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ECONOMIC COMMITTEE

AGRICULTURE IN THE SOVIET UNION AND EASTERN EUROPE

Note by the Economic Directorate

A. SOVIET UNION

1. The 1973 Harvest (Summary)

(a) A record grain harvest in 1973 reduced the USSR's grain import needs. Total imports in fiscal year (FY) 1974 should reach almost 12 million metric tons, about half the grain imported in FY 1973.

(b) The Soviets announced a grain crop of 222.5 million tons for 1973, 35.5 million tons above the previous high set in 1970. Discounting for excess moisture, foreign matter, and post-harvest losses, this gross grain crop is equivalent to a usable harvest of about 170 million tons, some 20 million tons more than in 1970. Production also was up sharply for other major crops, including potatoes, sugar beets, cotton and sunflower seeds.

(c) The record harvest, together with expected imports, probably have allowed the Soviets to rebuild stocks as well as increase exports to non-Communist countries. Last Autumn's agreement to lend 2 million tons of wheat to India illustrates the flexibility the Soviet leadership now enjoys with its grain supplies. Lower grain imports, however, will not help the Soviet hard currency position. Even if grain imports are held to 12 million tons in FY 1974, unusually high prices will keep grain costs near the FY 1973 level - in excess of US $1 billion.

2. The 1973 Harvest (Analysis)

(a) Last year's weather was generally favourable for growing but unfavourable for harvesting. High winds and rains in late July and in mid-August lodged grain in many parts of the Western USSR. As a result, farmers had to hand harvest in many areas. During September, the north-western portion of the USSR was subjected to frequent rains and low temperatures that increased harvest losses and reduced the quality of the grain.

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In the Urals region, rain fell almost daily during the first three weeks of September, and snow fell in mid-month. In Orenburg Oblast, part of the troubled Urals region, combines were fitted with caterpillar-type tracks to navigate the water-soaked fields.

(b) East of the Urals, generally good weather during August promoted both ripening of the grain and harvesting operations. During the first half of September, rainfall was heavy in Kazakhstan, and light in West Siberia. In the last half of the month, snow-storms were frequent throughout most of the New Lands area. By 15th October - the last official reporting date - about 96% of the total grain crop had been threshed. The unharvested area was mainly in the Urals, West Siberia and Kustanay Oblast in Kazakhstan, where freezing temperatures and snow were common. It is likely that much of this acreage was abandoned.

(c) On 16th December the Soviet press announced the official figure for 1973 grain output - 222.5 million tons. This ended two months of Soviet estimating that had ranged from "over the plan of 197.4 million tons" on 13th October to "more than 220 million tons" announced by Planning Chief Baibakov on 12th December. Because of this year's wet harvest conditions, a higher than normal discount must be applied to the Soviet figure to allow for excess moisture content. Even so, a gross harvest of 222.5 million tons yielded an estimated usable crop of 170 million tons, 36 million tons more than the poor 1972 harvest and 20 million tons more than the previous record in 1970.

(d) The announcement of the official grain estimate was not accompanied by the fanfare usually accorded such a report. The official diffidence probably reflected uncertainty about the quality of the crop, which had been endangered by the wet weather. Wet grain is a perennial problem in such areas as North Kazakhstan and West Siberia where the harvest is often not completed until after the first snowfall. But wet grain was also a problem in 1973 in the western USSR where grain drying capacity is limited. Early in September the Deputy Minister of Procurements for the Russian republic complained that "grain is arriving at breadgrain reception centres with a high moisture content, and there is insufficient capacity to dry it".

(e) A provisional breakdown of the contribution of each region to the gross harvest was published when a total of 215 million tons was expected. These figures will require some modification when the final harvest result is known. The gross harvests of the RSFSR and the Ukraine were reported to have increased by 37 and 45 per cent respectively compared with 1972,

producing an extra 49.5 million tons. The extended grain areas in both regions contributed to the expanded output, but average yield increases of over 30 per cent were the major factors. In 1971 and again 1973 average yields in these two regions have been above the averages achieved during 1966-70.

(f) In Kazakhstan and the other growing regions, the 1973 crop suffered from the effects of wet and windy weather; thus to ensure maximum recovery the combine harvesters had to operate at below normal speed, muddy fields caused delays and harvesting therefore continued beyond the optimum period(1) when lower yields are almost certain to have resulted.

(g) Higher average yields in the USSR during the current plan period have been obtained by an increase in the gross harvest and by reducing losses. The former has resulted from inter alia:

(i) Higher soil moisture content. Lack of moisture stunts growth by preventing the utilization of nutrients in the soil and applications of fertiliser produce only small increases in yields. Low soil moisture content was a major reason for the below-average harvest in 1972. Throughout the period of field preparation for spring sowing in 1973, particular efforts were made to secure moisture retention by ploughing in snow.

(ii) Increased fertiliser application. Fertiliser production in the USSR has been expanding and deliveries to agriculture doubled between 1965 and 1972 when they reached 54.9 million tons. During 1974, Soviet agriculture will receive over 64 million tons of mineral fertiliser, i.e. 6 million more than in 1973. Priority is still given to industrial crops (fibres, sugar beet) but increasing quantities are becoming available for grain although these are still quite inadequate. The available fertiliser is concentrated on those grain-growing regions where the greatest response is obtained.

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(1) 3 million hectares remained to be cut on 25th October, 1973

Grain losses on the other hand have been reduced by:

(iii) Increased availability of machinery. Since 1970 tractor numbers have risen by 7 per cent, they are of larger average capacity and the fleet of combine harvesters has increased by 5 per cent. However, agricultural machinery in general is still of poor quality and maintenance unsatisfactory.

(iv) Better organization. The Russians have now experienced several very large harvests which should have led to some improvement in field operations ensuring a greater recovery of grain. Nevertheless, difficulties with transporting and drying the grain continued to be reported during the harvesting period in 1973.

(h) The policy of steadily increasing the volume of resources applied to Soviet agriculture that has been carried out since 1956 primarily to reduce its susceptibility to adverse weather conditions, and thus improve the prospects of meeting annual production plans, appears to be gaining some success. The fact that a gross harvest as large as 168 million tons was obtained in 1972 under extremely poor weather conditions is attributable mainly to increased inputs. The 1973 record harvest illustrates dramatically the success of the policy.

Other Major Crops

(i) Potatoes. Production surpassed the previous record crop by about 7 per cent. Besides making more potatoes available in city stores, the bumper harvest means a more ample supply of seed potatoes for the next crop and more for livestock feed - especially in the private agricultural sector.

(j) Industrial crops. Sugar beet production in 1973 was the highest since 1968. The domestic crop - which will yield 9 million tons of refined sugar - plus expected imports of sugar from Cuba should exceed domestic requirements by about 1 million tons, permitting resumption of normal exports and/or stock replenishment. Production of sunflower seeds, the main source of vegetable oil, was up almost 48 per cent over 1972. Cottonseed oil supplies, another source of vegetable oil, were bolstered by a record cotton crop.

Livestock

(k) The shortage of feed supplies following 1972's disappointing harvest did not lead to distress slaughtering of animals as it has in the past. Indeed, herds in the socialized economy were larger in mid-1973 than the year before. Although large imports of grain allowed herds to be expanded, state livestock procurement lagged early in the year and kept meat production down. Meat production began to increase in the last quarter, but for 1973 as a whole did not equal the previous year's level.

(l) The livestock expansion programme, to provide more meat, milk and eggs in the Soviet diet, is an integral part of Brezhnev's plan for agriculture(1). Consumption of feedgrains for livestock rose from 60 million tons in 1970/1 to about 75 million tons in 1972/3. The USSR is not self-sufficient in feedgrains and imports increased from nearly 3 million tons in 1971 to over 6 million tons in 1973; the USA is the main supplier. Even though Soviet farmers are increasing their own production of fodder crops, it is estimated that annual imports in the region of 5-10 million tons will continue in the foreseeable future.

(m) Although wheat is grown primarily for human consumption, the USSR habitually also feeds large quantities to animals and the livestock expansion programme probably had a considerable influence on the unprecendently large-scale purchases of grains by the USSR in 1972. Of the 24 million tons delivered in 1972/3, 18 million tons were wheat but it is probable that much of this was needed to replace above-average quantities of the USSR's home-grown wheat which were of poor quality in 1972 and would have been used for animal fodder(2). Since 1971, on-farm feedgrain storage capacity has been increasing but at an insufficient rate - improvements in this area of farm management are vital if the planned expansion of the livestock sector is to occur.

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(1) In the period 1971-75 livestock numbers are to increase by 14 per cent for cattle (including cows), 11 per cent for pigs and 12 per cent for sheep and goats.

(2) This would help explain why there was little slaughter of animals in the USSR last winter in contrast to previous poor harvest years - only pig numbers fell.

3. Salient Problems Remain (Summary)

The 1973 success is somewhat attenuated by the continued high cost of agricultural production - this sector reportedly receives the largest known agricultural subsidy in the world - and the slow rate of improvement in rural living standards. Additionally, there remains a fundamental lag in output efficiency deriving from basic handicaps such as poor labour organization and the wastage of resources as well as the lack of modern grain drying and storage facilities and farm machinery. Perhaps the most serious of these difficulties, and the most complex to overcome, is the inadequate utilization of human resources, and the inability of the Soviet leadership to provide a viable series of incentives which would remove the lack of motivation and disinterest so prevalent among the Soviet farmers. The need for a great number of specialists for work on kolkhozes and sovkhozes as agriculture industrialises, is not being met. Outward migration of the rural population to urban areas, the low priority of agricultural studies, and the discouraging living conditions found by young agronomists on the farms are all part of the problem.

4. Salient Problems Remain (Analysis)

Clearly, the institutional factors responsible for exacerbating difficulties in the Soviet agricultural system are aided by the physical enormity of the country and the serious variations in climate. All these elements make it difficult for the Soviet planners to apply a rigid centrally directed agricultural policy. Essentially, Soviet problems in the agricultural sector may be divided into three main categories: technical, financial and human.

5. TECHNICAL FACTORS

(a) Soil Improvement

Higher land fertility is a vital factor in Soviet agriculture if it is to avoid the huge losses it periodically experiences through drought or excessive rains. It has been estimated that up to 50 million tons of grain may be lost through these two factors in a single year. In addition, it is believed that approximately 20% of all Soviet arable land requires drainage or irrigation.

Obviously, improved yields depend to a great extent on the wider utilization of fertilisers which the country cannot produce in sufficient quantities. Fertiliser inputs rose from 50.6 million tons in 1971 to 54.9 million in 1972 and with further significant increases during 1973, i.e. + 3 million tons. Production of fertiliser by 1975 is scheduled for 90 million tons which would appear extremely ambitious, although the fertiliser situation appears to be improving following the big push after the relatively poor 1972 harvest figures.

(b) Sowing Structure

Recent Soviet planning policy (i.e. last 2-3 years) has been to increase the sown area of grasses, because too much grass was ploughed up in the 1960s by Khrushchev. Instead of boosting the productivity of pastures and hayfields, the farms increased the areas sown to grass and reduced those sown to grain. Grain yields, however, were not rising fast enough to compensate for the reduction in area, even with fertilization and irrigation. This was partly due to the inefficient maintenance and use of agricultural inputs by unskilled labour and partly to the general exhaustion of the land's fertility which is occurring in the USSR today. In 1972, the cumulative reduction in grain acreage since 1966 contributed to the shortage of feedgrains in the country. The grain area decreased from 128 million hectares in 1965 to 117.9 million in 1971 and only in 1973 was the sown area again increased to 127.9 million hectares. What the authorities seem to want now is a partial switch in area distribution from grasses to grains, especially to corn and high-protein grains.

6. Recently, the Soviets announced that the grain target set for 1974 would be 205.6 million tons. This will still be higher than the 195 million tons which the current Soviet Five Year Plan has laid down as the necessary annual quota. The ultimate goal in grain production, not including population growth, has been given as "1,000 kilograms per head, or 260-300 million tons of grain altogether, per annum"(1).

7. The current Plan goals were to be reached through intensive methods, primarily the increased fertilization of grain and the extensive improvement of agricultural land. Soviet planners still intend, apparently, to produce about 15 million tons more grain by 1975 by additional fertilization, and about 6 million tons are to be produced by reducing the duration of the harvesting period and avoiding waste from late and inefficient storage. An all-out attempt is currently being made, however, to obtain additional grain by expanding the area of high-protein, high-yielding crops.

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(1) Ekonomika Sel'skogo Khoziaistva, No. 11, 1972 p. 18

8. Wheat presently being fed is to be replaced by high-yielding, high-protein concentrates which may be used in the mixed feed industry or may be fed alone to increase the added live weight per centner of feed. If the amount of wheat being fed can be reduced, more will be available for food, and other high-yielding grains can be grown to increase the bulk available in the country for feed stocks. Pulses, for instance, increase the fertility of the soil when rotated with other crops, and have averaged a yield of 1.5 tons per hectare in the USSR. Corn-for-grain has yielded an average 2.8-3 tons per hectare. Spring wheat, on the other hand, averages a yield of only 1.2 tons per hectare in the Soviet Union.

