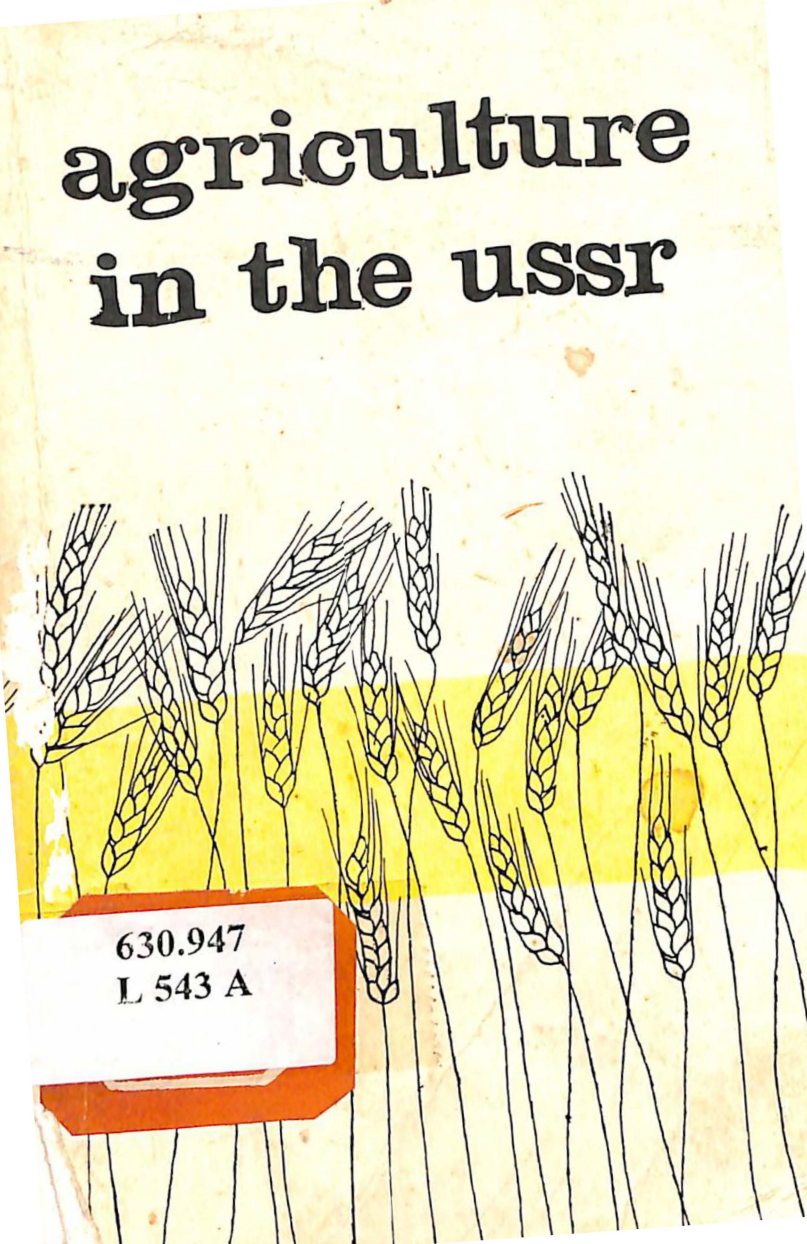


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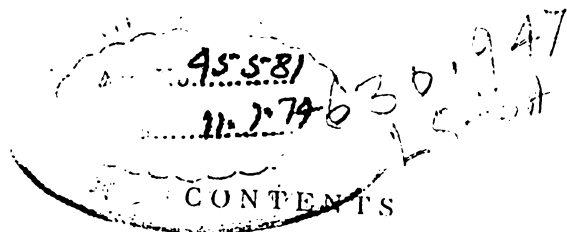
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ROLE OF AGRICULTURE IN USSR ECONOMY

In the economy of the Soviet Union agricultural production plays a highly significant role. As a key branch of material production, agriculture has a decisive effect on the growth of production in other spheres of the economy and on the people's welfare.

Agriculture accounts for 16.4 per cent of the gross social product and for 21.4 per cent of the national income. At the beginning of 1967 nearly one-third of the gainfully employed population was engaged in agricultural pursuits. In the USSR agricultural produce makes up approximately 75 per cent of the public consumption fund. At the present stage of scientific and technological development agriculture is practically the only source of foodstuffs. It is on agricultural development that the development of the light and food industries directly depends. Suffice it to say that outlays for agricultural products (raw materials) make up the bulk of expenses incurred by these industries. These outlays amount to 34 per cent in the textile industry, nearly 70 per cent in the sugar industry

and approximately 80 per cent in the dairy and butter industry.

Agricultural progress not only influences consumption but is of decisive importance in the solution of such vital economic problems as the efficient utilization of labour resources, the development of public services, the stability and growth of commodity turnover, the satisfaction of the people's effective demand, etc. Thus, the accelerated development of agriculture becomes a prime task of Soviet economic policy.

Problems of agricultural progress have always occupied a prominent place throughout the entire history of the Soviet state. They have varied at different stages of communist construction, but the most difficult of all was the task of overcoming age-old backwardness and reconstructing the village on a socialist basis.

AGRICULTURE IN PRE-REVOLUTIONARY RUSSIA

It was an extremely backward rural economy that the young Soviet state inherited from tsarist Russia. Although serfdom had been abolished in Russia in 1861 the countryside was oppressed by the burden of feudal vestiges left over from the serf system. This was due to the onerous terms of the Peasant Reform and the survivals of the serf system within the tsarist bureaucratic apparatus and among the land-

lords. The exceedingly difficult terms of land purchase by the peasants virtually perpetuated their economic dependence on the landowners. According to the regulations on payment of compensation for land serfs of all categories were to pay a total of 3,400 million gold roubles between 1863 and 1907 for their holdings. Besides they had to pay rent for them in very arduous *corvée* duties or in quitrent for the period they were "temporarily bound," and as the payment of compensation was made in the way the landowners wished, they could drag it out as long as they thought would be to their advantage.

Pending their "liberation" the peasants were ruined by unbearable taxes and other obligations. Despite the reform, non-payment of taxes and other offences involved corporal punishment. Huge taxes and compensation for land payments together with the numerous state and feudal obligations not only prevented the greater part of the peasantry from developing agricultural production but led to the curtailment of production from year to year.

The general picture of agriculture in tsarist Russia was one of extreme technical and economic backwardness and low labour productivity; scattered peasant holdings were a characteristic feature. The one-sided development of agriculture and lack of intensification, along with obsolete methods of farming, resulted in frequent crop failures and famine. Particularly severe famines occurred in 1874, 1891, 1892, 1905 and 1906 when hundreds of thousands of peasants died of hunger. Stratification of the peasants

was intensified by the Stolypin agrarian reforms whose aim was to develop agrarian productive forces by strengthening the *kulaks* and well-to-do peasants.

On the eve of the October Revolution nearly half of the arable land was concentrated in the hands of 30,000 landlords, the tsar's family and the monasteries; approximately 20 per cent of the land belonged to the *kulaks*—the rural bourgeoisie; the remaining 30 per cent (usually plots having the poorest soil) was allotted to 17 million poor peasant households.

Following the two landowners' reforms the peasants paid out thousands of millions of roubles in the form of taxes, rents and other payments; this largely led to a lag in the development of agriculture and the ruining of millions of peasant households to the benefit of the *kulaks* and big landowners.

Although by the end of the 19th century capitalism had begun to develop in Russia, the country remained economically backward and agrarian. According to the 1897 census about five-sixths of the population were engaged in agriculture. Primitive farm implements prevented the peasants from working the land efficiently. The 1910 census gives the following data on the farm tools used in peasant households:

Primitive wooden ploughs	7.8 million
Improved wooden ploughs	2.2 "
Iron ploughs	4.2 "
Wooden harrows	17.7 "

Numerous vestiges of the serf system survived up till the October Revolution. This, along

with the frequent redistribution of land and the scattered-strip and three-field crop rotation systems of agriculture, kept farming at a low agronomic level. The poverty of the Russian peasants is shown by the fact that 30 per cent of the households had no horse, 24 per cent could not afford a cow, 15 per cent sowed no crops and 34 per cent had no farm implements.

The general backwardness of agriculture was manifested in the extensive system of farming and in its one-sided development. Ninety per cent of the land under cultivation was sown to cereal crops, mainly rye, barley, oats and spelt. Less than 10 per cent of the land was under industrial and fodder crops, potatoes, vegetables and melons. The backwardness and onesidedness of agriculture caused a lag in live-stock breeding. Fodder was limited to wild hay and natural pastures, and wastes left over from field crops, chiefly straw and chaff. The number of live-stock increased very slowly, and the number per capita even diminished. Whereas in European Russia in 1864 there were 44.6 head of productive live-stock for every 100 of the population, by 1914 the figure had fallen to 26.8. Live-stock productivity was extremely low, and consequently the output of the basic animal products per capita was also extremely low. The majority of poor peasant households consumed neither meat, milk, nor eggs.

Characterizing the condition of agriculture in Russia before the Revolution, Lenin wrote: "In our days the peasants have been robbed—by means of all the tricks and achievements, all

the progress of civilization—robbed to such an extent that they are starving, eating goosefoot, eating lumps of dirt in lieu of bread, suffering from scurvy and dying in agony. At the same time the Russian landlords, with Nicholas II at their head, and the Russian capitalists are raking in money wholesale.” (Lenin, *Coll. Works*, Vol. 17, p. 527.)

Only a radical social and economic reorganization of Russia's entire social system could deliver the peasants from the dire poverty inflicted on them by the tsarist government.

SOCIALIST RECONSTRUCTION OF AGRICULTURE

The first decrees of the Soviet Government following the October Revolution nationalized all the land and handed it over to the peasants. Millions of peasants were freed from shackling payments and other obligations.

In the very first years of Soviet rule the Communist Party formulated the tasks of reorganizing agriculture on a socialist basis and laid the groundwork for the gradual transition of small peasant households to large-scale co-operative agricultural enterprises with high labour productivity.

It took long years to fulfil these tasks; organizational work in the rural areas took on different shape and developed in conformity with the requirements of each period. In the first years after the revolution the regulating role

of the state was displayed in the granting of systematic material and financial aid to poor and middle peasants. Poor peasant households were fully exempted from tax payments. Land utilization measures on the farms of poor and middle peasants were carried out free of charge. Poor and middle peasant farms were given seed, machinery, fertilizer and credit. The *kulaks* were subjected to various restrictions such as prohibition of land transactions, high taxes, the limitation of rented land and use of hired labour, and were gradually ousted from the economy. Within a few years after the revolution the number of middle peasant households and their proportion in the rural economy increased sharply, while that of the poor peasant and *kulak* households steadily declined. These social changes are shown by the following data (in per cent):

Category of farm	Pre-revolutionary period	1928-29
Poor peasant	65	35
Middle peasant	20	60
<i>Kulak</i>	15	5

Thus, in the first post-revolutionary decade the proportion of middle peasant farms tripled and the proportion of poor peasant farms shrank by nearly one half, while that of the *kulak* farms diminished threefold. The middle peasants gradually gained priority in agricultural development.

The economic policy of the Soviet state

which favoured the development of the working peasants' households bore fruit. Agriculture began to make headway. By 1927-28 the destruction caused by the First World War and the Civil War had been eliminated. Gross agricultural output reached the pre-war level. Economic rehabilitation had been completed in the main.

However, agriculture was still lagging behind the country's requirements. The rapid growth of the urban population due to industrialization increased the demand for foodstuffs; the processing industries called for raw materials. In the countryside, too, the consumption of agricultural produce rose steadily.

It was clear that the output of agricultural products, particularly marketable goods, fell below the mark. The marketable production of small and middle peasant farms, which made up the majority (95 per cent), was low. It was impossible to base the new system of political and economic development for a more or less lengthy period on two different foundations—large-scale socialist industry and petty individual farming. This made it necessary to organize big agricultural units of the socialist type. Peasant cooperation became the basis for solving this historic task. The programme of peasant cooperation drawn up by Lenin envisaged drawing the millions of peasants into collective farms on a strictly voluntary basis. Lenin regarded this as a gradual process that was to begin with the development of the simplest cooperative forms—market, credit, consumers' and finally production cooperative societies, thus leading to

the radical social and economic reorganization of the village.

There was much preliminary work to be done for the transition of the peasantry to a new path of development. And cooperation was to play a particular role in effecting this process.

The following figures show the progress of agricultural cooperation in the years preceding the beginning of all-round collectivization. In 1925 the number of agricultural cooperatives of different types amounted to 54,800. Some 600,000 of the total of 800,000 beet-growing farms were organized in cooperatives; cotton-growing cooperatives included 713,500 farms, or 92 per cent of the farms specializing in this crop; dairy cooperatives made up 772,000 peasant farmsteads, etc. Nearly 80 per cent of the farm machinery, implements and fertilizers (on a cost basis), and practically the entire sum of credits allocated by the Soviet state for developing agriculture were distributed through agricultural cooperatives.

In 1929 agricultural cooperatives had more than 13 million members, or over 55 per cent of all the poor and middle peasant farmsteads; besides this, there were approximately 14 million shareholders in the consumers' cooperatives.

