tr>
<td>1983</td>
<td>11,645</td>
<td>1,250</td>
<td>14,561</td>
</tr>
<tr>
<td>1984</td>
<td>19,098</td>
<td>1,510</td>
<td>25,021</td>
</tr>
<tr>
<td>1985</td>
<td>38,993</td>
<td>1,162</td>
<td>45,327</td>
</tr>
<tr>
<td>1986</td>
<td>40,452</td>
<td>1,267</td>
<td>51,259</td>
</tr>
<tr>
<td>1987</td>
<td>42,412</td>
<td>973</td>
<td>41,262</td>
</tr>
<tr>
<td>1988</td>
<td>49,348</td>
<td>1,001</td>
<td>49,348</td>
</tr>
</tbody>
</table>

Source: USDA, Foreign Agricultural Service.

Table 3. Dairy and Beef Cattle Semen Export Sales, 1988-89

<table>
<thead>
<tr>
<th>Region</th>
<th>1988 ($000)</th>
<th>1989 ($000)</th>
<th>1988 ($000)</th>
<th>1989 ($000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>European</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Community</td>
<td>18,939</td>
<td>23,009</td>
<td>29.7</td>
<td>37.6</td>
</tr>
<tr>
<td>No. America</td>
<td>3,223</td>
<td>3,751</td>
<td>470.2</td>
<td>571.8</td>
</tr>
<tr>
<td>So. America</td>
<td>5,119</td>
<td>3,160</td>
<td>573.6</td>
<td>380.3</td>
</tr>
<tr>
<td>Asia</td>
<td>2,198</td>
<td>2,873</td>
<td>54.4</td>
<td>54.1</td>
</tr>
<tr>
<td>Other Western Europe</td>
<td>1,627</td>
<td>1,627</td>
<td>1.6</td>
<td>1.6</td>
</tr>
<tr>
<td>Middle East</td>
<td>1,170</td>
<td>1,390</td>
<td>0</td>
<td>5.2</td>
</tr>
<tr>
<td>Eastern Europe</td>
<td>1,636</td>
<td>1,318</td>
<td>11.0</td>
<td>62.9</td>
</tr>
<tr>
<td>Oceania</td>
<td>667</td>
<td>879</td>
<td>96.7</td>
<td>73.8</td>
</tr>
<tr>
<td>Africa</td>
<td>868</td>
<td>799</td>
<td>48.0</td>
<td>29.5</td>
</tr>
<tr>
<td>Central America</td>
<td>316</td>
<td>391</td>
<td>77.5</td>
<td>83.1</td>
</tr>
<tr>
<td>Caribbean</td>
<td>15</td>
<td>46</td>
<td>12.6</td>
<td>15.2</td>
</tr>
<tr>
<td>Total</td>
<td>35,107</td>
<td>39,743</td>
<td>1,375</td>
<td>1,145</td>
</tr>
</tbody>
</table>

Source: National Association of Animal Breeders.

Table 4. Value of Cattle Embryo Exports By Destination, 1987-1988

<table>
<thead>
<tr>
<th>Country</th>
<th>1987 ($000)</th>
<th>1988 ($000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>France</td>
<td>1,524</td>
<td>3,549</td>
</tr>
<tr>
<td>Netherlands</td>
<td>110</td>
<td>836</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>0</td>
<td>622</td>
</tr>
<tr>
<td>W. Germany</td>
<td>1,097</td>
<td>538</td>
</tr>
<tr>
<td>Denmark</td>
<td>242</td>
<td>0</td>
</tr>
<tr>
<td>Brazil</td>
<td>0</td>
<td>300</td>
</tr>
<tr>
<td>Other Countries</td>
<td>82</td>
<td>151</td>
</tr>
<tr>
<td>Total</td>
<td>3,055</td>
<td>5,026</td>
</tr>
</tbody>
</table>

Source: USDA, Foreign Agricultural Service.

References
United States Department of Agriculture. Foreign Agricultural Service.

USDA-APHIS export certificate endorsements, various issues: Provided by American Embryo Transfer Assoc., Hastings, NE

SOUTHERN AGRICULTURE IN A WORLD ECONOMY

WORLD TRADE IN FRESH FRUIT AND VEGETABLES

P.J. Rathwell  Clemson University
John VanSickle  University of Florida

Current Situation

The United States is a leader in the international trade of fresh fruits and vegetables. Major U.S. exports include apples, grapes, cherries, lettuce, tomatoes, plums and strawberries. Production of these export items is centered mainly in two states: California and Florida. U.S. exports go primarily to Canada and the Pacific Rim area (Japan, Taiwan and Hong Kong).

Florida dominates Southeastern exports. Vegetable exports to Canada play a more important role in Southeastern trade patterns than they do to the U.S. in general. The Southeast has a long established relationship with Canada, annually shipping large quantities of both fresh fruits and vegetables.

The U.S. is consistently among the world's top five importers of fresh fruits and vegetables. Between 1984 and 1989, U.S. imports averaged $1.2 billion annually—with the top five commodities being bananas, grapes, tomatoes, dry onions and peppers. The major suppliers of these products have been Mexico, Chile and other Latin American countries.

