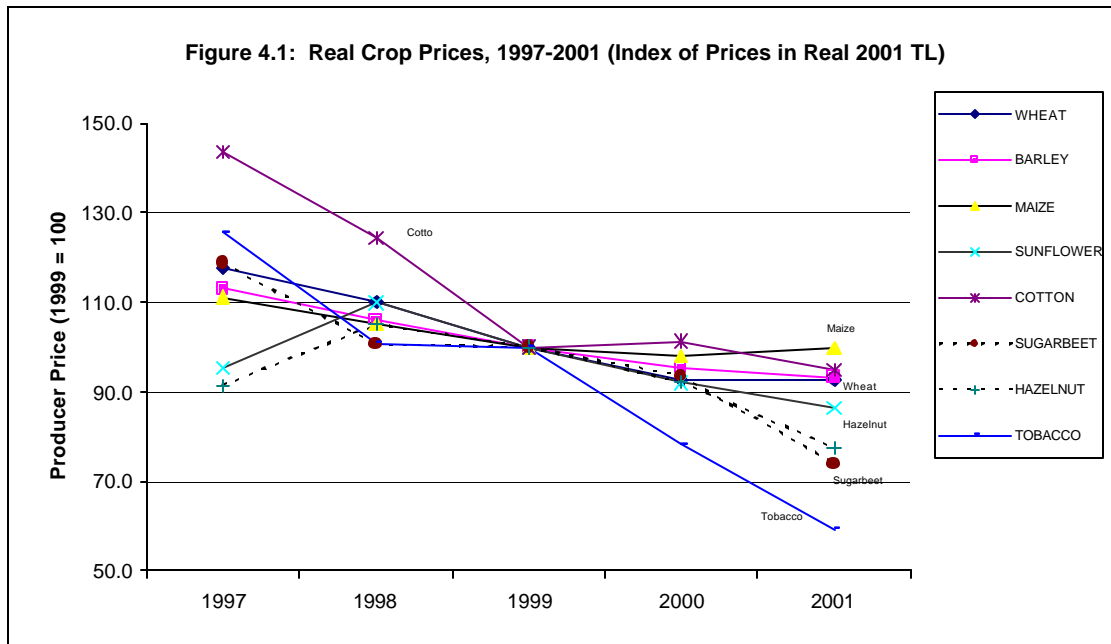


4. Changes in Output Structure and Foreign Trade Flows

A. *Producer Price Trends*

4.1 As a starting point for this chapter's analysis, the trends in producer prices for Turkey's major crops are examined. Figure 4.1 shows the trends in real prices relative to the base year 1999. The trends for all major crop prices are down in this period, with the largest decreases (25-50 percent) in tobacco, sugarbeet, and hazelnut. Grains also declined about 5-10 percent. These trends are similar to the findings in Chapter 2, which demonstrated that the largest reductions in PSEs were for sugarbeet and grains, while those for oilseeds and other crops were much more mediated. Thus, one can construct a range of commodities ordered by the degree to which their prices have been the most deregulated and fallen the most. Tobacco, sugarbeet, hazelnut, and wheat are in the first group.¹⁹ Maize and barley have seen the next largest reductions in support and prices, and cotton and sunflower seed prices have declined the least. Cotton is not highly supported, but sunflower seed continues to enjoy a high level of PSE, the highest for all sub-sectors, including livestock.



Source: "Agricultural Structure," 2002 SIS.

B. *Price and Output Decomposition*

4.2 In order to ascertain clearly the impact of price change on outputs, we first must examine this at an aggregate production level. As Table 4.1 shows below, between 1999 and 2001, real prices fell much more (13 percent) than aggregate farm output (4 percent). As a result, the value of production declined by 16 percent in real terms, with a larger decline derived from livestock (30 percent), than crops (12 percent). Falling real prices have been responsible for three-quarters

¹⁹ The series for hazelnut was not available through 2002, and no PSEs are routinely calculated for hazelnut, but other sources (cited in Annex 1 on the Review of the Turkish Hazelnut Sector) demonstrate that the trend in 2002 was further downward.

of the 16 percent reduction in real terms of gross agricultural value. This is true for both the crops and livestock sub-sectors. However, not all of the fall in prices has been due to reduced subsidization of agricultural product prices. The fact that the financial crisis of 2001 caused a real devaluation on the order of 20 percent meant that the prices in domestic currency of some of Turkey's agricultural products may have fallen even further in real TL terms. This is a result of the fact that the prices of agricultural tradeables take some time to adjust to devaluations and may have increased more slowly in 2001 than the prices of non-agricultural tradeables.

