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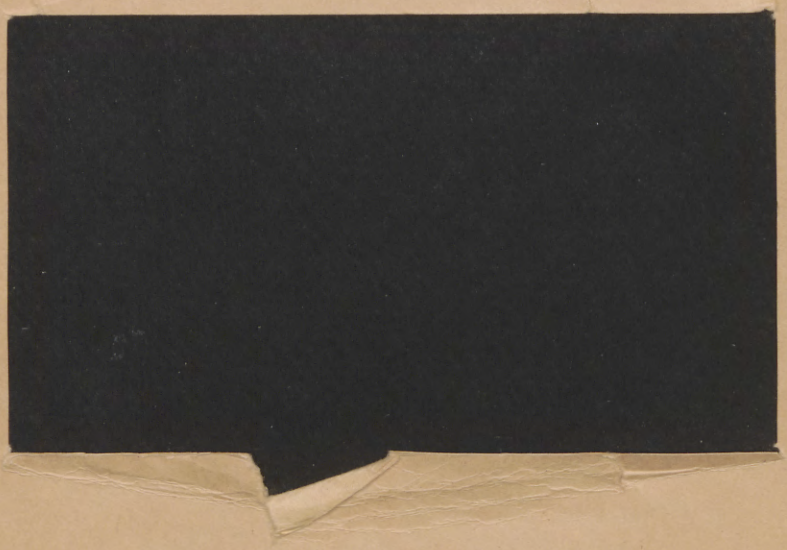

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Prospects for U.S. Agricultural Exports to Eastern Europe through 1985

by

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Abstract

Following rapid expansion of U.S. agricultural exports to Eastern Europe during the seventies, the prospects for continued growth of these exports are examined for the coming 5 years. Because of their overriding share of U.S. agricultural exports to the region, analysis is limited to grains, oilseeds, and oilseed meal. Results indicate a stagnation in U.S. agricultural exports, due to a decline in East European grain imports from their 1979/80 peak.

Keywords: Soybean meal equivalent (SME), net imports, Five Year Plan (FYP), investment, production, demand, agricultural trade, prospects, assumptions, projections.

PREFACE

The Food and Agriculture Act of 1977 will expire in 1981. New legislation could well influence the organization and operation of the food system for many years. Along with traditional concerns over price and income policy, several new issues have emerged since 1977. Of particular significance are such matters as inflation, energy, credit, conservation of our resource base, the increasing international role of U.S. agriculture, and the design and implementation of both domestic and international food assistance programs.

This report is a product of the ESS research agenda on issues relating to food and agriculture legislation. It deals with prospective levels of U.S. agricultural exports to Eastern Europe through 1985. Because of their predominant role in these exports, analysis is limited to grains, oilseeds and oilseed meal. Research was conducted utilizing the data and facilities of the East Europe/USSR Branch of IED. Edward Cook is the principal author. Tom Vankai provided projections for Hungary, Romania, the GDR and Czechoslovakia.

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INTRODUCTION

Over the course of the 1970's, Eastern Europe 1/ provided a rapidly growing market for U.S. agricultural exports. The present study examines prospects for these exports through 1985. Because of their overwhelming significance as U.S. agricultural exports to Eastern Europe, analysis is limited to grains, oilseeds and oilseed meal.

The growth of U.S. agricultural exports to Eastern Europe over the last ten years was largely the result of the rapid expansion of livestock numbers and livestock product production, particularly during the first half of the decade, combined with disappointing and less-than-planned increases in the domestic production of grains and oilseeds. The resulting increased dependence on imports was compounded by similar developments in the USSR which eliminated that country as a reliable source of grain exports. Thus, the countries of Eastern Europe were forced to look almost exclusively to hard-currency suppliers, including the United States, to meet their needs.

For the upcoming five year period the growing balance of payments problems and the attainment of already high levels of per capita meat consumption in some countries will act to slow down growth rates in livestock numbers and production. In addition the return of more "normal" weather conditions, particularly for the northern countries, and the continued expansion of agricultural investment will mean renewed increase of domestic production of grains and oilseeds. These combined events will result in

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1/ Northern countries: Poland, Czechoslovakia, and the GDR.
Southern countries: Bulgaria, Hungary, Romania and Yugoslavia

a drop of net grain imports by Eastern Europe in 1985/86 relative to 1979/80 and 1980/81 and a moderate expansion of imports of oilseeds and oilseed meal.

As a result, U.S. grain exports to Eastern Europe will likely be between 5 and 8 million tons in 1985/86 down from the 10.3 million tons for 1979/80 and approximately equal to the average of 1975/76 - 1977/78. Oilseed and oilseed meal exports are expected to rise 15 to 25 percent in 1985 relative to 1979. Assuming no major increase in other agricultural exports (grains and oilseed products account for 80 to 90 percent of U.S. agricultural exports to the region), growth in the value of U.S. agricultural exports to Eastern Europe would result primarily through increased prices.

METHODOLOGY

In making estimates of future production and trade of grains, oilseeds and oilseed meal the basis of approach was the analysis of the feed use of these commodities. In arriving at the conclusions contained in this study it was assumed that the production and utilization of bulk fodders whould not seriously differ from past trends. For this reason the present study, though it touches on some of the same key concerns, should not be taken as a complete analysis of the feed-livestock economy of Eastern Europe.

The estimation procedure begins by projecting domestic production of grains and oilseeds to 1985. Long-term trends, future levels of investment, input availability (particularly fertilizer), and the influence of policy or structural parameters are the principal determinants.

For all projections a number of "normalizing" assumptions were made. These consisted of "normal" weather, a "normal" state of political relations between East and West, and no drastic change in recent trends in these countries' balance-of-payments. Any deviation from these assumptions should be expected to result in a deviation from the projections made. With regard to possible abnormalities in weather, therefore, the projections for 1985 would be better regarded as an average expectation for the 1984-86 period.

Estimates of livestock numbers and livestock production were based on increases in livestock and livestock production over the last 5 and 10 years. From this base, the figures were adjusted according to likely domestic production of grains and oilseeds, indications of plan or policy goals, and the continued import constraint resulting from the balance of payments situation.

With these livestock projections as a basis, a number of regressions were run to determine likely feed requirements for 1985. To arrive at total grain

requirements, the amount designated for nonfeed uses (food, industrial, seed, and waste) was assumed to be the same or only slightly changed from the average for 1976-78. For oilseed meal, demand was calculated in soybean meal equivalent (SME). For both grains and oilseed meal, the difference between estimated demand and estimated production was designated as net trade.

The data base for this study consisted of grain and oilmeal balances of the East Europe/USSR Branch and figures for livestock numbers and meat production as published in Eastern Europe Agricultural Situation: Review of 1979 and Outlook for 1980.

In the final section an assessment is made of prospects for U.S. trade with Eastern Europe based on estimates of total demand, past trends in market share, and the use of available policy tools by the United States.

GRAIN AND OILSEED PRODUCTION PROSPECTS

Grain

Grain production in Eastern Europe followed a generally upward trend throughout the 1970's. In 1979, though, grain production in Eastern Europe totalled 90.7 million tons, down more than 5 percent from the record harvet of 95.8 million tons achieved in 1978 (table 1). The upward trend in grain production for the decade as a whole was largely due to corn, which alone accounted for roughly 70 percent of the increase between the average grain production figure for 1971-75 and the average of 1976-79. Next in importance in terms of absolute increases was barley, of which production in the second half of the decade averaged 20 percent above production for the first half. Unlike corn, though, most of the increase in barley production was attributed to area increases and not increases in average yields.

Wheat also showed higher figures for production over the second half of the decade, even after suffering a disappointing year in 1979. Both production and yield of the lower yielding grains, rye and oats, suffered declines in area and yield in the second half of the decade. The decrease in area was consistent with the need to increase domestic grain production by shifting to higher yielding crops. The decline in yield figures might have been the result of maintaining oat and rye production on the relatively poorest soils.

Grain production overall showed an increase of 8 percent in the second half of the decade, with yields increasing by slightly more. In spite of the goal of expanding grain acreage, grain area in Eastern Europe actually followed a downward trend throughout the decade.

Production of grain is likely to resume an upward trend during the upcoming 1981-85 Five Year Plans (FYP) of the East European countries. Given normal weather, higher production should be insured by improvement in the quality and quantity of inputs as well as their improved utilization.

Grain production has been increasing more rapidly in the southern countries than in the northern countries (tables 2 through 8). This increase was due in large part to expansion of corn production, which is more suited to climatic conditions in the southern countries and which exhibited the greatest increases in yield for the region in the 1970's. Romania, in particular, was successful in raising both corn and total grain yields from their low base, and had by far the greatest percentage increase in production.

The northern countries, because of their shorter growing season and cooler summers, have been unable to raise corn for grain on an appreciable scale. This fact weighed heavily in their disappointing performance in the second half of the seventies. Both Poland and the GDR suffered declines in

average yields, though the GDR was able to increase grain production through the introduction of more land to grain cultivation. Poland was the only country to register a decline in average production in the 1976-79 period relative to the 1971-75 period, due at least in part to a succession of years characterized by poor weather conditions.

For increasing grain production in Eastern Europe in the next few years, fertilizer use will remain of considerable importance. As shown in table 9, increases in use per hectare have tended to slow since 1975. For the next five years moderate to small increments in use are assumed. 2/ Rising costs of production, particularly of nitrogen fertilizer, anticipated for the future will most likely keep use from expanding in the countries of highest fertilizer intensity--Czechoslovakia, the GDR, and Hungary--and will act to limit its its expansion elsewhere. The Soviet Union will remain an important supplier of raw materials for fertilizer production, particularly of natural gas, total deliveries of which are expected to increase dramatically over the next five years. Soviet deliveries of the necessary raw materials for phosphate fertilizer production meet roughly half of East Eastern import requirements and limitations here have forced countries of the region to import larger amounts of phosphate rock from North Africa.

Improvements in the production and utilization of fertilizers will be of ever-greater significance during coming years. Increasing the share of more concentrated fertilizers in total production, improving the refining and mixing of fertilizers, and expanding the production of a wider variety of

2/ Because fertilizer use by crop is generally unavailable for the countries of Eastern Europe, we assume that changes in application of fertilizer per hectare of grain and oilseeds are of the same magnitude as change in total use per hectare of arable land.

compound fertilizer will all contribute to greater plant production without an actual increased intensity of fertilizer use.

Mechanization of sowing and harvesting of grain, with the primary exception of small private farms in Poland and Yugoslavia, is complete. What remains for the future is the introduction of improved cultivation practices and the required machinery for its implementation. Tractor and combine inventories are showing a tendency to stagnate in the countries of Eastern Europe with the most advanced agriculture. More and more emphasis is being placed on the use of larger machines and an increased variety of specialized implements and machinery.

Other areas that hold promise of contributing to higher grain output are land improvement and the development of improved seed varieties. Of course, the extent that all of these areas can contribute to larger grain production will depend on the availability of investment funds.

Though some countries of Eastern Europe promote an expansion of grain area, further expansion for the region as a whole is considered highly unlikely in the long run. Not only is total agricultural land trending downward, but there is equal or greater demand for increasing the area sown to other crops, notably oilseeds and sugarbeets.

In projecting grain production to 1985, each country was analyzed separately with attention given to recent performance, current input availability and likely future input availability. Where appropriate, structural and policy aspects were also considered.

During the last three years, Bulgaria has failed to match its record grain crop of 8.44 million tons, achieved in 1976. Along with this, increases in average yield of Bulgaria's three major grains--wheat, corn, and barley--for the period 1976-79 relative to 1971-75 were average to

less than average in comparison with region-wide results. However, average yields should increase somewhat more rapidly over the next five years and that the grain harvest for 1985 should be near 8.70 million tons.

In arriving at this figure it is assumed that fertilizer use will continue to expand and exceed 200 kg./ha. of arable land before 1985. In addition, it is assumed that expansion of irrigation facilities will not be large (less than 10 percent) and that investment in agriculture will grow slowly.3/

Bulgaria will have to count on much of its growth in grain production on better seed varieties, better quality fertilizers and continued expansion of machinery in use. The possible influence on grain production of the recent decentralization in the agricultural sector is not yet clear.

Czechoslovakia, like Bulgaria, had modest improvements in average yields in 1976-79 compared with 1971-75. Here, too, yields should grow somewhat more rapidly in the next five years, and the grain harvest in 1985 should total roughly 11.40 million tons. The inability of the Czechs to continue the traditional growth strategy of ever-higher input use will likely keep production from exceeding this figure.

In terms of both fertilizer and machinery use (tables 9 and 11) Czechoslavakia is at the forefront of Eastern Europe. Long-term guidelines call for continued increases in fertilizer intensity--from the current 335 kg./ha. of arable land to 425 kg./ha. in 1985 and 475 kg./ha. in 1990.4/ However, it is highly unlikely that the guidelines will be followed. Fertilizer use will probably not exceed 350 kg./ha. of arable land by 1985. To

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3/ Agricultural and forestry's share of total capital investment by country is shown in table 10.