Most imported fruit and vegetable commodities do not directly affect U.S. producing areas because of the "off season" origin of these shipments. However, there is one very noticeable exception—the winter production of Mexican and Florida vegetables. These two regions directly compete for U.S. and Canadian tomato, squash, cucumber, green bean and pepper markets during winter months.

Key Players in Fresh Fruit and Vegetable International Trade

Key importing countries are, and will likely continue to be, the Pacific Rim, the European Community (EC-12), plus the U.S. and Canada. Market expansion is also possible in the Middle East and Eastern Block countries in the next 10 to 20 years.

The reasons why these countries are the key consuming areas are purely economic. Their viable economies have allowed for expansion in the demand for high value fruit and vegetable products. Along with this have been improvements in market infrastructure, allowing for better storage and transportation of perishable products.

Major exporting areas are typically those countries with moderate weather conditions allowing for long growing seasons and/or countries with inexpensive or highly subsidized production resources. In the 1980s the leading exporting countries by dollar volume were Spain, the Netherlands, Italy, United States and France. Leading Latin American exporters were Mexico, Chile and Honduras. Continued adoption of production and post harvest technologies has improved the ability of these areas to increase their market share. Total world fresh fruit and vegetable exports during 1988 were $18 billion dollars—up $7 billion dollars from 1984.

Currently, several world exporting patterns are distinguishable. The European Community's (EC) market exports are largely to other Community countries. The Americas are trading among themselves and with Pacific—Rim countries. Other countries are exporting under trading relationships developed over time; many on the basis of old colonial ties.

Major limitations to reaching the full potential in the international trade of fresh fruits and vegetables still remain. These problems arise out of the physical, geographic and political barriers to trade. Though political barriers are being negotiated, market infrastructural improvements are critical to industry growth.

Domestic Policy Issues Affecting International Markets

Two major domestic issues will affect the U.S.'s position in expanding international trade in fresh fruit and vegetable markets. These issues will affect both the U.S. consumer and producer. The primary consumer issues for the 1990s are the environment and produce safety. U.S. consumers expect imported produce to be as safe as that domestically grown. Restrictions on chemical residue levels must apply to foreign produce as well as local produce.

U.S. producers, especially Southern growers, have a large stake in the amount of foreign grown fruit and vegetable imports that enter the U.S. during the "off season" (basically winter months). These products compete directly with Southern producers in domestic and Canadian markets. The short-run impact of increasing imports will dampen domestic prices and squeeze already tight profit margins. The long-run effect will force growers to maintain their competitive edge at a time when environmental, food safety, water pollution, and labor issues are making produce production less profitable in the U.S. The "old ace in the hole," technological advancement, cannot effectively compensate for these advancing public demands on the produce industry.

Policy Issues Affecting International Markets

The major policy issues affecting international fresh fruit and vegetable markets are diverse and very political. These issues often exceed the central issue of free trade and directly affect the economic welfare of many nations.

Two major issues confront the ability of international fresh fruit and vegetable markets to grow. World demand for these products will continue to grow—putting pressure on governments to make international trading easier. However, physical barriers, both on the production and marketing side, will severely limit the speed at which freer markets can be developed to meet this growing world demand. Unless significant changes are forthcoming in market infrastructure, i.e., transportation, storage, etc., international trade is a moot issue.

An equally difficult policy issue is the significant number of trade barriers already in existence. These barriers developed over a long period of time, and for economic and political reasons, have been difficult to bring down. Typical trade barriers in this market range from taxes on imports to restrictions on volumes imported. In addition, quasi tariffs, i.e., restrictions on chemicals applied for control of diseases and pests, are effective barriers. In recent years these physical limitations have become severe barriers to trade because of their liberal interpretation by importing countries. These restrictions are easy government policy tools to implement in the name of consumer protection while still providing maximum protection to domestic growers.

1Largely transhipments of bananas (Buckley).
Trade issues are also related to many Third World countries' development goals. Exports provide valuable capital which directly affect these countries' economic and political stability. The U.S. and other nations have waived duties on many products imported from these less developed countries in an effort to stimulate their economies and to meet foreign policy objectives. These programs, like the Caribbean Basin Initiative (CBI) started in 1983, are examples of this development policy. How effective the CBI program is to the Caribbean area and its impact on U.S. producers remains to be seen.

Another issue is the use of trade barriers to subsidize infant or inefficient domestic industries. This philosophy is effectively practiced by most of the world's trading partners. Tariffs used this way generally increase the cost of these commodities to the consumers in importing countries while heavily subsidizing inefficient domestic production.

Key Decisions

Important issues affecting international trade of fruits and vegetables center around developing freer trading arrangements while maintaining international development in Third World nations. A balance must be achieved if we are to increase international trading of fresh produce to meet increasing world demand and maintain a fair profit for domestic producers. It is unlikely that much progress will occur until these two positions are rectified.