By the end of 1929 agricultural cooperatives were already playing the chief role in supplying many agricultural products (grain excluded). They supplied all marketable cotton, sugar-beet and tobacco, nearly 60 per cent of flax fibre, 65 per cent of butter, approximately 50 per cent of eggs and 35 per cent of marketable grain.

The cooperatives acquainted the peasants with the principles of collective economic management. Peasants engaged in the production of flax, beet, cotton and other industrial crops, as well as milk, butter and other products united into flax-growing, beet-growing, dairy and other types of agricultural cooperatives. The cooperative credit system helped the peasants with credits for the acquisition and joint use of farm machinery.

At that time, however, cooperation in production was still poorly developed. The simplest form of peasant production cooperative at that period was the associations for joint cultivation of the land. Part of the proceeds were distributed according to labour, the rest according to the size of members' plots and the number of implements contributed to the common pool.

In some areas agricultural communes had been set up in which land, draught animals and implements were owned in common, as well as smaller domestic animals, poultry and dwellings. Income was divided evenly.

The most widespread and promising form of cooperative was the collective farm (agricultural *artel*), which was based on the socialization of land, labour and the basic means of production including all draught animals, and part of the farmer's cattle, along with farm buildings, machines and other farm implements, and enterprises for processing agricultural produce. At the same time the farmer was allowed to have a personal plot (kitchen-garden and orchard) and retained personal ownership of his dwelling, productive live-stock (as fixed by the farm's

charter) and their premises, poultry and small farm implements.

In these collective farms, which are voluntary farmers' cooperatives, the members are in charge of the distribution of produce and property, and direct the cooperative's activities in keeping with Soviet laws, and in the interests of the state, the collective farm and the farmers. The land that the farmers till is state-owned, i.e. public property, although they are actually in charge of it, for it has been assigned to the collective farm for use in perpetuity and free of charge.

The collective farm ensures the proper combining of the personal interests of the farmers with the community interests of the farm and creates the requisites for the steady development of agriculture.

Experience showed that the collective farm corresponded to the level of the country's productive forces and answered the interests of both the state and the farmers more fully than any other form of cooperation. Mass collectivization swept the countryside. In 1928, 400 thousand farmsteads were pooled to form collective farms. In 1929 the figure stood at one million and in 1930 at six million. In 1927 the country had only 14,800 collective farms, but by 1932 their number had increased to 200,000.¹

Agricultural collectivization was completed in the main in 1932. The farmers, who constituted the most numerous class of working people went over to a new way of life. The elimination of

¹ Economic History of the USSR. *Mysl*. 1967, p. 373.

the *kulaks* as a class destroyed the last remains of exploitation in the country.

Agricultural collectivization was greatly facilitated by the Soviet Union's rapid industrialization. Without the development of heavy industry and the wide-scale manufacture of tractors and agricultural machinery it would have been impossible to establish the necessary economic basis and effect such a radical reorganization of agriculture. The establishment of the first state farms was also of great importance in bringing about the collectivization of agriculture. These were socialist agricultural enterprises, organized on state-owned land and equipped with means of production that belonged to the state. In 1928 the country already had 1,407 state farms, and in 1932, 4,337.

The collectivization of agriculture opened the way to a rapid improvement of the farmers' material and cultural standards.

The victory of the collective-farm system consolidated the friendly alliance of the workers and peasants—the collective farmers became the mainstay of Soviet rule in the countryside. As the socialist way of production gained ground in agriculture there came an end to the age-old opposition of interests between town and village, since both began to develop on a socialist basis.

DEVELOPMENT AND CONSOLIDATION OF COLLECTIVE AND STATE FARMS

The progress of agriculture in the USSR along socialist lines is directly associated with the development of the collective and state farms, with their organizational and economic consolidation.

It has already been mentioned that the mass organization of collective farms was begun in 1928 and completed in the main by 1932. Since then this form of agricultural enterprise has been constantly developed and improved in keeping with the entire Soviet economy. The following general figures show the development of the collective-farm sector in Soviet agriculture.

Indicator	Unit	1932	1965
Number of collective farms	thous.	about 200	36.3
Fixed assets (in comparable prices)	thous. mln. rou- bles	0.47	35.0
Total area under communal crops	mln. hecta- res	91.5	105.1
Total number of cattle	mln. head	8.8	38.3

The drop in the number of collective farms in the post-war period was due to their amalgamation into bigger units, and in the last four years also to their reorganization into state farms in accordance with the decision of general meetings of the members.

These figures characterize the growth of collective-farm production all over the country, and show the increase in the basic elements of the collective farms' economy. This progress is the result of the organizational and economic consolidation of each separate enterprise.

A first step in this direction was the enlargement of farms. Small collective farms with insignificant crop areas and a small number of productive livestock could not make efficient use of the modern machinery put at their disposal by the machine-and tractor stations. Due to the small fields the use of powerful tractors and combines was often impractical. The farmers were well aware that small crop areas and a small head of livestock prevented them from raising labour productivity and increasing the output of agricultural products. Members of small collective farms raised the question of amalgamating their farms into bigger units. The realization of this project gave impetus to the rapid development of productive forces in socialist agriculture.

Economically, the collective farms of today are far above the level of the initial cooperatives. This is evident from the following table which gives average data on the farms of both periods.

Average Size of Collective Farms

Indicator	1932	1965
Number of farmsteads	71	421
Cultivated land (hect.)	630	2,994
Public crop area (hect.)	434	2,843
Public livestock (head)		
cattle	42	1,038
pigs	15	667
sheep and goats	54	1,479
Fixed assets (thous. rubls.)	2.2	972
Cash income (thous. rubls.)	2.2	550
Tractors (in terms of 15 h.p. units)	—	38

Note: Up till 1958 the collective farms, as a rule, had no tractors of their own but were served by the machine-and-tractor stations.

It follows from the table that the present-day collective farms are large-scale mechanized agricultural undertakings.

The collective farm structure has become firmly rooted in the countryside; the village has been radically changed. The efficiency and marketable output of collective farming has increased.

Today collective farms play the foremost part in providing the country with agricultural products. This is shown by their big share in the total gross output and in total state purchases of staple farm products.

In 1965 the collective farms accounted for 51 per cent of the total marketable agricultural

**Share of Collective Farms in Production and State
Purchases of Agricultural Produce (in per cent)**

Product	Share in total production	Share in total state purchases
Grain	61	63
Cotton	80	80
Sugar-beet	91	91
Potatoes	22	40
Vegetables	25	36
Meat	30	46
Milk	35	55
Eggs	13	29
Wool	41	44

products of the USSR. This shows the significant role of collective farms not only in the social reorganization of the farmers' life but also in the Soviet national economy as a whole.

State farms have also traversed a long path of development. Their organization in the USSR was begun immediately after the October Revolution. Some of them were set up on nationalized land that had belonged to landlords, but the majority of state farms were organized with state means on lands that had lain waste. Their mission was to provide the urban population with agricultural products and also to render effective organizational, agronomical and technical aid to the newly-formed collective farms. State farms supplied the farmers and cooperative associations with tractors, high quality seed and breeding stock, and gave them practical assistance in agronomy and animal husbandry. They were model large-scale mechanized agri-

cultural enterprises and showed the great advantage of this form over small farms.

In 1927 the first tractor unit was organized at the Shevchenko State Farm in the Ukraine, and contracts were signed with the farmers of nearby villages for cultivating their land, thus accustoming them to working the land in common. This first tractor unit was the forerunner of the machine-and-tractor stations which played an important role in reorganizing individual farms into large-scale collective farms and in introducing modern machinery into agriculture.

The following table shows the numerical growth of state farms in the USSR.

	1928	1965
Number of state farms	1,407	11,642

The number of state farms in the USSR is steadily growing, and has almost tripled since the end of the war. The organization of new state farms is still proceeding rapidly.

State farms are organized chiefly as specialized enterprises producing a big marketable surplus. At the beginning of 1966 12 per cent of the state farms specialized in cereals, 15 per cent in fruit and vine-growing, fruit and vegetable-growing or potato and vegetable-growing, 37 per cent in dairy or meat and dairy products, 10 per cent in sheep breeding and 6 per cent in pig breeding.

Other state farms are engaged in the production of sugar-beet, cotton, essential oil-bearing crops, tobacco, tea and other crops. Still others specialize in the production of high-grade seed or planting stock, pure bred livestock, and race horses. The output of these farms helps other state farms and collective farms improve the grade of their agricultural products and the breed of their livestock. A considerable part of their output is exported.

The increase in the number of state farms has been accompanied by a growth in their size. The average size of state farms is much larger today than during the first twenty years of their existence.

Average Size of State Farms

Indicator (per one state farm)	1940	1965
Number of workers employed	330	657
Crop area (thous. hect.)	2.8	7.7
Livestock (head)		
cattle	592	2,098
pigs	459	1,073
sheep and goats	1,420	3,977
Tractors (15h. p. units)	24	125*

Thus the average size of state farms in the period under investigation increased according to the basic indicators 100 per cent, 200 per cent or even more. It is interesting to note that the scale of production and the fixed production

* Data for 1964.

assets increased more rapidly than the number of workers employed on the farms, which indicates the rise in labour productivity.

The increase in the number and size of state farms ensured the steady growth of the state sector in agriculture. In 1965 there were 7,746 thousand workers on the state farms engaged in public production. State farm crop areas had increased to 89.1 million hectares, of which 59.7 million hectares were sown to cereal crops. They had 24.5 million head of cattle, 12.5 million pigs, 46.4 million head of sheep and goats. When it came to motor vehicles and machinery they had 1,325,000 tractors (in terms of 15 h.p. units), 265 combine harvesters, 335,000 lorries and millions of other farm machines.

The state farms had become a decisive factor in the output of agricultural products, approaching the collective farms in importance. This is shown by the following figures.

**Share of State Farms in Agricultural Production
and Purchases of Farm Products (in per cent)**

Product	Share in gross production	Share in state purchases
Grain	37	37
Cotton	20	20
Sugar-beet	9	9
Potatoes	15	33
Vegetables	34	57
Meat	30	45
Milk	26	41
Eggs	20	45
Wool	39	42

In 1965 state farms accounted for 36 per cent of all marketable agricultural products in the USSR.

On the whole the public sector in agriculture, which is represented in the USSR by state and collective farms, holds the dominant position in the production of agricultural products and in state purchases of the chief foodstuffs for the population and raw materials for the light and food industries. The following figures testify to this effect.

**Share of State and Collective Farms in the Production of Agricultural Products in the USSR
(in per cent)**

Product	Share in gross production	Share in marke- table production	Share in state purchases
Grain	98	100	100
Cotton	100	100	100
Sugar-beet	100	100	100
Sunflower	...	100	100
Potatoes	37	56	73
Vegetables	58	88	93
Meat	60	83	91
Milk	61	93	96
Eggs	33	63	74
Wool	80	86	86

The socialist sector has become the chief factor in agricultural production in the USSR. The rapid development of state and collective farm production and the raising of its efficiency are the main requisites for satisfying ever more fully the material requirements of the Soviet people.

TECHNICAL RE-EQUIPMENT OF AGRICULTURE

To achieve the rapid and steady growth of agricultural production it is highly important to develop and modernize the material and technical basis of agriculture. This follows from objective economic conditions, two of which are particularly important.

Firstly, the increase of agricultural output must, as a rule, be effected on the same crop areas, since the latter are naturally limited. This intensification, however, requires an increase in the use of machines, implements, fertilizers and other means of agricultural production.

Secondly, labour productivity must raise constantly in agriculture. The number of agricultural workers is steadily falling, and will continue to fall. Hence the rate of increase in labour productivity must exceed the rate of increase in gross agricultural output.

These two problems can only be solved by radically improving the material and technical basis of agriculture.

Another important requisite for the development of this basis is the all-round equipment of agriculture with machinery.

In pre-revolutionary Russia agriculture was carried on by means of a scanty number of primitive wooden implements, used mainly to till the land. Draught animals were the only source of power. Besides, 30 per cent of the peasant households were without horses.

In the central agricultural regions of Rus-

sia, in the Povolzhye area, Byelorussia and Lithuania and in the Northern and Urals regions the primitive wooden plough was practically the only agricultural implement. Only 3.4 per cent of the implements used for loosening the soil were made of metal. the remaining 96.6 per cent were wooden harrows.

The farm implement industry was very poorly developed: there was no tractor industry and the production of other farm machines was scattered among small handicraft or semi-handicraft enterprises that could turn out only the simplest kinds of farm implements, and in small numbers, at that.

These were chiefly horse-drawn hay-mowers, rakes, reapers, dump harvesters, binders, and horse-gear threshers. Big landowners and *kulaks* preferred to use imported farm machines.

During the Civil War most of the enterprises producing farm implements came to a standstill. The import of farm machines also ceased. Besides, the First World War and the Civil War brought about a great reduction in the number of horses—the main draught animals in the rural economy. All this seriously undermined the material and technical basis of agriculture in the young Soviet Republic.

In outlining the programme of agricultural reconstruction the Soviet Government gave due account to the creation of the necessary material and technical requisites. To develop agriculture along socialist lines it was highly important to establish a national industrial base—a tractor and farm implement industry.

Speaking at the 8th Party Congress in 1919

Lenin stressed the decisive importance of reorganizing agriculture on a new technical basis.