9. The demand for wheat is, therefore, being shifted to other grains which can better satisfy the protein and glutin requirements for effective feeding (see below). This policy seems rational, but hinges upon the ability to provide the necessary feed requirements, whilst not reducing the output of wheat for food, seeds and the mixed feed industry. The switch to feedgrains and mixed feed will, presumably, have to be carefully controlled by the authorities, or else more substantial grain imports could be required from abroad as in 1972 when the USSR imported, for example, $438 million of farm products from the US, including $167 million of corn, $52 million of soya beans and $31 million of barley.

10. Brezhnev's Food Policies and the Livestock Situation

(a) The steady growth in the Soviet population, the continued rise in per capita income, and the rapidly rising expectations of the populace have combined to generate major pressures on the regime to increase food supplies. The regime particularly wants to reduce the proportion of starchy staples (potatoes and bread) in the diet and raise the proportion of quality foods (meat, butter).

(b) Perhaps with the 1970 Polish riots in mind, and realizing the importance of consumption levels for work incentives, the leadership has committed itself to improving the national diet even if this requires a major dependence on western sources of food. Brezhnev's programme to provide much larger quantities of meat and other livestock products is the most striking example of this new policy. Recent leadership statements point to a continuation over the next decade of policies that require rapid progress toward the goals of the Brezhnev programme. Specifically, the leadership is committed to raising per capita disposable income which, given its policy of holding retail prices constant, will lead to a substantial annual rise in total demand for food, especially livestock products.

(c) While the growing demand for meat is a world-wide phenomenon, the cost of producing meat is far greater in the USSR than almost anywhere else. Meat production is heavily subsidized at existing retail prices. In addition, the USSR needs about twice as much grain as the US to produce a given amount of meat. This inefficiency in converting feed to live-weight, coupled with the expansion of livestock herds, has created a demand for grain that Soviet farms cannot satisfy even in a year of good weather. This situation is seemingly due to two main factors: firstly, Soviet herds are not yet sufficiently specialized. Many are poor quality, low-weight animals, and the prospect of large differentiated herds is certainly in the medium-term: secondly, and more important, the protein content of Soviet fodder is low, hence its consumption is much larger than in the West. Grain feed contains up to ten times the amount of protein, thus the Soviet habit of feeding cattle with bread grains, and the large imports of feed grains from the west.

11. The increase in cattle and hog numbers have naturally necessitated the procurement of great amounts of feed. In order to assure that enough feed would be supplied for growing animal numbers, the grain area was redistributed during 1971 and 1972, with the start of an expansion of the feed grain area, and a reduction of wheat (see above). However, it would seem that this decision was taken before wheat yields were stable and before it had been proven that they could be raised to the necessary level to provide grain for flour and bread for human consumption.

12. As is well known, supplies of digestible proteins for raising livestock are inadequate in the USSR. The authorities, nevertheless, believe optimistically that the Soviet Union can produce the required amount of protein to bring its meat production to the desired level within the next 10 to 15 years.

13. Production and consumption of feed (in terms of feed units) has been scarecely balancing off the upturn in livestock inventories since the 1960s. In addition, legislation since 1970 has encouraged kolkhozes and sovkhozes to keep increasing livestock numbers with guarantees of increases in feed availability. Because feeding efficiency has not greatly improved over the last decade, increases in feed production have not met the demands for feeding larger herds.

14. The yearly norm for feed per head of livestock reported by the Soviet Authorities is 30-35 centners (100 kg) of feed units, but only an average of 24-25 centners per head is fed yearly - a shortage of 20-30%. One solid reason for the shortage is that the production costs have been increasing considerably: on the kolkhozes the cost of one centner of feed units increased by 36% between 1966 and 1970, and on the sovkhozes by 24%.

15. This shortage is also explained by the inefficient allocation of land resources for feed, the low productivity of feed crops and the low protein content of feed varieties. The solution to these problems, as the authorities have themselves recognised, lies in better organization and in yet higher levels of agricultural investment. Presumably, the Soviets will also take into account the human factor and socio-economic conditions in the agricultural sector (see below) when making any improvements.

16. In considering the dimensions of the protein shortage, the Soviets have stated that the USSR needs about 35 million tons annually of digestible protein for livestock and 4.3 million tons of vegetable protein for human consumption. It is estimated that the Soviet Union loses about 6.5 million tons of digestible protein yearly for various reasons: one is that a standard feed unit in the USSR contains not more than 85 grams of protein, whereas the generally recognised scientific norm is admitted to be 105-110 grams. Thus, substantially more bulk feed is required than the norm to obtain the needed quantities of protein. Much protein is also lost as a result of inefficient storing methods and untimely harvesting, which, in turn, stem partly from under-mechanization in agriculture.

17. Soviet agricultural scientists have also expressed the belief that a reallocation of arable land, emphasising soya beans and lentils, will produce a basic improvement in the feed situation within the next decade. These crops have high protein levels. The aim would appear to be to sow such crops on 10-12 million hectares (one ha = 2.46 acres) in the future. This, according to Soviet calculations, could produce a 3-4 million ton increment in high-quality protein. From 50-70% of the area sown to corn for silage will probably be resown with soya beans and other pulses each year.

18. However, much more is needed, of course, than simply a reallocation of the area sown to feed crops. Soviet agriculture is in dire need of a blood-transfusion in the mechanization sector, i.e. it requires urgently feed crushers and grinders, grain drying installations and other equipment connected with feed preparation and livestock raising. Also, cattle herds are still predominantly of the joint meat-dairy variety. This calls for better breeding methods. These two problems can only be resolved within the time limits set by the Soviets, i.e. 10-15 years, by importing technology and breeding cattle from Western countries.

19. As regards machinery, it is clear that under-mechanization in every sector continues to be one of the major difficulties on the Soviet agricultural scene. Much of the equipment is outdated, and at best output of new machinery allows the total inventory to be maintained at its current levels only. Shortages of spares together with poor maintenance of equipment leads to frequent breakdowns. This inefficiency continues even though harvesting windblown grain in the USSR has not been an infrequent occurrence.

20. Additional material resources seem to be a major requirement, but poor design remains another of the main drawbacks in the performance of Soviet farm machinery. Soviet specialists appear to lay less importance on design defects and suggest two main methods for improving productivity:

(i) The "motion-loading" of grain which, it is claimed, could raise productivity by 15%.

(ii) Increased combine speed which, according to the experts, is "artificially slow".

21. However, whatever method is best, effects of low efficiency in machinery performance will probably continue to be felt for some years to come during the harvest periods. Indeed, it would seem that the solution to alleviating this inefficiency would be increased imports of agricultural machinery, although there are no indications of the quantity of such equipment to be taken from the US and other Western countries in the short-term.

FINANCIAL FACTORS

22. While investments have been growing considerably in recent years in the agricultural sector to provide more equipment, machinery, and fertiliser and to boost irrigation and drainage, it would appear that the sums invested remain inadequate if objectives are ever to be met. Continuing priority is given to industry (primarily heavy industry) by the Soviet leadership during the current Plan period. Of a total 501 millard rubles allocated to investment during 1971-1975, 108.4 milliard are slated for agriculture, 208.4 going to industry. Obviously, Brezhnev's stress on the need for more mechanized inputs into the farm sector could imply a boost in industrial production of such equipment. However, the share of agriculture in heavy industrial output is unknown.

23. The growth rate of investments allocated to land improvement has been consistent during the past decade. The share of gross fixed investment in the USSR being allocated to agriculture has been rising appreciably. In 1961-1965, that share was 16%, in 1965-1970, it was 18%, and during 1971-1975, agriculture's planned share is around 22% of gross fixed investment from all sectors. About 25 billion rubles or 20% of the gross investment in agriculture in 1971-1975 is to be directed towards land up-grading. The investment pattern of the USSR still seems to be that of a developing country attempt to rectify a crippled agriculture, which the Soviet leadership evidently finds hard to do under rigid centralized planning.

SOVKHOZES

24. In 1966 a general programme was announced for conversion of sovkhozes to full "khozraschet" or cost-accounting, with no dead line for completion. The main purpose of the conversion was to oblige farms to conduct production activities in a more efficient and thereby more profitable manner. The use of economic indices and special funds for financing farm activities was also supposed to provide a general incentive. The responsibility for allocating farm profits into funds would supposedly bring the financial process closer to the workers and farm managers.

25. The decision to introduce full cost-accounting was understandable. It has had, apparently, a notable impact on farms which were already financially strong. For this reason, profitable sovkhozes such as those which existed in Estonia, were the first to be converted. As an increasing number of sovkhozes have been introduced to "khozraschet" (around 9,000 had been converted by May 1972 out of a total of around 15,000), financial problems have arisen both due to the singularly rigid structure of funding, and to the psychological tendencies of weaker farms to attempt borrowing and investment plans under "khozraschet" which are beyond their means.

26. The more profitable farms which were converted were much less dependent than the weaker sovkhozes upon government revenue allocations before conversion. Thus, using their pattern of investment as models or examples to farms being subsequently converted is proving unrealistic and, reportedly, has produced unrealizable plans and expectations. The leadership is just beginning to realise that the production problems of the sovkhozes cannot be resolved by converting all the farms to a new system of accounting, while still maintaining the high shares of profits paid to the state, the lack of operational autonomy of farm managers, and the low level of labour incentives.

KOLKHOZES

27. Since 1965 the kolkhozes have experienced steady wage increases and a growth of around 30% in average gross income. Purchasing prices have been raised for above-plan fulfilment of grain and livestock sales. Nevertheless, the general level of productivity is low in the public sector of many kolkhozes. Although the administration of the kolkhozes has been collectivized through the formation of inter-farm organizations and state-collective farm enterprises, this has not tended to improve the output in response to needs.

28. The weak links in kolkhoz production continue to be the inefficient machinery repair facilities, the poor organization of labour operations, the inadequate pricing system and the unreliable supply network of raw materials and inputs to farms and subsidiary enterprises. A detailed analysis of grain production on the kolkhozes, for example, shows that production costs per centner of grain have increased since 1966 as a result of higher labour and input costs. As a result, the initial spate of profitability in 1966 due to increases in purchasing has subsided considerably. The system's economic managers have tended to attribute this fall in profitability on many farms to poor co-ordination between wage increases and final output and to accumulations.

29. Average accumulation on the kolkhozes in the period 1966-1970 increased 70.9% over the period 1961-1965. Average yearly production, on the other hand, rose 34.5%, with a great regional variation. The relationship between accumulation and production is vital, as Soviet economists only too well realise. It seems that too much capital accumulation has been urged without allowing farms to invest at their own pace or to invest needed amounts into improved living conditions and, thereby, creating higher labour motivation.

30. The apparently ongoing official policy of accumulation at all costs throws farms into debt and keeps living standards low in the rural sector. The average expenditure per 100 hectares on the kolkhozes nation-wide rose from 449 rubles in 1961-1965 to 762 rubles during 1966-1970 - an increase of 69.7%. Average profitability rose 45%.

31. Part of the reason for disappointing profit increases have been the hidden costs of the harvesting and procurement campaigns. The costs of transferring thousands of trucks, combines, tractors and human beings eastward to help with extended harvest periods are astronomical. On the kolkhozes, the number of workers occupied in any year with farm work from January to February, for example, is 7-8 million less than from July to August. The rise in the number of workers per farm for a period of from 60-70 days in the summer is indicative of how costly such campaigns must be for these farms and, ultimately, for the Soviet Government. A telling single example is that in Kustanay oblast' in 1973, there were 163 additional workers per farm for 67 days.

32. The use of imported harvesting machinery from other oblasts entails large governmental expenditures for transporting by rail. The costs of transportation, of paying temporary recruits normal wages and of lost working time in industry is a great drain on the economy. It has been estimated that just to deliver one truck and man, it costs 2,627 rubles for the harvest period, calculating one machine day as 18.7 rubles. From 1968 to 1971, the additional expenditure for four harvest campaigns in the USSR came apparently to 72.3 million rubles.

33. Many other hidden costs occur during the often rather chaotic harvesting activity in the USSR. Grain is stacked in open fields at great cost and sometimes left out in the open at procurement stations which are overburdened with work. In some instances grain is also transported much too far to procurement points.

34. A comparison of output data on both sovkhozes and kolkhoses suggests that production per hectare is higher on the kolkhoz. Although there are only approximately 15,000 sovkhozes against around 33,000 kilkhozes in the USSR, the sovkhozes possess greater means of production (fixed capital per worker is 1.7 times greater than for the kolkhoznik), more arable land per worker (1.8 times more than the kolkhoznik), far more land per farm (an average of 20,600 hectares compared with 6,200 hectares per kolkhoz); nevertheless, sovkhoz total agricultural production represents only 70% of kolkhoz production, and while sovkhoz per capita production is 1.3 times higher than its kolkhoz equivalent, its yeild per hectare of arable land is only 72% of kolkhoz yields.

35. It is also of interest to note that sovkhoz profits for the period 1965-1970 reached 6.8 milliard rubles (50% of which was registered for 1970 alone), whereas the average net revenues of the kolkhozes during the same period were around 6.6 milliards per annum.

WAGE PROBLEMS

36. The Soviet leadership's policy as regards farm wages has been primarily to ensure that kolkhoz wage funds do not grow faster than productivity during the current Plan period. Kolkhoz wages have been growing steadily since 1965 and are scheduled for an additional boost of 30.6% by the end of 1975. Labour productivity is planned to increase by 38% on both sovkhozes and kolkhozes over the previous five year average. Regardless of whether planned productivity levels are met, kolkhoz wage funds must be allowed to grow in order to attract the particular type of specialists so urgently needed at all levels of the farm structure.