For U.S. and Southern producers in particular, the negotiation of a North American Free Trade Agreement with Mexico, Canada, and the U.S. is a controversial and important policy issue, especially since Mexican imports during the winter months compete with Southern producers. Research suggests that the elimination of U.S. tariffs on fruit and vegetable imports from Mexico would increase U.S. imports, but only modestly increase U.S. exports of fruits and vegetables. Thus, U.S. fresh fruit and vegetable producers and processors could face greater competition.

References


SOUTHERN AGRICULTURE IN A WORLD ECONOMY

U.S. GREENHOUSE AND NURSERY INDUSTRY IN A GLOBAL ECONOMY

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Charles Sailey  Extension Economist, N.C. State University

Current Situation
The U.S. greenhouse and nursery industry is past the budding stage. It has flowered into an average annual growth of 10 percent per year since 1982—one of the fastest growing sectors in agriculture.

Worldwide, over the past decade, production, consumption and trade in flowers and plants have expanded faster than the general economy. For 1989, greenhouse and nursery crops totaled $7.9 billion in cash receipts and earned 9.5 percent of the total for all U.S. farm crops. The percentage slipped from 1987's 10.5 percent of crop receipts, mostly due to higher feed grain prices.

The industry is split into two major sectors. One is floriculture, which includes cut flowers, potted flowering plants, foliages, bedding plants and cut cultivated greens such as ferns used in arrangements. The other is ornamental horticulture, which includes all other nursery and greenhouse products which are used primarily for outdoor, but also indoor landscaping.

One of the reasons for the increase in sales is that the housing industry is spending more for sod and other landscape ornamentals. Also, cities are doing more landscaping in the inner-cities as well as parks and along highways. And citrus growers replaced freeze-killed citrus trees, pushing up nursery stock sales in Florida. In addition, with higher personal disposable income, Americans are buying more cut flowers, bedding plants and other ornamental crops such as houseplants and outdoor foliage, trees and shrubs.

Ten states accounted for 82.2 percent of the total cash receipts for horticulture in 1989. California, with almost 28 percent, ranked first, a position it has held since counting started in 1960. Florida was second, also a long-time rank, with 12 percent and Texas was third with 6 percent.

Of the two million farms in the United States, about 37,300 are horticultural operations, and individually they average high returns compared to sales for all other types of farms. In 1987, the average sales per horticultural farm were $154,818 compared to $65,165 for all farms.

Total cash receipts in 1989 for the floriculture sector were $2.43 billion, a two percent gain from 1988. (Table 1). Bedding garden plants were the top money-makers at $867.4 million, a 15 percent increase from 1988. Potted flowering plants were next with $522 million, up three percent, and foliage plants were third with $476 million in cash receipts, down about one percent from the previous year.

The market for cut flowers, especially roses, continues to expand. Production in 1989 in 28 major producing states has grown to a wholesale value of $469 million. Total consumption of cut flowers in the U.S. is estimated to have reached $800 million in 1989. This is nearly $200 million more than 1986.

Roses clearly have the highest wholesale value of all the cut flower crops. In 1989, domestic production of roses was valued at $195.7 million, almost four times carnations valued at $33.8 million; the second highest. Chrysanthemums were the third highest, valued at $45.4 million, just about $10 million less than carnations. Despite this growth, sales per person in the United States are still only half, or perhaps as low as one-third, the sales in many European countries.

U.S. Imports
The United States is the world's largest producer of flowers and plants. And although the American growers control 94 percent of the domestic market, the United States is also a major importer. In 1989, imports totaled $511 million. More than half of those imports were cut flowers, a six percent increase over 1988. (See Table 2). Colombia is the largest supplier of U.S. horticultural products imports. In 1989 almost all of the $187 million in U.S. purchases from Colombia were cut flowers. Since the value of Colombian peso is pegged to the U.S. dollar, the decline in dollars' exchange value in the late 1980s did not reduce imports from Colombia. Although horticultural trade with Colombia has fallen as U.S. import sources have diversified, Colombia will continue to be a dominant supplier of floral products to the United States.

Despite the lower valued U.S. dollar, Dutch flower exports to the United States have grown. In 1989 the U.S. imported $163 million in horticultural products from the Netherlands. Approximately $68 million was in cut flowers. The Dutch and other floral experts refer to the United States as "the largest underdeveloped market in the world for flowers."

Other major exporters of greenhouse and nursery products to the United States in 1989 were Canada, with sales totaling $110 million, Costa Rica with almost $18 million, and Mexico, at slightly over $20 million.

The United States is likely to import larger quantities of the major floral crops such as roses, carnations, chrysanthemums, statice, lilies, gladioli, daisies, and others. But analysts also expect that a wider diversity of tropical crops such as Bird of Paradise, Red Ginger, orchids, callas, and anthuriums will be imported as well.

Growing U.S. imports may contribute to a decline in domestic production. Many growers indicated in early 1989 that they planned to maintain or scale back cut flower production. Cut flowers require much hand labor, which adds significantly to costs. Producers in South and Central America can pay lower wages and consequently may have a cost advantage.