"If tomorrow we could supply one hundred thousand first-class tractors, provide them with fuel, provide them with drivers—you know very well that this at present is sheer fantasy—the middle peasant would say: I am for the communia (i.e. for communism)." (Lenin. *Sel. Works*, Vol. 3, p. 222.) As the Civil War and the struggle against the interventionists came to a close the young Soviet state was able to concentrate on economic construction, particularly on the technical equipment of agriculture. As early as April, 1921, Lenin signed a special decree on the development of the farm implement industry. Its task was to increase and regulate the production of simple farm implements and to organize on a large scale the output of tractors and complex farm implements.

With the growth of farmers' cooperatives and state farms mechanization was widely introduced into agriculture. The basic trend was to go over from horse-drawn implements to tractors. In 1923 the serial production of wheeled tractors with a 20 h.p. carburettor kerosene engine was organized at the Putilov Works (now Kirov Works) in Leningrad.

The extensive development of collectivization and state farms in the period between 1928-32 was based on the rapid growth of the tractor and farm implement industry. It was at that time that the Stalingrad Tractor Plant, the Kharkov Tractor Plant, and the farm implement works in Rostov-on-Don, Saratov and Tashkent were commissioned. -

The Stalingrad and Kharkov tractor plants specialized in large-scale production of wheeled tractors of the KIITZ-15/30 type with a 30 h.p. kerosene engine. The plant in Rostov produced combine harvesters, tractor-drawn drills and ploughs, spare parts for agricultural machines, and running gear for carts. The Saratov Works put out grain combine harvesters and the Tashkent Works—ginning equipment.

Plants that had been reconstructed produced tractor-drawn machines and implements. The Red Star Plant began to manufacture tractor-drawn drills and threshers: the Lubertsy Plant produced flax-pulling and hemp harvesting machines; the Kommunar Plant, combine harvesters; the October Revolution Plant in Odessa, tractor-drawn ploughs; the Ryazan Plant, potato-digging machines.

Beginning with the First Five-Year Plan Soviet industry began to supply the state and collective farms on an increasing scale with farm machinery.

**Number of Tractors, Combines and Lorries in Use
in Soviet Agriculture (thousand units)**

Type of machine	1932	1940	1965
Tractors:			
in physical units	148	531	1,650
in 15 h.p. units	148	681	3,050
Combine harvesters	14	182	520
Lorries	14	228	982

By 1940 there were already 531,000 tractors and hundreds of thousands of combine harvesters and lorries employed in agriculture in the USSR. Technical reorganization and comprehensive mechanization of agriculture were progressing rapidly in the rural economy. This dynamic process was cut short by the war thrust upon the Soviet Union by fascist Germany.

Soviet industry, including the tractor and farm implement industry, was almost completely turned to the satisfaction of military needs. This lasted for over four years. There was a sharp cut in the production of farm implements. Besides, in fascist-occupied areas the bulk of farm machinery had been either transported to Germany or demolished. The pre-war level of technical equipment in agriculture was reached only in 1950. The process of technical reorganization of Soviet agriculture had been suspended for ten long years. In the post-war years Soviet industry made great headway in producing farm implements for collective and state farms. This is shown by the following figures.

**Supply of Major Farm Implements for
Soviet Agriculture (thousand units)**

Type of machine	1940	1950	1965
Tractors:			
in physical units	23.3	92.2	239.5
in 15 h.p. units	33.5	182.5	482.1
Combine harvesters	12.8	45.8	79.4
Lorries	17.5	87.1	70.2

In 1965 the number of tractors had increased by 200 per cent as compared to 1950 and that of combine harvesters 150 per cent. There was also a steady rise in the amount of other farm equipment.

The increase in the amount of machinery and equipment available radically changed the character of agriculture. By 1958 nearly all agricultural operations were mechanized. The following data show the dynamics of the change in the character of major agricultural operations.

**Mechanization of Field Work in Soviet
Agriculture (per cent of total volume of work specified)**

Operation	Implements used	1928	1940	1958
Ploughing	wooden plough	10	—	—
	horse plough	89	38	2
	tractor plough	1	62	98
Sowing (grain)	by hand	75	8	—
	horse drills	25	36	3
	tractor drills	—	56	97
Harvesting (grain)	sythe and sickle	44	20	5
	horse harvester	56	34	3
	combine harvester	—	42	90

Mechanization of farming gave a considerable economy in labour. In 1925 individual peasant households spent 3.2 man-days for each centner of grain. In 1960 the production of the same amount of grain consumed 0.86 man-days on collective farms and 0.26 man-days on state farms, or an average of 0.58 man-days for both

state and collective farms. In 1964 the average figure stood at 0.42 man-days. In thirty years labour productivity in grain crop production had increased by 660 per cent.

In the USSR grain farming is the most highly mechanized branch of agriculture. In a number of other branches certain operations in cultivating, harvesting and transporting agricultural produce have not yet been fully mechanized on state and collective farms. Up till now animal husbandry has been the least mechanized branch of agriculture.

A number of operations at livestock farms still suffer from inadequate mechanization, which is largely due to the lack of efficient machinery. Soviet scientists, engineers and designers have made good progress in solving this problem, and mass manufacture of the necessary machines and equipment is being launched. Within the next five years (before 1970) nearly all the labour-consuming operations at livestock farms should be mechanised ensuring a sharp rise in labour productivity.

* * *

Particular attention is being given to the electrification of agriculture. After the October Revolution a system of planned measures was worked out for the electrification of the countryside. In 1920, when the rehabilitation of the war-ravaged economy of the young Soviet state was only gaining headway the first Soviet rural power station was put into operation in the vil-

lage of Kashino in the Volokolamsk district of Moscow Region, bringing electricity to the peasants' homes for the first time. Lenin personally attended the commissioning of this station.

In 1916, the year before the October Revolution, there were only 80 rural power stations with a total capacity of 2,000 kw; they only supplied electricity to a small number of landed estates. Their annual production of electricity amounted to only a little more than 1,000,000 kwh and they had no effect on the peasants' life or work.

Soviet rule brought radical changes to the countryside. When mass collectivization began there were already 694 rural power stations with a total capacity of nearly 30,000 kw. In 1928 these stations provided agriculture with some 34,000,000 kwh of electricity, or 30 times more than in 1916. At first electricity was used in agriculture only for household needs, mainly for illumination. Its use for production purposes was insignificant. In those years only threshers were sometimes operated by electric motors.

As industry developed the production of electricity for the countryside began to make headway.

In 1964 the annual consumption of electricity in agriculture was seven times higher than the total output in pre-revolutionary Russia.

In recent years there has been a sharp rise in the amount of electricity provided for the countryside by state power grids. This is equally significant for the state and collective farms and for the entire national economy, since big state power plants produce electricity at much

Electrification of Soviet Agriculture

Indicators	1928	1940	1965
Total capacity of rural power stations (thous.kw)	30	265	5,285
Total output of electricity by rural power stations (mln. kwh)	34	303	6,034
Total consumption of electricity in agriculture (mln.kwh)	34	538	21,000

lower costs than small local stations. Besides, big power stations are more reliable in providing an uninterrupted supply of electricity. This is highly important, particularly for production processes.

Simultaneously with the rise in the consumption of electricity in agriculture, state and collective farms have been amply supplied with electric motors. Since the war they have been widely introduced in various agricultural operations. In mechanical repair shops, in irrigation and animal husbandry they play an important part in all labour-consuming operations.

At the beginning of 1966 there was an average of 28.3 electric motors per collective farm and an average of 89.2 per state farm.

The increase in the amount of electricity supplied by state power systems and in the number of electric motors employed in agricul-

ture brought radical changes in the pattern of electricity consumption by state and collective farms. Electricity, previously used only for household purposes, steadily won a place in production processes.

The intensive introduction of electricity and electric motors into agriculture has made it possible to electrify numerous labour-consuming operations.

This plays an important part in raising the economic efficiency of agricultural production.

* * *

At the present stage in the development of science and technology chemicals are called upon to play an important part in developing the productive forces of society. Today chemical products are becoming an indispensable requisite for rapid development of numerous branches of the economy, but it is in agriculture that chemicals give the greatest effect.

In tsarist Russia numerous specialists in agronomy were well aware that a highly-productive agriculture could be achieved only by making the fullest use of chemical products. Academician D. N. Pryanishnikov, world-renowned Soviet scientist of the older generation, clearly perceived the reason for Russia's agricultural backwardness. Firmly believing in the radiant future of his country in those far-off pre-revolutionary years, he carried on intense research work in the physiology of the mineral nutrition of plants, the theory and prac-

tice of fertilizer application and the technology of fertilizer manufacture from home-supplied raw materials.

He developed a new theory of the nitrogen nutrition of plants and on this basis made broad generalizations on the unity of metabolism in the vegetable and animal kingdoms. In his doctor's thesis "Proteins and Their Disintegration Due to Respiration and Assimilation" he advanced the noteworthy idea that plants, besides using the ammonia formed within them during the disintegration of proteins, should under certain conditions assimilate external ammonia, converting it into aminoacids and protein. He later proved this by experiment and determined the conditions necessary for this process. Due to his indefatigable activities ammonium fertilizers, including ammonium nitrate, were given "a start in life;" long before practical application of the latter he foresaw its future advantages, calling it the "fertilizer of tomorrow."

While convinced of the great importance of using artificial fertilizers and the high economic effect that could be achieved in this way, D.N. Pryanishnikov realized that these ideas could not be implemented in tsarist Russia with its backward industry and small peasant households. "The use of mineral fertilizers, like every economic measure," he wrote, "depends chiefly on economic correlations." Pre-revolutionary Russia with its boundless stretches of tilled land consumed a ridiculously small amount of mineral fertilizers. The total of nitrate, potassium and phosphate fertilizers used

in Russia in 1913 amounted to 188,000 tons. More than half of the mineral fertilizers used were imported. In 1913 only 89,000 tons of mineral fertilizers were produced at home. At that time artificial fertilizers were applied only on big land estates and even then only for industrial and to a small extent for vegetable crops. The situation remained virtually the same up till the time of socialist industrialization and agricultural collectivization. In 1928 agriculture was supplied with 234,000 tons of mineral fertilizers, of which 135,000 tons were produced by the home industry.

The reconstruction of industry and agriculture along socialist lines brought a sharp rise in the output and consumption of mineral fertilizers. This is evident from the following figures.

Application of Mineral Fertilizers in Agriculture
(thousand tons)

Type of fertilizer	1928	1940	1966
Nitrogenous	11	789	11,132
Potassium	4	536	4,547
Phosphate	207	1,371	8,044
Phosphorite meal	12	473	3,246
Total in arbitrary units	234	3,159	27,066

In recent years the consumption of mineral fertilizers has been growing at an accelerated rate. Between 1951 and 1960 the yearly increase in the consumption of mineral fertilizers amounted to six million tons. In the next five years (1961-65) the yearly increase rose to 15.6 mil-

lion tons. In the first three years of the preceding seven-year period (1959-61) the average yearly growth rates for mineral fertilizers applied in agriculture stood at 4.4 per cent. In the next four years (1962-65) they went up to 25.6 per cent. The average annual volume of their consumption for these two periods increased from 11.5 million tons to 19.8 million tons respectively.

The headway made in the production and deliveries of mineral fertilizers to state and collective farms has made possible their general use for most crops. Scientifically-grounded application rates have been worked out for such industrial crops as cotton, sugar-beet, fibre flax and tea. The fertilizing of potato, vegetable, fruit and berry crops is also conducted at many collective and state farms. At farms employing these methods crop yields are usually well above the average for the area, showing the great economic effect that can be obtained by the chemicalization of agriculture.

The production of mineral fertilizers, however, still falls short of satisfying the needs of agriculture. Up till recently grain and forage crops were grown without mineral fertilizers, which accounted for the slow progress in raising average yields of these crops. Soviet industry has been set the task of manufacturing mineral fertilizers in an amount adequate for their application on a scientific basis for all crops. This will ensure a steady rise in crop yields and raise the efficiency of production at state and collective farms on the whole.

DEVELOPMENT OF PRODUCTION AND RISE IN LABOUR PRODUCTIVITY ON STATE AND COLLECTIVE FARMS

The comprehensive assistance rendered the peasants by the State brought about a speedy rehabilitation of the war-devastated rural economy. In 1921 gross output of agricultural products amounted only to 60 per cent of the 1913 level. In 1928 it was already 24 per cent higher. Marketability was, however, low and this was a drag on rapid industrialization.

This problem as well as that of achieving a general satisfactory development of agriculture was solved by its reconstruction along socialist lines. During mass collectivization, when the countryside became the site of a sharp class struggle, there was a considerable drop in agricultural production. Besides, in 1932 and 1933 agriculture was hit by severe droughts, which brought the total gross output of agricultural produce in 1933 back to the 1913 level. Nevertheless, progress achieved in the organization of state and collective farms made it possible quickly to overcome this lag. The average yearly rate of growth of gross agricultural output for the period between 1934 and 1940 stood at five per cent. By 1940 agricultural production had increased 41 per cent over the 1913 level. Agricultural development had on the whole be-

gun to keep pace with industrial progress.