4/ Svet Hospodarstvi, September 22, 1978, p. 2.

successfully raise production, the Czechs will have to continue to direct larger resources into the agricultural sector, concentrating on improvements in the quality and variety of inputs as well as continued expansion of irrigated and drained land.

The German Democratic Republic (GDR) faces a similar situation. Along with Czechoslovakia, the East Germans enjoy the highest levels of input use in the region. And like Czechoslovakia, the GDR experienced less than satisfactory movements in yields over the second half of the 1970's. In fact, average grain yields were lower in 1976-79 than in 1971-75. Poor weather conditions as well as expansion of grain onto poorer soils accounted for this decline.

The GDR relied on higher grain area figures to keep production from falling in the second half of the seventies. No further expansion of grain area is expected. Grain yields, however, are assumed to renew an upward trend, and production in 1985 will probably be in the neighorhood of 10.25 million tons.

Fertilizer use is likely to stay at its current level of 330-340 kg./ha. or arable land. Though FYP goals are not yet public, irrigation facilities will probably be extended to another 300,000 to 350,000 hectares or more. Otherwise, the East Germans will have to concentrate on the quality of inputs and their efficiency in use to move grain production levels upward.

Poland has encountered exceptional difficulties in grain production in recent years. The record of 23 million tons, attained in 1974, has not really been approached since. In the second half of the seventies, both yields and area harvested dropped. At the same time, investment in agriculture and the degree of mechanization increased strongly (tables 10 and 11). It would appear that potential production, given capital input availability, is quite above recent grain harvests.

Factors contributing to the disappointing results have been poor weather conditions, delays in bringing key investment projects on line, declines in the quality of labor in the private sector, and improper management of resources. Delays in bringing on line the large fertilizer factory at Police or tractor production under license from Massey-Ferguson are symptomatic of problems in suppling agriculture with planned inputs. Equally important has been the inefficient control and utilization of resources, particularly fertilizer.

In Poland, agriculture has been designated a priority area for investment during 1981-85. Agriculture's share of total investment is to expand from 17 percent in 1980 to 20 percent in 1981, but with total investment expenditures falling, actual investment in agriculture will show no increase relative to 1978 and 1979. Continued pressure to curtail the growth of investment in favor of consumption during the next few years will likely mean a need to rely on efficiency to attain higher grain production.

Taking into consideration the likely benefits of recently-agreed-to reforms in Poland's agricultural sector, grain production should be in the neighborhood of 23.4 million tons by 1985.

The other three countries--Romania, Yugoslavia, and Hungary--were the ones most successful at raising yields in the second half of the last decade. Of these, Romania had by far the highest average increase in grain yields in 1976-79 relative to 1971-75 (table 7). Romania's agricultural sector benefited from rapidly growing investment levels. Fertilizer use has gone from a regional low of 78 kg./ha. of arable land in 1974 to an estimated 115 kg./ha. in 1979. Irrigable area increased more than 500,000 hectares over the same time span and reached 2.2 million hectares in 1979.

Romanian yields, which remain very low by regional standards and have not improved much since a significant increase in 1976, are expected to resume an upward trend during the first half of 1980's. Accordingly, 1985 Romanian grain output is estimated at roughly 22.55 million tons. Fertilizer use will continue to expand strongly as greater stress on expanding domestic meat supplies diverts more fertilizer from export channels. Land improvement work should also continue to improve productivity of the soil, while increased machinery inputs and better seed varieties, particularly of corn, also will contribute to higher grain production.

Yugoslavia will be faced with two major constraints to higher grain production in the coming years. First will be an investment constraint which will continue to limit an agricultural sector that has long been denied sufficient access to resources. The second constraint will be diminishing returns on the large agricultural combines, which have been at the heart of recent production growth. Unofficial Yugoslav projections place 1985 grain production at 18.2 million tons. 5/ This is probably too optimistic and a 1985 harvest of 16.9 million tons is more likely. Whereas Yugoslav projections call for fertilizer use to increase 50 percent to 160 kg./ha. of arable land in 1985, balance-of-payments constraints and higher prices will likely keep this figure closer to 130 kg./ha. Expansion of irrigation systems, which have long been denied priority, will have only a minimal impact on production.

Continued growth in machinery use, which expanded more rapidly in

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5/ "Basic Directors of Development of the Yugoslav Agroindustrial Complex 1981/85," Glasnik Poljoprivredne, Prerada i Plasmana, No. 4, April 1980.

Yugoslavaia than in any East European country in the 1970's, and further improvements in seed varieties will contribute to the attainment of record production by 1985.

Estimated 1985 grain production in Hungary is 14.0 million tons. Because of its market orientation, the performance of Hungary's agricultural sector will be more dependent than some others on movements in producer prices. Lately a lack of profitability on farms has caused a cut-back in the use of fertilizers and the purchase of new machinery. With likely higher prices in the future, we assume that fertilizer use may not exceed the record of 286 kg./ha. of arable land recorded in 1978. Continuation of past improvements in seed varieties particularly corn, will be very important for Hungary in raising grain output.

The total projected East European grain output in 1985 is 107.2 million tons.

Oilseeds

Production of the major oilseeds--sunflowerseed, rapeseed, and soybeans--showed considerable growth in Eastern Europe in recent years. Comparing a 1976-79 annual average with one for the 1971-75 period, oilseed production increased by 23 percent, while the production of soybeans increased 66 percent (table 12). Soybeans are produced principally in the southern countries. Expansion of area rather than increased yields accounted for the higher soybean production level.

The northern countries continued to rely on rapeseed as the only viable oilseed for domestic production, while in the southern countries sunflowerseed remained the principal oilseed. Hungary and Yugoslavia were the most successful in increasing yields and production of oilseeds during the 1970's.

Oilmeal production from domestic resources showed an increase of 26 percent between the two periods (table 13). Soybean meal production expanded the most

rapidly. However, in absolute terms, sunflowerseed meal remained the most important protein supplement produced from domestic resources.

In projecting 1985 oilseed production, basic points discussed under grain production were considered. Because expansion of area will be significant in explaining 1985 East European oilseed production, we made separate estimates on area and yield for each oilseed and present the data in table 14. East European total production of sunflowerseed in 1985 is projected at 2.3 million tons, rapeseed is estimated at 1.7 million tons, while soybeans are estimated at 950,000 tons.

Compared with averages for 1976-79 (table 12) the projection for sunflowerseed production is 17 percent higher, rapeseed production 38 percent higher, and soybean production 103 percent higher. Some crucial assumptions included here are that winterkill of rapeseed will be no greater than average and that the southern countries will not push soybean area beyond 600,000 hectares.

Table 15 provides calculations of 1985 oilmeal production in soybean meal equivalent based on the projected oilseed production figures and standard assumptions on crush rates and meal conversions (see tables 16 and 17). Compared with the 1976-79 average of 1.53 million tons, production of oilmeal from domestic resources is estimated at 2.16 millions in 1985 for an increase of 40 percent.

DEMAND FOR GRAIN AND OILMEAL IN 1985

For the East European region as a whole, the 1970's witnessed a steadily increasing gap between domestic demand for concentrated feeds and the corresponding domestic production of those feeds. As a result, imports of grains, oilseeds and oilseed meal all increased. With estimates for domestic production of grain and oilseeds given, estimates of future import levels of the commodities

in question were arrived at by projecting domestic demand in 1985 for grain and oilmeal by country.

These demand calculations began with projections of livestock numbers and the meat production. Both the livestock and the meat production projections were based roughly on linear trend values for the last 10 and 20 years. The simple trend values were adjusted according to the projections on future domestic grain production, and an assumed tightening balance of payments situation for most countries. Also the attainment in 1980 of relatively high per capita consumption of meat in certain countries (table 18) is assumed to dampen somewhat pressures to increase livestock production. In almost all cases the adjustments made were downward from trend values. The rate of growth of livestock numbers therefore, is expected to slow further over the next five years and result in a subsequent decline in the growth rate of meat production. 6/

Table 19 presents projected livestock numbers. In comparison with increases between 1975 and 1980, growth of cattle and hog numbers are expected to be roughly similar in the next five year period, which is, much slower than during the 1971-75 period. Increases in the last five years in sheep numbers are expected to continue to 1985 at a somewhat slower rate, while increases in poultry numbers are expected to slow noticeably. Romania is expected to have the most rapid growth of livestock numbers, while the northern countries will have the slowest growth.

Projections of meat production are presented in table 20. These figures were arrived at by analyzing trends in meat production and in coordination with projections of our livestock numbers. The slowdown in meat production

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6/ In this estimation no direct consideration was given to possible changes in trend in feeding efficiency.

increases is expected to continue over the next five years, with an estimated percentage growth of 7.7 percent between 1980 and 1985 as compared with 12.1 percent for 1975-80 and roughly 30 percent for 1970-75. Assuming no change in trade flows, projected increases in domestic meat production will barely maintain per capita consumption of meat in the northern countries. Romania is expected to have by far the highest growth in meat production, while Bulgaria, Yugoslavia, and Hungary will experience moderate growth.

Demand for Grain

In this study, projections on livestock and livestock products were used as explanatory variables in determining future demand of oilmeal and grain for feed. Though there are drawbacks to this method of projection -- namely through a dependence on the reliability of the livestock and livestock product projections -- we feel it is more appropriate than a simple trend-based projection, because of the more direct functional relationship.

For each country of the region, regressions were run for the periods 1969-78 and 1960-78 for a number of single independent variables. Selection of the final variable for projecting demand for grain was made by determining "goodness of fit" as well as examining t-values after consideration was given to the corresponding value of the Durbin-Watson statistic. In determining "goodness of fit" we looked at R2 values and discounted for single years of great deviation from fitted values. In addition, special weight was placed on compatibility between fitted and actual values for the years 1976-78.

Projection of grain used for feed in 1985 and the variables selected for projecting it are given in tables 21 and 22. For the GDR, Hungary, and Poland the variable selected was pork and poultry meat, while for Czechoslovakia and Romania it was hog and poultry numbers expressed on a standard unit basis. 7/

7/ Soviet coefficients were utilized for conversion to standard units. See table 23.

These two variables are theoretically appealing because of the fact that hogs and poultry are most dependent on grain for feed and, in the countries of Eastern Europe, account for a majority of total meat production.

In the cases of Bulgaria and Yugoslavia, no variable provided as strong a relationship as in the other five countries. The variable selected for Bulgaria was total livestock expressed on a standard unit basis, while for Yugoslavia we made our own estimate.

Feed use of grain is projected to increase to 82.7 million tons by 1985, 11 million tons over the average of 1976-78. The countries expected to show the largest increases in grain used for feed are Romania and Poland, while Yugoslavia and Czechoslovakia are expected to show the smallest increases.

Admittedly, a complete explanation of grain used for feed would have to look at a number of variables and not just one. Unfortunately, given the single equation approach, as well as time and manpower constraints, we felt it was impossible to distinguish the relative influence of more than one variable due to the presence of multicollinearity. This could well mean that projections based on multiple independent variables would be less reliable than those based on the single variable approach. For the reasons mentioned we feel that the variables selected for all countries except Bulgaria and Yugoslavia are actually those most important for determining grain used for feed.

Grain Trade

Trade in grain demonstrated a more or less steady growth trend in the 1970's. Both total and net imports were above their 1971-75 average in the latter half of the decade (table 24). Though official figures are not yet available for the entire region, net imports of grain hit a record in 1980.

Increased net imports of corn, barley, and "other grain" (primarily sorghum and rye) accounted for the expansion in total net imports of grains.

Though wheat import levels were slightly higher in the 1976-78 period as compared with the average for 1971-75, wheat exports increased more, resulting in a fall in net imports of wheat. Romania was almost entirely responsible for the higher wheat export figures.

In the latter half of the 1970's, corn had surpassed wheat as the leading East European grain import. This was caused in part by the shifting trade patterns away from the USSR, a traditional wheat supplier, toward the United States, the region's major supplier of corn.

The northern countries alone accounted for total East European net imports of grain, while the southern countries, with the expection of Yugoslavia, have been net exporters of grain in the 1970's (tables 25 to 31). Poland has been the largest grain importer in the region, and has had the most rapid increase in net imports, lately accounting for nearly half of net imports of Eastern Europe or roughly 7 million tons. The GDR and Czechoslovakia were the second and third largest importers, respectively, of grain in the 1970's. Attempts to reduce imports by Czechoslvakia have met with only limited success, with average net imports of grain falling less than 10 percent in the 1976-78 period relative to 1971-75. Net imports by the GDR have fluctuated around 3 million tons with a higher avreage in 1976-78 than in 1971-75.

Of the southern countries, Bulgaria was on the average, a marginal net exporter of grain in the 1970's, but there were two years in which total imports exceeded 500,000 tons. Hungary, experiencing some of the best improvements in yields in the region, was the largest net exporter of grain in the region in the 1970's. Since 1976, though, net export figures have trended downward.