U.S. Exports
While the value of imports for all horticultural crops in 1988 was over $510 million, exports totaled about one-fifth of that amount—$109 million—mostly to Canada. The greatest export values were in ornamental plants $45.7 million; and other live plants $47.1 million, while bulbs and roots accounted for $5.7 million, and cut flowers $10.8 million.

In 1981 six countries—Holland, Colombia, Italy, Israel, Denmark, and Belgium—handled 90 percent of flower and plant exports worldwide. But import sources are broadening dramatically. In 1988, the Netherlands exported nearly $3.41 billion in greenhouse and nursery products, 56 percent of the world total. Nine other countries, including Belgium, Denmark, France, West Germany, Italy, Spain, Colombia, Israel, and the United States, each exported at least $100 million in greenhouse and nursery products.

The decline in the dollar's value helped U.S. growers find export markets, but stiff competition will continue as other countries gear up their floriculture production for export. These include Zimbabwe, Kenya, South Africa, Thailand, Singapore, New Zealand, Australia, France, Italy, Spain and Israel.

Large increases are also expected from Mexico, other Central and South American nations, and the Caribbean Basin countries. Canada is expected to raise production and is interested in stepping up exports to the United States.

Economic and Trade Issues
Costs, mainly labor and energy inputs, continue to rise for U.S. growers while prices received have been almost flat. When adjusted for inflation, producer prices have generally fallen, putting
some U.S. growers in a cost-price squeeze and allowing foreign competitors to penetrate the U.S. and other markets. The U.S. industry could benefit from:
  • more automated, cost-effective production facilities;
  • improved packaging, handling, and distribution;
  • trade agreements to expand exports and open new markets;
  • greater marketing efforts to boost domestic sales, especially nonoccasional purchases; and
  • more biotechnical, statistical, and economic research.

Growth Potential
Although consumer spending on flowers and plants is stable, there appears to be a large potential for growth. Consumption rates in the U.S. are relatively low compared with those in Europe. For example, in the U.S., per capita purchases of cut roses were 3.5 stems in 1988; carnations, 5 stems; and chrysanthemums, only 2 stems. The Dutch buy flowers more frequently than anyone else in the world. They purchase flowers on average 155 times each year, while people in the U.S. buy only 12 times annually.

As the world's top producer of flowers and plants, the U.S. could become a leading exporter. But to boost exports, U.S. growers need to cut production costs and improve marketing techniques. For example, despite also having relatively high wages, the Dutch are leading exporters because they use automated production processes and a low-cost auction marketing system. Cut flowers growers in the U.S. want to ship more to Far Eastern markets and the EC. However, BC duties are high, and the EC has other trade barriers that restrict imports. The Netherlands, Spain and Denmark are especially likely to continue expanding domestic production and exports, putting more pressure on world floriculture markets. Mexico and other Latin American countries are also expected to increase flower and plant exports, targeting mainly U.S. markets.

Table 1. Cash Receipts for Greenhouse and Nursery Products, 1978-1989

<table>
<thead>
<tr>
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<tr>
<td>Floriculture:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cut Flowers &amp; Cut Greenery</td>
<td>220.1</td>
<td>230.1</td>
<td>N/A</td>
<td>237.3</td>
<td>466.6</td>
<td>548.6</td>
<td>567.9</td>
</tr>
<tr>
<td>Ornamental Greenery</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tomato, Peony, Garden Plants</td>
<td>172.5</td>
<td>209.9</td>
<td>N/A</td>
<td>226.5</td>
<td>358.3</td>
<td>367.7</td>
<td>322.5</td>
</tr>
<tr>
<td>Ornamental Trees</td>
<td>211.9</td>
<td>313.0</td>
<td>N/A</td>
<td>425.0</td>
<td>321.4</td>
<td>484.0</td>
<td>475.3</td>
</tr>
<tr>
<td>Bulb and Garden Ornamental</td>
<td>129.7</td>
<td>190.3</td>
<td>N/A</td>
<td>345.1</td>
<td>501.1</td>
<td>715.3</td>
<td>672.4</td>
</tr>
<tr>
<td>TOTAL</td>
<td>844.5</td>
<td>955.0</td>
<td>N/A</td>
<td>1,308.6</td>
<td>1,690.9</td>
<td>2,206.2</td>
<td>2,341.6</td>
</tr>
<tr>
<td>Environmental Control</td>
<td>1,872.8</td>
<td>2,035.5</td>
<td>N/A</td>
<td>3,042.2</td>
<td>3,941.3</td>
<td>5,384.0</td>
<td>5,465.9</td>
</tr>
<tr>
<td>TOTAL</td>
<td>2,757.3</td>
<td>3,190.8</td>
<td>4,041.0</td>
<td>5,285.2</td>
<td>5,880.3</td>
<td>7,582.2</td>
<td>7,909.0</td>
</tr>
</tbody>
</table>

Table 2. Greenhouse and Nursery Crops: Value of U.S. Production, Supply and Consumption, 1988-88