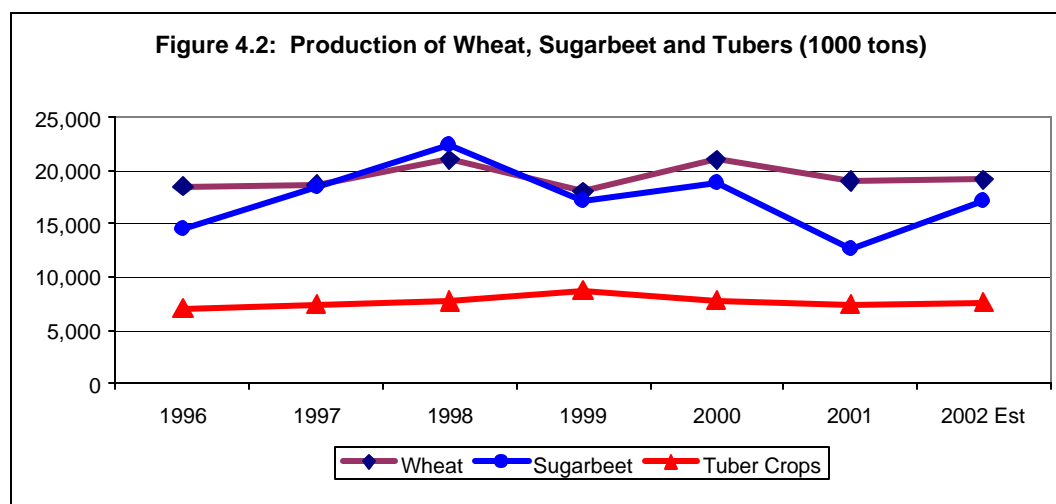
Table 4.1 – Indices of Real Prices, Production, and Gross Value, Real 2001 TL

	1997	1998	1999	2000	2001
Real Price Index, 1999=100	102.6	108.6	100.0	95.7	87.3
Crops	106.0	109.5	100.0	96.1	90.6
Livestock	93.6	106.9	100.0	95.6	78.8
Quantity Indices, 1999=100	95.1	105.0	100.0	104.4	95.7
Crops	94.8	107.1	100.0	106.6	97.7
Livestock	95.8	98.4	100.0	97.5	89.8
Gross Value Index, 1999=100	97.6	113.9	100.0	99.9	83.6
Crops	100.6	117.3	100.0	102.4	88.5
Livestock	89.7	105.2	100.0	93.2	70.7

4.3 In addition, overall GDP fell in 1999-2001 and reduced aggregate demand for food and agricultural products by 2 percent. A full quarter of the 24 percent decline in agricultural income (in real 2001 TL) over this period was due to the lag in the response of agricultural prices to the large devaluation of early 2001. In 2002, agricultural income recovered by 11 percent as the devaluation passed through to agricultural prices. Overall GDP grew by 8 percent, and preliminary data indicate that transfers to agriculture rose by almost 5 percent (as measured by the NAC in Chapter 2) as the DIS program accelerated. Thus, in the first two years of the reform period, subsidy reform (as expressed by decline in the NAC and TSE) was responsible for about two thirds of the loss in agricultural income, while over the whole period 1999-2002, subsidy reform was responsible for about 80 percent of the cumulative (16 percent) fall in agricultural income.

C. Changes in Output Structure

4.4 Between 1999 and 2001, the production volumes of cereals, pulses, nuts, and fodder crops increased (in ascending order) by 2 to 16 percent. Tubers (mainly potatoes), industrial crops (mainly tobacco, sugarbeet, and cotton), and oilseeds have seen their volumes fall by 15 to 30 percent. In other words, the declines in individual outputs was most pronounced among the previously most protected crops: sugar, tobacco, and sunflower, while little change has been noticed in the production of fruits and vegetables, which has been stable.



Source: MARA.