Romania has become known as the grain broker of Eastern Europe, importing and exporting large amounts in the same year and waiting for favorable movements in world prices. On balance, the Romanians were the second largest net

exporters in the 1970's. Yugoslavia, for the most part, was a net importer of grain in the 1970's, with four years in which total imports approached or exceeded 1 million tons. In the second half of the decade average net imports by Yugoslavia were lower, though, than during the first half.

In determining net grain trade projections for 1985-86, non-feed uses of grain (food, seed, industrial, and waste) were assumed to show little change from recent levels, with increases in population, waste (as a function of higher production) and industrial use being balanced by decreases in per capita consumption of grain for food. Total demand for grain by Eastern Europe in 1985 is estimated at 117 million tons (table 21). Comparing this with estimated production of grain of 107 million tons results in a net import of 10 million tons of grain by the countries of Eastern Europe in 1985/86. This figure is below the record level of 1979/80 of roughly 14 million tons and approximately equals the average of 1975/76 to 1977/78.

Bulgaria is expected to become a small net importer of grain as continued expansion of herd size outstrips growth of grain production. Czechoslovakia and the GDR are expected to remain major net importers of grain, with East German imports increasing slightly over the average of the 1970's. Poland will remain the most important importer of grain in the region with nearly 6 million tons of imports projected for 1985. The pursuit of a rapid growth of meat production in Romania is expected to outstrip a healthy growth in grain production and leave that country a net importer of 500,000 tons of grain in 1985, a change from its net exporter status of recent years. Hungary is projected to be the only net exporter of grain in the region in 1985, with net exports slightly less than 1 million tons.

Of the individual countries the most controversial case is Poland, where the government will be extremely hard pressed to raise meat consumption and lower grain imports. In 1979, for the first time in recent years, the Poles showed signs of a significant improvement in feeding efficiency with regard to grain. 8/ This was more or less enforced by a lack of available grain for feed as well as the enactment of financial incentives for farmers to save on the use of mixed feeds. If Poland can find a way of enforcing more rational utilization of grain in the future, net imports could be below the projected figure, possibly as low as 5.5 million tons.

The decision to facilitate the expansion of livestock raising in the private sector through the policy of "specialized" farms and other reforms contained in the Rzeszow Agreement signed in February of this year could help lower grain import requirements. Another source of possible improved performance was indicated in the recently announced plan to terminate government subsidies to state farms by July 1, 1981. 9/ Agricultural experts in Poland indicate feeding efficiency is currently worse on socialized farms than on private farms. Placing the state farms on a basis of financial independence could well lead to better utilization of their available feed supplies.

Oilmeal Demand and Trade

Data on imports of oilseeds, vegetable oil, and oilseed meal for the 1970's are presented in table 32. Of the commodities listed the most spectacular rate of growth in imports was for soybeans, which roughly doubled in annual averages for the years 1976-78 in relation to 1971-75. The increase in soybean imports more than accounted for all the increase in total oilseed imports.

8/ "Jak Zwiekszyc Produckcja Zboz? "Trybuna Ludu 8/1/80.
9/ "Uprawnienia Terenowych Wladz i Wieksza Samodzielnosc PGR"

Oilseed meal imports 10/ also showed a vigorous expansion in the 1970's though imports stagnated just shy of the 4 million ton mark in 1976-78. Here, also, soybeans accounted for growing share of the total, with soybean meal making up 90 percent of total oilmeal imports by 1978. Because domestic oilseed production increased more rapidly than population, vegetable oil imports for the region generally fell in the second half of the decade.

Romania and Yugoslavia, who have been expanding domestic processing capacity, accounted for increased soybean imports in the second half of the 1970's. Soybean meal and total oilmeal imports increased substantially to all countries with the exception of Yugoslavia and Bulgaria. As was the case with grains, Poland had the largest jump in average oilmeal and soybean meal imports in 1976-78 relative to 1971-75.

Table 33 provides supply information for the 1970's of oilmeal and oilseed converted to soybean meal equivalent. Whereas meal produced from domestic resources was higher on average during the 1976-78 period than 1971-75, it did not increase rapidly enough to meet the increasing demand for oilmeal in the East European region as a whole. For the years in question, only Romania and Bulgaria were nearly 50 percent self-sufficient in oilmeal, while all other countries imported well over half of their oilmeal supplies.

In estimating 1985 demand for oilmeal the explanatory variable used in every case except Czechoslovakia was poultry and pork meat production, which for the same reasons cited under grain demand, was considered the most appropriate. In the case of Czechoslovakia, no variable for either the 1969-78 or 1960-78 period provided effective in explaining oilmeal consumption. Here we made our own estimate.

10/ Does not include fish meal.

Demand and trade figures by country are given in table 34. We estimate that total demand of oilmeal, in soybean meal equivalent, will increase over a million tons from the average of 6.7 million tons in 1976-78 to 8.1 million tons in 1985. The country expected to show the largest increase in oilmeal demand is Romania, while the GDR should have the smallest increase.

Eastern Europe is projected to be a net importer of roughly six million tons of (SME) oilmeal in 1985 compared with recent levels of roughly 5-5.2 million tons. Poland and the GDR will remain the most important markets, while Bulgaria will remain the least important. Though feed rations in the region remain low in protein by Western standards, continued hard currency constraints are expected to limit what would otherwise be larger increases in oilmeal imports. 11/ This is particulary true of Poland.

Of our six estimating equations for oilmeal demand, only Poland's seems to be characterized by a first-order autoregressive structure. The significance of poultry/pork meat as a means of explaining oilmeal consumption in this case is likely overstated. With a generally worsening balance-of-payments situation continuing through 1981, we consider it likely that Poland will be forced to hold back imports of total soybean meal equivalent to 1.5 million tons by 1985.

Depending on relative prices, almost all, if not all, of the increased imports by Eastern Europe will be accounted for by soybeans and soybean meal. This is consistent with recent trends.

Of course, total imports of oilmeal will be dependent to a large extent on the availability of protein from other sources. Beyond the scope of our classification of protein supplement is protein from animal sources other than

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11/ For figures on estimated balance of payments and debt service ratios see tables 35 and 36.

fish, protein from other leguminous crops, and single cell protein. We assume there will be little growth in supply from these sources by 1985. Land constraints and the expansion of area sown to other crops will keep area sown to leguminous crops from expanding. Rising input costs will most likely make expansion of the single-cell protein industry uneconomical.

MARKET SHARE PATTERNS

The general results drawn from the previous section are that by 1985 net imports of grain by Eastern Europe should fall from the current record levels to the levels prevailing for that years 1976-78, and the oilmeal and oilseed imports--in soybean meal equivalent--will continue increasing at a moderate rate to 1985. The primary reason that we don't foresee greater growth of East European imports of the commodities in question is that we assume a deepening balance-of-payments problem will continue to curtail growth in livestock numbers and livestock production from recent rates. Furthermore, normal weather, and continued investment in agriculture, will raise domestic production of grains and oilseeds.

Grain Trade

Given the net grain import figure of 10.0 million tons, gross grain imports by Eastern Europe in 1985/86 should be between 12 and 14 million tons, that is, below the estimated 17 million tons of 1979/80. 12/ It would appear difficult, therefore, for the United States to maintain grain exports to Eastern Europe at current levels through 1985/86. Of course, we need to make an assumption on market share in 1985/86 before we can arrive at an estimation of U.S. grain exports. Tables 37, 39 and 41 provide recent information on East European

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12/ A margin of two to four million tons between net and gross grain imports encompasses actual differences for eight of the last ten years.

imports by source on a calendar year basis for wheat, coarse grains and total grain respectively, while tables 38, 40 and 42 give the corrsponding market shares. 13/ From tables 41 and 42 it is readily apparent that since 1977 both total grain imports and the U.S. share of these imports have trended steadily upwards. This resulted in an estimated U.S. export of over 10 million tons of grain to Eastern Europe in 1980. Simultaneously there was a steady decline in imports from Argentina as well as from within the East European region itself. With movement toward grain self-sufficiency, the countries of the Common Market have become increasingly important suppliers of grain to Eastern Europe. Though the Soviet Union is a major net importer of grain, it has attempted to continue grain exports to the northern countries of the region.

Wheat--In wheat trade the United States has and will face competition from a number of sources. With the exception of one year, Canada has exported wheat to Eastern Europe in excess of 900,000 tons annually since 1976. Currently Canada is in the middle of a three-year agreement with Poland whereby it will provide 3-4.5 million tons of grain. In 1980, the first year of the agreement, most of the Canadian grain supplied was wheat.

Likewise, the French have become significant wheat supppliers to Eastern Europe. Recently France and Poland have been signed annual agreements providing for the import of up to 1 million tons of French wheat. During recent negotiations, the Poles showed a definite interest in increasing this ceiling.

The Soviet Union, which until 1976 supplied over half of Eastern Europe's wheat imports annually, has been a sporadic and largely secondary supplier in

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13/ Because of the inavailability of data on a July/June basis, these tables are on a calendar year basis.

the last few years. Depending on their own abilities to secure required grain imports in the near future, Soviet shipments of wheat to Eastern Europe will continue to be small, with trade occuring only in exceptional circumstances, such as those currently in Poland. With the lifting of the sales suspension with the Soviet Union, if the Soviets themselves record a high wheat harvest, shipments in excess of 1 million tons can be expected, as in 1979.

Another growing source of supply of wheat has been Sweden, and beginning in 1978, Austria. The Austrians have reached agreement with the Poles to supply up to 300,000 of wheat and barley on an annual July-June basis. The Austrian exportable surplus of wheat has come not so much from increased production as from decreased use of wheat for feed at home. Given current production and use patterns, it is likely that the Austrians will approach 300,000 tons of wheat exports only in favorable years and in poor years may export much less.

Wheat imports from within the East European region itself, namely from Hungary and Romania, have fallen precipitously from a peak of 1.5 million tons in 1976 to an estimated level of 450,000 tons in 1980. Following the lifting of the sales suspension intra-region trade in wheat might be expected to increase.

Argentina figured prominently in the East European wheat market in only one year, 1977, when it supplied nearly 20 percent of wheat imports. The Argentines currently have trade agreements for wheat with the PRC and Iraq and also have developed markets in Brazil and the USSR. This will probably leave little room for serious penetration of the East European wheat import market in the near future.

Australia has never been an important supplier of wheat to Eastern Europe, and this situation is not likely to change in the future.

Coarse Grains--Whereas the market for wheat exports to Eastern Europe is fairly crowded, with the United States never accounting for as much as 50 percent of supplies, the coarse grain market has, since 1975, been dominated by the United States. Only in 1977 and 1978 did the United States fail to capture half of the East European market for coarse grains. In 1980 the U.S. market share had reached 70 percent, and coarse grain exports to Eastern Europe reached record levels.

While U.S. exports were soaring, those from Argentina, the Soviet Union and from within the East European region itself were falling radically. With the signing of the recent agreement with the Soviet Union, and other coarse grain trade agreements with the PRC and Mexico, much of Argentina's annual exportable surplus is now accounted for. Given a continuation of the sales suspension with the Soviet Union, Argentina is unlikey to reenter the East European coarse grain market in a big way.

The Soviet Union has not shipped any coarse grains to Eastern Europe during the last three years, following a fairly high amount in 1977. With a lifting of the sales suspension, the Soviets might be expected to provide a few hundred thousand tons of coarse grain in certain years. 14/ A lifting of the sales suspension will likely also revive intra-bloc trade in coarse grains from the estimated low level of the last two years.

The United States is and will remain the dominant source of corn. Canada and Western Europe are likely to remain the primary source of barley. Competition for East European coarse grain market is likely to center among these three.

14/ Reports from Poland have indicated Soviet willingness to supply 1 million tons of coarse grains in 1981, though this remains be be verified.

Because the United States is now the only significant supplier of corn to the region, at worst the U.S. market share of coarse grains is likely to remain prominent.

Oilmeal and Oilseed Trade

Imports of oilmeal 15/ by Eastern Europe increased substantially during the 1970's. In 1980 their estimated level of 4.26 million tons was double that of 1971. Table 43 presents oilmeal import data for Eastern Europe for recent years and table 44 gives the corresponding market shares. Except for 1979, Brazil has been the major supplier of oilmeal to Eastern Europe in every year since 1976. The United States has maintained a significant share of this market as the other major supplier. Secondary suppliers include the European Community and India. In the case of the former, soybean meal, largely derived from U.S. soybeans, is shipped, with more than half of this total being accounted for by exports from the FRG to the GDR. In the case of the latter, oilmeal exports come primarily in the form of peanut meal.

In comparison with oilmeal imports, oilseed imports by Eastern Europe are much less significant, accounting in the last three years for an annual average of roughly 600,000 tons of soybean meal equivalent. The United States supplies the majority of oilseed imports and almost all soybean imports. In recent years the United States has been benefiting from the growing prominence of soybeans in total oilseed imports of Eastern Europe (table 32).

15/ Not including fish meal.