37. The more highly educated cadres of a mechanized agriculture will obviously have higher demands for better living conditions and higher incomes than did the peasants, who resigned themselves to a small plot of land they could call their own. The Soviet press reflects a strong debate at present on the relative importance of moral and material incentives in agriculture. Judging from remarks made recently by Brezhnev and other Soviet leaders (see below), the advocates of raising the material interests of farm workers may be heeded with more interest over the next Plan period.

FARM ORGANIZATION AND THE HUMAN FACTOR

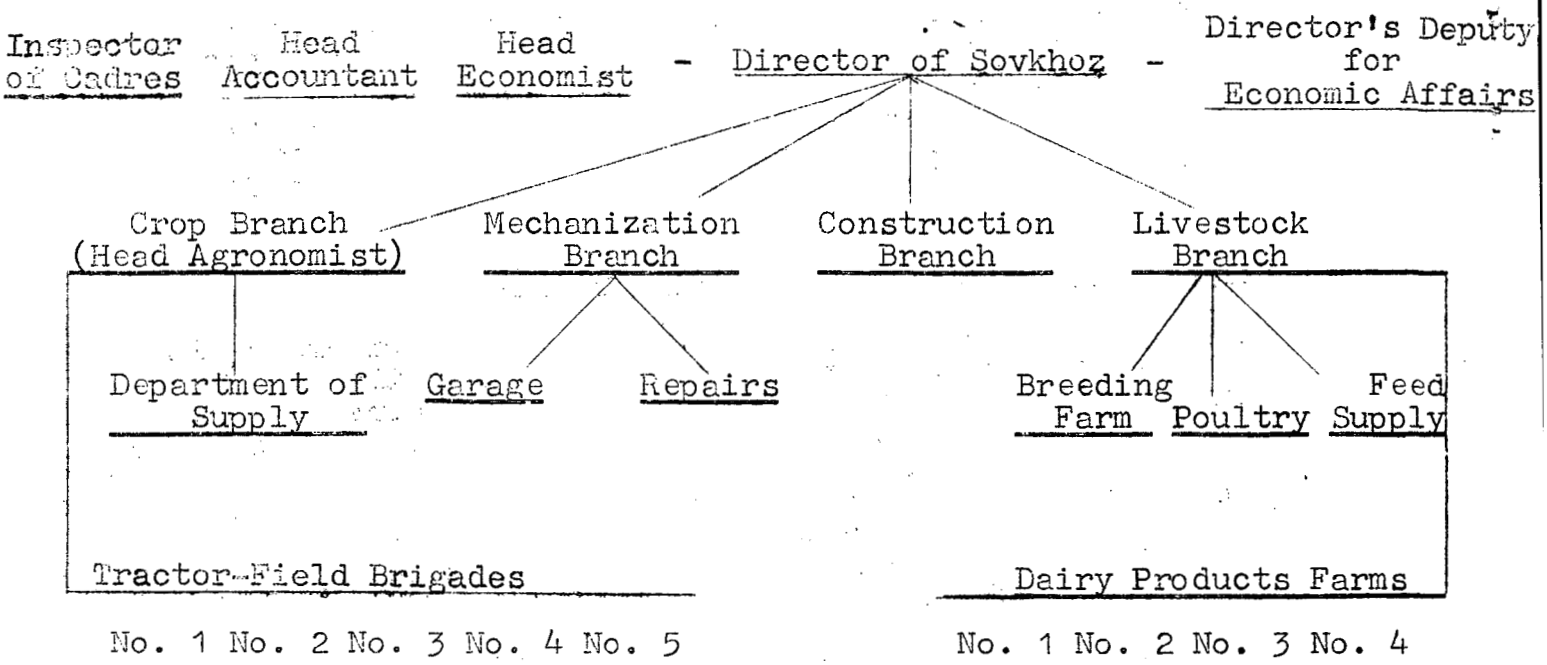
38. One of the attempts to improve farm performance is shown by widespread concern with better organization and management on individual farms. The Soviet leadership has been worried all along that decentralization may take economic control out of the hands of the central planners. Consequently raion committees of the Party establishment have been made responsible for an important link in the farm authority, i.e. the supplying of approved lists of specialists for work on kolkhozes and sovkhozes.

39. The need for a great number of skilled personnel with diverse talents and education, as agriculture industrializes, is not being met. Outward migration of the rural population to urban areas, the low priority of farming studies with students and the discouraging living conditions found by young agricultural specialists on the farms are all part of the problem.

40. In the so-called "branch system" of individual farm administration, specialists act as heads and possessors of sole authority over four main branches of farm operation. The specialists have at their disposal all labour and material resources under this system and are responsible for production results. In this way, the numbers of directive personnel are theorectically to be reduced to about one-fourth, and farms will be transferred to a more controlled basis under the closer watch of the raion supervisory committee.

41. Eventually, planners supposedly aim at the system's widespread adaptation as a basic method of organization. Hitherto, mostly small sovkhozes with compact territory have been converted. The conversion of more farms is underway and will, doubtless, be undertaken in conjunction with the major Soviet farm reform plan announced in December 1973 (see below).

The branch system of the sovkhoz organization looks something like the following:



As the inner structure of the farms become organized along these lines, it is planned to integrate farms on an oblast level. Sovkhozes of the same specialization will thus be organized into trusts, into which, presumably, the kolkhozes will ultimately be slotted (see below).

42. All this reorganization may bode ill for the independent or "norm-less" links which are already being replaced by mechanized "link-brigades" on a wide scale. As farming becomes more mechanized, it is presumably difficult in ideological terms to justify the essentially private "use" by 5-6 persons (frequently a single family) of large pieces of machinery, chemical inputs, etc. The basically monocultural tracts of land assigned to independent links are becoming quite profitable also, leading doubtless to dissatisfaction by other farm members, who may not work in links.

43. The link-brigade consisting of about 25 men each, perform one field operation for many crops as opposed to all the field operations for one crop. They are paid according to output, with advances in the winter according to each man's qualifications and bonuses at the end of the harvest. One

link-brigade may be responsible for planting a 1,300 hectare area with various crops, whose distribution is decided by the chief agronomist. How effective these mechanized brigades are proving is still unknown, but the real impetus for performance which was provided by the independent links may be eliminated entirely.

44. Mention must be made of the private sector and its rôle in Soviet agriculture. This sector, although it was not further restricted during the last Plan period, and has even been supported during the present Plan, still comes under attack by local officials. Reports that local authorities have been hampering the operations of the kolkhoz "free markets" indicate persisting intentions eventually to replace this market by state and co-operative trading organizations or by state-controlled "bureaux of trade services".

45. It is hard for kolkhozniks to obtain fertilisers, machinery and various types of equipment for their private plots. Nevertheless, in 1970, these plots continued to be a necessary part of the Soviet agricultural system and produced 65% of the potatoes, 38% of the vegetables, 35% of the meat, 36% of the milk, 53% of the eggs and 19% of the wool in the country. The private sector's share in the overall retail trade of agricultural products was 12%. This makes official plans for the eventual phasing-out of the private sector seem unwise and unrealizable at least in the next decade or so.

46. It would appear that the Soviet leadership is now realising that it must organize a strategic retreat from the short-term measures which have been tried in the past and which have put long-term development into obvious danger. The man-power problems remain serious: young people continue to leave the countryside, only the aged remaining. Conditions both in terms of work and living standards are much better in the urban centres, while the countryside in the main offers poor housing, few amenities, inadequate roads and transportation. Nevertheless, a large percentage of the Soviet working population remains in farming: 32% compared with 4.6% in the United States. The prime reasons for this anomoly are the insufficient degree of mechanization, the advanced age of the bulk of the farming sector and the traditionally low productivity of the Soviet peasant.

47. Future grain and livestock policies will, it seems, have to be based upon considerations of such handicaps, i.e. in demography, labour organization and intensification which exist in the Soviet agricultural system. Ushering in technological development and high growth rates into a collectivised system is clearly a slower process than the Soviet leadership expected, especially in view of the high increase in demand.

PROSPECTS

A. REORGANIZATION PLANS

48. On 16th December, 1973 Pravda announced that the present system of kolkhozes would give way to larger and more integrated units, with increased specialization in livestock breeding, fodder production, and other food output. Pravda said that economic persuasion and not coercion would be the impulse in bringing about the new integrated structure of farming - with large farm conglomerations spaced around the bigger farm townlets.

49. Other recent reports have suggested that food processing plants, other light industry and construction units should be installed in these rural homesteads to absorb labour as rationalization reduces the labour force. Certainly, Pravda added that the new system would have to accomplish social tasks. This seems to indicate the creation of larger self-supporting rural communities better provided with health and educational services - a way to remove the stigma of second-class citizenship from the Soviet Union's over 100 million people, who work and/or live on the land.

50. Co-operation and the establishment of larger farm units is nothing new in the Soviet Union. It comprises primarily activities concerned with processing, irrigation, repair and other facilities, jointly set up and maintained. The Party Programme of 1961 and the 1969 kolkhoz statutes explicitly approved this type of co-operation. As of 1971, 4,835 such co-operation contracts were operative. However, the merger of several agricultural units in order to undertake join production did not receive strong support prior to the Party's 24th Party Congress in 1971. The purpose of such co-operation, as stated above, is specialization, which is expected to boost the more efficient use of labour and capital. Nevertheless, the anticipated impact of this venture is only likely to be achieved if a certain farm size is maintained. Sizes vary greatly according to region, but in many cases, the maximum effective model has been exceeded considerably. The optimum size of a farm is determined by factors such as crop rotation, administration, and above all, the costs of internal transportation. The average kolkhoz area (6,200 hectares) is already considered too large, and that of the sovkhoz with 20,600 hectares is viewed as hardly practicable any longer in economic terms.

51. In the long-term, such concentration will tend to eliminate the kolkhoz: the conversion of kolkhoz into sovkhoz has, in any case, always been an ultimate goal of Soviet agricultural policy. Hitherto, the process of conversion has been irregular, being boosted under Khrushchev in the early 1960s, and decelerating at the end of the decade. The evolution until 1971 was as follows:

	Kolkhozes	Sovkhozes
1960	44,000	7,400
1965	36,300	11,700
1970	33,000	15,000
1971	32,300	15,500

52. In the United States, only around 5% of the total labour force works in agriculture, whereas in the USSR it is slightly over 30% and, with families, slightly under 50% of the Soviet population of 250 million is tied to the villages. Apart from raising social standards in the countryside and boosting efficiency and farm incomes, this reorganization could thus help to entice surplus rural workers off the land and into local industry and construction. Soviet building programmes appear to be suffering from a nagging shortage of labour which is crippling some housing projects.

B. BREZHNEV'S NEW LANDS PROGRAMME (SUMMARY)

53. Presumably with a number of such problems in mind, Brezhnev delivered a major speech on 15th March, 1974 at Alma Ata (Kazakhstan). He unveiled a land-improvement programme for the Russian Republic aimed at levelling off the large fluctuations in Soviet agricultural output. He also spoke of the need to modernise and simplify agriculture's organizational structure. Indicating that agriculture is a top-priority sector, he warned that "national economic problems" must not tempt a diversion of resources from the farms.

54. Brezhnev revealed that 35 billion rubles would be spent during 1976-80 in the first phase of a 15-year project to develop agriculture in the non-black soil region of the Russian Republic. This sum is equal to a fourth of planned agricultural investment during the current Five Year Plan. The new programme will include traditional land-reclamation projects - irrigation and drainage - as well as increased supplies of mineral fertiliser and other agricultural chemicals. The plan covers 124 million acres, 79 million of which are arable and the rest useful for grazing. The copp area represents about 15 per cent of total sown acreage and is about equal to the 70 million acres plowed up in the New Lands of Kazakhstan and Siberia.

55. Although the non-black soil area has large tracts of boggy, uneven land, it has a high annual precipitation and responds well to the application of lime and mineral fertiliser. The Brezhnev agricultural programmes of 1965 and 1970 got good results by providing more chemicals for this area, which has furnished more than one third of the increase in grain output in recent years. The new programme is feasible only because the Soviets have been successful in boosting their output of mineral fertiliser.

56. On the other hand, the Soviets do not have a good record in implementing land-reclamation programmes, however, and the Brezhnev plan is unlikely to work out as announced. In recent years, the amount of land that slipped into disuse exceeds additions of newly reclaimed land. In any case, major benefits from the new programme will not be realised before 1980.

C. BREZHNEV'S NEW LANDS PROGRAMME (ANALYSIS)

57. Brezhnev's speech was supplemented by a decree published on 4th April, 1974 which points to a renewed sense of urgency being attached to the current long-term land improvement which he outlined at Alma Ata. The scale of the project in the non-black earth zone recalls the campaigns to plough up about 30 million hectares of virgin lands initiated by Khrushchev in 1954.

58. The decree calls for 35 billion rubles to be allocated to this zone which is, on average, one billion rubles more than the investment in land reclamation in the entire country during 1973. The zone will receive an average annual delivery of 24 million tons of mineral fertiliser (equal to about one third of the amount to be delivered to agriculture in 1975), 76,000 tractors, 18,000 grain combines and 46,000 trucks. These inputs will be distributed over the huge tract of farm lands which include the Central, North-Western and Volga-Vyatka regions, Perm Oblast, and the Udmurt ASSR.