<table>
<thead>
<tr>
<th>Subcategory and Year</th>
<th>Domestic Production</th>
<th>Imports</th>
<th>Total Supply</th>
<th>U.S. Consumption</th>
<th>U.S. Share of Annual Domestic Consumption</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cut flowers</td>
<td>1984</td>
<td>454,299</td>
<td>238,805</td>
<td>693,104</td>
<td>18,300</td>
</tr>
<tr>
<td>1985</td>
<td>493,792</td>
<td>254,609</td>
<td>748,401</td>
<td>18,410</td>
<td>7,100,000</td>
</tr>
<tr>
<td>1986</td>
<td>514,443</td>
<td>283,205</td>
<td>797,648</td>
<td>19,700</td>
<td>7,600,000</td>
</tr>
<tr>
<td>1987</td>
<td>532,860</td>
<td>299,192</td>
<td>832,052</td>
<td>21,500</td>
<td>7,200,000</td>
</tr>
</tbody>
</table>

Preliminary estimates.
Estimates are based on reported 1985 crop season data.

This is one of a series of trade leaflets entitled "Southern Agriculture is a World Economy written as a result of the Southern Extension International Trade Task Force sponsored by the Southern Extension Marketing Committee, the Southern Extension Public Affairs Committee and the Southern Extension Farm Management Committee.

Hal Harris, Clemson University, and G. A. Benson, North Carolina State University, served as task force co-chairs.

Editors: for the series were C. P. Ramsey, III, Texas A&M University; J. A. Benson, NCSU; and R. B. Taylor, Clemson University.

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Southern Agriculture in A World Economy: World Wheat Trade

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Kim B. Anderson  Extension Economist, Oklahoma State University

Current Situation

Current Trends in World Wheat
World wheat production, consumption, exports, and ending stocks continue to increase (Table 1). U.S. production, consumption, and ending stocks as a percentage of world production, consumption, and ending stocks have been declining. World wheat ending stocks have increased an average of 2.36 percent per year compared to 0.14 percent in the U.S. These trends indicate the U.S. is storing less of the world’s ending wheat stocks than it did three decades ago.

World wheat harvested acreage has fluctuated within a five percent band since the mid-1960s and is now about where it was in 1964—less than 250 million hectares. However, there have been regional shifts in growth, cutbacks, and productivity gains during that period.


<table>
<thead>
<tr>
<th>ITEM</th>
<th>WORLD</th>
<th>U.S.</th>
<th>U.S./WORLD</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRODUCTION</td>
<td>163</td>
<td>122</td>
<td>15 13</td>
</tr>
<tr>
<td>CONSUMPTION</td>
<td>140</td>
<td>128</td>
<td>9 7</td>
</tr>
<tr>
<td>EXPORTS</td>
<td>128</td>
<td>50</td>
<td>42 27</td>
</tr>
<tr>
<td>ENDING STOCKS</td>
<td>228</td>
<td>40</td>
<td>55 16</td>
</tr>
</tbody>
</table>

*Note: Consumption figures exclude exports.
Source: USDA, PS&D View; World Agricultural Supply and Demand Estimates.

In the U.S., the South has seen dramatic expansion in wheat acreage since the mid-1970s. Hard red winter wheat acreage has decreased in Oklahoma and Texas. The growth has come in acreage devoted to the production of soft red winter wheat (SRW). The Southern region, excluding Oklahoma and Texas, had about three percent of the wheat acreage in 1970 and eight percent in 1988.

Key Players
Four regions produce about 60 percent of the world’s wheat and consume about 55 percent: China and the USSR each produce 3.3 to 3.5 billion bushels, the European Community (EC), 2.9 billion bushels, and the U.S., 2.5 billion bushels.

Major wheat exporters are (million bushels): U.S., 1,250; EC-12, 1,200; Canada, 700; Australia, 400; and Argentina, 250. Major wheat importers are (million bushels): USSR, 580; China, 500; and North Africa (Algeria, Egypt, Libya, Morocco and Tunisia), 300.

Comparative Advantage
Comparative advantage refers to underlying economic forces which influence trade. Protective policies often cloud the issue of comparative advantage among countries and regions within countries.

Competitive advantage refers to what "is" in trade patterns, while competitiveness refers to the ability to obtain a market for a product. Competitiveness is influenced by many factors, including government policies and exchange rates, along with unpredictable events such as weather. In other words, market distortions exist, alter trade flows, and have a major influence on a country’s competitive position.

Two examples help illustrate the difference between these two concepts. Regional estimates of cash expenses for wheat may be looked upon as breakeven prices. These costs are highest in the Southern Plains, while the Southeast is higher than the national average. Regional differences explain such trends as acreage movement out of wheat, and the search for efficiency gains from consolidation into larger operations in Oklahoma and Texas, increased adoption of complementary activities such as stocker operations on winter wheat, and expanded acreage where the returns from double-cropping wheat and soybeans were attractive.