U.S. TRADE IMPLICATIONS

Actual U.S. grain exports to Eastern Europe in 1985/86 will depend on a number of factors. With gross grain imports for the region projected at 12 to 14 million tons, U.S. exports will depend also on the relative share of wheat and coarse grains in this total. A further major consideration will be the situation with the Soviet Union. Given continued high grain imports by the USSR, a lower U.S. share of that market will most probably mean a higher U.S. share of the East European market and vice versa.

In 1985/86, Poland is projected to account for 6 million tons of grain imports, which is below recent figures of 7.0-8.0 million tons. Given a likely continuation of its balance of payments problems, as well as continuation of trade agreements with such countries as France, Canada and Austria, the United States will need to extend availabilities of large CCC credit guarantees if it is to continue shipping grain to Poland at levels approximately those of the last few years.

A likely "maximum" scenario for U.S. grain exports to Eastern Europe would show continued marginal imports to the region from the Soviet Union and Argentina as well as a decline of imports from the EC-9 from the high 1980 level. The resulting U.S. market share could be around 60 percent, resulting in U.S. grain exports of 7.2 - 8.4 million tons to Eastern Europe in 1985/86.

On the other hand a "minimum" scenario would show no decline in wheat imports in 1985/86 relative to the last two years, while coarse grain imports would fall a few million tons. In addition, expansion of trade agreements with Canada and the nations of the Common Market would solidify their share of the grain market. In this case, the U.S. market share might be around 40 percent, resulting in U.S. grain exports to the region of only 4.8 to 5.6 million tons in 1985/86.

In either case it seems likely, based on this study, that exports of grain by the United States to Eastern Europe will not maintain themselves at current levels through 1985/86.

The increase in oilmeal and oilseed imports from 5.17 to roughly six million tons of soybean meal equivalent will be accounted for primarily, if not entirely, by higher soybean and soybean meal imports. Competition for this growing market will come from Brazil. The FRG is likely to continue high exports of soybean meal to the GDR, but without changes in relative prices or new marketing advantages, other European suppliers are likely to continue playing a major role only as transshippers of meal.

Given current Brazilian policy which limits exports of soybeans in favor of soybean meal, the U.S. share of the growing East European oilmeal market will likely be higher if increased imports come in the form of beans rather than meal. In recent years, soybean imports have rocketed as processing capacity was expanded in Yugoslavia and Romania. However, shortages in investment funds may well dampen further expansion in soybean processing capacity during the coming FYP.

A "maximum" scenario for U.S. exports of oilmeal and oilseeds to Eastern Europe would assume continued expansion of that region's oilseed crushing capacity coupled with less than planned increases in domestic oilseed production, and a decline in imports from Brazil. This would result in the growth of U.S. exports of 25 to 30 percent by 1985 relative to 1979.

On the other hand, a "minumum" scenario, including little expansion of regional crushing capacity and growth in available Brazilian supplies could mean an increase of only 10 percent in U.S. exports of oilmeal and oilseeds.

Total Agricultural Trade

Because of their preponderant role in U.S. agricultural exports to Eastern Europe (table 45), this analysis of grain, oilmeal and oilseeds gives an indicative view of likely future patterns of U.S. total agricultural trade with that region. A general conclusion to be drawn is that given constant prices, an increase in oilmeal and oilseed exports will at best balance an anticipated decline in grain exports to Eastern Europe. An increase in the value of U.S. agricultural exports to that region over the next five years, therefore, will most likely come as a result of higher prices, and not as a result of higher volumes.

TABLE 1--EASTERN EUROPE: AREA, YIELD AND PRODUCTION BY MAJOR TYPES OF GRAIN

1971-1975, AVERAGES, AND ANNUAL, 1976-1979

(Production = 1000 metric tons; Area = 1000 hectares; Yield = tons per hectare)

		AVERAGE 1971-75	1976	1977	1978	1979	AVERAGE 1976-79	1976-79 / 1971-75 1/
WHEAT	Production	30,829	34,628	34,193	35,521	27,142	32,881	1.07
	Area	10,334	10,226	9,947	10,067	9,073	9,828	0.95
	Yield	2.98	3.39	3.44	3.53	2.99	3.35	1.12
RYE	Production	10,443	9,263	8,829	10,246	7,696	9,008	0.86
	Area	4,445	3,942	4,160	4,063	3,904	4,017	0.90
	Yield	2.35	2.35	2.12	2.52	1.97	2.24	0.95
BARLEY	Production	12,893	14,386	14,980	16,528	16,017	15,478	1.20
	Area	4,172	4,482	4,742	4,849	5,244	4,829	1.16
	Yield	3.09	3.21	3.16	3.41	3.05	3.21	1.04
OATS	Production	5,296	4,106	3,939	4,037	3,487	3,892	0.73
	Area	2,257	1,863	1,798	1,670	1,733	1,766	0.78
	Yield	2.35	2.20	2.19	2.42	2.01	2.20	0.94
CORN	Production	25,623	29,613	29,462	27,349	34,218	30,161	1.17
	Area	7,677	8,078	7,882	7,428	7,986	7,844	1.02
	Yield	3.34	3.67	3.74	3.68	4.28	3.85	1.15
RICE	Production	215	133	186	176	204	175	0.81
OTHER GRAINS	Production	1,606	1,841	1,736	1,927	1,895	1,850	1.15
TOTAL PRODUCTION		86,905	93,970	93,325	95,784	90,659	93,435	1.08
TOTAL AREA		29,601	29,399	29,305	28,902	28,880	29,121	0.98
TOTAL YIELD		2.94	3.20	3.18	3.31	3.14	3.21	1.09

1/ Annual average of 1976-1979 divided by annual average of 1971-1975.

TABLE 2--BULGARIA: AREA, YIELD AND PRODUCTION BY MAJOR TYPES OF GRAIN

1971-1975, AVERAGES, AND ANNUAL, 1976-1979

(Production = 1000 metric tons; Area = 1000 hectares; Yield = tons per hectare)

		AVERAGE 1971-75	1976	1977	1978	1979	AVERAGE 1976-79	1976-79 / 1971-75 1/
WHEAT	Production	3,193	3,511	3,384	3,466	3,324	3,421	1.07
	Area	945	918	910	935	955	930	0.98
	Yield	3.38	3.82	3.72	3,71	3.48	3.69	1.12
RYE	Production	21	15	15	19	25	19	0.90
	Area	17	13	13	13	13	13	0.76
	Yield	1.24	1.15	1.15	1.46	1.92	1.46	1.18
BARLEY	Production	1,478	1,781	1,481	1,488	1,512	1,566	1.06
	Area	478	524	529	473	468	499	1.04
	Yield	3.09	3.40	2.80	3.15	3.23	3.16	1.02
OATS	Production	70	65	88	76	60	72	1.03
	Area	57	44	57	51	45	49	0.86
	Yield	1.24	1.48	1.54	1.49	1.33	1.47	1.19
CORN	Production	2,505	3,031	2,513	2,236	3,205	2,746	1.10
	Area	629	731	702	601	672	677	1.08
	Yield	3.98	4.15	3.58	3.72	4.77	4.06	1.02
RICE	Production	60	41	68	61	58	57	0.95
OTHER GRAINS	Production	--	--	--	--	--	--	--
TOTAL PRODUCTION		7,327	8,444	7,549	7,420	8,184	7,899	1.08
TOTAL AREA		2,142	2,247	2,228	2,090	2,204	2,192	1.02
TOTAL YIELD		3.42	3.76	3.39	3.55	3.71	3.60	1.05

-- = Negligible or none.

1/ Annual average of 1976-1979 divided by annual average of 1971-1975.

TABLE 3--CZECHOSLAVAKIA: AREA, YIELD AND PRODUCTION BY MAJOR TYPES OF GRAIN

1971-1975, AVERAGES, AND ANNUAL, 1976-1979

(Production = 1000 metric tons; Area = 1000 hectares; Yield = tons per hectare)

		AVERAGE 1971-75	1976	1977	1978	1979	AVERAGE 1976-79	1976-79 / 1971-75 1/
WHEAT	Production	4,360	4,807	5,214	5,601	3,742	4,841	1.11
	Area	1,198	1,278	1,287	1,274	1,100	1,235	1.03
	Yield	3.64	3.77	4.05	4.40	3.40	3.92	1.08
RYE	Production	629	561	641	630	482	579	0.92
	Area	220	186	212	187	200	196	0.89
	Yield	2.86	3.02	3.02	3.37	2.41	2.95	1.03
BARLEY	Production	2,991	2,901	3,207	3,642	3,606	3,339	1.12
	Area	885	857	856	919	980	903	1.02
	Yield	3.38	3.39	3.75	3.96	3.68	3.70	1.09
OATS	Production	729	379	454	456	409	425	0.58
	Area	278	198	174	151	150	168	0.60
	Yield	2.62	1.91	2.61	3.02	2.73	2.53	0.97
CORN	Production	640	514	792	619	989	729	1.14
	Area	157	204	203	202	220	207	1.32
	Yield	4.08	2.52	3.90	3.06	4.50	3.52	0.86
RICE	Production	--	--	--	--	--	--	--
OTHER GRAINS	Production	--	--	--	--	--	--	--
TOTAL PRODUCTION		9,349	9,162	10,308	10,948	9,228	9,912	1.06
TOTAL AREA		2,739	2,723	2,732	2,733	2,650	2,709	0.99
TOTAL YIELD		3.41	3.36	3.77	4.01	3.48	3.66	1.07

-- = Negligible or none.

1/ Annual average of 1976-1979 divided by annual average of 1971-1975.

TABLE 4--GDR: AREA, YIELD AND PRODUCTION BY MAJOR TYPES OF GRAIN

1971-1975, AVERAGES, AND ANNUAL, 1976-1979

(Production = 1000 metric tons; Area = 1000 hectares; Yield = tons per hectare)

		AVERAGE 1971-75	1976	1977	1978	1979	AVERAGE 1976-79	1976-79 / 1971-75 1/
WHEAT	Production	2,797	2,715	2,914	3,147	3,000	2,944	1.05
	Area	687	762	732	686	720	725	1.06
	Yield	4.07	3.56	3.98	4.59	4.17	4.06	1.00
RYE	Production	1,774	1,455	1,644	1,895	1,760	1,689	0.95
	Area	638	600	619	652	660	633	0.99
	Yield	2.78	2.43	2.66	2.91	2.67	2.67	0.96
BARLEY	Production	2,966	3,456	3,681	4,135	3,800	3,768	1.27
	Area	735	960	997	1,035	1,000	998	1.36
	Yield	4.04	3.60	3.69	4.00	3.80	3.78	0.94
OATS	Production	841	506	411	595	400	478	0.57
	Area	236	190	153	153	150	162	0.69
	Yield	3.56	2.66	2.69	3.89	2.67	2.95	0.83
CORN	Production	11	--	--	2	--	0.50	--
	Area	3	--	--	1	--	0.25	--
	Yield	3.67	--	--	2.00	--	2.00	--
RICE	Production	--	--	--	--	--	--	--
OTHER GRAINS	Production	290	58	43	47	40	47	0.16
TOTAL PRODUCTION		8,679	8,190	8,693	9,821	9,000	8,927	1.03
TOTAL AREA		2,397	2,542	2,520	2,544	2,550	2,539	1.06
TOTAL YIELD		3.62	3.22	3.45	3.86	3.53	3.52	0.97

-- = Negligible or none.

1/ Annual average of 1976-1979 divided by annual average of 1971-1975.

TABLE 5--HUNGARY: AREA, YIELD AND PRODUCTION BY MAJOR TYPES OF GRAIN

1971-1975, AVERAGES, AND ANNUAL, 1976-1979

(Production = 1000 metric tons; Area = 1000 hectares; Yield = tons per hectare)

		AVERAGE 1971-75	1976	1977	1978	1979	AVERAGE 1976-79	1976-79 / 1971-75 1/
WHEAT	Production	4,295	5,148	5,315	5,673	3,700	4,959	1.15
	Area	1,292	1,325	1,311	1,324	1,138	1,275	0.99
	Yield	3.32	3.89	4.05	4.28	3.25	3.89	1.17
RYE	Production	170	156	142	137	100	134	0.79
	Area	113	93	91	78	69	83	0.73
	Yield	1.50	1.68	1.56	1.75	1.45	1.61	1.07
BARLEY	Production	810	747	706	760	700	728	0.90
	Area	281	228	224	225	263	235	0.84
	Yield	2.88	3.27	3.15	3.38	2.66	3.10	1.08
OATS	Production	75	86	64	77	90	79	1.05
	Area	42	39	32	27	45	36	0.86
	Yield	1.78	2.21	2.00	2.85	2.00	2.19	1.23
CORN	Production	5,881	5,148	5,939	6,581	7,400	6,267	1.07
	Area	1,409	1,339	1,281	1,283	1,372	1,319	0.94
	Yield	4.17	3.84	4.64	5.13	5.39	4.75	1.14
RICE	Production	64	32	35	23	40	32	0.50
OTHER GRAINS	Production	7	9	5	4	--	4	0.57
TOTAL PRODUCTION		11,302	11,321	12,206	13,255	12,030	12,203	1.08
TOTAL AREA		3,168	3,057	2,970	2,963	2,909	2,975	0.94
TOTAL YIELD		3.57	3.70	4.11	4.47	4.14	4.10	1.15

-- = Negligible or none.