59. The soil of this zone has been relatively infertile, although it is known that it could for example produce significantly greater quantities of potatoes (still an important feed crop and diet supplement), vegetables, flax and cultivated grasses for feed, provided adequate drainage were installed and sufficient amounts of fertiliser applied. Drainage throughout this zone is very poor, and considerable work will have to be done to prevent further deterioration of this agricultural land.

60. Although the decree outlines a large and expensive plan, it clearly follows the investment pattern of the past two Plan periods for land improvement. It calls for the drainage of about 12 million hectares of agricultural lands in the non-black earth zone (about 9 million hectares of drainage and 2.5 million hectares of irrigation) by 1990. This means an average of 3.5 million hectares every five years - about half of the plan for land reclamation in the USSR during the previous two Plan periods.

61. The share of agricultural investment allocated to land reclamation has shown a rise parallel to that of overall agricultural investment. About 25 billion rubles or 20% of the gross investment in agriculture during 1971-1975 is to be directed to the upgrading of land. If agricultural investment rises during the 10th Plan by 60% as it did during the 9th Plan, and land improvement funds rise correspondingly, the outlays planned for upgrading the non-black earth zone will seem large, but nevertheless, rational.

62. Far more costly than the establishment of irrigation and drainage systems, are the huge tasks in the construction of a rural infrastructure remaining to be completed in the non-black earth zone. Presumably, a good portion of the 35 billion rubles allocated will be directed toward such tasks in the period 1976-1980. It is planned to build a hard surface road system of 25,000 kilometres, for which kolkhozes will receive state credits repayable over 15 years.

63. The electrification, telephone and telecommunication systems must also be completed in order to make a transition to a more modern agriculture. Credits up to 3,500 rubles for home building will also be offered by the State to kolkhozniks and sovkhozniks, who settle in this area, 35% of which will not require repayment.

64. These plans seem ambitious considering the capabilities of the Soviet system for organizing and carrying such work through. The expenditures which must be appropriated after 1980 will, of course, depend on the success made in realising these plans. Real success, and this has been touched upon in the Soviet press, will call for organizational as well as planning reforms despite the scheduled amalgamation of farms into agro-industrial associations and large specialized live-stock complexes (see above). The transition to and management of such agglomerations is still far from having been perfected.

65. Finally, Brezhnev's speech also hinted that some agricultural reorganization may take place in the near future. He noted that the Central Committee is now looking over suggestions for improvements from the grass roots. He endorsed such local-level experiments as agro-industrial and inter-farm organizations, but warned that "hasty, artificial nudging and exertion of pressure" will not be tolerated. On the national level, he stated that the present structure of management has become over-complicated.

66. Brezhnev also called for "a unified approach" to all agricultural questions for the country as a whole and better co-ordination among the departments concerned with agriculture. At the same time, he stressed that centralized planned guidance must be balanced with operational independence for state and collective farms. These proposals echo in many ways the reorganization scheme currently under way in the industrial sector, namely, the creation of large integrated production units at the local level and a streamlining at the national level.

B. EASTERN EUROPE (SUMMARY)

67. Three good performances in a row have lifted East European agricultural output from a 5-year plateau. Farm production grew by more than 4% in 1973 on the strength of a record grain harvest and a sizeable boost in livestock production.

Percentage Growth in Agricultural Production

	Average Annual Rate			
	1966-1970	1971	1972	1973
Bulgaria	3.6	2.8	4.8	3.1
Czechoslovakia	3.9	1.7	3.8	4.0
East Germany	0.6	2.8	8.5	1.0
Hungary	4.2	8.0	3.0	5.5
Poland	0.7	2.7	8.4	6.3
Romania	0.7	16.2	9.5	3.5
Eastern Europe(1)	1.6	4.3	6.9	4.3

68. Despite three successive years of good to excellent grain crops, Eastern Europe's total grain imports in FY 1974(2) should be close to 8 million tons - just about as much as in FY 1973. Livestock inventories are up, carry over grain stocks are still low, and, because of a poor 1973 out-turn of important root and forage crops, non-grain feedstuffs are in short supply.

(1) In this report Eastern Europe is defined to include Bulgaria, Czechoslovakia, East Germany, Hungary, Poland and Romania.
(2) Data are for fiscal years ending 30th June of the stated year.

This year, however, more feed grains and less wheat will be needed. Net grain imports of the region will be down somewhat to an estimated 5½ million tons as all of the countries - but principally Bulgaria, Hungary and Romania - export some grain to the West for hard currency. Because of the excellent 1973 Soviet grain harvest, the reliance of Eastern Europe on the US and other Western countries for imports will decline. Deliveries of Soviet grain to the region are expected to increase by 1.2 million tons in FY 1974 while US deliveries fall by 700 thousand tons.

69. Although the growing season for fall-sown grain (for harvest in 1974) is not far enough advanced to make firm predictions, the outlook for another record year for wheat production is not bright in most countries. The area sown last fall to winter wheat increased throughout the region, but as of 1st February yield prospects were worse than a year ago, except in East Germany and Poland. Soil moisture levels were nearly 40% below normal from Slovakia south into Bulgaria. Furthermore, sparse snow cover over most of the region's wheat fields has increased vulnerability to winterkill.

DISCUSSION

AGRICULTURAL PRODUCTION SETS RECORD

70. Eastern Europe's agricultural production increased by 4.3% in 1973 and reached a record level. Total output in 1971-73 was markedly above the production plateau established in 1966-70. Except for East Germany, output was up in every country by at least 3%; Hungary and Poland achieved the largest growth - 5% and 6%, respectively.

71. In most countries, livestock production grew faster than crop production. Both livestock inventories (particularly hogs) and the productivity of animals reached new highs. Consequently, the production and per capita availability of meat increased, although not enough to satisfy demand. Certain processed pork products and veal are in especially short supply, most notably in Poland and Hungary.

72. The substantially higher production of 1971-73 suggests that East European regimes are now receiving a payoff for the high priority they placed on their agricultural sectors beginning in the late 1960s. East European farms have been given more fertiliser, improved grain varieties, more and better farm machinery, and larger supplies of imported livestock feed. They are also receiving higher prices for their products. Nevertheless, most of the large collectives and state farms throughout Eastern Europe still are high-cost

producers. As a consequence the growing state subsidies needed to maintain low food prices, especially for meat, are an admitted burden in most countries. To recover some of the money spent on the farm sector and to dampen consumption somewhat, higher retail prices for livestock products are likely to be introduced next year in at least Hungary and Poland.

BUMPER GRAIN HARVEST(1)

73. The 1973 grain harvest in Eastern Europe set a new record of 73.6 million tons, one percent larger than the previous year's crop. A record average yield per hectare more than offset a 2% reduction in the total grain area over 1972. The high yield was partially the result of expanding the area planted to corn and barley in place of lower-yielding oats and rye. A slight decline in the southern region in output of breadgrains and total grain was more than offset by a production boost in the northern region(2). For the northern countries, Czechoslovakia's grain harvest more than offset the 7% decline in East Germany's crop. Production in the southern region dropped slightly, despite an impressive output in Hungary, because the grain harvest was down by more than 1 million tons in Romania. The 1973 plans for grain production were met or exceeded everywhere except in East Germany and Romania. In addition, the 1973 crop was harvested in relatively favourable weather, raising both the ratio of usable to total harvested grain and quality relative to 1972.

74. The output of breadgrain (wheat and rye) remained at the 1972 level. Total sown area was down about 3%, due to shortfalls in Poland and Romania. Both countries were unable to meet sowing plans because of late maturing crops in the fall of 1972 and adverse planting conditions last spring. The combination of lower yields and a smaller sown acreage reduced Romania's wheat production by 13%.

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(1) Grain production throughout this report includes the five major grains - wheat, rye, barley, oats, and corn - as well as mixtures.

(2) The northern countries - Poland, East Germany, and Czechoslovakia - produce about as much grain as the southern countries - Hungary, Bulgaria and Romania. The southern countries, however, generally are net exporters of grain while the northern countries usually have large net imports.

PRODUCTION OF OTHER CROPS

75. Official results for fall-harvested row crops - potatoes, sugar beets, fodder roots, vegetables, and oilseeds - are still scarce. Except for oilseeds, total output of row crops in Eastern Europe in 1973 is estimated to be below 1972 and less than the 1966-70 average. A dry spring and fall reduced yields - especially of sugar beets - in Poland, East Germany, and Hungary. But the sugar content of the beets is higher than a year ago, so East European sugar production will be down less than the estimated 8% decline in the sugar beet crop. Potato production was off 5%; only Romania harvested a larger crop than 1972. Hungary was forced to import 90,000 tons of potatoes because of a short harvest. In contrast, oilseed production in Eastern Europe climbed to a new high of nearly 3 million tons. Poland had an excellent rapeseed harvest (40% above the 1972 level), Bulgaria and Romania harvested fine sunflower seed crops, and most countries planted a record area to soybeans. Unlike the winter of 1971-72, when nearly one-third of Poland's rapeseed acreage was lost to winterkill, less than 5% was so damaged last year. In Romania, the largest soybean producer in Eastern Europe, soybean acreage was up 30% to 185,000 hectares. Eastern European countries are anxiously seeking ways of reducing hard currency outlays for imports of high protein oilmeals for their livestock industries by substituting domestically produced supplies. Hungary plans to expand its soybean area from less than 3,000 hectares in 1973 to 100,000 hectares by 1980. Bulgaria and Czechoslovakia also intend to increase their soybean plantings.

76. Harvests of green forage and pasture grass were less bountiful in 1973 than in 1972 in most of the countries. Stocks of roughage carried into this winter were especially low in Bulgaria, East Germany, Czechoslovakia, and Hungary because of a late summer drought. Romania, with relatively good soil moisture conditions, was probably the only East European country in which the 1973 out-turn of forage crops equalled the 1972 level. Other countries will have to make up shortages of roughage in feed rations by feeding additional amounts of grain or other concentrates. This means that the grain-deficit northern countries will not be able to reduce expensive imports of grain or protein meals.

LIVESTOCK SECTOR CONTINUES TO GROW

77. Eastern European output of most animal products increased in 1973. Although official production statistics have not been released, the higher procurements of animal products during the first nine months of 1973 and larger livestock herds imply a relatively good year. Nevertheless,

growth of the livestock sectors was probably lower than the 1972 rates of increase in all countries except Hungary and Bulgaria(1). In particular, last year's large percentage gains for milk (4%) and meat (8%) for the region as a whole probably were not repeated. While inventories of cattle and hogs apparently reached new highs, the output of beef grew slowly. Gains in output of beef and milk were held back by a shortage of good pasture and green forage crops in the last half of 1973, which lowered the productivity of cattle in Czechoslovakia, Bulgaria and Hungary. Good grain crops last year together with the reported large numbers of hogs and chickens on hand at the end of 1973 in most countries promises substantial production increases in 1974 for pork and poultry. The outlook for beef is less favourable due to short supplies of roughage and efforts of most countries to further expand cattle numbers.

78. The slow growth in the production of major feed crops - silage, hay and green forage - is of major concern to all East European countries. More high-quality roughage and improved pastures are needed not only to support planned production increases in beef and milk but also to lower the currently high costs. In most countries, the share of grain in feed rations of cows and beef cattle is rising at the expense of cheap roughage. Livestock production costs in the northern countries, which have had to import feedgrains at rising prices, have therefore risen sharply. Czechoslovakia probably has been most affected as grain consumption per unit of animal output increased by 22% in 1972. Grain consumption by livestock has also been pushed up in Czechoslovakia and East Germany for another reason. The increasing number of large specialised hog and poultry producing enterprises cannot feed potatoes as economically as the smaller collective farms they are replacing.

IMPORT DEMAND FOR GRAIN

79. Total grain imports of the East European countries in FY 1974 should be close to last year's level - a little more than 8 million tons. Net imports will fall by 600 thousand tons to 5.4 million tons as a result of large grain exports by the southern countries. Despite a bumper grain harvest, requirements for imports remain high because of larger livestock herds, smaller harvests of non-grain feed crops, and the need to rebuild grain stocks. The composition of grain imports should change, however. A greater quantity of feedgrains is likely to be purchased at the expense of milling quality wheat.

(1) The Hungarian livestock industry was recovering from a 1971-72 foot-and-mouth epidemic. Bulgarian livestock production rose by more than the 1% recorded in 1972 but fell short of official expectations. Bulgaria's livestock industry suffers from a shortage of high protein feeds, and unlike most other East European countries, Bulgaria has refused to import feedstuffs.

80. The estimated net imports of the northern countries in FY 1974 are slightly higher than in FY 1973 on the strength of larger Polish requirements. Nevertheless, East Germany still will be the largest net grain importer. Because of an exceptional grain harvest, Czechoslovakia may be able to reduce net imports for the third successive year.