The war cut short the planned development of agriculture. The fascist invaders burned and destroyed 70,000 villages, ravaged 98,000 collective farms, 1,876 state farms and 2,890 machine-and-tractor stations; they robbed the farmers of 17 million head of cattle, 20 million pigs, 27 million sheep and goats and seven million horses. After their liberation, the areas that had been occupied by the enemy had, as compared with the pre-war period, only 50 per cent of the tractors and 58 per cent of the combine harvesters (most of them made unfit for use), 28 per cent of the horses, 40 per cent of the cattle, 30 per cent of the sheep and goats and 10 per cent of the pigs. The losses suffered by agriculture due to occupation amounted to thousands of millions of roubles.

Besides, the war had diverted huge material and labour resources from agriculture. The overwhelming majority of the adult male population of the villages had been mobilized. The majority of tractors, lorries and draught horses had also been handed over to the Soviet Army. This also checked the development of agriculture in the eastern regions of the country.

By the end of the war agriculture had been seriously undermined. Gross agricultural output in 1945 was only 60 per cent of that of 1940. It took the Soviet people five years to reach the pre-war level of agricultural production. Only then could collective and state farm production be further developed.

The growth of agricultural and livestock production in the post-war years was influenced by

a number of factors. In field crop cultivation this was achieved by expanding areas under all staple crops.

Sown Areas in the USSR
(million hectares)

Crop	1940	1950	1965
Total sown area	150.6	146.3	209.1
Grains	110.7	102.9	128.0
Industrial crops	11.8	12.2	15.3
Potatoes, vegetables and melons	10.0	10.5	10.6
Fodder crops	18.1	20.7	55.2
Fallow lands	28.9	32.0	14.6

It follows from the table that in the post-war period the total sown area topped that of 1940 by 39 per cent, including a 16 per cent rise in the area under cereals, a 31 per cent rise in that under industrial crops and a more than 200 per cent increase in fodder-crop areas. Fallow lands shrank almost by half.

Sown areas were substantially increased by bringing large tracts of virgin and unused lands under cultivation in the more easterly part of the country. Within a short period (1954-58) a total of 41 million hectares of lands was brought under the plough in these regions. This exceeded the total area sown to cereals in Austria, Belgium, Denmark, France, the Federal Republic of Germany, Italy, the Netherlands, Spain and Sweden combined. A large grain-producing area was established to the east of the Volga. There were cases when new lands were develop-

ed without adequate soil and agronomic investigations. Along with faulty methods of land tillage and crop rotation this led to soil erosion in several virgin land areas. These shortcomings are now being eliminated in accordance with scientific farm techniques.

Simultaneously with the increase in sown areas state and collective farms carried on extensive work to improve crop varieties and methods of their cultivation. These measures, combined with the extensive use of mineral and organic fertilizers, have given a considerable rise in crop yields.

As compared with 1940 crop yields in 1964 increased by 32 per cent for cereals, 100 per cent for cotton, 36 per cent for sugar beet, 30 per cent for fibre flax, 77 per cent for sunflower, and 11 and 43 per cent for potatoes and vegetables respectively.

The expansion of sown areas and the increase in crop yields provided a substantial rise in agricultural production.

Output of Staple Crops in the USSR

Product	Unit	1940	1950	1965
Cereals	mln. tons	95.6	81.2	148.0*
Seed cotton	"	2.24	3.54	5.66
Sugar-beet (industrial)	"	18.0	20.8	71.5
Sunflower	"	2.64	1.80	5.41
Flax fibre	thous. tons	349	255	444
Potatoes	mln. tons	76.1	88.6	88.0
Vegetables	"	13.7	9.3	17.0

* Average data for 1965-66.

The growth of agricultural output gave impetus to productive livestock raising. After the war there was a sharp rise in the livestock and poultry population.

Livestock and Poultry in the USSR
(million head)

	1940	1950	1965
Cattle	54.8	57.1	93.4
Including cows	28.0	24.3	40.1
Pigs	27.6	24.4	59.5
Sheep and goats	91.7	99.0	135.3
Poultry	—	292.8	456.0*

The table shows that despite the losses suffered in the war, stocks of cattle increased by 70 per cent over 1940, the number of cows increasing by 43 per cent; the number of pigs doubled; that of sheep and goats went up by 48 per cent; poultry stocks increased by 56 per cent over 1950.

Feed resources were increased; highly productive breeds of cattle were developed; there was a considerable rise in the level of livestock management and veterinary services at state and collective farms. These were factors making for the systematic improvement of livestock productivity.

In 1965 the milk yield per cow increased some 80 per cent over the 1940 figure, and the wool clip went up by 16 per cent; in recent

* Data for beginning of the year.

years there has been a considerable rise in egg yield per hen.

The development of animal husbandry in the post-war period is characterized by increased output of staple animal products in physical terms.

Output of Staple Animal Products in the USSR

Product	Unit	1940	1950	1965
Meat (slaughter weight)	mln. tons	4.7	4.9	9.9
Milk	"	33.6	35.3	72.4
Wool	thous. tons	61	180	357
Eggs	thous. mln.	12.2	11.7	29.0

On the whole gross agricultural output (in comparable prices) increased from 30,400 million roubles in 1940 to 56,000 million roubles in 1965. The level achieved in agricultural production brought about a sharp improvement in supplying the population with foodstuffs and the processing industries with raw materials. The first can be observed by comparing the increase in population with the increase in gross agricultural output. By the beginning of 1966 the population of the USSR had risen 19 per cent over the 1940 figure, while gross agricultural output was up 81 per cent. In 1940 agricultural production per capita (in comparable prices) amounted to 157 roubles; in 1965 it had increased to 238 roubles, a rise of 52 per cent. Coupled with the population's growing income, the in-

crease in agricultural production had a decisive influence in raising living standards.

Since the war Soviet agriculture has made a great advance in raising the output of marketable produce. An increasing proportion of agricultural produce is sold as marketable output to the state, providing the processing industries with raw materials and becoming a part of the centralized commodity turnover. The bulk of farm products is sold to the state at fixed prices.

At present state purchases are made almost entirely on state and collective farms. The proportion of the public agricultural sector in state purchases amounts to 100 per cent for grain, seed cotton, sugar-beet and sunflower, 93 per cent for vegetables, 73 per cent for potatoes, 91 per cent for meat and 96 per cent for milk.

Collective and state farm production has become the chief source of foodstuffs for the population and of raw materials for the processing industries. This is a great victory for the collective and state farm system. The supplying of all areas of the country with foodstuffs has been properly organized. Sufficient reserves have been built up for this purpose. Breaks in regular food supplies that still occur occasionally are the consequence of poor trade organization and not of a food shortage. The population is fully provided with milk, butter, oil, sugar, bread, eggs, pork, vegetables and other products. The problem today is to expand the food industry, increase the variety of foodstuffs, raise their quality and fully satisfy the needs of the population for these products.

Post-revolutionary agricultural development was characterized by a rise in output and a drop in the rural population. In 1913 urban dwellers made up only 18 per cent of Russia's population. The picture remained much the same till 1928.

With the beginning of industrialization and social reconstruction in the countryside the ratio began to change in favour of the town dwellers. In 1940 they already made up 33 per cent of the population. This process was accelerated in the post-war period. Today the urban and rural population of the USSR amounts to 54 and 46 per cent respectively. Before the revolution 75 per cent of the able-bodied population was engaged in agriculture. Between 1913 and 1965 gross agricultural output increased by 150 per cent while the percentage of workers engaged in agriculture fell to less than half the former figure. There has also been a considerable drop in the actual size of the rural population. The total population of the USSR increased from 194.1 million in 1940 to 231.9 million in 1965, while during the same period the rural population fell from 131 million to 107.1 million.

The number of workers engaged in agriculture has also declined. In 1950 there were 30.7 million people engaged at collective and state farms and rural subsidiary enterprises. At the beginning of 1966 their number had dropped to 27.5 million i.e. by 3.2 million or 10 per cent. At the same time gross agricultural output rose from 30,400 million roubles to 56,000 million roubles, or 84 per cent.

This has been possible only due to a steady rise in labour productivity. There has been a fivefold increase in labour productivity at collective farms, state farms and rural subsidiary enterprises as compared with pre-revolutionary Russia (including landowners' estates).

Today the method of growing crops by means of mechanized teams and brigades is steadily gaining ground at state and collective farms where it is replacing manual labour.

The large-scale introduction of advanced methods of organizing production will in the near future steadily reduce the number of workers engaged in agriculture, increase labour productivity at state and collective farms and raise the efficiency of social production.

RAISING THE LIVING STANDARDS OF THE RURAL POPULATION

In pre-revolutionary Russia the living standards of the peasantry were extremely low. At that time even the impoverished urban worker was much better off than the peasant. From their paltry income the peasants were forced to make numerous payments to the state and the landowners (taxes, rent, insurance, conscriptions, etc.). These combined consumed one-fifth of the peasants' total income from agriculture. Today no more than three per cent of the farmers' income is paid out in taxes.

As public agricultural production develops the real incomes of the farmers rise. Between 1913 and 1958, farmers' incomes (in cash and kind) from public and private farming—minus taxes (in comparable prices) per agricultural worker—increased 350 per cent. Peasants' real incomes from agriculture within that period increased approximately 500 per cent. The difference between real incomes and incomes in cash and kind is due to the rapid increase in the public consumption funds, which cover expenses for education, medical treatment, old-age pensions, temporary disablement allowances and other payments and grants provided by the collective farms and the state.

During the years of Soviet rule payments and grants provided by the state per agricultural worker for social and cultural needs have increased approximately forty times over. The bulk of income received by the collective farmers from the public consumption funds (about 90 per cent) is provided by the state. The other 10 per cent comes from the collective farms.

The farmers' chief income comes in the form of remuneration for work in the public economy. This accounts for more than half of the farmers' total real incomes and the proportion is increasing yearly due to growing labour remuneration. At present the average incomes of collective farmers are still below the average wages of factory and office workers. This difference, however, is being steadily eliminated. Between 1958 and 1963 the average wages of factory and office workers increased by 12.6 per cent whereas the income of collective farmers

went up by 20 per cent. This narrowing of the gap between the incomes of farmers and those of factory and office workers has been particularly rapid in recent years.

In 1965 the average incomes of collective farmers rose by 16 per cent as against the 5.8 per cent increase in the wages of factory and office workers. By consistently increasing the collective farmers' labour remuneration more rapidly than that of workers the difference between the real incomes of rural and urban dwellers will be overcome in the near future.

There have also been great changes in the cultural standards of the rural population. In pre-revolutionary Russia the overwhelming majority of peasants were illiterate. Only a small number of peasant families could afford elementary education for their children. Those conditions have long since changed. According to the general census of 1959, 98.2 per cent of the rural population aged between 9 and 45 were literate. 212 rural dwellers out of every 1,000 had a higher or a secondary education.

At the beginning of 1966 Soviet agriculture had 496,000 specialists with a higher or secondary education, of whom 232,000 were working on collective farms and 264,000 on state farms. Universal compulsory secondary education is now being introduced. The rural communities are provided with secondary schools on the spot and with boarding schools at the nearest towns and workers' settlements. Many large state farms have specialized secondary schools where students receive a theoretical and prac-

tical knowledge of agronomy, animal husbandry or engineering subjects. And these are not the only opportunities: the doors of hundreds of higher educational institutions and of thousands of urban specialized secondary schools are always open to young people from the countryside.

Other forms of cultural and educational work have become widely spread in the rural areas. In 1913 the countryside had only 11,300 libraries with a stock of 4,400,000 books and magazines. By 1965 their number had increased to 90,900 and their book-and-magazine stock to 473,100,000. In the whole of pre-revolutionary Russia with its predominantly rural population there were only 100 village clubs. Today the Soviet countryside has 111,600 clubs, theatres and houses of culture. The radio, newspapers and magazines have become part of the farmers' everyday life. TV is finding its way into the farmers' homes on an increasing scale. Many state and collective farms have their own sports grounds and stadiums.

Particular care and attention is devoted to the youngest rural citizens—children under school age. In 1937 the countryside was provided with only 200 kindergartens and nurseries. Today their number has reached almost 23,000. Thirty years ago rural pre-school establishments could hardly admit 8,000 children. Today they care for more than a million.

Before the revolution the rural population was practically deprived of medical service. Today all rural districts are covered by a ramified network of hospitals and outpatient clinics.

Public services are rapidly developing in the countryside; tailoring and garment-repairing establishments, public baths and showers, laundries and hairdressing establishments are mushrooming throughout the country. Cooperative trade is being widely developed. In 1928 there were only 87,000 shops in the countryside. Despite the sharp reduction in the rural population, the number of state and cooperative shops has now increased to 316,000. Public catering has been developed on a wide scale. Canteens and restaurants, cafes and snack-bars have increased in the countryside from 15,000 to 281,000 within the same period.

A big programme of housing construction is being carried out in the countryside simultaneously with the construction of buildings for cultural and welfare purposes. Between 1959 and 1965 more than three and a half million houses were built in the rural areas by collective farmers, rural intellectual workers and the collective farms. Many houses are built at the expense of the state and the state farms. There is a growing tendency to build urban-type houses with modern conveniences.

These developments are leading to the gradual elimination of the basic socio-economic distinctions between town and country which are still observed in the character of production, the level of education and professional training, the level of real incomes, and public, cultural and medical services. Time and effort will be needed to overcome these differences. An important step in this direction will be taken in the current five-year period (1966-70).