1/ Annual average of 1976-1979 divided by annual average of 1971-1975.

TABLE 6--POLAND: AREA, YIELD AND PRODUCTION BY MAJOR TYPES OF GRAIN

1971-1975, AVERAGES, AND ANNUAL, 1976-1979

(Production = 1000 metric tons; Area = 1000 hectares; Yield = tons per hectare)

		AVERAGE 1971-75	1976	1977	1978	1979	AVERAGE 1976-79	1976-79 / 1971-75 1/
WHEAT	Production	5,605	5,745	5,308	6,029	4,187	5,317	0.95
	Area	1,987	1,832	1,834	1,852	1,549	1,767	0.89
	Yield	2.82	3.14	2.89	3.26	2.70	3.01	1.07
RYE	Production	7,679	6,922	6,250	7,434	5,201	6,452	0.84
	Area	3,340	2,934	3,116	3,030	2,868	2,987	0.89
	Yield	2.30	2.36	2.01	2.45	1.81	2.16	0.94
BARLEY	Production	3,181	3,617	3,396	3,636	3,731	3,595	1.13
	Area	1,111	1,210	1,235	1,202	1,470	1,279	1.15
	Yield	2.86	2.99	2.75	3.03	2.54	2.81	0.98
OATS	Production	3,158	2,695	2,552	2,492	2,186	2,481	0.79
	Area	1,287	1,115	1,097	1,030	1,094	1,084	0.84
	Yield	2.45	2.42	2.33	2.42	2.00	2.29	0.93
CORN	Production	27	231	232	120	181	191	7.07
	Area	7	52	57	33	46	47	6.71
	Yield	3.86	4.44	4.07	3.64	3.93	4.06	1.05
RICE	Production	--	--	--	--	--	--	--
OTHER GRAINS	Production	1,284	1,653	1,661	1,826	1,855	1,749	1.36
TOTAL PRODUCTION		20,934	20,863	19,399	21,537	17,341	19,785	0.95
TOTAL AREA		8,232	7,768	8,002	7,852	7,872	7,874	0.96
TOTAL YIELD		2.54	2.68	2.42	2.74	2.20	2.51	0.99

-- = Negligible or none.

1/ Annual average of 1976-1979 divided by annual average of 1971-1975.

TABLE 7--ROMANIA: AREA, YIELD AND PRODUCTION BY MAJOR TYPES OF GRAIN

1971-1975, AVERAGES, AND ANNUAL, 1976-1979

(Production = 1000 metric tons; Area = 1000 hectares; Yield = tons per hectare)

		AVERAGE 1971-75	1976	1977	1978	1979	AVERAGE 1976-79	1976-79 / 1971-75 2/
WHEAT	Production	5,395	6,723	6,463	6,250	4,677	6,028	1.11
	Area	2,464	2,388	2,269	2,284	2,087	2,257	0.92
	Yield	2.19	2.82	2.85	2.74	2.24	2.67	1.22
RYE	Production	53	49	50	50	47	49	0.92
	Area	41	1/40	1/40	1/40	35	39	0.95
	Yield	1.29	1.23	1.25	1.25	1.34	1.26	0.98
BARLEY	Production	1/845	1,231	1,859	2,307	2,037	1,858	2.20
	Area	363	410	595	722	772	625	1.72
	Yield	2.33	3.01	3.12	3.20	2.64	2.97	1.27
OATS	Production	104	55	61	57	59	58	0.56
	Area	57	45	54	48	40	47	0.82
	Yield	1.82	1.22	1.13	1.19	1.48	1.23	0.68
CORN	Production	8,349	11,583	10,114	10,208	12,380	11,071	1.33
	Area	3,111	3,338	3,318	3,179	3,410	3,311	1.06
	Yield	2.68	3.47	3.04	3.21	3.63	3.34	1.25
RICE	Production	57	37	47	58	61	51	0.89
OTHER GRAINS	Production	9	112	20	44	--	44	4.89
TOTAL PRODUCTION		14,813	19,790	18,614	18,974	19,261	19,159	1.29
TOTAL AREA		6,068	6,350	6,308	6,318	6,366	6,336	1.04
TOTAL YIELD		2.44	3.12	2.95	3.00	3.02	3.02	1.24

-- = Negligible or none.

1/ Estimate.

2/ Annual average of 1976-1979 divided by annual average of 1971-1975.

TABLE 8--YUGOSLAVIA; AREA, YIELD AND PRODUCTION BY MAJOR TYPES OF GRAIN

1971-1975, AVERAGES, AND ANNUAL, 1976-1979

(Production = 1000 metric tons; Area = 1000 hectares; Yield = tons per hectare)

		AVERAGE 1971-75	1976	1977	1978	1979	AVERAGE 1976-79	1976-79 / 1971-75 1/
WHEAT	Production	5,177	5,979	5,595	5,355	4,517	5,360	1.04
	Area	1,801	1,723	1,604	1,712	1,524	1,641	0.91
	Yield	2.87	3.47	3.49	3.13	2.96	3.27	1.14
RYE	Production	118	105	87	81	81	89	0.75
	Area	97	76	69	63	59	67	0.69
	Yield	1.22	1.38	1.28	1.30	1.37	1.33	1.09
BARLEY	Production	625	653	650	560	631	624	1.00
	Area	318	293	306	273	291	291	0.92
	Yield	1.97	2.23	2.13	2.05	2.17	2.14	1.09
OATS	Production	318	320	309	284	283	299	0.94
	Area	258	232	231	210	209	221	0.86
	Yield	1.23	1.38	1.33	1.35	1.35	1.35	1.10
CORN	Production	8,209	9,106	9,870	7,585	10,063	9,156	1.12
	Area	2,360	2,374	2,321	2,130	2,238	2,266	0.96
	Yield	3.48	3.84	4.25	3.56	4.50	4.04	1.16
RICE	Production	33	23	36	34	45	35	1.00
OTHER GRAINS	Production	14	9	7	6	--	6	0.43
TOTAL PRODUCTION		14,495	16,195	16,554	13,905	15,615	15,569	1.07
TOTAL AREA		4,855	4,713	4,545	4,402	4,329	4,497	0.93
TOTAL YIELD		2.99	3.44	3.64	3.16	3.61	3.46	1.16

-- = Negligible or none.

1/ Annual average of 1976-1979 divided by annual average of 1971-1975.

TABLE 9--EASTERN EUROPE: FERTILIZER USE 1/, PER HECTARE OF ARABLE LAND 2/

1971-1978 AND 1980 PLAN

	1971	1972	1973	1974	1975	1976	1977	1978	1980 PLAN
BULGARIA	141	143	141	126	157	152	172	172	250
CZECHOSLOVAKIA	254	263	265	275	305	319	311	334	3/335
GDR	332	334	361	376	370	361	332	331	4/400
HUNGARY	171	183	216	243	276	254	279	286	290-300
POLAND	172	196	207	228	236	244	239	241	317
ROMANIA	60	61	69	78	88	96	97	105	285
YUGOSLAVIA	82	88	87	84	90	92	101	108	164
EASTERN EUROPE	153	165	176	186	199	204	204	211	290

1/ Nitrogen, phosphate and potash in nutrients.
2/ Cultivated land plus gardens and orchards.
3/ Based on plan goal of a 20% increase in fertilizer use for 1976-80 compared to 1971-75.
4/ Based on plan goal of an 11% increase in fertilizer use for 1976-80 compared to 1971-75.

SOURCE: CEMA Yearbook, 1976, 1979; Country Statistical Yearbooks.

TABLE 10--CAPITAL INVESTMENT IN THE NATIONAL ECONOMY:

AGRICULTURE AND FORESTRY'S SHARE

(in 1,000,000 current units of domestic currency)

	AVERAGE 1971-75	1976	1977	1978
BULGARIA				
Agriculture & Forestry	688	790	877	793
Total	4,215	5,213	5,983	6,030
Share	16.32%	15.15%	14.66%	13.15%
HUNGARY				
Agriculture & Forestry	19,525	26,522	30,083	33,422
Total	125,062	173,692	198,867	NA
Share	15.61%	15.27%	15.13%	NA
GDR				
Agriculture & Forestry	4,615	4,984	5,177	5,038
Total	35,380	43,416	45,688	47,270
Share	13.04%	11.48%	11.33%	10.66%
POLAND				
Agriculture & Forestry	53,867	94,691	110,413	111,111
Total	380,226	620,087	647,128	657,522
Share	14.17%	15.27%	17.06%	16.90%
ROMANIA				
Agriculture & Forestry	15,836	20,871	24,505	27,302
Total	115,843	147,433	167,461	194,606
Share	13.67%	14.16%	14.63%	14.03%
CZECHOSLOVAKIA				
Agriculture & Forestry	13,204	16,351	16,755	18,147
Total	111,410	134,912	135,182	140,244
Share	11.85%	12.12%	12.39%	12.94%

NA = Not available.

SOURCE: CEMA Yearbook, 1976, p. 143-145; 1979, p. 173-175.

TABLE 11--EASTERN EUROPE: TRACTOR HORSEPOWER PER 100 HECTARES OF AGRICULTURAL LAND, 1971-1978

	1971	1972	1973	1974	1975	1976	1977	1978
BULGARIA	57	63	73	77	82	86	90	93
CZECHOSLOVAKIA	115	122	131	138	147	150	154	161
GDR	146	148	149	152	154	154	158	167
HUNGARY	59	60	62	63	65	67	70	72
POLAND	57	65	77	88	103	107	118	129
ROMANIA	63	66	68	69	70	75	82	83

SOURCE: CEMA Yearbook, 1976, p. 228; 1979, p. 274.

TABLE 12--EASTERN EUROPE: AREA, YIELD AND PRODUCTION OF OILSEEDS

1971-1975, AVERAGES, AND ANNUAL, 1976-1979

(Production = 1000 metric tons; Area = 1000 hectares; Yield = tons per hectare)

	AVERAGE 1971-75	1976	1977	1978	1979	AVERAGE 1976-79	1976-79 / 1971-75 1/
SUNFLOWERSEED							
Production	1,673	1,672	1,932	1,962	2,270	1,959	1.17
Area	1,098	1,063	1,106	1,149	1,257	1,144	1.04
Yield	1.52	1.57	1.75	1.71	1.81	1.71	1.13
RAPESEED							
Production	1,015	1,542	1,313	1,366	682	1,226	1.21
Area	533	661	682	653	446	611	1.15
Yield	1.90	2.33	1.93	2.09	1.53	2.01	1.06
SOYBEANS							
Production	283	406	396	458	619	470	1.66
Area	200	286	304	363	425	345	1.73
Yield	1.42	1.42	1.30	1.26	1.46	1.36	0.96
TOTAL PRODUCTION	2,970	3,620	3,641	3,786	3,571	3,655	1.23

1/ Annual average of 1976-1979 divided by annual average of 1971-1975.

TABLE 13--EASTERN EUROPE: OILMEAL PRODUCTION FROM DOMESTIC RESOURCES

1971-1975, AVERAGES, AND ANNUAL, 1976-1979

	AVERAGE 1971-75	1976	1977	1978	1979	AVERAGE 1976-79	1976-79 / 1971-75 1/
	--------1000 metric tons--------						
SUNFLOWERSEED MEAL	557.1	557.0	643.4	653.4	755.9	652.4	1.17
RAPESEED MEAL	520.6	791.0	673.6	700.7	349.8	628.8	1.21
SOYMEAL	201.2	288.6	281.6	325.6	440.1	334.0	1.66
FISHMEAL	76.6	93	92	89	2/91	88.3	1.19
TOTAL MEAL	1,355.5	1,729.6	1,690.6	1,768.7	1,636.8	1,706.4	1.26
SOYMEAL EQUIVALENT TOTAL	1,210.3	1,511.0	1,496.4	1,569.1	1,532.6	1,527.3	1.26

1/ Annual average of 1976-1979 divided by annual average of 1971-1975.
2/ Preliminary.