81. The southern countries, which usually grow more grain than they use, will have net exports of nearly 2 million tons of grain in FY 1974. Hungarian exports this year, are estimated at one million tons of wheat and corn, and for the first time will exceed Romanian exports. An expanding livestock sector and a smaller corn crop have eroded Romania's export potential this year. Bulgaria will sell an estimated 300,000 tons of wheat abroad, mostly to Middle Eastern and African countries. Both Romania and Hungary will import small amounts of barley for their compound feed industries. Romania also bought some high-grade milling quality wheat to replace some lower-quality wheat exported to Egypt.

82. In the wake of the USSR's fine 1973 harvest, Soviet grain exports to eastern Europe - down by perhaps 1.7 million tons in FY 1973 - are expected to rebound by about 1.2 million tons in FY 1974. Soviet exports to Poland should go up the most, from less than 900,000 tons in FY 1973 to an announced 1.5 million tons in FY 1974. A slight increase is projected for East Germany and no change for Czechoslovakia.

83. Because of the turn around in Soviet deliveries, Eastern Europe has been able to cut grain imports from the West by a similar amount. But savings in foreign exchange expenditures will be minimal due to much higher world prices. Imports from the US are expected to drop the most in FY 1974 - by 700,000 tons to a level of two million tons. The cutback will affect US exports of wheat rather than feedgrains.

OUTLOOK FOR 1974 WINTER GRAIN(1)

84. Several factors favour higher production of wheat and barley in 1974 should better weather prevail during the balance of the growing season. Larger areas were sown last fall to winter wheat and winter barley in Czechoslovakia, East Germany, Hungary and Poland at the expense of lower-yielding rye. In addition, more of the higher yielding Soviet wheat varieties were sown(2). Finally, allocations of chemical fertiliser to the farms were up last fall, and there are no indications that supplies will be cut back this spring because of energy shortages. Indeed, the evidence to date suggests that agriculture will be given priority in the allocation of petroleum products.

(1) Fall-sown wheat, rye, and barley normally account for 50-55% of total grain and over 95% of breadgrains in Eastern Europe.
(2) East Germany for example, claims that yields of the Soviet wheat varieties exceed yields of domestic strains by at least 10%.

85. Still, it is much too early to predict whether Eastern Europe will match last year's record harvest in 1974. The condition of winter grain plantings going into the winter was mixed. Planting was delayed last fall and germination was threatened by drought over much of Eastern Europe. Good rains in October and November, however, helped plant development in the northern countries. In mid-December, Polish officials stated that the "condition of winter grain and rape was better than a year ago". Grain plantings in East Germany and most of Czechoslovakia are probably in good shape too. Winter grain in the southern countries, in contrast, entered dormancy in poorer condition than a year ago because soil moisture was lower. Winter wheat fields in Bulgaria and the Great Hungarian Plain were described in late November as spotty with uneven plant growth. Since then, precipitation has been slight; by 1st February soil moisture in the southern countries averaged about 40% below normal.

86. So far, Eastern Europe has had a relatively mild winter. No damage to the grain has been reported, although the sparse snow cover makes the grain susceptible to winterkill. But the grain fields - particularly in the southern countries and south-west Czechoslovakia - must receive normal to above-normal rainfall this spring or winter grain yields will be reduced.

87. Specific problems remain within the Eastern countries. Polish agriculture, for example, continues to lack what the authorities term "technical investment", and measures are apparently underway to boost the machinery input. The Polish situation is complicated by the fact that some 80% of arable land remains in the hands of some 3 million individual farmers, of whom only an estimated one million are making use of modern farm technology. Again, for example, the fodder situation in Czechoslovakia remains serious: the authorities have pointed out that although livestock production in Czechoslovakia increased by 8% between 1970 and 1972, production of bulk feed had risen by only 1%, and the consumption of feed from grain by 25%. Although perennial fodder plants are grown on 18% of the country's arable land, because of low yields, these meet only 11.8% of overall feed requirements.

CONCLUSIONS

88. In spite of such problems in certain of the Eastern countries, the general farm picture remains much more favourable both in the grain and livestock sectors than in the USSR. Indeed the question arises: has the Soviet Union at last managed to overcome the fundamental problems which have plagued its agriculture ever since collectivization was introduced in 1928? Basically

the answer would appear to be in the negative: together with the problems of inadequate mechanization, storage, fertilisers, already mentioned as well as the vicissitudes of climate, there remains the incredibly poor utilization of manpower both on the kolkhozes/sovkhozes: the USSR employs a farm labour force more than eight times the size of that in the United States, for example, on almost two-thirds more cultivated land. However, in the USSR, one farm worker feeds an estimated seven people while in the United States he feeds 46. Again, the USSR maintains around 32% of its labour force in agriculture, by far the largest share among industrialized nations; the US employs about 5% of its labour force in the farm sector. It would seem that only a fundamental reorganization of the agricultural system could produce a real upswing in efficiency; and that, despite its forthcoming gigantic efforts in the agricultural sector, the Soviet leadership will harvest only relatively disappointing fruits in the medium term.

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Table 1 USSR: TOTAL SOWN AREA, GROSS HARVEST, STATE PROCUREMENTS AND YIELDS

	1966-1970 Average	1970	1971	1972	1973 (Provisional)	Percentage charge 1970/73	Percentage charge 1972/73
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
Sown Area (millions of hectares)							
Total	122.1	119.3	117.9	120.1	127.9(1)	+ 7.2	+ 6.5
RSFSR	74.3	72.7	71.8	72.3	76.2	+ 4.6	+ 5.4
Ukraine	15.6	15.5	15.5	15.5	16.8	+ 8.4	+ 8.4
Kazakhstan	23.6	22.6	22.4	23.6	26.0	+ 15.0	+ 10.2
Others	8.6	8.5	8.2	8.7	8.9	+ 4.7	+ 2.3
Gross Harvest (million tons)							
Total	167.6	186.8	181.2	168.0	214.9	+ 15.0	+ 28.0
RSFSR	100.5	113.4	104.8	91.4	126	+ 11.1	+ 37.8
Ukraine	33.4	36.4	39.4	32.6	47.5	+ 30.5	+ 45.6
Kazakhstan	20.7	22.2	21.1	29.0	27.5	+ 23.9	- 5.7
Others	13.0	14.8	15.9	15.0	13.9	- 6.1	- 7.3

(1) Compared with 1972 the harvested areas increased by 3.8 million hectares to reach 123.5 million hectares. A smaller area is generally harvested because during the spring part of the winter sown area is grazed as a green fodder crop by livestock; and some of the cereal crop is written off because of damage by fungi and insects

Source: Selskaya Zhinzn 12th November, 1973, and official Soviet statistics

TABLE 1 (continued)

(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
Sales to the State (million tons)							
Total	66.0	73.3	64.1	64.0	na		
RSFSR	40.2	45.6	36.5	29.5	51.4		
Ukraine	11.1	11.7	12.6	9.2	16.7		
Kazakhstan	12.3	13.4	12.3	17.4	16.4		
Others	2.4	2.6	2.7	3.9	na		
Yields (centners per hectare)							
Average for all USSR	13.7	15.6	15.4	14.0	17.5	+ 12.2	+ 25.0
RSFSR	13.5	15.6	14.6	12.0	16.5	+ 5.0	+ 37.5
Ukraine	21.9	23.4	25.4	21.0	28.2	+ 20.5	+ 34.4
Kazakhstan	8.8	9.8	9.4	12.2	10.5	+ 7.1	- 13.9
Others	11.1	17.4	19.3	na	15.6	- 10.3	-

- 2 -

USSR: GROWTH IN AGRICULTURAL CAPITAL 1965-72

Available Machinery

	1965	1970	1971	1972
Tractors ('000)	1613	1977	2046	2110
Tractors - capacity (million horse power)	77.6	111.6	117.6	123.0
Combines ('000)	520	623	639	656
Building - new capacities (million tons capacity)				
Elevators	1.7(1)	2.7	3.0	3.1
Other Grain Storage				
(a) sovkhoz	5.7(1)	3.7	3.0	1.4
(b) sovkhoz and kolkhoz	9.6(1)	7.2	6.8	4.1

TABLE 3

USSR: ESTIMATED GRAIN ALLOCATION 1970-73 (million tons)

	1970/71	1971/72	1972/73	1973/74
Gross Harvest	186.8	181	168	222.5
Estimated usable grain	150.0	148	134	175
Net Trade Balance	- 3.5	- 5.1	+ 22.0	+ 8.0
Domestic availability	146	143	156	183
Total available for domestic use				
Human Consumption	47	48	49	49
Animal Feed	60	70	75	85
Seeding	15	20	20	23
Industrial Use	3	3	3	3
Domestic Consumption	125	141	147	160
Surplus(2)	21	2	7	23

(1) 1966-70 average
(2) Theoretically this should be available for addition to reserves but account must be taken of losses in storage, transport etc.

TABLE 4

LIVESTOCK (millions - at end year)

	1968	1969	1970	1971	1972	1975(plan)
Pigs	49.0	56.1	67.5	71.4	66.5	75
Sheep	104.6	138.7	138.0	139.0	144.5	160.2
Goats	5.5	5.1	5.4	5.4		
Cattle	95.7	95.2	99.2	102.4	104	106.2
Of which cows	41.2	40.5	41.0	41.2	41.7	46.7
Poultry (units)	na	na	276.0	502.4	521.3	na

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TABLE 5 -5- ANNEX I to AC/127-WP/394

USSR: Production of Selected Crops and Livestock Products

	Annual Average 1966-70	1971	1972	1973
	Million Metric Tons			
Crops				
Grain a/	136.6	148.0	134.5	170.0
Potatoes	94.8	92.3	77.8	107.7
Vegetables	19.5	20.8	19.1	24.5
Sugar beets	81.1	72.1	75.7	86.8
Sunflower seeds a/	5.9	5.2	4.6	6.8
Cotton	6.1	7.1	7.3	7.7
	Thousand Metric Tons			
Livestock Products				
Meat (slaughter weight)	11,600	13,300	13,600	13,500
Milk	80,600	83,200	83,200	87,200
Wool	398	429	420	428
	Billion Units			
Eggs	35.8	45.1	47.9	50.8

a. Estimate of net usable production

TABLE 6

ANNEX I to
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USSR: Progress in Harvesting of Grain Crops in 1973 Compared with a Seven-Year Annual Average

	Seven-Year Annual Average[1]				1973			
	Total Area Threshed[2] (Thousand Hectares)		Proportion Threshed (Percent)		Total Area Threshed[2] (Thousand Hectares)		Proportion Threshed (Percent)	
Date	Per Period	Cumulative	Per Period	Cumulative[3]	Per Period	Cumulative	Per Period	Cumulative[3]
Before 23 Jul	18,406	18,406	15.9	15.9	15,607	15,607	13.0	13.0
24-30 Jul	9,490	27,896	8.2	24.1	7,893	23,500	6.6	19.6
31 Jul-6 Aug	10,391	38,287	9.0	33.1	12,300	35,800	10.2	29.8
7-13 Aug	9,876	48,163	8.5	41.7	12,050	47,850	10.0	39.9
14-20 Aug	9,554	57,717	8.3	50.0	9,150	57,000	7.6	47.5
21-27 Aug	9,288	67,005	8.0	58.0	10,600	67,600	8.8	56.3
28 Aug-3 Sep	10,482	77,487	9.1	67.1	12,300	79,900	10.2	66.6
4-10 Sep	10,154	87,641	8.8	75.9	7,400	87,300	6.2	72.8
11-17 Sep	7,338	94,979	6.4	82.2	9,700	97,000	8.1	80.8
18-24 Sep	5,572	100,551	4.8	87.0	6,446	103,446	5.4	86.2
23 Sep-1 Oct	3,947	104,498	3.4	90.4	3,554	107,000	3.0	89.2
28 Oct	2,726	107,224	2.4	92.8	4,550	111,550	3.8	93.0
9-15 Oct	N.A.	N.A.	N.A.	N.A.	3,050	114,600	2.5	95.5
Total[4]	....	115,543	....	100.0	....	120,000	....	100.0

1. 1965, 1966, 1968-72
2. Including all pulses and grain, except corn, grown on state and collective farms, but excluding area sown to grain on small plots by individuals and area sown on subsidary farming enterprises operated by non-agricultural firms and organizations
3. Because of rounding, components may not add to the totals shown
4. Including area threshed after 15th October and grain area harvested for fodder or abandoned

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TABLE 7

USSR: GRAIN TRADE 1963-71 (millions of tons)

	1963	1964	1965	1966	1967	1968	1969	1970	1971
Imports	3.1	7.3	6.4	7.7	2.2	1.6	0.6	2.2	3.5
Exports	6.3	3.5	4.3	3.6	6.2	5.4	7.2	5.7	8.6
of which:									
CMEA	4.16	2.34	3.2	2.89	3.67	3.78	4.43	4.16	5.96
Other Communist countries	0.51	0.51	0.56	0.61	0.76	0.58	0.65	0.79	0.72
Developed West	1.11	0.25	0.32	0.02	0.29	0.18	0.92	0.44	0.64

Source - Soviet official Trade statistics (no figures for 1972 available)

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TABLE 8

ANNEX I to
AC/127-WP/394

USSR: Estimates of Supply and Demand for Breadgrains [1]

	Supply of Breadgrains			Demand for Breadgrains (Million Metric Tons)					
	Gross Production (Million Metric Tons)	Discount [2] (Percent)	Net Production (Million Metric Tons)	Food and Industrial Use	Seed [3]	Waste [4]	Exports	Amount Available for Other Uses	Total
FY 1973	95.6	20.0	76.5	55.0	15.1	2.3	5.5	-1.4	76.5
FY 1974	121.3	24.4	92.7	55.2	17.0	2.7	4.5	13.3	92.7

1. Winter and spring wheat and winter rye.
2. Discount to adjust gross production for excess moisture, unripe and damaged kernels, weed seeds and other foreign matter, and post-harvest losses incurred in loading, unloading, and handlin of grain between combines and storage facilites.
3. Seed used in planting the succeeding year's crop.
4. An allowance of 3% of net production is used to cover losses after harvesting and in the initial stage of storage.