AGRICULTURAL PLANNING

Today every Soviet worker realizes the full significance of planned economic development. A properly elaborated and economically grounded plan for developing collective and state farm production is particularly important. Planning constitutes the basis of every form of production process, especially agriculture. Even small semi-natural peasant households had plans. Using his "peasant" common sense the tiller shrewdly balanced the potentialities and needs of his household. His life-long experience helped him select the proper crops for his plot and the draught animals for ploughing; he had to estimate the number of animals to be left for the winter to provide his family with food and his field with manure so as to make his land more fertile the following year. But no matter how he tried he often could not make both ends meet. And it was not the peasant's fault. There was too big a discrepancy between the peasant's potentialities, and his needs. That is why his plan often came to naught.

Years rolled by. The socialist revolution brought radical economic changes. Small semi-natural peasant households gave way to large-scale mechanized socialist enterprises in the form of state and collective farms. Current and long-range planning of social production became an economic law, the basis for developing every enterprise and agriculture as a whole.

Big farms based on public ownership of land

and the means of production, employing collective labour and modern machines, and enormous funds at their disposal, can develop smoothly only if they follow a comprehensively elaborated plan. Agricultural planning has grown into a complicated modern branch of science that deals with the development of collective and state farm production. It cannot as yet supply remedies for all current ailments; there are many "blank spaces" that are still waiting to be filled in. Neither is the practical side of planning collective and state farm production free from shortcomings. The economic substantiation of state and collective farm production plans often falls short of the necessary requirements.

Nevertheless, the many years of planned economic development of state and collective farms have led to the elaboration of the basic principles and methodology of agricultural planning, its organizational pattern and the chief indices for long-range and current plans on a national, territorial, regional, district and individual farm scale.

The chief object of agricultural planning in the Soviet Union is to increase the output of farm products in order to satisfy more fully the constantly growing needs of society. The chief requirement of agricultural planning is to ensure increased production with minimum public outlays.

At all levels of economic planning and management, attention is focused on the most effective utilization of material, labour, financial and natural resources and on eliminating super-

fluous costs and losses. To obtain the highest results with the lowest outlays in the interests of society is the paramount law of economic development.

An economically-grounded agricultural plan drawn up on a nation-wide scale or for each specific agricultural enterprise must answer the following requirements:

1. Give an all-round analysis of the economic situation prevailing in each field of production or farm at the beginning of the planned period.
2. Determine the demand for farm products during the planned period.
3. Give a substantiation of the actual potentialities for the expansion and more efficient use of crop areas, labour resources, material and technical means and for technical progress in the planned period.
4. Use a system of balances to determine the potential rates and proportions in developing a branch of agriculture or an individual farm along different organizational and technological lines (specialization, concentration, mechanization, etc.).
5. Estimate the economic efficiency of individual economic measures and that of developing a particular branch or farm as a whole (growth of output, labour productivity and profitability of production).

These requirements must be met at all planning levels: from separate farms to central planning organizations.

UNDER THE NEW ECONOMIC CONDITIONS

Simultaneously with the rapid development of industry, agriculture has made steady progress.

But although there have been substantial achievements in agricultural production it still falls behind the general economic development of the country. As we have mentioned before, the growth of agricultural production was accompanied by a 50 per cent increase in the population, and an even greater rise in the people's purchasing power. Consequently the increase in agricultural output was insufficient and could not fully meet the demands of the national economy.

The country's agricultural achievements could have been more spectacular if the objective potentialities of agricultural development had been used more fully and more consistently and if the advantages offered by the planned character of collective and state farm production had been utilized in full measure. Actually agriculture in the USSR during the analyzed period developed unevenly; at some periods its progress was sharply retarded. This is explained by shortcomings and mistakes in collective and state farm organization, which have now been revealed and condemned by the Soviet Communist Party. Thus during the period of mass collectivization a severe blow was delivered to the collective-farm system and to the growth of agricultural pro-

duction by violations of the principle of voluntary entry of peasants into cooperatives. Collectivization was often artificially accelerated. Serious distortions during the socialization of the means of production and bread procurement campaigns discredited the collective-farm idea in a number of regions and hindered the development of the communal economy.

Grave mistakes were committed in the first post-war years in agricultural management. There were frequent violations of the principle of the material incentive of agricultural workers, as a consequence the growth of agricultural output all but came to a standstill at that period. Thus the average yearly rate of growth of gross agricultural output for the five years from 1949 to 1953 stood at only 1.3 per cent instead of the 5 per cent rate of the pre-war years. Agricultural production could not meet state's demands for farm products. There were interruptions in supplying the population with bread, meat, milk, sugar and some other food-stuffs. There was a wide gap in the rates of industrial and agricultural development. Such a situation threatened to put a brake on the development of industry and halt the rise of the people's standard of living.

In September 1953 a Plenary Meeting of the CPSU Central Committee outlined a number of economic measures to increase collective and state farm production. Of decisive importance were the decisions to raise state purchase prices of farm products, strengthen the material and technical basis of collective and state farms, and provide the farms with skilled specialists.

The implementation of these decisions led to a great increase in the output of all farm products within a short period of time. Gross agricultural output for 1954-58 went up by 51 per cent and its average yearly growth rate reached 8.6 per cent instead of the 1.3 per cent for 1949-53. These achievements brought a great improvement in supplying the population with foodstuffs and made it possible to satisfy more fully the demands of the light and food industries.

In the years that followed, however, these achievements were not consolidated and developed. Contraventions of the adopted economic policy became frequent. This is particularly true of the Seven-Year Plan for 1959-65. Agriculture was set a number of big targets in raising farm production, but provision was not made for the necessary economic measures. Thus, the plan envisaged a reduction in the rates of growth of state capital investment in agriculture, and in the rates of increase in supplies of machines, mineral fertilizers and electricity for collective and state farms; prices were raised for industrial means of production employed in agriculture.

This limited possibilities of expanded reproduction in agriculture. Administrative measures and the giving of peremptory orders became predominant in farm management. This was particularly manifested in the practice of dictating the scale and structure of production from central organs without taking into consideration concrete geographic and economic conditions and local experience. Noteworthy

examples were the orders to expand everywhere plantings of maize and sugar-beet as cattle fodder, to plough up perennial grasses and do away with clean fallow on a country-wide scale. Such a routine approach caused serious damage to agriculture, reducing its economic efficiency, and moreover, shackled the creative initiative of the farmers. This unjustified interference in the economic activities of collective and state farms violated the principles of democracy in relations between the state and the enterprises and led to the contravention of important economic principles of socialist management.

These shortcomings and mistakes resulted in a drastic fall in the growth of agricultural output.

The state of affairs in agriculture was closely analyzed at the Plenary Meeting of the CPSU Central Committee held in March 1965. A series of effective measures were outlined for accelerating agricultural development. The Plenum decisions were based on a profound study of the laws governing the development of socialist economy in contemporary conditions and envisaged a consistent implementation of Lenin's principles of economic management.

The cornerstone of the Plenum's decisions was the Party's directive on the necessity of developing and improving commodity-money relations between the state and the collective and state farms and between agriculture and industry, and making extensive use of economic levers in agricultural management. The Soviet people consider the development of the exchange of labour products on a mutually-profitable

basis between town and countryside to be the key to consolidating the alliance of the workers and farmers—the basis of the socialist state. Proceeding from this principle it was decided to increase capital investment in agriculture and provide the farms with more machinery, to adopt stable plans for state purchases and raise purchase prices. To this end the prices of farm machines, spare parts, motor vehicles, electricity and other industrial commodities used in agriculture were considerably reduced as of January 1, 1966. The tax system has likewise been improved—it is now based on the farms' net income instead of the gross income; the system of financing and crediting state and collective farms has changed for the better.

The practice of influencing collective- and state-farm production by purely administrative measures has been replaced by economic, scientifically substantiated levers of management on the basis of the objective economic laws of socialism. Collective and state farms have been given greater economic independence. A decisive step in this direction was the introduction of a new system of evaluating the enterprises' economic activity on the basis of the most important criterion—profitableness, instead of the former practice based on a number of indices.

These measures created the economic requisites for accelerating the process of expanded reproduction at collective and state farms in the very near future. The level of development of the productive forces which has already been achieved is quite sufficient for the purpose.

Implementation of the new system gave fa-

vourable results the very first year. One year is too short a term to sum up the results of a big economic reform, particularly in such a branch as agriculture where production is seasonal and is influenced by geographical and especially climatic factors.

Nevertheless the volume of agricultural output for 1965 surpassed that of 1964, when the highest level of output had been reached. There was a considerable rise in livestock products. Thus, the output of meat was 16 per cent higher than in 1964, milk output went up by 14 per cent and that of eggs by nine per cent.

1965 was an unfortunate year for grain crops. None the less there was a substantial increase in harvests of some cereals. Thus the rice harvest went up by 21 per cent, that of buckwheat by 32 per cent. Great headway was made in cotton growing—the total yield amounted to 5.7 million tons of seed cotton, the highest figure ever scored for this crop in the Soviet Union.

1966 brought even greater achievements to Soviet farmers. The plan for state purchases of grain and other farm products was substantially overfulfilled. Fresh success was attained in animal husbandry. The reorganization of agricultural planning and management proved highly successful. In 1966 the country produced more farm products than ever before. In 1966 the gross output of grain reached 170.8 million tons against 130.2 million tons in 1961-65. The average growth rate in agriculture for this year was 10 per cent.

The measures adopted for increasing agri-

cultural output are not temporary but constitute Soviet economic policy, as regards agriculture, for a long period to come. This is borne out by the five-year plan for 1966-70 which envisages substantial measures for further development of agriculture.

CHIEF TASKS OF THE CURRENT FIVE-YEAR PLAN PERIOD

The chief economic task in the current plan period is to achieve a substantial increase in industrial production and high, stable rates of agricultural development, in this way raising living standards and satisfying more fully the population's material and cultural requirements. This necessitates the widest application of advances in science and technology, development of all social production along industrial lines, and raising its efficiency and the productivity of labour.

In order to cope with this task the entire Soviet economy is directing particular effort to developing agriculture. Under the plan the average yearly volume of all farm products during the 1966-70 period is to rise 25 per cent as compared to the preceding five-year period. Priority is to be given to increasing grain output. The average yearly volume is to increase by approximately 30 per cent.

The plan calls for the average yearly output of staple farm products to reach the following level:

Farm products	Average yearly output (million tons)		
	1961-65	1966-70	1966-70 (per cent of 1961-65)
Cereals	130.2	167	128
Sugar-beet	59	80	136
Seed cotton	5	6	120
Potatoes	81	100	120
Meat	9.3	11	118
Milk	65	78	120
Eggs (thous. mln.)	29	34	117

In field-crop output the main stress is on raising average yield. Possibilities of increasing output by expanding sown areas are limited as compared to previous times.

During the large-scale reclamation of virgin land there were cases in some parts of Kazakhstan, Siberia and the Trans-Volga areas where soils of light mechanical structure were brought under the plough along with fertile lands. It would be more expedient to convert these lands to meadows, and in the basic virgin-land areas to introduce in the shortest possible time a scientifically-grounded methods of farming in conformity with the soil and climatic features of each zone. The envisaged expansion of sown areas by draining marshlands and by irrigation will partially compensate for the reduction of the area under cereal crops in the virgin-land districts subject to soil erosion.

Thus, the main source of increased cereal output will be the raising of average yields on all sown areas.

Extensive measures to raise the level of land cultivation will be implemented. It includes the rational use of arable land, the introduction of proper crop rotations and better varieties of cereals and other crops, the effective use of mineral and organic fertilizers, the control of soil erosion and the organization of field shelter-belt afforestation.

Attention will be concentrated on the establishment of a stable cereal economy by increasing the output of cereals in districts of the non-black-earth zone which are not subject to drought. Rice cultivation will be organized on a broad scale in the lower Syr-Darya and Amu-Darya areas, in the North Caucasus and in the southern Ukraine, and cereal cultivation in the virgin-land areas will be radically improved.

Further increase in the output of meat, milk, eggs and wool will be achieved by raising the productivity of livestock and poultry on the basis of improved supplies of feeding stuffs.

To achieve these objects it is planned:

To increase the output of feed crops that ensure the greatest yields per unit of sown area with the lowest labour and material outlays;

To achieve a rise in the yields of all natural fodder areas and expand cultivated pastures;

To increase the output of full-value mixed feed and protein-vitamin additions, meat, bone, blood and fish meal by not less than 100 per cent;

To supply agriculture in 1970 with 800-900 thousand tons of feed yeast; to produce 2.-2.5 million tons of grass meal;

To provide animal husbandry at collective and state farms more fully with high-protein feeds, essential aminoacids, microelements, vitamins, and mineral feeds, as well as preservatives to prevent losses of feed nutrients.

In order to raise the efficiency of public livestock breeding the Five-Year Plan contemplates acceleration in raising the average milk yield and in developing intensive dairy farming at collective and state farms, particularly in the vicinity of big towns and industrial centres. The plan likewise provides for developing the breeding of beef cattle, raising and fattening the young cattle stock in areas with developed dairy farming, and at special fattening farms.