TABLE 14--EASTERN EUROPE: ACTUAL AND PROJECTED VALUES OF AREA, YIELD AND PRODUCTION OF MAJOR OILSEEDS

BY COUNTRY, 1976-1979 AVERAGES, 1985

(Production = 1000 metric tons; Area = 1000 hectares; Yield = quintels per hectare)

	1976-1979 AVERAGES			1985 SEED PROJECTIONS			1985 MEAL PRODUCTION PROJECTIONS 1/
	AREA	YIELD	PRODUCTION	AREA	YIELD	PRODUCTION	FROM SEED
SUNFLOWERSEED							
BULGARIA	230	17.1	392	230	19.25	443	139.3
CZECHOSLOVAKIA	12	12.3	15	22	13.6	30	9.4
HUNGARY	163	15.9	259	180	16.3	293	92.2
ROMANIA	516	16.0	828	520	18.0	936	294.3
YUGOSLAVIA	222	21.0	465	260	23.2	603	190.0
TOTAL EASTERN EUROPE	1,144	17.1	1,959	1,212	19.0	2,305	725.2
RAPESEED							
CZECHOSLOVAKIA	67	20.3	136	90	23.6	212	77.4
GDR	124	23.1	286	125	27.0	338	123.4
HUNGARY	58	14.1	82	60	16.1	97	35.4
POLAND	329	19.8	653	420	22.0	924	337.2
ROMANIA	6	18.3	11	6	16.7	10	3.6
YUGOSLAVIA	27	20.6	56	50	23.5	117	42.7
TOTAL EASTERN EUROPE	611	20.0	1,225	751	22.6	1,698	619.7
SOYBEANS							
BULGARIA	80	14.4	115	120	16.5	198	140.8
CZECHOSLOVAKIA	4	15.0	5	4	20.0	8	5.7
HUNGARY	29	13.8	40	30	16.7	50	35.6
ROMANIA	199	12.7	252	400	15.0	600	426.6
YUGOSLAVIA	31	18.0	56	50	20	100	71.1
TOTAL EASTERN EUROPE	344	13.6	469	604	15.8	956	679.8

1/ Soybean meal equivalent.

TABLE 15--EASTERN EUROPE: PROJECTED VALUES OF OILMEAL PRODUCED FROM DOMESTIC RESOURCES, 1985, IN SOYBEAN MEAL EQUIVALENT

	FROM SEEDS	FISH MEAL	TOTAL
	------1000 metric tons------		
BULGARIA	280.1	14.4	294.5
CZECHOSLOVAKIA	92.5	--	92.5
GDR	123.4	30.4	153.8
HUNGARY	163.2	--	163.2
POLAND	337.2	72.3	409.5
ROMANIA	724.5	11.6	736.1
YUGOSLAVIA	303.8	--	303.8
TOTAL EASTERN EUROPE	2,024.7	128.7	2,153.4

-- = Negligible or none.

TABLE 16--MEAL YIELD RATES FOR OILSEED CRUSH

SOYBEANS	.79
SUNFLOWERSEED	.37
RAPESEED	.57

TABLE 17--CONVERSION FACTORS TO SOYBEAN MEAL EQUIVALENT

SOYBEANS	1.000
SUNFLOWERSEED	.9442
RAPESEED	.7115
PEANUT	1.124
FISH	1.4452
COTTON	.8103
LINSEED	.7609

TABLE 18--EASTERN EUROPE: PER CAPITA CONSUMPTION OF MEAT 1/, BY COUNTRY

1971, 1975, 1979

	1971	1975	1979 2/
BULGARIA	43.6	58.0	62.0
CZECHOSLOVAKIA	73.7	81.1	84.0
GDR	68.5	77.8	87.0
HUNGARY	59.5	68.5	71.2
POLAND	56.1	70.3	73.0
ROMANIA	NA	45.7	NA
YUGOSLAVIA	37.6	48.3	50.0

NA = Not available.

1/ Includes offal.
2/ With the exception of Poland, estimated figures.

TABLE 19--EASTERN EUROPE: JANUARY LIVESTOCK NUMBERS, 1971, 1975, 1980 AND PROJECTIONS FOR 1985 BY COUNTRY

	1971	1975	1980 1/	PROJECTED 1985
	--------1000 head--------			
CATTLE				
BULGARIA	1,279	1,554	1,788	1,882
CZECHOSLOVAKIA	4,288	4,566	4,900	5,078
GDR	5,190	5,585	5,596	5,665
HUNGARY	1,912	2,018	1,955	1,970
POLAND	10,220	12,815	12,272	12,822
ROMANIA	5,216	5,983	6,513	6,849
YUGOSLAVIA	5,138	5,872	5,436	5,550
TOTAL EASTERN EUROPE	33,243	38,393	38,460	39,816
HOGS				
BULGARIA	2,369	3,422	3,832	4,247
CZECHOSLOVAKIA	5,530	6,719	7,600	7,600
GDR	9,684	11,518	12,132	12,253
HUNGARY	7,311	8,293	8,370	8,500
POLAND	13,863	21,709	20,897	21,837
ROMANIA	6,359	8,566	10,889	13,067
YUGOSLAVIA	6,562	7,683	7,502	8,185
TOTAL EASTERN EUROPE	51,678	67,910	71,222	75,689
POULTRY				
BULGARIA	33,706	35,089	40,500	43,873
CZECHOSLOVAKIA	39,187	39,476	48,000	48,000
GDR	43,034	47,530	51,444	51,444
HUNGARY	61,300	57,500	67,427	67,427
POLAND	87,561	96,583	84,533	88,624
ROMANIA	54,333	67,672	95,417	110,615
YUGOSLAVIA	44,954	54,991	62,743	69,108
TOTAL EASTERN EUROPE	364,075	398,841	450,064	479,091
SHEEP				
BULGARIA	9,678	9,791	10,358	10,980
CZECHOSLOVAKIA	981	811	880	955
GDR	1,598	1,847	1,979	2,050
HUNGARY	2,316	2,021	3,000	3,150
POLAND	2,661	2,660	3,800	4,200
ROMANIA	13,818	13,929	16,195	17,650
YUGOSLAVIA	8,703	8,175	7,294	7,575
TOTAL EASTERN EUROPE	39,755	39,234	43,506	46,560

1/ Certain figures are preliminary.

TABLE 20--EASTERN EUROPE: MEAL PRODUCTION 1/, 1971, 1975, 1979

AND PROJECTIONS FOR 1985

	1971	1975	1979	PROJECTED 1985
	--------1000 metric tons--------			
TOTAL MEAT				
BULGARIA	522	657	766	857
CZECHOSLOVAKIA	1,157	1,349	1,515	1,565
GDR	1,419	1,837	1,790	1,847
HUNGARY	1,216	1,422	1,558	1,668
POLAND	2,232	3,062	3,196	3,335
ROMANIA	898	1,328	1,676	2,055
YUGOSLAVIA	1,102	1,329	1,449	1,590
TOTAL EASTERN EUROPE	8,546	10,984	11,950	12,917
PORK				
BULGARIA	204	329	340	392
CZECHOSLOVAKIA	624	738	911	925
GDR	854	1,198	1,205	1,213
HUNGARY	753	892	980	1,068
POLAND	1,357	1,852	1,846	1,923
ROMANIA	474	724	871	1,113
YUGOSLAVIA	670	722	843	896
TOTAL EASTERN EUROPE	4,936	6,455	6,996	7,530
POULTRY				
BULGARIA	111	123	168	202
CZECHOSLOVAKIA	111	134	164	176
GDR	99	125	135	147
HUNGARY	237	280	355	373
POLAND	150	254	419	452
ROMANIA	145	273	411	499
YUGOSLAVIA	149	188	273	340
TOTAL EASTERN EUROPE	1,002	1,377	1,925	2,189

1/ Carcass weight including offal.

TABLE 21--EASTERN EUROPE: PROJECTIONS ON PRODUCTION USE AND NET TRADE OF GRAIN, 1985, BY COUNTRY

	PRODUCTION	USE			NET TRADE
		FEED	OTHER	TOTAL	
	--------1000 metric tons--------				
BULGARIA	8.70	6.05	2.75	8.80	-0.10
CZECHOSLOVAKIA	11.40	8.61	3.79	12.40	-1.00
GDR	10.25	10.05	3.40	13.45	-3.20
HUNGARY	14.00	10.24	2.83	13.07	+0.93
POLAND	23.40	20.40	8.93	29.33	-5.93
ROMANIA	22.55	16.62	6.46	23.08	-0.53
YUGOSLAVIA	16.90	10.70	6.35	17.05	-0.15
EASTERN EUROPE	107.20	82.67	34.51	117.18	-9.98

TABLE 22--EASTERN EUROPE: REGRESSION INFORMATION FOR PROJECTION

EQUATIONS OF GRAIN USED FOR FEED

	PERIOD	INDEPENDENT VARIABLE	R2	t VALUE	D. W. STATISTIC
BULGARIA	1969-78	1/SUCIT	.70	4.33	1.68
CZECHOSLOVAKIA	1969-78	2/STUPH	.94	11.07	1.83
GDR	1960-78	3/POULPK	.86	10.18	1.53
HUNGARY	1960-78	POULPK	.91	12.82	2.51
POLAND	1960-78	POULPK	.85	9.68	1.97
ROMANIA	1960-78	STUPH	.83	9.03	2.07
YUGOSLAVIA	X	4/OWN	X	X	X

X = Not applicable.

1/ Total livestock expressed in standard units (see table 23).
2/ Hogs and poultry expressed in standard units.
3/ Pork and poultry meat production (liveweight basis).
4/ Own estimate.

TABLE 23--CONVERSION FACTORS TO STANDARD UNITS 1/

COWS	1.0
OTHER CATTLE	0.6
HOGS	0.3
SHEEP	0.1
HORSES	1.0
POULTRY	0.02

TABLE 24--EASTERN EUROPE 1/: IMPORTS, EXPORTS AND NET IMPORTS BY MAJOR TYPES OF GRAIN

1971-1975, AVERAGES, AND ANNUAL, 1976-1978

	AVERAGE 1971-75	1976	1977	1978	AVERAGE 1976-78	1976-78 / 1971-75 1/
	--------1000 metric tons--------					
IMPORTS:						
WHEAT	4,955.6	6,543	5,715	3,617	5,291.7	1.068
BARLEY	1,980.2	1,869	2,185	3,495	2,516.3	1.271
CORN	2,753.0	6,138	3,421	4,604	4,721.0	1.715
OTHER GRAIN 2/	792.2	1,895	923	1,971	1,596.8	2.016
TOTAL GRAIN	10,481	16,445	12,244	13,687	14,125.3	1.348
EXPORTS:						
WHEAT	1,580.8	2,420	2,321	1,727	2,156.0	1.364
BARLEY	335.0	448	172	172	264.0	0.788
CORN	1,028.2	1,828	1,215	1,467	1,503.3	1.462
OTHER GRAIN 2/	328.0	204	184	158	182.0	0.555
TOTAL GRAIN	3,272.0	4,900	3,892	3,524	4,105.3	1.255
NET IMPORTS:						
WHEAT	3,374.8	4,123	3,394	1,890	3,135.7	0.929
BARLEY	1,645.2	1,421	2,013	3,323	2,252.3	1.369
CORN	1,724.8	4,310	2,206	3,137	3,217.7	1.866
OTHER GRAIN 2/	462.8	1,691	739	1,813	1,414.3	3.056
TOTAL GRAIN	7,209.6	11,545	8,352	10,163	10,020.0	1.390

1/ Import and export figures include Intra-East European Trade.
2/ Other grain includes: rye, oats, sorghum and rice.
3/ Annual average of 1976-1978 divided by annual average of 1971-1975.

TABLE 25--BULGARIA: IMPORTS, EXPORTS AND NET EXPORTS BY MAJOR TYPES OF GRAIN

1971-1975, AVERAGES, AND ANNUAL, 1976-1978

	AVERAGE 1971-75	1976	1977	1978	AVERAGE 1976-78	1976-78 / 1971-75 2/
	--------1000 metric tons--------					
IMPORTS:						
WHEAT	66.4	32	119	59	70.0	1.054
BARLEY	108.0	--	--	--	--	--
CORN	136.4	375	61	360	265.3	1.945
OTHER GRAIN 1/	16.4	31	12	8	17.0	1.037
TOTAL GRAIN	327.2	438	192	427	352.3	1.077
EXPORTS:						
WHEAT	261.0	253	271	201	241.7	0.926
BARLEY	11.2	44	2	--	15.3	1.366
CORN	147.4	155	173	--	109.3	0.742
OTHER GRAIN 1/	1	1	--	--	.3	0.300
TOTAL GRAIN	420.6	453	446	201	366.6	0.872
NET EXPORTS:						
WHEAT	194.6	221	152	142	171.7	0.882
BARLEY	-96.8	44	2	--	15.3	-0.158
CORN	11.0	-220	112	-360	-156.0	-14.182
OTHER GRAIN 1/	-15.4	-30	-12	-8	-16.7	1.084
TOTAL GRAIN	93.4	15	254	-226	14.3	0.164

-- = Negligible or none.

1/ Other grains include: rye, oats, sorghum and rice.
2/ Annual average of 1976-1978 divided by annual average of 1971-1975.