USSR: Grain Purchases a/
Fiscal Years 1972-74

Million Metric Tons

Commodity and Origin	Bought for Delivery in FY 1972	FY 1973 Bought	FY 1973 Of Which: Shipped	FY 1974 Carry-over	FY 1974 New Purchases	FY 1974 Total
Wheat	4.00	18.525	18.061	0.464	5.700	6.164
United States	--	10.900 b/	10.451	0.449	3.600 b/	4.049 c/
Canada	3.00	5.000	5.000	--	1.500	1.500
Australia	0.50	1.000	1.000	--	0.600	0.600
France	0.50	0.670	0.670	--	--	--
Romania	--	0.500	0.500	--	--	--
Argentina	--	0.150	0.150	--	--	--
Sweden	--	0.150	0.135	0.015	--	0.015
Syria	--	0.150	0.150	--	--	--
Finland	--	0.005	0.005	--	--	--
Barley, rye, and oats	1.61	2.524	2.370	0.154	0.864	1.018
United States (barley)	0.80	0.020	0.020	--	0.061	0.061
United states (rye)	--	0.375 b/	0.221	0.154	0.514 b/	0.668
United States (oats)	0.31	0.037	0.037	--	--	--
Canada (barley)	--	0.611	0.611	--	0.089	0.089
France (barley)	0.25	0.930	0.930	--	0.200	0.200
Sweden (rye and oats)	0.05	0.250	0.250	--	--	--
West Germany (rye)	0.15	0.240	0.240	--	--	--
Finland (barley and oats)	0.05	0.061	0.061	--	--	--
Corn and grain sorghum	2.12	7.478	3.922	3.556	2.000	5.556
United States (corn)	1.96	7.200 b/	3.644	3.556	2.000 b/	5.556
Hungary (corn)	--	0.100	0.100	--	--	--
Argentina (sorghum)	--	0.070	0.070	--	--	--
Australia (sorghum)	--	0.070	0.070	--	--	--
Other	0.16	0.038	0.038	--	--	--
Total	7.73	28.527	24.353	4.174	8.564	12.738
US summary						
Wheat	--	10.900	10.451	0.449	3.600	4.049
Barley	0.80	0.020	0.020	--	0.061	0.061
Rye	--	0.375	0.221	0.154	0.514	0.668
Oats	0.31	0.037	0.037	--	--	--
Corn	1.96	7.200	3.644	.556	2.00	5.556
Total	3.07	18.532	14.373	4.159	6.175	10.334

a. Purchased on Soviet account; not all deliveries will go to the USSR
b. Totals for FY 1973 and FY 1974 supplied by Eksportkhleb in November 1973
c. About 1 million tons were deferred for delivery in FY 1975 at the request of the US Government

TABLE 10

Statistics on the Nonchernozem Zone

Gross Production of Grain (1,000 tons)

	1913	1940	1950	1970
North-West Region (Severo-Zapadny Raion)	2553.8	1501	1295	1202
Central Region (Tsentralny)	6045	4742	3274	7102
Volga Vyatka	3806	4950	2950	5206
Total	12404	11193	7519	13906

Gross Production of Potatoes (1,000 tons)

	1940	1950	1960	1970
North-West Region	4288	2579	3418	3756
Central Region	16043	15353	14541	15057
Volgo-Vyatka	3476	5831	5141	5865
Total	23807	23659	23100	24678

Sown Area of Grain (thousand hectares)

	1913	1940	1950	1960	1970
Noth West Region	2846	2216	1891	984	934
Central	7525	8437	7846	6239	6690
Volga Vyatka	4184	4050	3863	3353	3178
Total	14555	14703	13600	10576	10802

Total Sown Area of all Crops (1,000 Hectares)

	1950	1960	1965	1970
North-West Region	3104	3047	2843	2904
Central	12286	14042	13902	13732
Volga Vyatka	6213	6849	6577	6542

TABLE 10

(Annual and Perennial Grasses and crops)
Sown Area of Feed Crops (1,000 Hectares)

	1940	1950	1960	1970
North West Region	828	539	1468	1506
Central Region	2180	1953	5463	5093
Volga Vyatka	646	699	1933	1959
Total	3654	3191	8864	8558

Inventory of Cattle (1,000 Head)

	1916	1940	1950	1960	1970
North-West Region	2431	2239	2192	2099	2357
Central	4015	3864	4584	4918	6910
Volga Vyatka	1425	1375	1618	1805	2653
Total	7871	7478	8394	8822	11920

SOURCE: (Narkhoz for relevant years)

TABLE 11

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USSR – SOVKHOZ – POTENTIEL ET PRODUCTIVITÉ

	Nord Ouest	Centre	Volga Viatka	Terres Noires	Volga	Caucase nord	Oural	Sibérie occid.	Sibérie orient.	Extrême Orient	Kazakh-stan	Asie centr.	Trans-caucasie	Donets	Sud-Ouest	Sud	Ouest	Biélo-russie	Moldavie	URSS
Nombre de Sovkhoz (fin 1970)	751	1.948	528	421	1.094	934	809	1.081	466	497	1.609	622	898	691	422	482	766	820	145	14.994
Emploi agricole (*)	295	814	234	271	661	622	495	665	285	201	1.052	594	405	440	252	363	264	422	91	8.593
1.1. Capital fixe agricole (**)	1.426	3.361	730	984	2.784	2.648	2.136	2.948	1.326	1.214	5.430	2.301	1.437	1.658	821	1.542	1.532	1.083	358	35.800
1.2. Nombre de tracteurs (en 15 cv) (milliers)	57,3	158,7	38,4	51,8	170,6	122,2	134,2	175,5	81,0	51,3	410,3	105,7	41,3	58,7	25,0	50,1	47,5	46,7	11,1	1.844
- pour 1000 ha ensemencés	43	27	20	19	15	21	17	16	19	27	16	51	61	20	26	24	32	24	51	20
1.3. *Surfaces ensemencées* (milliers ha)	1.324	5.931	1.885	2.658	11.448	5.718	8.075	10.834	4.347	1.893	25.256	2.089	675	2.869	971	2.128	1.483	1.947	218	91.749
1.4. Gros bétail (1.1971) (milliers)	1.060	3.100	727	778	2.778	1.700	2.217	3.561	1.336	845	4.163	706	598	1.550	640	936	986	1.286	106	29.073
Production de la culture (roubles)																				
– par ha ensemencé	197	164	117	156	110	211	106	92	87	146	75	454	594	230	285	315	182	218	555	136

(*) milliers

(**) millions de roubles

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TABLE 12

ANNEX I to
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USSR – KOLKHOZ – POTENTIEL ET PRODUCTIVITÉ

	Nord Ouest	Centre	Volga Viatka	Terres Noires	Volga	Caucase nord	Oural	Sibérie occid.	Sibérie orient.	Extrême Orient	Kazakh-stan	Asie centr.	Trans-caucasie	Donets	Sud-ouest	Sud	Ouest	Biélo-russie	Moldavie	URSS
Nombre de kolkhoz (fin 1970)	747	2.787	1.637	1.683	2.630	1.339	1.260	845	556	136	423	1.904	2.721	2.827	5.406	908	2.478	2.206	551	33.000
Emploi (1970) (milliers)	220	881	692	944	1.278	1.098	561	358	201	44	281	1.758	762	1.639	3.141	647	549	1.028	433	16.715
1.1. Capital fixe agricole (*)	604	2.497	1.401	2.381	3.729	3.270	1.753	1.353	773	227	869	2.816	1.233	4.325	5.298	1.797	2.560	1.992	1.099	39.900
1.2. Nombre de tracteurs (en 15 cv) (milliers)	85,2	140,8	73,7	38,3	216,3	160,6	103,0	62,6	47,6	15,0	61,7	219,0	52,0	164,0	205,0	67,0	89,0	84,0	52,0	1980,0
pour 1000 ha ensemencés (unités)	29,5	22	18	18,5	15	18	15	15	18	26	15,5	58	35,4	17	20	17	31	24	36	20
1.3. Surfaces ensemencées (10^3 ha)	1.193	6.473	4.051	7.471	14.694	8.803	6.754	5.597	2.672	574	4.008	3.792	1.457	9.781	10.140	3.835	2.874	3.458	1.426	99.053
1.4. Gros bétail (milliers)	646	2.777	1.443	2.453	4.152	3.330	2.115	1.677	794	184	853	1.792	1.175	5.315	6.157	1.883	1.769	2.603	603	41.733
Revenu net des kolkhoz Moyenne 1968-1970 (*) – prix courant	292	1.235	732	1.107	1.748	1.689	866	546	318	102	485	2.521	667	2.200	2.947	1.027	923	1.034	731	21.173

(*) millions de roubles

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TABLE 13

ANNEX I to
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CARACTÉRISTIQUES RÉGIONALES DE L'AGRICULTURE EN U.R.S.S. - 1968-1970 -

	Population 1.1970	Stock de capital fixe agricole	Surfaces ensemencées	Gros bétail	Production agricole en % U.R.S.S.	Production par habitant (moyenne 1968-1970) Roubles
Nord-Ouest	5,0	2,7	1,4	2,4	2,4	162
Centre	11,2	7,7	6,6	7,4	8,1	242
Volga-Viatka	3,5	2,8	3,2	3,1	3,2	316
Terres Noires	3,3	4,5	5,3	4,4	5,0	521
Volga	7,6	8,6	13,4	9,4	9,0	404
Caucase Nord	5,9	7,8	7,6	6,6	7,6	438
Dural	6,4	5,1	7,7	6,2	5,2	280
Sibérie occidentale	5,1	5,7	8,5	7,3	5,5	373
Sibérie orientale	3,1	2,8	3,7	3,3	2,5	275
Extrême Orient	2,4	1,9	1,3	1,4	1,3	181
Kazakhstan	5,4	8,3	14,9	7,5	6,2	402
Asie centrale	8,2	6,8	3,0	5,5	6,4	266
Transcaucasie	5,1	3,5	1,1	3,9	2,7	179
Donets	8,3	7,9	6,6	7,8	8,4	345
Sud-Ouest	8,5	8,0	6,2	10,3	10,8	430
Sud	2,6	4,4	3,0	3,1	3,9	500
Ouest	3,0	5,4	2,4	4,1	4,6	496
Biélorussie	3,7	4,1	2,9	5,3	5,2	478
Moldavie	1,5	1,9	0,9	0,9	2,0	472
U.R.S.S.	100	100	100	100	100	341

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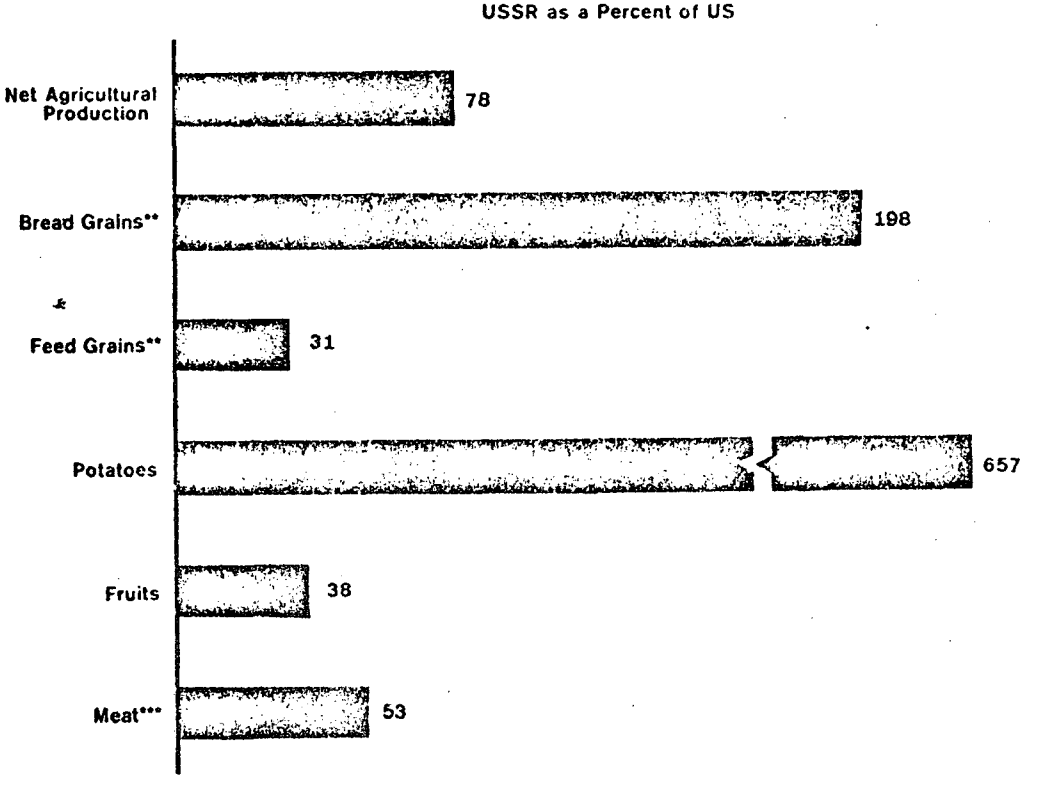
TABLE 14