It is also intended to make a more rational use of the pig stock by fattening animals to an economically profitable weight level; to increase the wool-clip and meat yield of sheep, and develop on a greater scale the raising of sheep with fine and semi-fine fleece, cross-bred sheep and karakul sheep.

Measures are being taken to develop commodity poultry farming on an industrial basis at special poultry plants and large mechanized collective and state poultry farms.

The material basis for the solution of these tasks in the current five-year period will be provided by the all-round mechanization of collective and state farm production, the extensive chemicalization of crop production and animal husbandry, the total electrification of rural areas and a vast programme of land-reclamation measures.

By increasing the amount of machinery available to agriculture, improving labour organization and increasing the material incentives of farm workers it is planned to raise labour productivity at collective and state farms 40-45 per cent, reduce the costs of farm products and achieve greater profitability in agricultural production as the basis for increasing public production and the real incomes of farm workers.

An important socio-economic task for the five-year period is to make further progress in eliminating essential differences between town and country, consistently raising the material and cultural level of the rural population, bringing it closer to that of town dwellers.

INDUSTRIAL METHODS IN AGRICULTURAL PRODUCTION

A characteristic feature of economic development in the current five-year period will be the increasing introduction of industrial methods of production into all sectors of the national economy. In this respect agriculture offers particularly broad opportunities.

During this period the technical level of agriculture must be brought considerably closer to that of industry. The fixed production assets in agriculture will be doubled and radically renew-

ed, the rate of growth of labour productivity will be relatively higher than in industry.

To achieve these goals the Five-Year Plan envisages the creation of a modern material and technical basis for agriculture. Huge sums are being allocated for this purpose. Thus, the state has assigned 41 thousand million roubles in the current five-year period for construction of farm buildings, irrigation and land drainage and the purchase of machinery. This is double the amount invested by the state in the preceding five-year period.

Besides state allocations the collective farms themselves will invest, according to preliminary estimates, some 30 thousand million roubles in expanding their economies. Thus, the sum-total of capital investment in agriculture to be used only for production needs will amount to 71 thousand million roubles or 23 per cent of all capital investment in the national economy of the USSR. A substantial proportion of these investments will be applied to re-equipping collective and state farms. Accordingly priority will be given to engineering industries that manufacture tractors, lorries and farm implements. The production capacities of these industries will be increased by expanding operating enterprises and building new ones. The Five-Year Plan provides for putting into operation some 80 new plants and shops which will work to satisfy the needs of the rural economy. The data below show the anticipated increase in farm machinery output.

Taking into account the writing-off of obsolete vehicles and machines the number of

Growth of Deliveries of Machines to Agriculture
(*thousand units*)

Machines	for 1961-65	for 1966-70
Tractors	1,093.1	1,790
Grain harvesting combines	381.4	550
Lorries	361.1	1,100
Tractor-drawn implements	475	900
Lorry trailers	21	275
Excavators	45.4	80
Bulldozers	38.1	55
Farm implements (thous. mln. roubles)	6.4	10.7

tractors at collective and state farms will increase in 1970 to 2,490 units; combine harvesters, 780 thousand; and lorries, 1,370 thousand. These figures represent gains of 50 per cent, 51 per cent and 37 per cent over 1965, respectively.

This will be accompanied by the further improvement of farm machinery. The manufacture of many new farm machines is to be launched. They will be marked by higher capacity and greater efficiency in operation. The constant replacement of obsolete machines by new, improved models is an indispensable requisite for the socialist mode of production. Technical progress in agriculture is a highly important condition for the intensification of collective and state farm production, since the introduction of improved machinery leads to the saving of labour and materials, reduces outlays, cuts

production costs, and increases the profitability of social economy.

Accordingly the national economic plan for 1966-70 envisages a series of measures to radically improve the technical and economic characteristics of farm implements. High-speed tractors will be introduced on a wide scale. This will increase the working speed of field machines from 5-9 km per hour to 9-15 km per hour which will not only reduce the time of work but will also cut the number of tractors required by collective and state farms for all-round mechanization from 4.2 to 2.9 million.

New models of tractors will have more powerful and economical engines. Their average capacity will rise from 50 h.p. in 1965 to 84 h.p. in 1970. At the same time the design and technical and economic characteristics of tractors will be considerably improved. General-purpose caterpillar tractors will be equipped with 130-150 h.p. engines, row-crop tractors of the MTZ type will have 75-80 h.p. engines. The tractors will be more economical, specific fuel consumption being cut 8-10 per cent. The transport speed of wheeled tractors will increase to 30 km per hour.

The service of tractors prior to capital repairs is to be extended. The Minsk Tractor Works has developed and is now introducing measures to lengthen this term from three thousand to four thousand motor-hours.

The increase in the number and capacity of agricultural machines will make it possible in the course of the five-year period to double the power available per farm worker.

The complete electrification of collective and state farms is an important target for this period. In accordance with the Directives of the 23rd CPSU Congress the amount of electricity supplied to the countryside during the five years will increase by approximately three times, thus surpassing the total volume of power consumed by the entire country in 1940. The figures below show the growth of electricity consumption in agriculture.

Indicators	1965	1970
Total consumption of electricity in agriculture (thous. mln. kwh)	21	60-65
including:		
for production purposes	11	31-33
for public and individual needs	10	29-32

The main trend in the electrification of collective and state farms is the use of electricity for raising productivity and lightening farm work, as well as improving public amenities in the countryside.

The introduction of electricity into agriculture will economize labour and operating costs. Thus, the comprehensive electro-mechanization of animal husbandry can bring down labour expenditure per centner of milk from 13.5 to 6 man-hours and operating costs from 7.2 to 5.4 roubles, labour outlays per centner of pork from 35 to 25 man-hours and operating expenses from 17 to 3.7 roubles, and per 1,000 eggs from 7.8

to 1.4 man-hours and from 3.2 to 2.5 roubles, respectively.

The introduction of electricity is most advantageous economically in operations requiring stationary power installations, as in animal husbandry, poultry breeding, the primary processing of grain, irrigation farming, hotbed and greenhouse undertakings and auxiliary agricultural enterprises, as well as in the radical improvement of cultural and everyday facilities for the rural population. In some cases electricity can be introduced into mobile processes; for example, there can be electrified field units in irrigation farming.

The increase in the consumption of electricity in the countryside is an important requisite for raising the level of mechanization of labour-consuming operations in animal husbandry.

In 1964, 4.7 million workers were employed in the livestock departments of collective and state farms. Despite the large increase in the number of livestock expected in the five-year period the number of workers in animal husbandry will remain essentially the same due to the mechanization of labour.

During this period it is planned to build 1.4 million kilometres of rural transmission lines with the corresponding amount of consumer transformer sub-stations, which is 60 per cent more than between 1961 and 1965. This will increase the total length of rural electric systems with 20 kV tension and lower from 1,600,000 km at the end of 1965 to 2,700-2,800 thousand km at the end of 1970. By 1970 an average of 85-90 per cent of all rural transmission

lines will be supplied with electricity from state power grids.

There will be a nearly fourfold increase in the number of electric motors employed in agriculture during the five-year period, the total reaching eight million.

This will raise the total consumption of electricity per farm worker by approximately two hundred per cent towards the end of the five-year period. The consumption of electricity for public amenities per rural dweller will go up from 98 kwh in 1965 to 280-310 kwh in 1970.

Greater amounts of machinery and equipment and the introduction of new types, along with the large-scale employment of electricity, will make it possible in the near future to use systems of machines on collective and state farms instead of individual pieces of equipment. This will be a decisive factor in achieving the all-round mechanization of agriculture and higher labour productivity, and the basis for gradually organizing this sector of the economy along industrial lines.

Soviet engineers and designers together with agricultural experts have already developed systems of machinery using electric power for mechanizing and automating work at livestock departments.

According to figures published by the Research Institute for the Electrification of Agriculture the introduction of integrated machinery will reduce labour expenditure for livestock products more than 100 per cent at cattle departments with stall stabling and threefold at de-

partments with loose-run stabling, more than ten times in pig breeding and seven or eight times in poultry raising.

The first models of these integrated machines are already in use, for example at the Znamya Oktyabrya Collective Farm near Moscow. At its pig breeding department one operator cares for four thousand pigs. This experiment has proved the economic efficiency of electrifying animal husbandry. The average daily gain in weight per pig has reached 580 grammes which is 180-200 grammes higher than at other departments where manual labour is still employed. It is significant that the increase in the gain of weight has been accompanied by a reduction in feed expenditure.

As a result of the technological revolution taking place in agriculture, which is characterized by increased mechanization, a number of traditional operations are being converted to industrial production. Thus, industrial methods are being extensively introduced into the post-harvest processing of grain (drying, conditioning, storing), the pre-sowing treatment of seed, the primary processing of vegetables, fruits, grapes and industrial crops. For example, the artificial warm retting of flax and the overall mechanization of flax stock processing directly at flax-mills are economically highly efficient.

The production of the most valuable grades of concentrated feed will be gradually removed from the sphere of agriculture as the mixed feed industry is developed. The Five-Year Plan envisages an increase of at least 100 per cent in the output of standard mixed feeds and protein and

vitamin additions. In 1970 agriculture is to be provided with 800-900 thousand tons of nutrient yeast. Livestock departments at state and collective farms will be more fully supplied with high-protein feeds, aminoacids, microelements, vitamins and mineral feeds as well as preservatives to prevent loss of nutrients.

Industrial methods will be applied in animal husbandry on an increasing scale. During the present five-year period the emphasis is to be laid on the development of poultry-raising along industrial lines at state poultry farms and at large mechanized poultry departments at collective and state farms. The development of specialized beef production is also planned, along with the intensive raising and fattening of cattle at fattening stations on the basis of wastes from the sugar, wine and dairy industries. Such enterprises will be highly mechanized. The operation of fattening stations in Belgorod Region and other parts of the country has demonstrated the high economic efficiency of organizing livestock production along these lines.

The progressive chemicalization of crop raising and animal husbandry will be an important factor in introducing industrial methods into agriculture. In the five-year period farms will receive 55 million tons of mineral fertilizer—double the amount supplied during the preceding five years.

An important feature in the chemicalization of agriculture is the sharp rise in the application of fertilizers for grain crops. In practice nearly the entire total increase in the deliveries of mineral fertilizers will be used in the grain eco-

nomy. In 1970 a total of 26 million tons of standard fertilizer will be applied for grain crops. The rate of application per hectare of grain sowings will be raised to 1.9 centners as against 0.5 centners in 1965. This should be a very important factor in ensuring stable grain yields. Since at present grain farming is the foundation of all agriculture, the achievement of big stable grain harvests will accelerate agricultural development as a whole.

Along with increased deliveries of mineral fertilizers collective and state farms will be regularly supplied with herbicides, pesticides, protein feed additions, vitamins, microelements and other chemical products.

The application of antibiotics such as biotycin, penicillin, terramycin, etc. is a huge reserve for raising livestock and poultry productivity. They increase disease resistance, stimulate growth and raise productivity. The use of crude antibiotics, which are much cheaper and more convenient, is especially promising. Their effectiveness can be judged from the following example. The administration of crude antibiotics at the Nadezhdinsky State Farm in Stavropol Territory raised the survival of chicks to 93 per cent and their average weight at the age of two months to 600-650 grammes, as against 62 per cent and 250-300 grammes respectively for chicks in the control group.

Land reclamation will also play an important part in organizing agriculture along industrial lines. During the five-year period about 3 million hectares of fertile but arid land will be irrigated. Nearly 28 million hectares of sour

land will be limed and approximately 9 million hectares will be brought under cultivation. Measures will be taken to prevent soil erosion and to develop protective afforestation.

In cotton-growing areas the construction of irrigation systems and land reclamation work will make it possible to expand sown areas and raise average yields thus increasing the yearly production of seed cotton by approximately one million tons in 1970 as against the average level attained in the preceding five-year period.

By the end of the five-year period reclaimed lands will provide the country with a guaranteed 16 million tons of grain and will satisfy the demand for rice; they will account for almost the entire production of vegetables, and a substantial proportion of feed and other crops.

The Party does not regard the solution of this economic problem as a current campaign but a national programme in agriculture for a lengthy period, which requires huge capital investments and material and technical means. Its implementation will raise standards of agriculture in general and will create a reliable basis for stable harvests of cereals and other crops, irrespective of weather conditions.

Fulfilment of this programme will require the carrying out of immense work of an industrial character. Accordingly specialized state teams and stations will be organized to perform work for collective and state farms, such as draining land, clearing forest, liming acid soils, and extracting, transporting and utilizing peat.

The growing application of industrial methods in agricultural production reflects the general tendency to retain in the sphere of agriculture only those operations that are directly connected with the use of land as a means of production. This tendency signifies a qualitatively new stage in the development of the basic sectors of material production—industry and agriculture—marked by the strengthening of ties between them.

BRIDGING THE GAP BETWEEN THE CONDITIONS OF LIFE IN TOWN AND COUNTRY

The radical socio-economic transformations carried out in the USSR in all spheres of social life have eliminated since the Great October Socialist Revolution the age-old distinctions between town and country.

At all stages of socialist construction the peasants have received great assistance from the working class. The common character of the two forms of socialist property (public and collective-farm cooperative) has drawn the working class and the collective farmers nearer, strengthened their alliance and made their friendship inviolable. The working class, being the most advanced and best organized force of

society plays the leading role in this alliance.