A review of agricultural productivity statistics for 1970-82 indicates that relative to the rest of the world, U.S. agricultural productivity growth was greater, and nonagricultural labor productivity growth seemed to be slower. These observations suggest the relative efficiency of U.S. agriculture increased compared to the relative efficiency of agricultural productivity in the rest of the world, further suggesting declining relative unit costs for U.S. agricultural products. Theory of comparative advantage would then say that U.S. exports should have increased. That, however, did not occur, except for a part of the 1970s. The decline in U.S. wheat exports was not directly related to a loss of comparative advantage but to factors of competitive advantage.

Domestic Policy Issues
Trade can be beneficial. However, benefits do not come without increasing degrees of complexity and cost, often brought on by government intervention in the marketing chain. In the wheat market, foreign buyers are essential in keeping demand at current levels. Between 60 and 80 percent of all U.S. wheat production is exported annually.

Government policies have been an important factor affecting wheat trade. Brazil, China, Egypt, Pakistan, India, and other importers of wheat with consumer subsidies. Development policies, spurred by foreign aid, largely from the U.S., has been significant in allowing some countries to obtain wheat and wheat products, and has led to commercial exports once countries "graduated" from these aid programs. The sagging value of the U.S. dollar in the 1970s, domestic farm programs, and bilateral trade agreements have also enhanced the opportunity for trade.

In the U.S., the Export Enhancement Program (EEP) has recently subsidized a more competitive price for U.S. wheat in world markets. Farm programs such as the loan rate-target price-deficiency payment system have helped raise and stabilize producer incomes but at a cost of higher stocks and increased foreign competition. The Acreage Reduction Program (ARP) and Conservation Reserve Program (CRP) were used in the first few
years of the 1985 Food Security Act to force cutbacks in production, but drought, coupled with EEP and payment-in-kind (PK), probably accounted for most of the reductions in stocks.

The Common Agricultural Policy (CAP) of the EC has been used since the late 1970s to strengthen farm income by a system of price management and border measures. Variable import levies maintain minimum import prices, placing EC prices far above the world market price. The EC purchases surplus wheat at the guaranteed price to protect internal domestic price. Surplus stocks that are not used to stabilize the domestic market are placed on the world market. The EC consumer ultimately pays higher prices for these protected markets.

Other major competitors such as Canada and Australia provide both price and income support, supply management, and input subsidies through marketing and transportation programs. Their marketing boards are effective intervenors in the world market because of their collective force within a country. Subsidies for wheat producers in these countries, however, are low relative to other countries. Countries such as Argentina do not subsidize producers, but actually tax them for wheat production. There are similar programs in India.

International Trade & Policy Issues

While the U.S. trade deficit remains a problem, various factors have combined to improve U.S. agricultural market share. These factors include a depreciating U.S. dollar, export support programs, more competitive prices, and bilateral agreements to liberalize trade barriers. The debt crisis of Third World countries remains a problem. There is uncertainty over the potential impact of the approaching move to an EC economic power block in 1992, but it is unlikely to have a major short-term impact on agricultural trade. The geo-political restructuring in Eastern Europe and the USSR will change trade flows in ways that are difficult to predict at the present time.

U.S. government-assisted export programs that play a major role at the national level to promote U.S. wheat abroad fall into three categories: PL-480, AID Mutual Security, and non-PL 480 export assistance programs. The U.S. proposed in the beginning of the latest GATT negotiations—the Uruguay Round—that international discussion be focused on reducing government intervention in world agricultural markets. Quotas, embargoes, quarantine regulations and a host of other nontariff barriers remain in the agricultural sector. Trade ministers from GATT countries initiated the current round in Punta del Este, Uruguay, September 1986. Domestic policies, such as loan rates and deficiency payments, that are not directly linked to trade have come under scrutiny for their apparent adverse impact on trade. The reduction of nontariff barriers, especially by harmonizing health and phytosanitary regulations, continues to be a major challenge.

Discussions were to have concluded in an agreement by the end of 1990. Differences in how much change could be tolerated, however, were too great, especially between the U.S. and the European Community and, to a lesser extent, within the EC itself. During the first half of 1991, the key actors began to re-open talks, attempting to ameliorate major differences. Meanwhile, Congress extended "fast-track" authority for two years, moving the deadline from June 30, 1991, to June 30, 1993. Because the Uruguay Round remains in session, it is too early to estimate impacts on the U.S. wheat market.

References

USDA, PS&D View; World Agricultural Supply and Demand Estimates


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The U.S. citrus industry has a long history of involvement in international trade. Efforts have focused on maintaining the U.S. tariff structure, developing export markets for fresh and processed citrus, and reducing unjustified barriers to trade. The U.S. both exports and imports citrus. Although the U.S. is the world's largest producer of grapefruit and the second largest producer of oranges, citrus juice imports have become substantial. In fact, the U.S. is the world's largest importer of citrus, and the second largest exporter of citrus, following Brazil.

In the South, citrus is commercially produced in Florida and Texas. Currently, southern agriculture represents 59.5 percent of U.S. citrus production with Florida accounting for 58.3 percent and Texas 1.2 percent. The balance of U.S. citrus is produced in California and Arizona. Before freezes in the 1980s, Florida (75%) and Texas (3%) accounted for 78 percent of U.S. citrus production during the record 1979-80 season. By variety, Florida produces 59.3 percent of U.S. oranges and 73.6 percent of U.S. grapefruit. California and Arizona dominate lemon and tangerine production while Florida produces the majority of limes, tangelos and Temple oranges.