TABLE 26--CZECHOSLOVAKIA: IMPORTS, EXPORTS AND NET EXPORTS BY MAJOR TYPES OF GRAIN

1971-1975, AVERAGES, AND ANNUAL, 1976-1978

	AVERAGE 1971-75	1976	1977	1978	AVERAGE 1976-78	1976-78 / 1971-75 2/
	--------1000 metric tons--------					
IMPORTS:						
WHEAT	954.6	689	374	257	440.0	0.461
BARLEY	109.8	158	272	20	150.0	1.366
CORN	373.2	1,260	471	590	773.7	2.073
OTHER GRAIN 1/	126.8	80	90	69	79.6	0.628
TOTAL GRAIN	1,564.4	2,187	1,207	936	1,443.3	0.923
EXPORTS:						
WHEAT	--	--	--	--	--	--
BARLEY	36.4	183	34	33	83.3	2.288
CORN	--	--	--	--	--	--
OTHER GRAIN 1/	40.2	15	--	--	5.0	0.124
TOTAL GRAIN	76.6	198	34	33	88.3	1.153
NET EXPORTS:						
WHEAT	-954.6	-689	-374	-257	-440	0.461
BARLEY	-73.4	25	-238	13	-66.7	0.909
CORN	-373.2	-1,260	-471	-590	-773.7	2.073
OTHER GRAIN 1/	86.6	-65	-90	-69	-74.6	-0.861
TOTAL GRAIN	-1,487.8	-1,989	-1,173	-903	-1,355.0	0.911

-- = Negligible or none.

1/ Other grains include: rye, oats, sorghum and rice.
2/ Annual average of 1976-1978 divided by annual average of 1971-1975.

TABLE 27--GDR: IMPORTS, EXPORTS AND NET EXPORTS BY MAJOR TYPES OF GRAIN

1971-1975, AVERAGES, AND ANNUAL, 1976-1978

	AVERAGE 1971-75	1976	1977	1978	AVERAGE 1976-78	1976-78 / 1971-75 2/
			--------1000 metric tons--------			
IMPORTS:						
WHEAT	1,570.0	1,691	1,100	687	1,159.3	0.738
BARLEY	330.8	796	581	806	727.7	2.200
CORN	1,179.2	2,346	940	1,229	1,505.0	1.276
OTHER GRAIN 1/	110.4	234	151	579	321.3	2.910
TOTAL GRAIN	3,190.4	5,067	2,772	3,301	3,713.3	1.164
EXPORTS:						
WHEAT	88.8	75	55	60	63.3	0.713
BARLEY	143.6	162	105	137	134.7	0.938
CORN	--	--	--	--	--	--
OTHER GRAIN 1/	123.6	149	169	142	153.3	1.240
TOTAL GRAIN	336.0	386	329	339	351.3	1.046
NET EXPORTS:						
WHEAT	-1,481.2	-1,616	-1,045	-627	-1,096.0	0.740
BARLEY	-187.2	-634	-476	-669	-593.0	3.168
CORN	-1,179.2	-2,346	-940	-1,229	-1,505.0	1.276
OTHER GRAIN 1/	13.2	-85	+18	-437	-168.0	-12.727
TOTAL GRAIN	-2,854.4	-4,681	-2,443	-2,962	-3,362.0	1.178

-- = Negligible or none.

1/ Other grains include: rye, oats, sorghum and rice.
2/ Annual average of 1976-1978 divided by annual average of 1971-1975.

TABLE 28--HUNGARY: IMPORTS, EXPORTS AND NET EXPORTS BY MAJOR TYPES OF GRAIN

1971-1975, AVERAGES, AND ANNUAL, 1976-1978

	AVERAGE 1971-75	1976	1977	1978	AVERAGE 1976-78	1976-78 / 1971-75 2/
	--------1000 metric tons--------					
IMPORTS:						
WHEAT	93.6	33	4	--	12.3	0.131
BARLEY	278.0	153	31	95	93.0	0.334
CORN	55.8	20	248	284	184.0	3.298
OTHER GRAIN 1/	74.8	27	27	49	34.3	0.4586
TOTAL GRAIN	502.2	233	310	428	323.6	0.644
EXPORTS:						
WHEAT	649	707	790	560	685.7	1.056
BARLEY	44.8	1	9	2	4.0	0.089
CORN	399.8	966	216	298	493.3	1.234
OTHER GRAIN 1/	9.8	--	11	14	8.3	0.846
TOTAL GRAIN	1,103.4	1,674	1,026	874	1,191.3	1.080
NET EXPORTS:						
WHEAT	555.4	674	786	560	673.4	1.212
BARLEY	-233.2	-152	-22	-93	-89.0	0.3816
CORN	344.0	946	-32	14	309.3	0.899
OTHER GRAIN 1/	-65.0	-27	-16	-35	-26 0	0.400
TOTAL GRAIN	601.2	1,441	716	446	867.7	1.443

-- = Negligible or none.

1/ Other grains include: rye, oats, sorghum and rice.
2/ Annual average of 1976-1978 divided by annual average of 1971-1975.

TABLE 29 --POLAND: IMPORTS, EXPORTS AND NET EXPORTS BY MAJOR TYPES OF GRAIN

1971-1975, AVERAGES, AND ANNUAL, 1976-1978

	AVERAGE 1971-75	1976	1977	1978	AVERAGE 1976-78	1976-78 / 1971-75 2/
	--------1000 metric tons--------					
IMPORTS:						
WHEAT	1,607.8	2,311	2,599	2,311	2,407.0	1.497
BARLEY	1,045.8	742	1,268	2,413	1,474.3	1.410
CORN	537.4	2,035	1,401	1,807	1,747.7	3.252
OTHER GRAIN 1/	349.8	943	100	823	622.0	1.778
TOTAL GRAIN	3,540.8	6,031	5,368	7,354	6,251.0	1.765
EXPORTS:						
WHEAT	--	--	--	--	--	--
BARLEY	69.4	49	22	--	23.7	0.342
CORN	--	--	--	--	--	--
OTHER GRAIN 1/	146.4	21	--	--	7.0	0.048
TOTAL GRAIN	215.8	70	22	--	30.7	0.142
NET EXPORTS:						
WHEAT	-1,607.8	-2,311	-2,599	-2,311	-2,407.0	1.497
BARLEY	-976.4	-693	-1,246	-2,413	-1,450.6	1.486
CORN	-537.4	-2,035	-1,401	-1,807	-1,747.7	3.252
OTHER GRAIN 1/	-203.4	-922	-100	-823	-615.0	3.024
TOTAL GRAIN	-3,325.0	-5,961	-5,346	-7,354	-6,220.3	1.871

-- = Negligible or none.

1/ Other grains include: rye, oats, sorghum and rice.
2/ Annual average of 1976-1978 divided by annual average of 1971-1975.

TABLE 30--ROMANIA: IMPORTS, EXPORTS AND NET EXPORTS BY MAJOR TYPES OF GRAIN

1971-1975, AVERAGES, AND ANNUAL, 1976-1978

	AVERAGE 1971-75	1976	1977	1978	AVERAGE 1976-78	1976-78 / 1971-75 2/
	--------1000 metric tons--------					
IMPORTS:						
WHEAT	250.2	925	1,000	300	741.7	2.964
BARLEY	61.6	20	23	150	64.3	1.044
CORN	301.4	102	300	228	210.0	0.697
OTHER GRAIN 1/	78.2	559	477	423	486.3	6.219
TOTAL GRAIN	691.4	1,606	1,800	1,101	1,502.3	2.173
EXPORTS:						
WHEAT	580.2	1,385	1,200	828	1,137.7	1.961
BARLEY	--	--	--	--	--	--
CORN	340.4	248	500	1,001	583.0	1.713
OTHER GRAIN 1/	--	--	--	--	--	--
TOTAL GRAIN	920.6	1,633	1,700	1,829	1,720.7	1.869
NET EXPORTS:						
WHEAT	330.0	460	200	528	396.0	1.200
BARLEY	-61.6	-20	-23	-150	-64.3	1.039
CORN	39.0	146	200	773	373.0	9.564
OTHER GRAIN 1/	-78.2	-559	-477	-423	-486.3	6.219
TOTAL GRAIN	229.2	27	-100	728	218.4	0.953

-- = Negligible or none.

1/ Other grains include: rye, oats, sorghum and rice.
2/ Annual average of 1976-1978 divided by annual average of 1971-1975.

TABLE 31--YUGOSLAVIA: IMPORTS, EXPORTS AND NET EXPORTS BY MAJOR TYPES OF GRAIN

1971-1975, AVERAGES, AND ANNUAL, 1976-1978

	AVERAGE 1971-75	1976	1977	1978	AVERAGE 1976-78	1976-78 / 1971-75 2/
	--------1000 metric tons--------					
IMPORTS:						
WHEAT	413.0	862	519	3	461.3	1.117
BARLEY	44.2	--	10	11	7.0	0.158
CORN	169.6	--	--	106	35.3	0.208
OTHER GRAIN 1/	35.8	21	68	11	33.3	0.930
TOTAL GRAIN	662.6	883	597	131	537.0	0.810
EXPORTS:						
WHEAT	1.2	--	5	78	27.7	23.083
BARLEY	29.6	9	--	--	3.0	0.101
CORN	140.6	459	326	168	317.7	2.260
OTHER GRAIN 1/	7.0	18	4	2	8.0	1.143
TOTAL GRAIN	158.4	486	335	248	356.3	2.249
NET EXPORTS:						
WHEAT	-411.8	-862	-514	75	-433.6	1.053
BARLEY	-14.6	9	-10	-11	-4.0	0.274
CORN	-29.0	459	326	62	282.4	-9.738
OTHER GRAIN 1/	-28.8	-3	-64	-9	-25.3	0.878
TOTAL GRAIN	-504.2	-397	-262	117	-180.7	0.358

-- = Negligible or none.

1/ Other grains include: rye, oats, sorghum and rice.
2/ Annual average of 1976-1978 divided by annual average of 1971-1975.

TABLE 32--EASTERN EUROPE: IMPORTS OF OILSEEDS AND OILSEED PRODUCTS 1/

1971-1975, AVERAGES, AND ANNUAL, 1976-1978

	AVERAGE 1971-75	1976	1977	1978	AVERAGE 1976-78	1976-78 / 1971-75 2/
	--------1000 metric tons--------					
OILSEEDS	491.4	535	433	901	623.0	1.27
of which:						
SOYBEANS	210.2	344	279	619	414.0	1.97
VEGETABLE OIL	354.2	379	306	261	315.3	0.89
OILSEED MEAL	2,990.4	3,934	3,890	3,950	3,924.7	1.31
of which:						
SOYBEAN MEAL	NA	3,160	3,329	3,530	3,339.7	NA

1/ Figures do not eliminate Intra-East European Trade.
2/ Annual average of 1976-1978 divided by annual average of 1971-1975.

TABLE 33--EASTERN EUROPE: MEAL 1/ USED FOR FEED IN SOYBEAN MEAL EQUIVALENT

1971-1975, AVERAGES, AND ANNUAL, 1976, 1977, 1978

	AVERAGE 1971-75	1976	1977	1978
	--------1000 metric tons--------			
BULGARIA				
TOTAL	392.8	581	568	441
FDR 2/	170.9	199	211	216
IMPORTS	221.9	382	357	225
CZECHOSLOVAKIA				
TOTAL	793.6	852	800	785
FDR	43.8	54	68	69
IMPORTS	749.8	798	732	716
GDR				
TOTAL	1,157.6	1,313	1,462	1,260
FDR	127.3	148	143	146
IMPORTS	1,030.3	1,165	1,319	1,114
HUNGARY				
TOTAL	616.0	770	831	982
FDR	76.7	112	128	138
IMPORTS	539.3	658	703	844
POLAND				
TOTAL	1,233.6	1,611	1,509	1,613
FDR	257.6	434	335	324
IMPORTS	976.0	1,177	1,174	1,289
ROMANIA				
TOTAL	662.2	1,010	829	974
FDR	415.4	411	403	435
IMPORTS	246.8	599	426	539
YUGOSLAVIA				
TOTAL	418.0	516	637	749
FDR	116.7	143	213	241
IMPORTS	301.3	373	424	508
EASTERN EUROPE				
TOTAL	5,273.8	6,653	6,636	6,804
FDR	1,208.4	1,501	1,501	1,569
IMPORTS	4,065.4	5,152	5,135	5,235

1/ Includes soymeal, rapeseed meal, sunflowerseed meal, cottonseed meal, peanut meal, linseed meal and fish meal.

2/ FDR - from domestic resources.

TABLE 34--EASTERN EUROPE: PROJECTIONS ON OILMEAL PRODUCTION FROM DOMESTIC RESOURCES 1/, USE, AND NET TRADE, 1985, BY COUNTRY, IN SOYBEAN MEAL EQUIVALENT AND REGRESSION INFORMATION FOR PROJECTION EQUATIONS

	PRODUCTION	USE	NET TRADE	PERIOD	INDEPENDENT VARIABLE	R2	t VALUE	D. W. STATISTIC
	---1000 metric tons---							
BULGARIA	294.5	666	-371.5	1969-78	2/POULPK	.78	5.29	1.99
CZECHOSLOVAKIA	92.5	900	-807.5	--	3/OWN	--	--	--
GDR	153.8	1,432	-1,278.2	1969-78	POULPK	.82	6.05	1.44
HUNGARY	163.2	1,066	-902.8	1960-78	POULPK	.93	14.55	1.76
POLAND	409.5	1,857	-1,447.5	1969-78	POULPK	.80	5.62	1.06
ROMANIA	746.1	1,381	-634.9	1969-78	POULPK	.92	9.89	2.78
YUGOSLAVIA	311.9	843	-531.1	1960-78	POULPK	.82	8.80	1.63
EASTERN EUROPE	2,171.5	8,145	-5,973.5	X	X	X	X	X

X = Not applicable.
-- = Negligible or none.