4.5 The most significant changes in individual crops production were for: (a) tobacco (a fall of 40 percent); (b) sugarbeets (down by 26 percent); (c) oilseeds (down by 29 percent); (d) the expansion of cotton production (by 16 percent); and (e) the increase of hazelnut output (by 13 percent). In the livestock sector, milk production and cattle meat output have fallen by 5 percent, but the more serious declines have come in the sheep meat and egg sub-sectors (**Table 4.2**).

Table 4.2 – Indices of Crop and Livestock Production Volumes, 1999=100

	1997	1998	1999	2000	2001
Cereals	103.1	115.0	100.C	111.7	102.4
Pulses	124.9	117.6	100.C	96.7	106.9
Industrial Crops	107.2	128.1	100.C	109.7	78.1
Tobacco	117.6	102.9	100.C	82.3	59.5
Sugarbeet	107.6	130.3	100.C	110.0	73.9
Cotton (raw)	103.9	113.8	100.C	111.6	116.4
Oil seeds	92.2	93.2	100.C	83.3	71.0
Tuber crops	85.0	88.7	100.C	89.5	84.8
Vegetables	85.1	95.8	100.C	101.2	99.3
Fruits and Nuts	91.0	106.6	100.C	108.5	100.1
Cows milk	99.4	98.5	100.C	97.4	94.7
Sheep Meat	87.6	109.2	100.C	83.9	64.7
Cattle Meat	108.5	102.7	100.C	101.4	94.8
Poultry	79.0	81.5	100.C	107.8	103.0
Eggs	85.8	98.6	100.C	95.9	75.1

Source: MARA and own calculations

4.6 In gross value terms, the changes from 1999 to 2001 have been almost all downward, with only cotton and pulses showing increases, of 10 and 8 percent respectively. The largest declines in value terms amplify those of the production declines: tobacco (-65 percent); sugarbeet (-45 percent); oilseeds (-36 percent); tea (-41 percent); and tubers (-28 percent). The fall in the largest product group by value, fruits and nuts, was also substantial (-11 percent). For livestock,

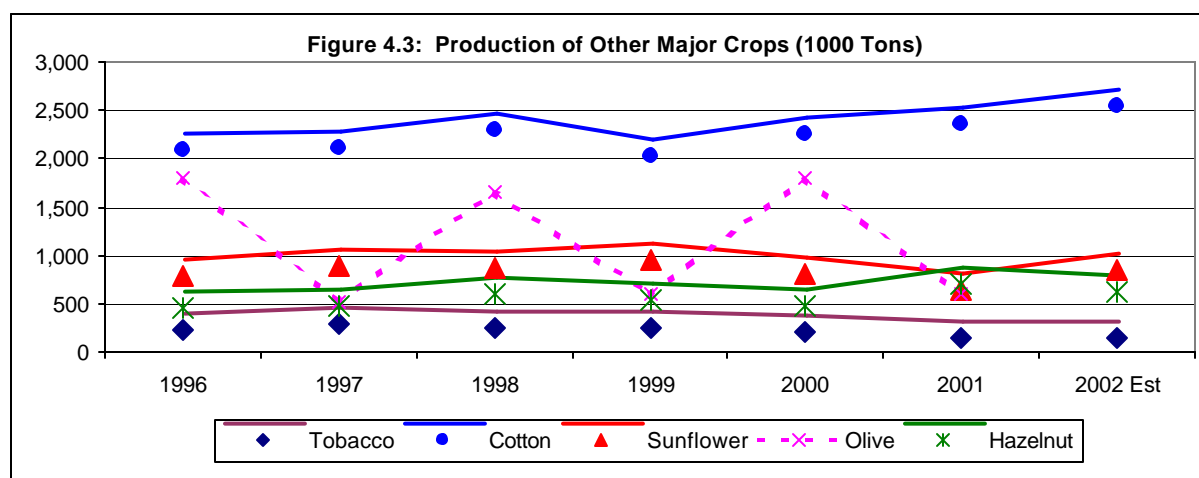
the greatest declines came in the sheep meat and cattle meat sectors, but the poultry and dairy sub-sectors were hard hit as well, with reductions of 25-35 percent (Table 4.3).