**U.S. Citrus Trade**

**Citrus Juice**

The majority of U.S. citrus imports are accounted for by orange juice. For 1988/1989, U.S. citrus imports totaled $472 million. Over the last decade, U.S. orange juice imports have been influenced by the reduction in domestic supply caused by Florida's freezes and growing consumer demand. U.S. per capita orange juice consumption is the highest in the world.

Higher prices, lower domestic orange juice supplies, and increased competition from Brazil have combined to reduce the volume of U.S. orange juice exports since the early 1980s. Canada and Western Europe represent the largest export markets for U.S. orange juice. Japan and other Pacific Rim countries appear to represent some potential for growth in response to market development and promotion programs.

U.S. exports of grapefruit juice decreased during the freeze period of the early to mid 1980s. Additionally, reduced product availability, record high prices, and a strong U.S. dollar contributed to declining export sales during the same period. Japan now represents the leading export market for U.S. grapefruit juice, accounting for one-half of total export shipments in recent years. Increased sales are also occurring in Western European countries.

**Fresh Citrus**

U.S. trade in fresh citrus differs considerably from trade in citrus juice. While the U.S. has become primarily an importer of orange juice, U.S. fresh citrus exports far exceed imports. In 1988/1989 U.S. fresh citrus exports were valued at $562 million, while imports were $19.1 million. Grapefruit exports were $235 million, followed by oranges, $224 million and lemons/limes, $101 million. In volume, export shipments have increased dramatically since the 1986-1987 season, peaking at 26.9 million cartons in 1988-1989.

Over the past decade, annual U.S. imports of fresh grapefruit have consistently been less than one-tenth million 4/5 bushel cartons. However, U.S. fresh grapefruit exports generally ranged from 13 to 16 million cartons from the late 1970s to the mid-1980s. Florida accounts for the major share of U.S. fresh grapefruit exports.

California dominates U.S. fresh orange exports. U.S. exports of fresh orange and specialty citrus have remained at about the 20 million 4/5 bushel carton equivalent level since the 1979-1980 season. Although Florida remains a small part of the fresh orange export picture, the price structure of the domestic U.S. fresh orange market benefits from the volume of California fruit which is exported. U.S. imports of fresh oranges and specialty citrus generally have remained below 2 million cartons annually.

**Domestic and International Policy Issues**

International policies of other countries have major impacts on the competitive position of the U.S. citrus industry. Both supply and demand now have international dimensions which are beyond the control of the U.S. citrus industry, but which exert considerable influence on that industry. The supply of orange juice in Brazil and fresh grapefruit in Israel help define the competitive position of U.S. citrus. Demand considerations are now shaped by international product flows, imports and exports, and factors which influence prices such as currency exchange rates, tariffs, other government policies, and commodity promotion expenditures.

Interdependence between markets and U.S. economic policies play a leading role in production and marketing of citrus. For example, even though the U.S. exports a relatively small quantity of orange juice to Europe, the currency exchange rates between the U.S. dollar and European currencies affect the level of Brazilian orange juice imports into the United States. This occurs because Brazil prices orange juice in U.S. dollars. The strong rise in the value of the dollar during the early 1980s in conjunction with a rise in Brazilian orange juice prices combined to nearly quadruple the price of Brazilian orange juice to European consumers. The ensuing decline in quantity resulted in greater U.S. imports from Brazil, thus depressing prices to U.S. producers. With the subsequent decline in the value of the dollar, Brazilian orange juice exports to Europe responded positively. Variations in exchange rates also have been demonstrated to have impacts on the demand structure for U.S. fresh grapefruit among export markets.

**Trade Policies**

Market access and protectionism now dominate the international trade environment. Advertising and promotion efforts are emerging as key elements in international marketing programs. International market growth now surpasses domestic market expansion for some citrus products. The Targeted Export Assistance (TEA) program and its successor, the Market Promotion Program (MPP), sponsored by the U.S. government, along with the citrus industry may set the stage for expanded international marketing efforts in the next decade.

With the Uruguay round of multilateral trade negotiations among the nations of the General Agreement on Tariffs and Trade (GATT) nearing completion, it becomes extremely important for those interested in the production, marketing and distribution of citrus to monitor international trade issues. There are many practical political and economic reasons for examining the impacts of tariffs remaining in place following the current round of negotiations. However, the fact remains that all U.S. citrus tariffs are now subject to reduction and elimination. The potential implications for the U.S. citrus industry are substantial.

It is important to note that U.S. political and economic objectives generally far outweigh consideration of potential impacts on agriculture and food production. It is unrealistic to expect negative international trade impacts on one or more commodities in the produce sector to take precedence over positive benefits realized by non-agricultural sectors of the economy. International trade policies which favor the larger, branded-based sectors of agriculture such as food and feed grains, livestock, and selected commodities subject to government support programs can be expected to receive federal government endorsement at the expense
of the fruit and vegetable industry. The impact of removing the U.S. tariff on citrus is illustrated by Florida Department of Citrus research. These studies indicate that Florida grower returns would be reduced by $100 million in the first year following a 50 percent tariff reduction. The cumulative reduction in real grower returns over a 10-year adjustment period would exceed $1.2 billion and losses would continue to accrue in the future.