1/ Sunflowerseed, soybeans, rapeseed, minor oilseed meals and fish meal.
2/ Poultry and pork meat production (liveweight basis).
3/ Own estimate.

TABLE 35--EAST EUROPEAN NET HARD CURRENCY DEBT

CALENDAR YEAR 1971-1979

	1971	1972	1973	1974	1975	1976	1977	1978	1979
	--------Million U.S. dollars--------								
BULGARIA	723	909	997	1,360	2,257	2,756	3,169	3,710	3,850
CZECHOSLOVAKIA	160	176	273	640	827	1,434	2,121	2,513	3,190
GDR	1,205	1,229	1,876	2,592	3,548	5,047	6,159	7,548	8,640
HUNGARY	848	1,055	1,696	1,537	2,195	2,852	4,491	6,532	7,320
POLAND	764	1,150	2,213	4,120	7,381	10,680	13,352	16,972	19,590
ROMANIA	1,227	1,204	1,495	2,483	2,449	2,528	3,388	4,990	6,730
YUGOSLAVIA	3,177	3,583	4,729	5,442	6,587	7,932	9,540	11,590	13,000

TABLE 36--EASTERN EUROPE DEBT SERVICE RATIOS 1970-1979 ESTIMATES

	1970 1/	1973 1/	1976 1/	1979 1/
BULGARIA	35	35	75	NA
CZECHOSLOVAKIA	8	15	30	2/ 20
GDR	20	25	35	51
HUNGARY	20	20	40	36
POLAND	20	21	50	70
ROMANIA	36	35	42	20
YUGOSLAVIA	NA	NA	NA	29

NA = Not available.

1/ Joan Parpart Zoeter, "Eastern Europe: The Growing Hard Currency Debt" in East European Economies Post Helsinki JEC, p. 1367.
2/ Department of Commerce, ITA.

TABLE 37--EASTERN EUROPE: WHEAT IMPORTS BY SOURCE

CALENDAR YEAR 1975-1980

	TOTAL 1/	USSR 2/	U.S. 3/	CANADA 4/	EC-9 5/	OWE 6/	ARGEN-TINA 7/	EASTERN EUROPE 8/	OTHER
	--------1000 metric tons--------								
1975	3,669	1,849	932	520	53	160	--	584	-429
1976	6,609	--	1,987	930	849	627	12	1,491	713
1977	5,257	603	892	903	--	462	1,037	1,148	212
1978	3,617	34	803	926	10	495	--	658	691
1979 9/	5,373	861	1,942	662	760	350	--	757	41
1980 9/	6,194	320	2,224	1,300	1,550	300	--	450	50

-- = Negligible or none.

1/ Eastern Europe Agricultural Situation and Outlook, 1979.
2/ Vneshnaya Torgovlya respective issues. For 1975, Hungarian imports were added to breakdown. For 1977-78, figures are estimates based on importing country data and ruble values in Vneshnaya Torgovlya.
3/ FATUS.
4/ U.N. Exporting Country Data.
5/ U.N. Exporting Country Data. Does not include exports from the FRG to the GDR.
6/ Sweden, Austria, Finland; U.N. Exporting Country Data.
7/ Compiled from Argentina Monthly Export Data.
8/ Compiled from Exporter and Importer Country Data.
9/ Preliminary.

TABLE 38--EASTERN EUROPE: WHEAT IMPORTS BY SOURCE,

PERCENT SHARE OF MARKET, 1975-1980 CALENDAR YEAR 1/

	USSR 2/	U.S. 3/	CANADA 4/	EC-9 5/	OWE 6/	ARGEN-TINA 7/	EASTERN EUROPE 8/	OTHER
1975	50	25	14	1	4	--	16	-12
1976	--	30	14	13	9	--	23	11
1977	11	17	17	--	9	20	22	4
1978	1	22	26	--	14	--	18	19
1979	16	36	12	14	7	--	14	1
1980	5	36	21	25	5	--	7	1

-- = Negligible or none.

1/ Totals may not sum to 100 due to rounding.
2/ Vneshnaya Torgovlya respective issues. For 1975, Hungarian imports were added to breakdown. For 1977-78, figures are estimates based on importing country data and ruble values in Vneshnaya Torgovlya.
3/ FATUS.
4/ U.N. Exporting Country Data.
5/ U.N. Exporting Country Data. Does not include exports from the FRG to the GDR.
6/ Sweden, Austria, Finland; U.N. Exporting Country Data.
7/ Compiled from Argentina Monthly Export Data.
8/ Compiled from Exporter and Importer Country Data.

TABLE 39--EASTERN EUROPE: COARSE GRAIN IMPORTS BY SOURCE

CALENDAR YEAR 1975-1980

	TOTAL 1/	USSR 2/	U.S. 3/	CANADA 4/	EC-9 5/	OWE 6/	ARGEN-TINA 7/	EASTERN EUROPE 8/	OTHER
	--------1000 metric tons--------								
1975	6,570	495	3,746	500	643	221	41	361	563
1976	9,672	512	5,513	445	404	76	281	974	1,467
1977	6,547	1,353	3,182	351	56	109	725	460	311
1978	10,287	--	4,314	1,002	2,119	327	558	891	1,076
1979 9/	11,761	--	6,994	788	2,158	609	355	405	452
1980 9/	11,615	--	8,165	350	1,850	300	50	450	450

-- = Negligible or none.

1/ Eastern Europe Agricultural Situation and Outlook, 1979.
2/ Vneshnaya Torgovlya respective issues. For 1972-75, Hungarian imports were added to breakdown. For 1977-78, figures are estimates based on importing country data and ruble values in Vneshnaya Torgovlya.
3/ FATUS.
4/ U.N. Exporting Country Data.
5/ U.N. Exporting Country Data. Does not include imports by the GDR from the FRG.
6/ Sweden, Austria, Finland; U.N. Exporting Country Data.
7/ Compiled from monthly Export Data. Includes only corn and sorghum.
8/ Exporter and Importer Country Data.
9/ Preliminary.

TABLE 40--EASTERN EUROPE: COARSE GRAIN IMPORTS BY SOURCE,

PERCENT SHARE OF MARKET, 1975-1980 CALENDAR YEAR 1/

	USSR 2/	U.S. 3/	CANADA 4/	EC-9 5/	OWE 6/	ARGEN-TINA 7/	EASTERN EUROPE 8/	OTHER
1975	8	57	8	10	3	1	5	9
1976	5	57	5	4	1	3	10	15
1977	21	49	5	1	2	11	7	5
1978	--	42	10	21	3	5	9	10
1979	--	59	7	18	5	3	3	4
1980	--	70	3	16	3	--	4	4

-- = Negligible or none.

1/ Totals may not sum to 100 due to rounding.
2/ Vneshnaya Torgovlya respective issues. For 1975, Hungarian import figures were added to breakdown in Vneshnaya Torgovlya. For 1977-78, figures are estimated based on importing country data and ruble values in Vneshnaya Torgovlya.
3/ FATUS.
4/ U.N. Exporting Country Data.
5/ U.N. Exporting Country Data. Does not include imports by the GDR from the FRG.
6/ Sweden, Austria, Finland; U.N. Exporting Country Data.
7/ Compiled from monthly Export Data. Includes only corn and sorghum.
8/ Exporter and Importer Country Data.

TABLE 41--EASTERN EUROPE: TOTAL GRAIN IMPORTS 1/ BY SOURCE

CALENDAR YEAR 1975-1980

	TOTAL 2/	USSR 3/	U.S. 4/	CANADA 5/	EC-9 6/	OWE 7/	ARGEN-TINA 8/	EASTERN EUROPE 9/	OTHER
	--------1000 metric tons--------								
1975	10,239	2,344	4,678	1,020	696	381	41	945	134
1976	16,281	512	7,500	1,375	1,253	703	293	2.465	2,180
1977	11,804	1,956	4,074	1,254	58	571	1,762	1,608	523
1978	13,904	34	5,117	1,928	2,129	822	558	1,549	1,767
1979 10/	17,134	861	8,935	1,450	2,918	959	355	1,162	493
1980 10/	17,809	320	10,389	1,650	3,400	600	50	900	500

-- = Negligible or none.

1/ Not including rice, summation of Tables 33 and 35.
2/ Eastern Europe Agricultural Situation and Outlook, 1979.
3/ Vneshnaya Torgovlya respective issues. For 1975, Hungarian imports were added to breakdown. For 1977-78, figures are estimates based on importing country data and ruble values in Vneshnaya Torgovlya.
4/ FATUS.
5/ U.N. Exporting Country Data.
6/ U.N. Exporting Country Data. Does not include exports by the FRG to the GDR.
7/ Sweden, Austria, Finland; U.N. Exporting Country Data.
8/ Compiled from Argentina Monthly Export Data.
9/ Compiled from Exporter and Importer Country Data.
10/ Preliminary.

TABLE 42--EASTERN EUROPE: TOTAL GRAIN IMPORTS 1/ BY SOURCE,

PERCENT SHARE OF MARKET, 1975-1980 CALENDAR YEAR 2/

	USSR 3/	U.S. 4/	CANADA 5/	EC-9 6/	OWE 7/	ARGEN-TINA 8/	EASTERN EUROPE 9/	OTHER
1975	23	46	10	7	4	--	9	1
1976	3	46	8	8	4	2	15	13
1977	17	35	11	--	5	15	14	4
1978	--	37	14	15	6	4	11	13
1979	5	52	8	17	5	2	7	3
1980	2	58	9	19	3	--	5	3

-- = Negligible or none.

1/ Not including rice, summation of Tables 33 and 35.
2/ Totals may not sum due to rounding.
3/ Vneshnaya Torgovlya respective issues. For 1975, Hungarian import figures were added to breakdown in Vneshnaya Torgovlya. For 1977-78, figures are estimated based on importing country data and ruble values in Vneshnaya Torgovlya.
4/ FATUS.
5/ U.N. Exporting Country Data.
6/ U.N. Exporting Country Data. Does not include imports by the GDR from the FRG.
7/ Sweden, Austria, Finland; U.N. Exporting Country Data.
8/ Compiled from monthly Export Data. Includes only corn and sorghum.
9/ Exporter and Importer Country Data.

TABLE 43--EASTERN EUROPE: OILMEAL IMPORTS 1/ BY SOURCE

CALENDAR YEAR 1976-1980

	TOTAL	U.S.	BRAZIL	EC-9	INDIA	ARGEN-TINA	OTHER
1976	3,934	1,288	1,511	386	674	34	41
1977	3,900	1,121	1,922	237	532	8	80
1978	3,941	1,493	1,716	360	262	64	45
1979 2/	3,971	1,609	1,482	389	323	137	21
1980 2/	4,375	1,705	1,809	464	200	168	29

-- = Negligible or none.

1/ Does not include fishmeal.
2/ Preliminary.

TABLE 44: OILMEAL IMPORTS 1/ BY SOURCE, PERCENT SHARE OF MARKET, CALENDAR YEAR 1976-1980 2/

	U.S.	BRAZIL	EC-9	INDIA	ARGENTINA	OTHER
1976	33	38	10	17	1	1
1977	29	49	6	14	--	2
1978	38	44	9	7	2	1
1979 3/	41	37	10	8	3	1
1980 3/	39	41	11	5	4	1

1/ Does not include fishmeal.
2/ Totals may not sum to 100 due to rounding.
3/ Preliminary.

TABLE 45--MAJOR COMMODITIES/SHARE OF U.S. AGRICULTURAL EXPORTS TO EASTERN EUROPE

CALENDAR YEAR 1971-1979

	1971	1972	1973	1974	1975	1976	1977	1978	1979
	--------Dollars--------								
GRAIN	127,078	125,226	294,124	370,325	651,699	928,740	395,015	542,923	1,155,621
OIL 1/	96,334	106,477	281,090	327,585	265,045	334,222	339,445	421,724	605,481
CATTLE HIDES	16,664	46,366	56,147	52,590	28,602	53,396	65,325	84,077	130,960
TOTAL	240,076	278,059	631,341	750,500	945,346	1,316,358	799,785	1,048,724	1,891,862
TOTAL U.S. AGRICULTURE EXPORTS	268,779	331,460	707,816	882,327	1,025,230	1,399,794	894,051	1,156,133	2,097,449
	--------Percent--------								
GRAIN SHARE	47	38	42	42	66	66	44	47	55
OIL SHARE	36	32	40	37	26	24	38	36	29
CATTLE HIDE SHARE	6	14	8	6	3	4	9	7	6
GRAIN AND OIL SHARE	83	70	82	79	92	90	82	83	84
GRAIN, OIL, AND CATTLE HIDE SHARE	89	84	90	85	95	94	91	90	90

1/ Includes soybeans, soybean meal, and vegetable oil.