Table 4.3 – Indices of Gross Value of Crop Production (Real 2001 TL) and Crop Value Shares

1999=100	1997	1998	1999	2000	2001
Cereals	121.4	126.4	100.0	105.7	96.6
Pulses	98.2	111.0	100.0	108.1	107.5
Industrial Crops	138.2	125.3	100.0	93.3	65.9
Tobacco	147.7	103.8	100.0	64.3	35.2
Sugarbeet	127.8	131.1	100.0	103.0	54.7
Cotton (raw)	149.2	141.6	100.0	113.1	110.3
Oilseeds	90.7	104.2	100.0	79.4	63.9
Tuber Crops	78.6	107.4	100.0	74.3	71.5
Vegetables	98.9	115.5	100.0	105.6	99.0
Fruits and Nuts	78.8	113.8	100.0	111.8	89.4
Cows milk	87.6	102.2	100.0	91.2	76.3
Sheep Meat	75.6	112.9	100.0	76.9	47.1
Cattle Meat	91.6	111.2	100.0	89.6	63.1
Poultry	88.1	98.9	100.0	98.2	63.9
Eggs	112.1	109.5	100.0	114.4	85.8

Source: MARA and own calculations

4.7 The main changes in terms of the shares of gross value in the crops sector are consistent with the fact that the market intervention levels and support prices for tobacco, sugarbeet, and hazelnuts were reduced substantially. These are manifest as the fall in the shares of industrial crops from 13 to 9 percent, the stable share of fruits and nuts (growth of other fruits being offset by hazelnuts), and the rise in the share of vegetables from 23 to 27 percent. The cereals share has risen slightly as prices fell less here than for tobacco, sugarbeet, and hazelnuts. The livestock share in total gross value in agriculture has contracted from 28 to 23 percent.



Source: MARA.

D. *Changes in Foreign Trade Flows for Agricultural and Food Products*

4.8 Agricultural trade balances have improved as agricultural exports have stabilized at lower levels and imports have declined. This section examines trends in agricultural and food²⁰ exports and imports over the period 1996-2002, with special emphasis on the 1999-2002 period. While both Turkish exports and imports of all commodities together have increased over 1997-2002 period, the share of agricultural and food products within total exports and imports have both decreased. Agricultural and food exports have fallen steadily over this period, from a 20 percent export share in 1997 to just 11 percent in 2002. Agricultural and food product imports show a very small and declining share in Turkey's overall imports: 6 percent in 1997 and only 4 percent in 2002. Thus, Turkey maintains a trade surplus in agricultural and food products. Indeed, the foreign trade surplus of agricultural and food products recovered in 2001 to the US \$2.5 billion level of 1997, after bottoming out at US \$1.4 billion in 2000. In 2002, it has apparently fallen to about US \$1.7 billion.

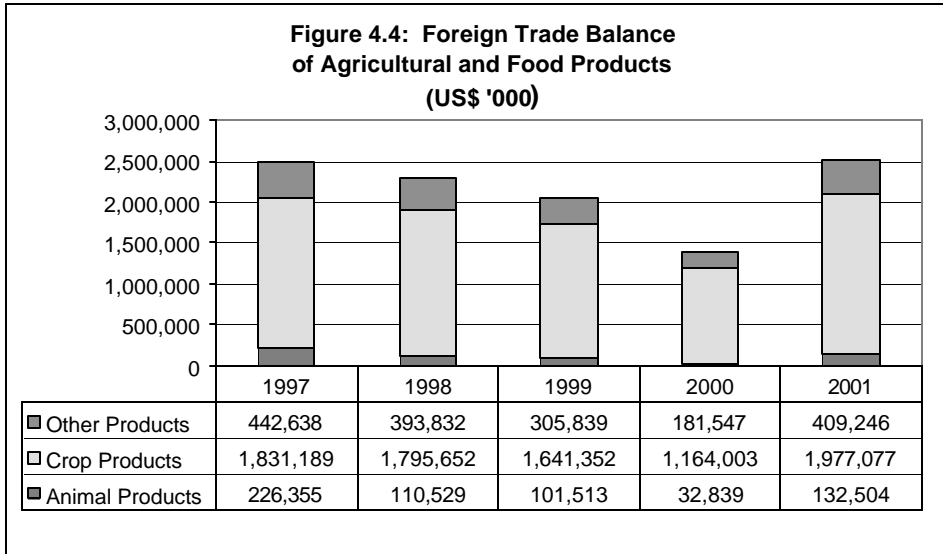
Table 4.4: Total Exports and Imports and Agricultural and Food Shares