Value of Output of Selected Agricultural Products,* 1971



*Value of production of crops and livestock for human use in average 1957-59 dollars. The dollar value of the USSR's output reflects the geometric mean of alternative comparisons of US and USSR production computed in 1960 ruble prices and 1957-59 dollar prices

**Based on production in million metric tons

***Based on carcass weight, bone in, of beef, veal, mutton-lamb, goat, pork, poultry and edible offals, excluding lard.

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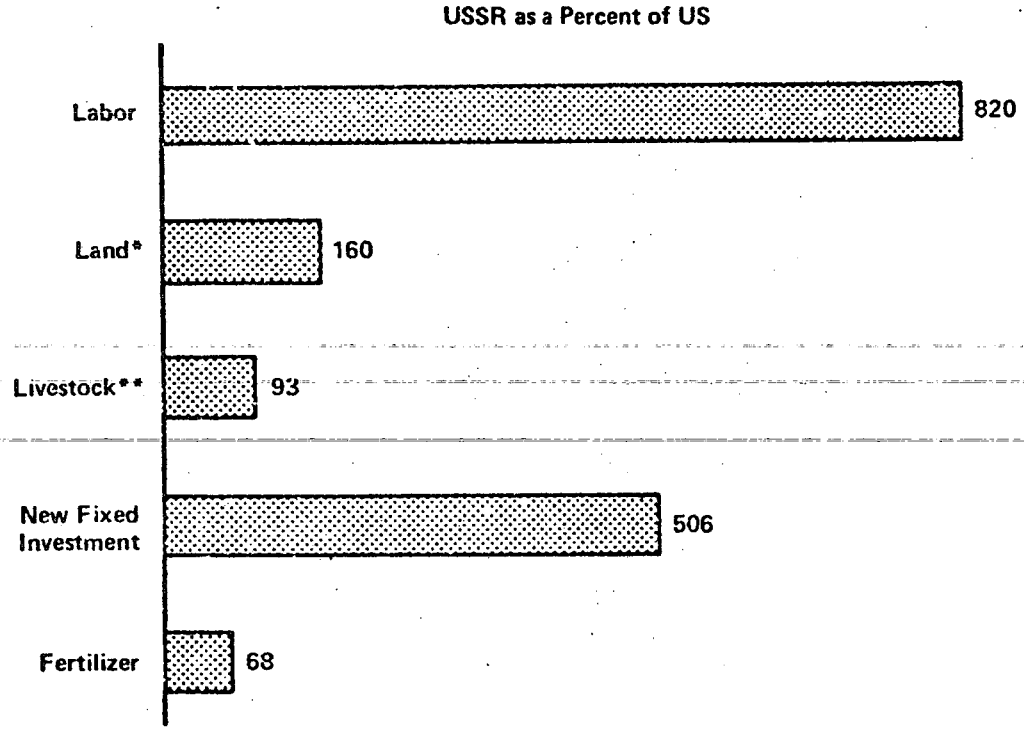
TABLE 15

Factors of Production in Agriculture, 1971



*Acreage sown to annual and perennial crops.
**End of year inventories.

Inventories of Agricultural Equipment, 1971

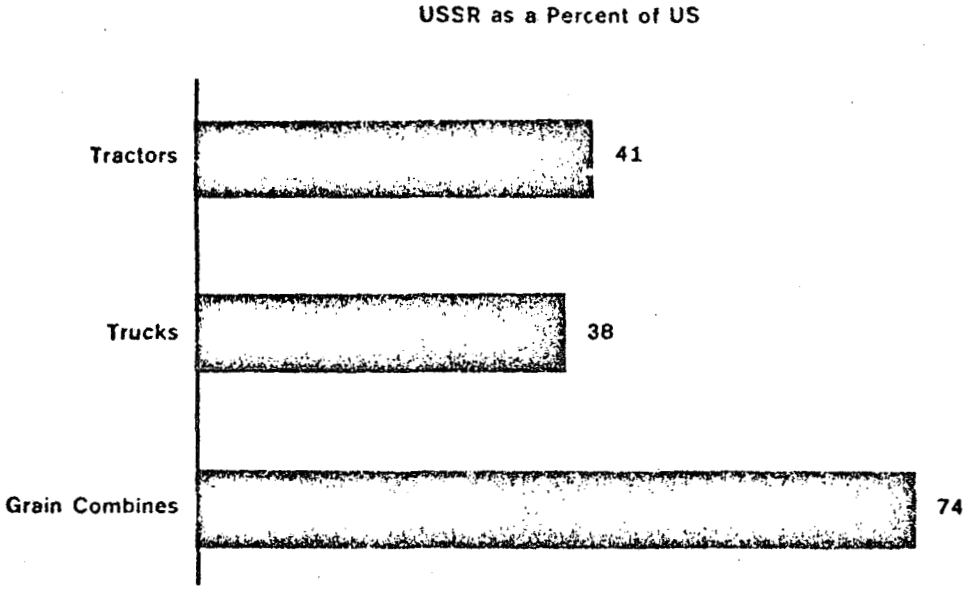


TABLE 17

SHARE OF FARM OUTPUT DELIVERED TO INDUSTRY[1]

[In percent]

Industry	Crop production		Livestock products	
	United States	U.S.S.R.	United States	U.S.S.R.
Processed food	47	42	75	48
Soft goods	5	9	2	6
Other	9	5	5	4
Total	61	56	82	58

[1] Based on 1963 and 1966 input-output tables for the United States and U.S.S.R., respectively.

TABLE 18

US-USSR: COMPARISON OF ANNUAL AVERAGE CROP OUTPUT, SELECTED PERIODS, 1950-71

[In billion 1957-59 dollars][1]

	United States[2]				U.S.S.R.[2]			
	1950-55	1956-60	1961-65	1966-71	1950-55	1956-60	1961-65	1966-71
Feed grains	4.30	5.34	5.52	6.57	1.15	1.30	1.85	2.15
Food grains	2.19	2.39	2.55	3.13	3.56	4.64	4.08	5.44
Vegetables	1.71	1.70	1.71	1.75	0.79	1.15	1.36	1.63
Potatoes	0.41	0.46	0.49	0.56	2.92	3.55	3.30	3.79
Fruits, berries, and nuts	1.38	1.40	1.43	1.63	0.23	0.33	0.48	0.73
Sugar crops	0.21	0.24	0.33	0.38	0.30	0.57	0.65	1.01
Cotton and cottonseed	2.50	2.28	2.64	1.72	0.93	1.17	1.32	1.68
Tobacco	1.27	1.08	1.26	1.07	0.14	0.18	0.20	0.29
Oil crops	0.91	1.32	1.74	2.50	0.31	0.43	0.58	0.72
Miscellaneous crops	0.06	0.06	0.06	0.06	0.32	0.52	0.46	0.60
Total crops	14.94	16.27	17.72	19.36	10.17	12.87	13.77	16.77

[1] Calculated from US output using the geometric mean of comparisons of USSR and US output carried out, alternatively, in dollar and ruble prices.
[2] Components of US output may not add to total output because of rounding while components of USSR output will not add to the totals due to the use of geometric mean comparisons for individual products.

TABLE 19

US-USSR: COMPARISON OF ANNUAL AVERAGE OUTPUT OF LIVESTOCK PRODUCTS, SELECTED PERIODS, 1950-71

[Billion 1957-59 dollars]

Livestock product	United States[1]				U.S.S.R.[2]			
	1950-55	1956-60	1961-65	1966-71	1950-55	1956-60	1961-65	1966-71
Beef and veal	5.27	5.73	6.72	7.75	1.69	2.60	3.15	4.29
Pork	3.31	3.31	3.39	3.58	1.18	1.87	1.99	2.48
Other red meat	0.25	0.28	0.26	0.20	0.53	0.76	0.74	0.72
Poultry meat	0.99	1.44	1.87	2.41	0.17	0.27	0.32	0.39
Milk	4.71	4.98	5.15	4.92	3.44	5.26	5.95	7.45
Eggs	1.72	1.81	1.93	2.15	0.45	0.69	0.84	1.10
Wool	0.11	0.13	0.13	0.10	0.21	0.31	0.35	0.39
Other	0.05	0.05	0.05	0.04	0.11	0.10	0.11	0.11
Total livestock production	16.41	17.74	19.49	21.15	7.42	11.33	12.86	16.04

[1] Components of US output may not add to total output because of rounding while components of USSR output will not add to the totals due to the use of geometric mean comparisons for individual products.
[2] Calculated from US output using the geometric mean of comparisons of USSR and US output carried out, alternatively, in dollar and ruble prices.

US-USSR: DISTRIBUTION OF SOWN AREA, SELECTED YEARS [1]

[Millions of acres]

	United States			U.S.S.R.		
	1950	1960	1971	1950	1960	1971
Wheat	61.6	51.9	48.4	95.1	149.2	158.1
Rye	1.8	1.7	1.8	58.3	40.0	23.5
Rice	1.6	1.6	1.8	0.2	0.2	1.0
Buckwheat	0.2			7.4	3.5	4.4
Total food grains	65.2	55.2	52.1	161.0	192.9	187.0
Corn	72.4	71.4	63.8	11.9	12.6	8.2
Oats	39.3	26.6	15.7	40.0	31.6	23.7
Barley	11.2	13.9	10.1	21.3	29.9	53.4
Other [2]	10.4	15.6	16.6	20.0	18.6	19.0
Total feed grains	133.2	127.5	106.3	93.2	92.7	104.3
Potatoes	1.7	1.4	1.4	21.2	22.5	19.5
Vegetables	1.6	1.6	1.6	3.2	3.7	3.7
Fruits, berries, and nuts	3.3	2.8	3.2	3.4	7.2	9.4
Sugar beets	.9	1.0	1.3	3.2	7.5	8.2
Sugarcane	.4	.3	.5			
Total sugar crops	1.3	1.3	1.9	3.2	7.5	8.2
Tobacco	1.6	1.1	.8	2.5	[3] 2.5	[3] 2.5
Cotton	17.8	15.3	11.5	5.7	5.4	6.8
Soybeans for beans	13.8	23.7	42.4	(4)	(4)	(4)
Sunflower seeds	(4)	(4)	(4)	8.9	10.4	11.1
Other oilseeds	6.8	4.9	3.1	4.6	2.4	3.9
Total oil crops	20.6	28.6	45.5	13.5	12.8	15.0
Forage crops [5]	85.1	78.0	76.1	51.1	155.9	161.1
Miscellaneous [6]	4.9	3.0	1.0	6.9	5.7	4.1
Total crop acreage	336.4	315.8	301.4	364.9	508.8	521.6

[1] US data from USDA, Agricultural Statistics, 1972. USSR data from Tsentral'noe statisticheskoe upravlenie, Narodnoe khozyaystvo SSSR, 1922-72 and Sel'skoe khozyaystvo SSSR Moscow, 1971.
[2] Millet and pulses for the USSR and grain sorghum for the US.
[3] Estimated.
[4] Not available; included in other oil seeds.
[5] Includes roots, corn for silage, and other forage grasses.
[6] Residual (reported total less sum of components).