An important task of the new five-year period is to bridge the gap between the living conditions of rural and urban dwellers by overcoming socio-economic distinctions and those in the provision of cultural and welfare facilities, and to consolidate even more the alliance of the workers and farmers. It has been decided to elaborate concrete measures to eliminate differences in the conditions of life and level of culture in town and country and to set about the realization of this programme on a broad scale.

Having eliminated the antagonism between town and country socialism has not obliterated all the social and economic distinctions between the rural and urban areas. What is the essence of these distinctions and what are the objective reasons for their existence today?

Social and economic distinctions between town and country are accounted for, first of all, by the difference in the level of development of the productive forces in industry and agriculture. This difference explains the existence of the two forms of socialist property: public, or state property in towns, and collective-farm cooperative property in the countryside. Forms of property involve definite social classes. Under socialism the two classes are the workers and the collective farmers. The difference in the level of development of the material and technical basis of industry and agriculture accounts for the difference in material and cultural standards of the urban and rural population. Hence, the people's standard of living must be considered in relation to the development of

productive forces and the character of production relations. It is only then that the changes taking place in the people's living standards on the basis of social development can be understood.

At the present stage, the level of development of productive forces in the collective-farm cooperative and the state-owned sectors of the economy is different: it is much lower in the collective-farm sector than in the state sector. At the same time in agriculture itself there are differences between collective and state farms.

In agriculture the degree of mechanization is less than in industry. The value of fixed production assets per worker in agriculture is only a little more than two thousand roubles, whereas in industry it comes to approximately five thousand roubles. It must also be remembered that numerous farm implements are used only part of the year. There are even greater distinctions in the amount of power, particularly electricity, used per worker in agriculture and in industry. Twice as much power is available to the industrial worker and dozens of times more electricity.

The state plays a decisive part in the development of collective- and state-farm production and in raising the level of productive forces in the socialist countryside by regulating relations of distribution and exchange, particularly the supplying of collective and state farms with the means of production and the purchasing of agricultural products.

In the current five-year period the role of the state in accelerating the development of the

productive forces in agriculture is to be enhanced. The state determines the basic trends of technical progress in collective-farm production and actively promotes the creation of new productive forces—the basis for raising the material and cultural level of workers in agriculture. The Five-Year Plan provides for a greater increase in capital investments in agriculture than in the national economy as a whole. Thus between 1966 and 1970 all capital investments in the national economy will increase 47 per cent over the preceding five-year period whereas state investments in agriculture will be doubled. This will increase the fixed assets of the entire national economy by 50 per cent, industry, 60 per cent, and agriculture, by 90 per cent. The power available to the industrial worker will go up 50 per cent, while the power available to the worker on the collective or state farm will increase 200 per cent. On this basis the average yearly increase in labour productivity in industry will amount to 6 per cent and in agriculture, 7 per cent.

In order to raise the farmers' labour productivity and improve their living standards it is highly important not only to accumulate production assets and increase power capacity but also to raise the farmers' activity and provide for a more rational use of manpower at collective farms throughout the year.

Manpower engaged in agriculture, particularly at collective farms, is still utilized to a smaller degree than in most industries. Data for a number of years show that the able-bodied collective farmer is employed in the collective econ-

omy on the average less than 200 days a year, which is less than 75 per cent of the total working-time. The chief reason for this is the uneven application of labour power in the course of the year due to the seasonal character of agriculture.

One of the ways to solve this problem is to combine agricultural and industrial labour. This will be greatly facilitated by developing at collective and state farms auxiliary enterprises for processing farm products and producing building materials, containers and packing materials, and consumer goods from local raw materials or industrial wastes. Where expedient, seasonal branches of industrial enterprises will be set up for this purpose. State allocations will provide for technological equipment and machinery, and where necessary, for raw materials and packing to supply the subsidiary industries in the countryside.

If manpower is employed more rationally the rural areas will have more than 1,500 million additional man-days yearly. This will give a substantial increase in gross output which in its turn will accelerate the rise in the standard of living bringing it closer to that of industrial and office workers. The development of subsidiary enterprises will be a source of additional income for the collective farmers.

Strengthening and developing the material and technical basis of collective-farm production, and improving economic relations between the state and the collective farms, as well as increasing farmers' material incentives to develop public production will accelerate the rise

in the farmers' living standards. In implementing these measures a certain redistribution of the national income has been carried out in favour of the collective farms, and conditions have been created for bringing rates of development in agriculture and industry closer together. This is the basis for bridging the gap between the living standards of farmers and workers. Existing differences will be eliminated in all spheres but primarily in the level of labour remuneration.

In the current five-year period the incomes of collective farmers from public production in money and in kind will increase by an average of 35-40 per cent, while the wages of industrial and office workers will rise by an average of 20 per cent. Radical changes will take place in the labour organization of collective farmers and in the forms of their labour remuneration; basically these will be the same as at state enterprises. This is the realization of an important point in the CPSU Programme: that the system of labour organization and remuneration at collective farms must be brought closer in form and level to that of state enterprises, and the transition to a system of guaranteed monthly payments to collective farmers must be carried out.

Up till recently regular pay for work performed was not guaranteed at many collective farms. There was also a considerable difference in payments for labour at individual farms, as well as at a given farm during the year. This weakened the effect of material incentives in collective-farm production.

The decision of the CPSU Central Committee and the USSR Council of Ministers on increasing collective farmers' material incentives to develop public production recommended that beginning as of July 1, 1966 all collective farms should introduce a system of guaranteed pay for collective farmers' labour (in money and in kind) based on the rates for the corresponding categories of state-farm workers. The point was made that in distributing the collective farms' profits priority should be given to remuneration of the farmers' labour, whereas before, the accumulation fund rather than the consumption fund, had first claim on the farms' profits. Besides, the size of the remuneration fund at a number of collective farms was too small to pay the farmers according to the grading rates for similar work at state farms. Under the new system collective farms are granted credits for a term of up to five years when necessary to ensure guaranteed payments to farmers. This is particularly important for lagging collective farms; a shortage of means limited their capacity for stimulating the farmers, which naturally had an unfavourable effect on production.

The role of the state in the organization and remuneration of collective farmers' labour is being enhanced. To a certain degree the state is beginning to control the system of labour and consumption in the collective-farm sector of the economy. This will help reduce the difference in the farmers' pay at different collective farms and implement more consistently the principle of equal pay for equal work throughout the entire collective-farm sector.

The further expansion of the public consumption funds in the countryside will be of great importance in bringing living standards in the rural areas up to the town level. Grants and payments to farmers from the state budget, including pensions, allowances to mothers of many children and unmarried mothers, expenditures for free tuition, free medical service and other social and communal services are constantly increasing. Nevertheless, despite the more rapid rates of growth of public consumption funds in the countryside, the absolute level of these funds per collective farmer is still only half that per industrial worker.

The public consumption funds account for more than 30 per cent of the real incomes of factory and office workers, as against 16 per cent for collective farmers.

This is because of the smaller pension grants and a higher pension age for farmers, the smaller number of kindergartens and nurseries at farms, the insufficient development of cultural facilities in the countryside such as libraries, clubs and theatres. Housing in the rural areas is still inferior to that in towns, public amenities and medical services are still at a lower level.

The Soviet Union has adopted the policy of rapidly increasing the public consumption funds, particularly for the benefit of the rural dwellers. The Five-Year Plan envisages at least a 40 per cent increase in total payments and benefits received by the population from the public consumption funds. The increment in these funds will be used primarily to improve the pension

scheme, the public health, education and upbringing of children at public institutions, community and cultural services in town and country. In 1970 expenditures for these aims will total about 60,000 million roubles, an average of 280 roubles per capita.

An improved pension scheme for the collective farmers will be another important measure in the new five-year period. The main objective will be approximation of pensions for workers and farmers. This will be achieved through extending to farmers the same pension-age rules as those covering industrial and office workers. Pensions will be granted to Group Three invalids, collective farmers disabled at work or as a result of an occupational disease. Minimal old-age pensions for collective farmers will be raised under the five-year plan by at least 30 per cent.

Rural housing construction will be greatly expanded. Collective farmers will, with the aid of state credits, build in the five years 2 or 2.5 million homes.

Special attention will be given to modernized housing and improved community services in the countryside. Twenty or twenty five per cent of the homes will have gas. There will be more electric power available for household needs in rural areas. While the amount of electricity for household needs of the urban population will go up in the five years by 60 per cent, that for the rural population—by at least 200 per cent. Community services on a nationwide scale will be extended 150 per cent by 1970. The increase in rural areas only will top 200 per cent. Community services of the near-by towns and region-

al centres will have branches or service stations in villages.

Much will be done to improve trade. The current Five-Year Plan calls for a more rapid development of trade in the countryside in conformity with the accelerated growth of the farmers' incomes.

The implementation of this programme will bring the USSR another step forward in eliminating the social and economic distinctions between town and country.

DEVELOPING ECONOMIC METHODS OF AGRICULTURAL MANAGEMENT

It has already been mentioned that all the material requisites have been created for the successful fulfilment of the tasks placed before collective and state farms in the current Five-Year Plan. It must be borne in mind, however, that strengthening the material and technical basis of collective and state farms will not of itself lead to an increase in the output of farm products or a rise in the farmers' standard of living. In order to apply these huge means of production to the best advantage it is necessary to draw on the creative energy and activity of millions of workers in agriculture. This is the vital problem of the day.

Particular attention is being paid to enhancing the role of economic methods in planning and management, extending the economic self-sufficiency and initiative of the personnel of enterprises, raising the material interest of workers in the results of their labour.

The peculiarities of agriculture due to its dependence on natural conditions, the use of vast tracts of land, and the character of production which is connected with the biological development of living organisms, are such that the application of stereotyped decisions, administrative coercion and voluntarism are particularly harmful. Profound economic substantiation of

all adopted decisions, consideration for local economic conditions, development of initiative on the part of the entire farm and each individual worker for increasing output and introducing progressive methods of labour—all these factors have become a law for the economic development of collective and state farms.

In industrial and agricultural management attention is now concentrated on the development of economic methods of management or, in other words, a system for planned regulation of the national economy, primarily by means of economic levers, such as profits, profitability, credits, material incentives to get better results from labour. These levers are used by the state and by planning bodies to influence all sectors of social production, each socialist enterprise, mobilizing its personnel to make the fullest use of the entire production potential.

Contrary to administration by mere injunction, contrary to coercion and subjectivism, economic methods of management demand a sober, all-round consideration of objective conditions for developing production and exchange, distribution and consumption, and the proper application of economic laws in solving the economic and political problems confronting the Soviet people. Economic management allows the maximum combination of centralized planning and management of the national economy with the promotion of local initiative and independence of managers, specialists, workers and farmers.

Cost accounting provides for the rational combination of the material interest and mate-

rial responsibility of enterprises, as well as their independence in economic operation, with financial control by the state. Cost accounting and economic levers are used in the Soviet Union to raise the efficiency of socialist production.

Nevertheless, up to now there have been serious shortcomings in this respect particularly in agriculture. In recent years there have been violations of the principle of proper economic relations between the state and the collective and state farms. Administrative bodies have placed needless restrictions on capital investments in state farms: they have fixed the wage fund and even the number and categories of workers and the office and service staff. Losses at state farms have been made good by the state. It was necessary to transfer state farms to cost accounting, to develop cost accounting at collective farms, and to allow farms to dispose of their income independently for expanding production, carrying out capital construction, and encouraging the best workers and improving their living conditions.

The rational application of economic levers for developing the national economy presupposes a fixed differentiation of rights and obligations for all central, republican, regional, territorial and district bodies as well as for the individual enterprises.

Centralized planned economic management should be concentrated on elaborating and providing for the attainment of the key targets of the national economic plans, every consideration being given to proposals coming from below. They should coordinate local plans, pro-

pagate scientific and technical achievements and the methods of leading workers and enterprises and implement a unified state policy as regards technical progress, capital investments, production siting, wages, prices and finances. They must also implement a unified system of calculations and statistics.

Centralized management should cover only the basic trends in economic development, generalize and coordinate plans drawn up at lower levels, and influence the growth of production by means of economic measures. These principles have been implemented in the new system of state purchases of farm products. Fixed purchase plans create broad opportunities for collective and state farms in the rational planning of production and in developing the workers' initiative. The new system makes it possible to coordinate state purchase plans with measures for farm specialization; promotes the expansion of direct contacts between collective and state farms on the one hand and industrial enterprises and trade organizations on the other and stimulates the growth of production and voluntary sale of above-plan produce to the state at higher prices. This promotes general prosperity.

A correct understanding of the principle of centralized planning excludes petty supervision and groundless interference in the affairs of enterprises. The Government has strongly condemned unnecessary centralization when elaborating plans for agricultural development. It has condemned insufficient consideration for local natural and economic conditions, and disregard of proposals made by collective and state

farms. These wrongful methods affected to some extent the inner life of the collective farms. Some farms ceased to adhere to the requirements of their Charters, while at a number of farms the bulk of the farmers took no part in discussing important questions of the farm's work and in making decisions on them. The Party and the state have demanded strict observance of democratic principles of management at the collective farms. The forthcoming 3rd Congress of Collective Farmers is to draw up concrete measures to eliminate these shortcomings and to elaborate standards governing the inner life of collective farms more fully in accordance with the Leninist principles of collective and state farm management and the present level of development of rural productive forces.