	1997	1998	1999	2000	2001	2002
Total Exports (US\$ '000)	26,261,100	26,973,000	26,587,500	27,775,000	31,340,000	35,081,000
Agricultural and food exports	5,231,844	4,711,255	4,172,659	3,596,865	4,071,018	3,701,845
Share of agriculture and food within total exports	19.9%	17.5%	15.7%	13.0%	13.0%	10.6%
Total Imports (US\$ '000)	48,558,700	45,921,392	40,671,272	54,502,821	41,399,000	50,832,000
Agricultural and food imports	2,731,662	2,411,242	2,123,955	2,218,476	1,552,191	1,997,131
Share of agriculture and food within total imports	5.6%	5.3%	5.2%	4.1%	3.7%	3.9%

Source: Undersecretariat of Foreign Trade.

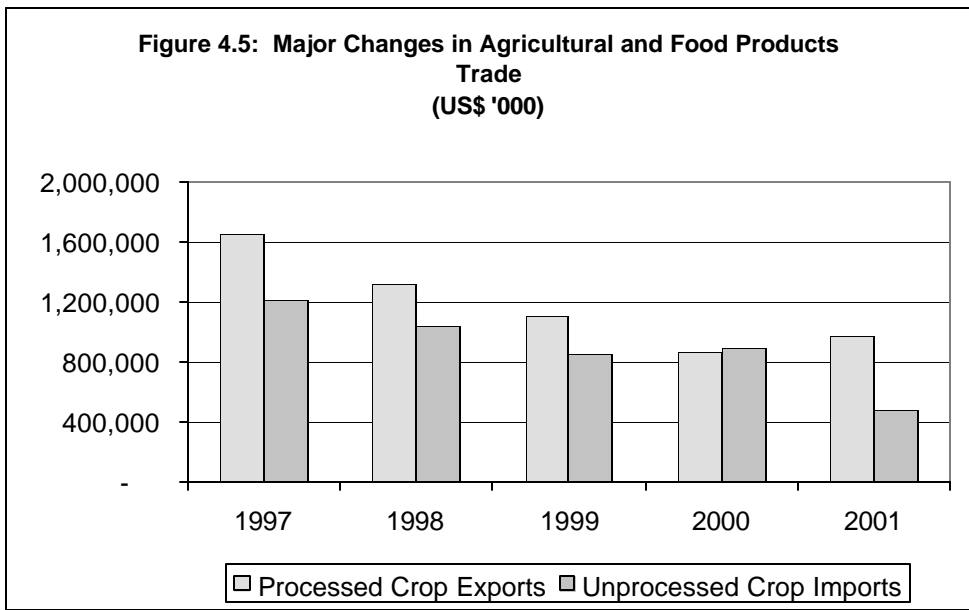
4.9 Net Trade in Agricultural and Food Products Continues Positive. Examining the three main categories of crop products (edible crops including cereals, pulses, fruits, vegetables, etc.), livestock products, and other agricultural products, the following main trends are evident. First, Turkey consistently maintains a positive net trade position in all three categories throughout the 1997-2002 period (and indeed prior to this for many years). Net exports of crop products (both processed and raw) are both the largest and most stable. Fully US \$1.2 billion annually of these net crop product exports are fruits and nuts, with hazelnuts about half to three quarters of this value. Net exports of "other" food and agricultural products (mainly tobacco and sugar and confectionary products) are also consistently high at around US \$400 million. Trade in livestock products (both unprocessed and processed) is low for both exports (US \$250 million) and imports (US \$125 million) and declining, even though these also include fish and dairy product categories.

²⁰ Agricultural and food products involve both unprocessed and processed agricultural products included in five sections and 24 chapters of the tariff classifications. They are comprised mainly of animal products, crop products, animal and vegetable fats, prepared foods, and beverages. Agricultural raw materials such as cotton fiber leather, timber, rubber etc. are not considered under the agricultural and food products group. There are considerable agricultural raw materials imports; however agricultural raw materials after being imported are exported back under industrial products. As our analysis focuses only on agricultural and food products trade, we do not include agricultural raw materials in this study.



Source: Undersecretariat of Foreign Trade.