Unilateral Agreements. The Caribbean Basin Economic Recovery Act of 1983 serves as an example of a policy designed to meet political objectives that has the potential of encouraging duty-free imports which would compete with the U.S. citrus industry, as well as with other U.S.-produced commodities. The United States unilaterally enacted the law that created the Caribbean Basin Initiative (CBI). The CBI was intended to foster economic growth in 27 small neighboring Caribbean Basin countries through trade, economic assistance, and tax measures. It was assumed that such growth would aid national security, as well as the economic and political interests of the U.S., by creating more political stability in the region and reducing the chances of unfriendly governments coming into power. The principal component of the CBI is the provision of duty-free access to U.S. markets for a twelve-year period. Moreover, Congress has been considering proposals to extend the duty-free period to the year 2007.

Citrus industry concerns have centered on three issues: (1) the potential for transshipment of Brazilian FCOJ through CBI countries to avoid the U.S. tariff, (2) potential competition from CBI citrus production, and (3) the introduction of plant pests and diseases from Caribbean countries. Orange and grapefruit production in the Caribbean has been increasing over time. While U.S. imports of citrus products have increased dramatically in percentage terms since the CBI became effective, the absolute volume increases have been extremely small. However, concerns about transshipment have recently reemerged.

The CBI may result in increased investment in citrus, with resulting increases in production and exports. However, the amount of such increases is uncertain at this time due to a number of factors which will affect investment, plantings, productivity, costs, and quality. While the Caribbean Basin Initiative may not have significant competition to the U.S. citrus industry, it does serve as an excellent example of how non-agricultural policies can potentially affect the competitive position of U.S. citrus.

Bilateral Agreements. The United States has been involved in bilateral trade agreements with other countries which result in lower-priced citrus imports. The first example is the Israel-U.S. Free Trade Agreement developed in 1984 which phases out the U.S. tariff requirements for Israel beginning in 1990. Israel is the world's second-largest producer of grapefruit, and ranks seventh in orange production and tenth in tangerine production. Israel imports orange juice, primarily from Brazil, and often exports more orange juice than it produces.

The Canada-U.S. Free Trade Agreement serves as a second example of a bilateral trade action of concern to the U.S. citrus industry. While Canada has not been known as a major citrus producer, it still looks as a competitive threat to the U.S. citrus industry, particularly the processed orange sector. This concern is baseline in the future. First, Canada does not have an industry on its own and is dependent on third-party countries such as Brazil to import orange juice into Canada and ship it into U.S. markets duty-free in the absence of manufacture and transit restrictions. In fact, the U.S. already imports three million gallons of orange juice from Canada annually. Second, the import-duties draw-back provisions of the U.S. citrus tariff structure would not be applicable to U.S. exports to Canada without a specific amendment to the Canada-U.S. Free Trade Agreement. This feature would further limit the U.S. citrus industry's ability to compete in foreign markets.

The proposed North American Free Trade Agreement has caused some concern about the potential for Mexico to ship both fresh and concentrated citrus products to the U.S. These concerns may be especially well-founded given that about one-half of Mexico's orange areas are non-bearing, while one-third of the grapefruit acreage is non-bearing. With additional production in Mexico, the U.S. citrus industry can expect more intense competition and downward pressure on prices and returns.

Trade Barriers. In addition to competitive pressures in the processed orange market from Brazil and other citrus producers, the U.S. citrus industry faces numerous barriers to trade in foreign markets. While trade policy measures are widespread, in many cases, these barriers and trade policy measures vary by market. In the European Community (EC) and Japan, for example, there have been a variety of barriers to trade in the citrus industry. In spite of the low levels of citrus production in the EC relative to population, the EC imposes preferential duties on citrus imports from non-EU countries. While the EC has been known to reduce these barriers, recent trends suggest that the EC may be increasing its protectionist measures.

Under the settlement agreement, the EC will improve market access for U.S. citrus products in return for trade concessions. However, quantity restrictions were included to complement lower tariffs offered by the EC. Lower tariff rates were applied to imports of fresh oranges, while the EC increased its import quota for oranges and grapefruit in 1991 and on grapefruit in 1992. However, there are many examples of trade restrictions that limit the competitiveness of the U.S. citrus industry in world markets. The question is whether U.S. government trade policies and regulations place enough emphasis on the importance of citrus to provide adequate opportunities to compete in international markets.

Concluding Comment

International citrus markets can be best described as dynamic. International competition in the citrus industry is destined to have a major impact on the citrus industry in the next decade. Export market growth will be influenced by industry marketing efforts, currency exchange rates, and trade liberalization. In international markets and competition become more important to the citrus industry, the impact of government programs and policies on the economic welfare of the industry will become more pronounced.

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