TABLE 21

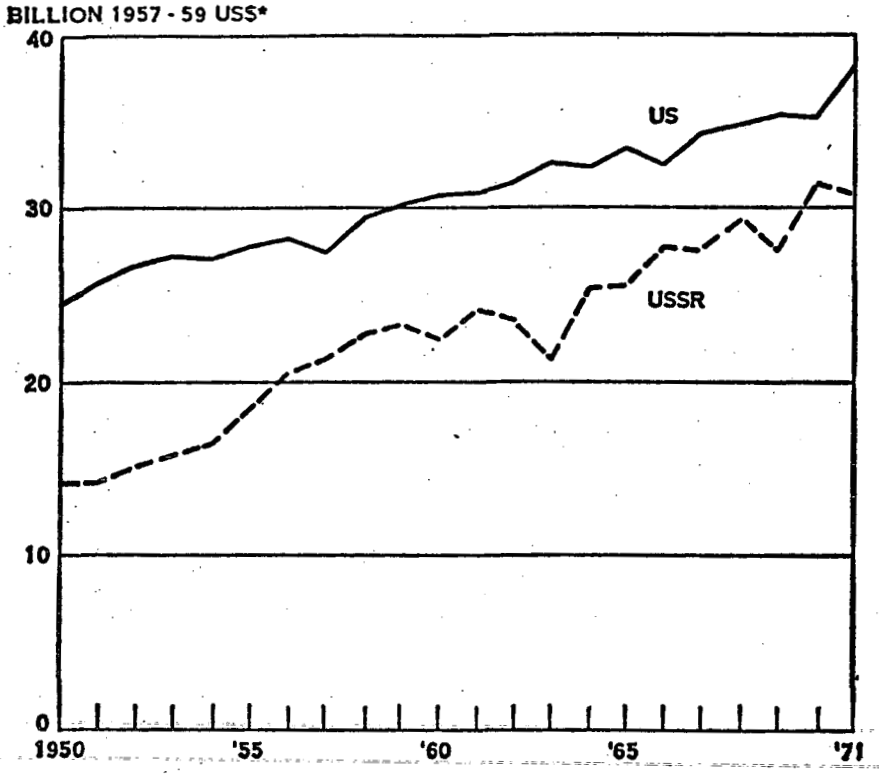
US-USSR: INDICATORS OF THE LEVEL OF FARM TECHNOLOGY [1]

Indicator	United States	USSR	USSR as percent of United States
Share of labor force employed in agriculture (percent)	4	31	775
Output per farm worker	$7746	[2] $834	11
Number of persons supported by one farm worker	46	7	15
Sown acreage per tractor (acres)	64	258	403
Grain acreage harvested per combine (acres)	52	473	910
Trucks per 1,000 farm workers	665	34	5
Fertilizer nutrients applied to crops [3] (pounds/acre)	93	45	48
Of which:			
Nitrogen (N)	44	22	50
Phosphorous (P_2O_5)	26	11	42
Potash (K_2O)	23	12	52
Livestock yields:			
Average five weight at slaughter:			
Cattle (pounds)	953	[4] 681	71
Hogs (pounds)	240	[4] 236	98
Eggs per hen/year	218	[4] 166	76
Milk per cow milked/year (pounds)	9,388	[4] 4,652	50
Crop yields (bushels per acre):			
Spring wheat [5]	28	14	50
Winter wheat [5]	33	26	79
Rye [5]	26	16	62
Oats [5]	52	34	65
Corn [5]	69	35	51
Barley [5]	44	26	59
Potatoes	382	173	45
Sugar beets (metric tons/acre)	16	9	56
Ginned cotton (pounds/acre)	442	784	177

[1] Based on 1970 data, except as noted.
[2] Calculated from US output using the geometric mean of comparisons of USSR and US output carried out, alternatively, in dollar and ruble prices.
[3] Based on 1971 data.
[4] Average for state procured animals.
[5] 3 year average (1969/70/71).

ANNEX I to
AC/127-WP/394
TABLE 22

Total Farm Output

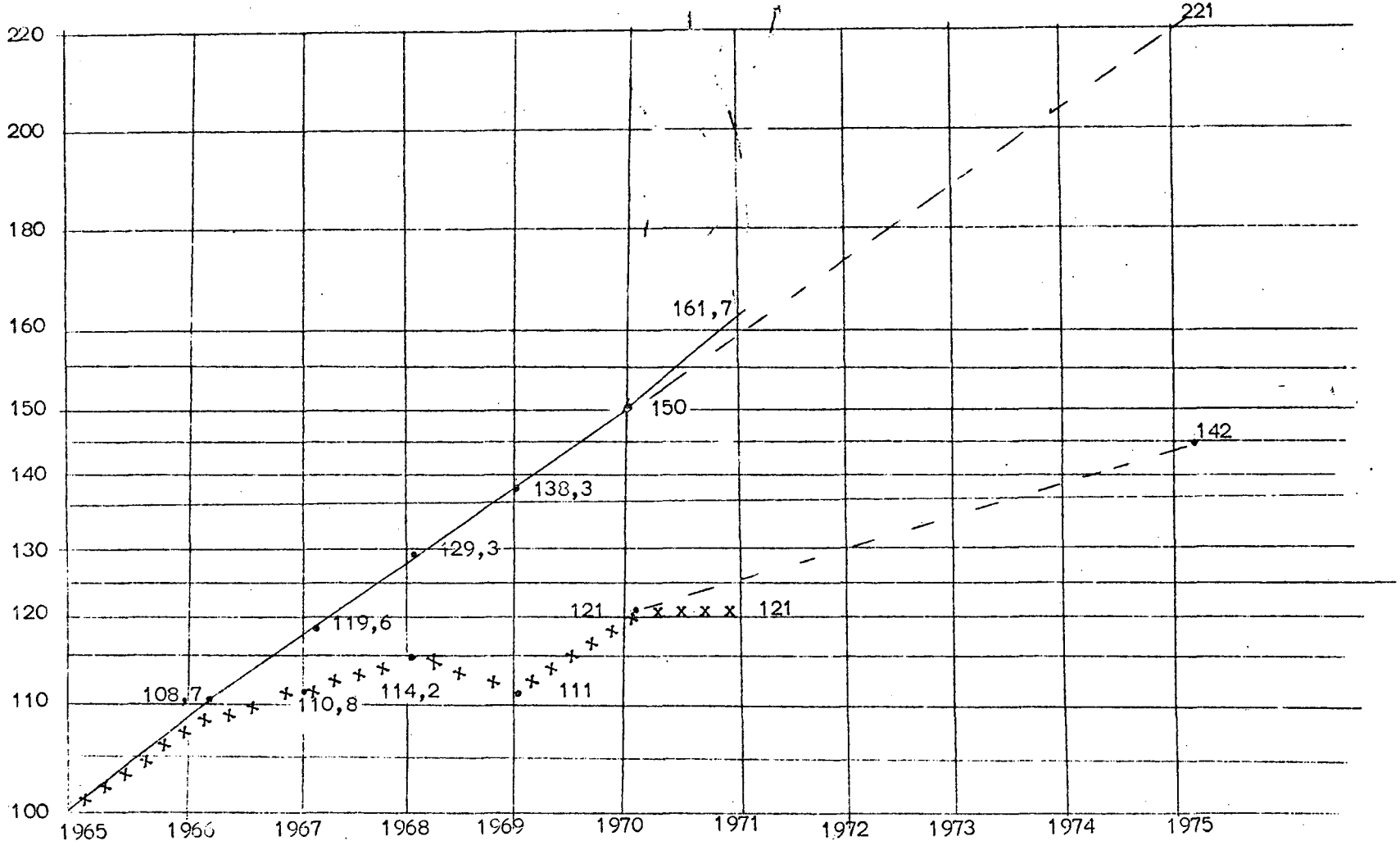


*USSR data calculated from US output using the geometric mean of comparisons of USSR and US output carried out, alternatively, in dollar and ruble prices.

TABLE 23

ANNEX I to
AC/127-WP/394

Comparative Development of Soviet Agriculture and Industry
(1965 = 100)



——— Industry
----- 9th Five Year Plan (forecasts)
xxxxxx Agriculture

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TABLE 24

Indexes of Net Agricultural Production
for Eastern Europe

1957-59 = 100

Year	
1960	107
1961	109
1962	103
1963	106
1964	112
1965	114
1966	125
1967	129
1968	128
1969	125
1970	124
1971	130
1972	139
1973 Prel.	145

ANNEX II to
AC/127-WP/394

TABLE 25

Trend in East European Grain Production
1961-73

Million Metric Tons

	Total Grain	Wheat	Other
1961	47.5	13.4	34.1
1962	46.3	13.8	32.5
1963	47.3	13.3	34.0
1964	48.3	14.2	34.1
1965	53.0	18.3	34.7
1966	55.4	17.8	37.6
1967	57.8	20.5	37.3
1968	59.4	20.8	38.6
1969	61.7	20.4	41.3
1970	54.5	19.0	35.5
1971	67.5	24.4	43.1
1972	73.2	26.0	47.2
1973 Prel.	73.6	26.2	47.4

TABLE 26

EE Imports of Grain, Fiscal Years 1965-73
and Forecast for FY 1974

Million Metric Tons

	TOTAL	of which: USSR	of which: USA
FY 1965	8.23	3.58	.26
FY 1966	7.21	2.70	1.22
FY 1967	6.29	3.72	1.10
FY 1968	5.82	3.63	.65
FY 1969	6.08	4.19	.75
FY 1970	7.07	4.12	.69
FY 1971	10.24	5.86	1.49
FY 1972	9.33	4.84	.75
FY 1973 Preliminary	8.20	3.15	2.73
FY 1974 Forecast	8.10	4.30	2.30

Eastern Europe: Official Gross Agricultural Production Data
(Annual Percentage change)

Country	1970	1971	1972	1973		1974 plan
				plan	actual	
Bulgaria						
Total	4.0	3.1	4.8	7.8	3.1	5.0
Crops	2.5	-0.4	7.2	n.a.	n.a.	n.a.
Livestock	6.9	6.1	1.0	n.a.	n.a.	n.a.
Czechoslovakia						
Total	1.1	3.1	3.9	4.0	4.2	3.8
Crops	-4.8	2.8	3.6	6.7	6.3	5.8
Livestock	6.6	3.4	4.1	1.1	2.5	n.a.
East Germany						
Total	3.7	1.8	8.5	4.9*	n.a.	6.8
Crops	10.1	n.a.	n.a.	2.4	n.a.	n.a.
Livestock	-0.8	2.3	7.0	n.a.	n.a.	n.a.
Hungary						
Total	-5	9	3	2.0	5.5	2.0
Crops	-14	12	6	0	7.5	0
Livestock	8	6	-2	n.a.	2.5	6.0
Poland						
Total	2.2	3.6	8.4	2.1	6.3	4.3
Crops	4.3	1.1	7.8	0	n.a.	2.4
Livestock	-1.1	6.6	9.0	5.0	n.a.	6.5
Romania						
Total	-5.2	18.9	9.5	20.0	4.7	21.5
Crops	-11.3	26.3	7.5	n.a.	n.a.	n.a.
Livestock	5.1	8.9	12.5	n.a.	n.a.	n.a.

* Increase over 1972 plan.

Eastern Europe: Indexes of Net Agricultural Production a/

1957-59=100

	Total	Bulgaria	Czecho-slovakia	East Germany	Hungary	Poland	Romania
1960	107	107	106	108	106	107	107
1961	109	106	106	98	109	113	116
1962	103	114	102	91	100	107	108
1963	106	111	101	100	113	105	109
1964	112	126	105	102	114	112	117
1965	114	128	102	112	108	114	121
1966	125	151	114	115	120	122	141
1967	129	153	120	121	129	123	145
1968	128	137	123	123	125	124	142
1969	125	141	118	117	129	119	141
1970	124	153	123	115	132	119	125
1971	130	155	125	110	137	123	152
1972 b/	139	163	130	121	141	133	166
1973 b/	145	168	135	121	149	141	171

a. The value of crop production less feed (including imported grain), seed, and waste plus the value of livestock products, including changes in livestock numbers. Food and Agriculture Organization (FAO) regional price weights (1952-56) for Western Europe were used to compute the indexes.

b. Preliminary.

Eastern Europe: Production of Breadgrain a/ and Total Grain b/

Country and Commodity	Million Metric Tons				1973 as a Percent of 1972
	1966-70 c/	1971	1972	1973 d/	
Northern region					
Czechoslovakia					
Breadgrain	3.55	4.50	4.65	5.33	115
Total Grain	6.97	8.77	8.67	9.79	113
East Germany					
Breadgrain	3.72	4.24	4.65	4.46	96
Total Grain	6.90	7.74	8.54	7.98	93
Poland					
Breadgrain	11.73	13.29	13.30	13.38	101
Total Grain	16.96	19.88	20.40	20.60	101
Sub-total					
Breadgrain	19.00	22.03	22.60	23.17	103
Total Grain	30.83	36.39	37.61	38.37	102
Southern region					
Bulgaria					
Breadgrain	2.94	3.08	3.58	3.52	98
Total Grain	6.16	6.97	8.09	8.02	101
Hungary					
Breadgrain	3.22	4.10	4.29	4.67	109
Total Grain	8.12	9.64	10.65	11.35	107
Romania					
Breadgrain	4.75	5.28	6.10	5.28	87
Total Grain	12.66	14.46	16.86	15.70	93
Sub-total					
Breadgrain	10.91	12.46	13.97	13.47	96
Total Grain	26.94	31.07	35.60	35.25	99
East European Total					
Breadgrain	29.91	34.49	36.57	36.64	100
Total Grain	57.77	67.46	73.21	73.62	101

a. Wheat and rye.
b. Wheat, rye, barley, oats, corn and mixtures.
c. Annual average production.
d. Preliminary estimates.

Eastern Europe: Estimated Total Imports of Grain a/
Fiscal Years 1968-1974 b/

Thousand Metric Tons

Region and Country	Average FY 68-70	FY 71	FY 72	FY 73c/	FY 74d/
Northern					
Czechoslovakia	1,777	2,289	2,000	1,500	1,400
East Germany	1,810	3,250	3,200	3,400	3,400
Poland	2,068	2,785	3,150	2,600	3,000
Sub-total	5,655	8,324	8,350	7,500	7,800
Southern					
Bulgaria	317	184	20	0	0
Hungary	305	505	520	400	100
Romania	43	1,231	380	300	200
Sub-total	665	1,920	920	700	300
Total Eastern Europe	6,320	10,244	9,270	8,200	8,100
OF WHICH: Exports from USSR e/	3,977	5,855	4,785	3,150	4,300

a. Including wheat, rye, barley, oats, corn and sorghum.
b. Twelve month period ending 30th June of stated year.
c. Preliminary.
d. Forecast based on known sales, shipments, trade agreements, and estimated requirements as of January 1974.
e. Imported under Soviet contracts; however, may include third country origin grain.