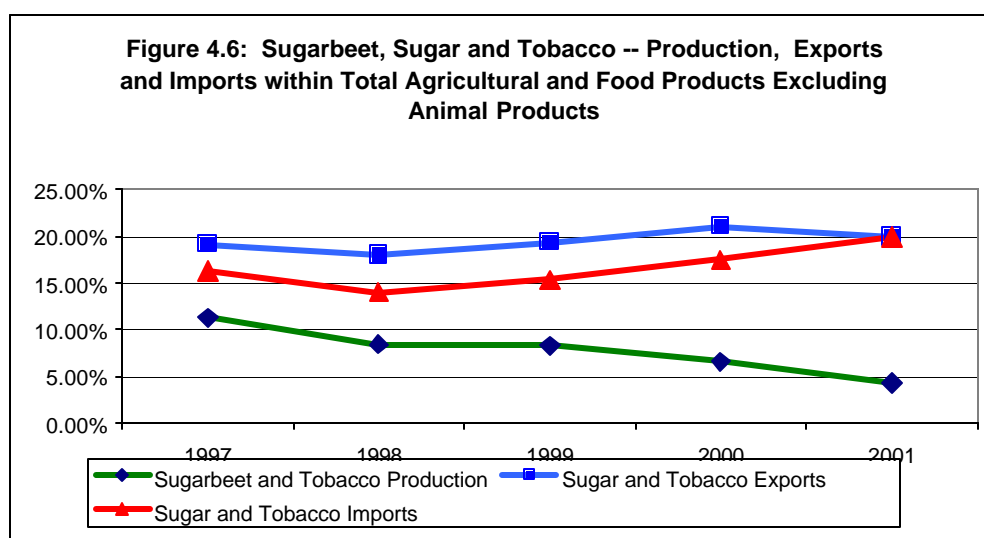
4.10 Exports of Unprocessed Products More Resilient Than for Processed Products. Examining the structure of trade in processed versus unprocessed agricultural and food products reveals the following. First, the volume of processed product exports has fallen by a third to about US \$2 billion, while unprocessed exports have fallen by only 10 percent (also to roughly US \$2 billion). This falling trend came to an end in 2000 and reversed in 2001-2002. The biggest contributor to the decline in agricultural and food exports has been processed crop exports, with a US \$800 million decline comprised mainly of declines (in diminishing order of magnitude) in milling products, oils and fats, and flour and starch. Other large declines were noted for tobacco (\$250 million) and unprocessed crop products (\$120 million).



Source: Undersecretariat of Foreign Trade

4.11 Unprocessed Imports Fall the Most. On the imports side, flows of agricultural and food products declined by about 30 percent between 1997 to 2002. Unlike agricultural and food exports, for which the lowest level was reached in 2000, agricultural imports continued to decline in 2001 as well. This is likely associated with the large devaluation in early 2001. Since then, as the real exchange rate has appreciated, agricultural and food imports have recovered by about 25 percent. The decrease in 2001 can be mainly attributed to reductions in unprocessed vegetable product imports, mainly cereals (over US \$500 million reduction), and oil seeds and fodder (down from US \$300 to \$160 million). Vegetable fats and oils and tobacco imports also declined significantly, by US \$250 million and US \$100 million respectively.

4.12 As can be seen from Figure 4.6, the previously heavily supported sugarbeet and tobacco crops have likely been the areas where the most marked linkage between reduced support and trade outcomes is present. Production of both were down sharply in the reform period (their share of production values dropped from 8 percent to below 5 percent) and the consequent impact of trade is clear. The share of tobacco and sugar imports have increased by one-third between 1991 and 2001, and even in 2001 tobacco and sugar exports declined.



Source: Undersecretariat of Foreign Trade.

4.13 Summarizing the specific trends that occurred in the reform period, we see that exports of agricultural and food products declined in 2000 but quickly recovered in 2001, while imports rose in 2000 but declined substantially in 2001. Thus, it appears that the reductions in agricultural support in 2000 led to erosion of net agricultural exports. This is in line with the production trends noted above, which left lower crop surpluses on the domestic market in 2000, reduced both unprocessed and processed crops' exports, and allowed greater scope for competitive imports of unprocessed agricultural imports (mainly crops, rather than livestock). In 2001, the production trends for cereals, cotton and hazelnut were up, with other crops largely down. The significant devaluation in 2001 helped to amplify the export of these commodities with production growth and was the most important factor affecting the decline in unprocessed crop product imports.