Genuinely scientific planning presupposes the closest correlation of state economic interests with those of every enterprise and every collective and state farm in raising output. It enables the state to concentrate the key positions in regulating agricultural production and at the same time gives the collective and state farms broad rights and economic independence in their operations. This helps the farmers to draw up plans for developing production which take into consideration the concrete natural and economic conditions; it helps them find the most effective ways of realizing these plans, and achieve the highest results with the lowest labour and financial expenditures.

Economic methods of managing the national economy presuppose the state's rational use of

price levers. Planned prices are of great importance for collective and state farms as they are for all enterprises operating on a cost-accounting basis, since they regulate the commodity turnover between town and country. It is on planned prices that the economy of agricultural enterprises, technical progress and labour remuneration greatly depend.

Lenin's plan for cooperation envisaged the rendering of all-round political and economic assistance to the collectivization movement. In this connection Lenin stated that the cooperative system under socialism could be established and developed only with the financial and material support of the workers' and peasants' state. And he regarded this aid not as a state "benefit" to the "indigent" peasantry, but as systematic cooperation of the working class and the toiling farmers in producing and distributing industrial and agricultural produce to their mutual advantage. At the same time Lenin demanded that each cooperative member should have all the qualities of an intelligent competent specialist.

Lenin's ideas on cooperation have a direct bearing on the modern problem of improving management at collective and state farms.

First of all, relations between industry and agriculture must be based on proper, mutually advantageous commodity turnover, which will provide the urban population with foodstuffs, industry with raw materials and the state budget with means for social accumulation. On the other hand, this commodity turnover must strengthen the material and technical basis of ag-

riculture, implement the principle of the workers' material interest in the results of their labour and consolidate the collective- and state-farm system.

Secondly, the development of farm production under socialism brings to the fore the problem of raising the cultural and technical level of workers and specialists in agriculture. Each farm worker must become an intelligent farmer, well-versed in agronomy, and applying his efforts to making efficient use of the land, farm implements and fertilizers; he must avail himself of the principles of agrobiolgy and scientific animal husbandry and on this basis constantly raise labour productivity and reduce outlays.

The proper application of the principle of mutual advantage in the exchange between industry and agriculture is an indispensable requisite for the harmonious and proportional development of both these sectors of material production, and for eliminating the gap between the living standards of industrial and farm workers. The solution of this problem is of vital importance for consolidating the alliance between the working class and the farmers.

The development and improvement of production relations between agriculture and industry are closely connected with the problem of improving the system of purchase prices, and developing agricultural specialization on a rational basis.

The problem of price formation in agriculture is a difficult one and could not be fully

solved at a time when all the efforts of the Soviet state were concentrated on heavy industry—the material basis for developing the entire economy and strengthening the socialist state's defence potential. Today the USSR has a powerful modern industry and can go over to other vital economic problems, such as the further development of productive forces in agriculture.

Opportunities have appeared for raising state purchase prices of agricultural products. Higher prices for wheat, rye, meat and other products were established as of May 1, 1965. They served to make economic conditions more equal for collective and state farms situated in different geographical and economic zones.

The new prices gave greater incentive to agricultural enterprises to increase output and the volume of sales to the state, and promoted the establishment of mutually advantageous exchange between town and country. Today the main task is to make the most efficient use of these opportunities.

It would be incorrect to consider the elaboration of a scientifically-substantiated price policy as a single act, since new problems are constantly arising. The development of production and social relations in the countryside is an objective process. Hence the necessity for thorough day-by-day research that takes into account processes involved in social production, such as progressive shifts in the specialization of farms, increased labour productivity at collective and

state farms, reduced costs, expansion of collective-farm trade, etc.

The problem of price formation calls for a further improvement of the system of state purchases. Collective and state farms are now given fixed planned targets for sales to the state of crop and livestock products for several years in advance. This creates a firm basis for planning agricultural production and opens broad prospects for its development.

Thus, the Soviet state has raised the problem of giving the collective and state farms the real opportunity of planning their production independently. At present the state is obliged in the interests of society to purchase grain and certain other products in practically all the climatic zones of the country. Apparently this is a temporary practice. In due time it will be possible to concentrate state purchases of a given crop in areas where production involves low costs and where its cultivation is profitable to collective and state farms.

This will promote a further-going, stable system of farm specialization, accelerate the increase of marketable farm products and satisfy more fully the country's requirements in foods and raw materials.

In this connection it is envisaged to fix planned targets and realize state purchases of farm products on the basis of proposals received from collective and state farms. Apprehensions that such a system of state purchases may weaken the centralized management of collective and state farms are groundless. Huge agricultural

enterprises based on socialist ownership of the means of production are naturally in need of a wholesale purchaser. This function is realized by state purchasing organizations, processing enterprises, etc.

In this case the principle of centralized management is not violated. The new system of planned purchases based on a mutually advantageous turnover of commodities between industry and agriculture will considerably increase the responsibility of planning and purchasing agencies for a proper regulation of ties between town and country.

The wide-scale implementation of such economic categories as prices and credit in planning the output and purchase of farm products will raise the efficiency of collective- and state-farm production, create favourable conditions for a rapid growth of the farms' technical equipment and their specialization, and thus provide for a further increase of state purchases in volume and assortment.

While providing the collective and state farms with economically profitable conditions for the sale of their produce, the state also obliges purchasing bodies to buy up all marketable farm products.

Today decentralized trade may likewise play an important part. By availing themselves of the services of consumer cooperatives collective and state farms are able to sell their marketable surpluses not only at local markets but also engage in inter-district and inter-regional exchange. This will provide the population of many towns and workers' settlements with more foodstuffs, bring

down market prices and do away with unprofitable production at collective and state farms more rapidly on the basis of economically substantiated specialization. This will enhance farm workers' material interest in increasing output.

Extending the farms' rights in this sphere will give them greater independence in managing, planning and organizing production and selling their produce.

The forms of material stimulation for state-farm workers comprise wages, bonus funds and the enterprise fund, and for collective farmers, the basic remuneration and additional payments in money and kind. However, until recently insufficient use was made of these forms for the material stimulation of work. In practice the best results were awarded only by the payment of bonuses at state farms and additional remuneration at collective farms. But these payments were insignificant in proportion to the wage and remuneration funds, making up only three or four per cent.

The basic wages of state farm workers and the main incomes of collective farmers were not directly dependent on the final results of the labour of the whole farm or its individual workers. In practice this led to levelling and undermined the material interest of agricultural workers.

Raising prices for farm products, establishing a stable plan for purchases coupled with a cut in their volume, and other measures promoted the growth of collective- and state-farm incomes in cash and kind. This made it possible

to raise the level of labour remuneration and consistently implement Lenin's principle of the material stimulation of workers.

The 23rd Congress of the CPSU set the task of increasing the wages of manual workers, engineers, technicians and office workers and the incomes of collective farmers from the material incentive funds which are being established at enterprises going over to the new methods of planning and economic stimulation. It is essential to raise the proportion of bonuses and grants in the workers' earnings and thus ensure better correlation between the interests of each worker and those of the enterprise and society as a whole.

Labour remuneration from these sources will grow as each farmer and worker makes a greater contribution to developing production and raising its efficiency.

Today the principle task in agriculture is to introduce at every state or collective farm the most rational forms and methods of remuneration so that labour remuneration is always closely associated with production results of the farm and of the individual worker or collective farmer.

Such a system of organizing production will raise the material incentive of operating on a cost-accounting basis in obtaining the maximum yields per hectare, preserving and raising soil fertility, using machinery and other means of production to the best advantage. The consistent implementation of Leninist principles of economic stimulation will help to reveal and realize

vast potentialities for developing agricultural production and raising its efficiency, and thus promote a further rise in the Soviet people's standard of living.

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1. SOWING WHEAT IN MOLDAVIA
 2. A BUMPER CROP IN TAJIKISTAN
 3. THRASHING WHEAT
 4. METRIC TONS PER ACRE BUSHELS OF WHEAT
PER ACRE ON IRRIGATED LANDS
 5. VIRGIN-LAND WHEAT

6. CORN FROM THE UKRAINE
7. MECHANIZED TEA PICKING
8. MOUNTAINS OF COTTON IN TAJIKISTAN
9. MECHANIZED MILKING
10. PEDIGREE COWS AT A FARM
11. AFTER MILKING
12. A PIG-RAISING FARM
13. FLOCK OF PAMIR SHEEP
14. HATCHERY
15. JUST HATCHED
16. A TRACTOR USED IN THE VIRGIN LANDS
17. BELT-LINE PRODUCTION OF HARVESTER COMBINES
18. PRODUCED BY THE VOLGOGRAD TRACTOR WORKS
19. VILLAGE HIGH-VOLTAGE TRANSMISSION LINE
20. CHIMKENT
21. IRRIGATION SYSTEM IN TAJIKISTAN
22. KAZAKHSTAN IRRIGATION SYSTEM
23. IRRIGATION IN MOLDAVIA
24. READY FOR EATING
25. CUCUMBERS IN DECEMBER
26. A BUMPER CROP
27. ZARYA COLLECTIVE FARM IN DONETSK REGION
28. RECREATION SPOT AT A FISHING COOPERATIVE
IN ESTONIA
29. IN A VILLAGE CAFÉ
30. GETTING-UP TIME AT A CRÈCHE

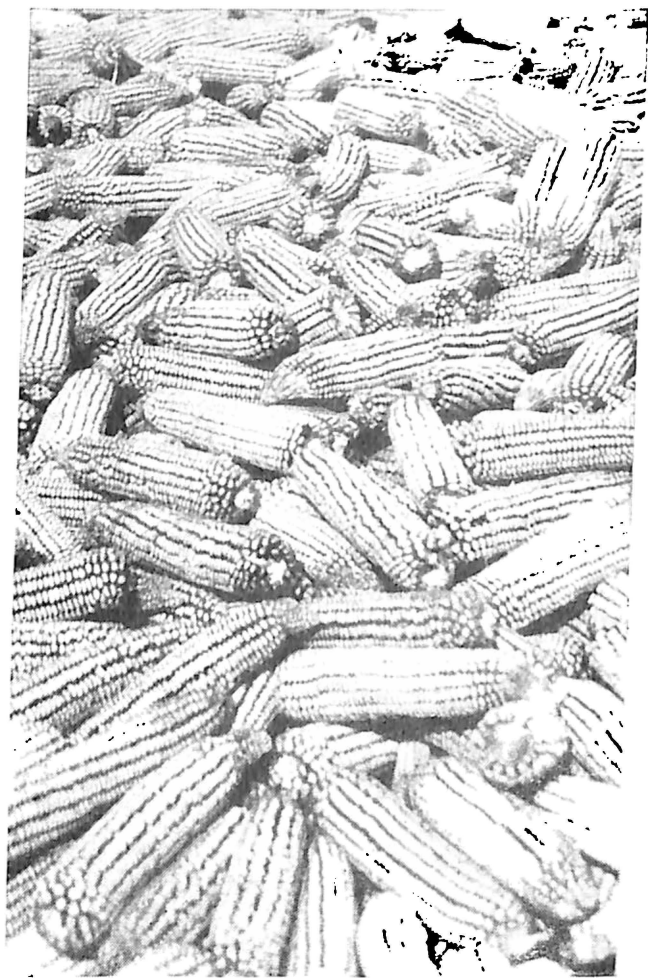


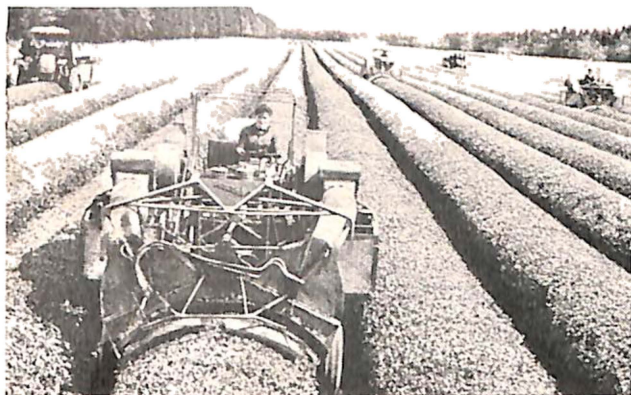


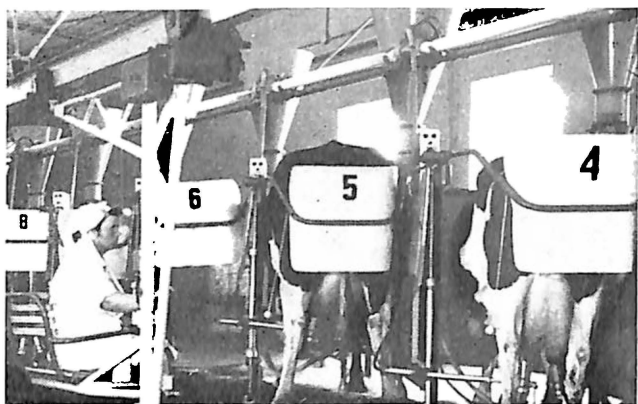


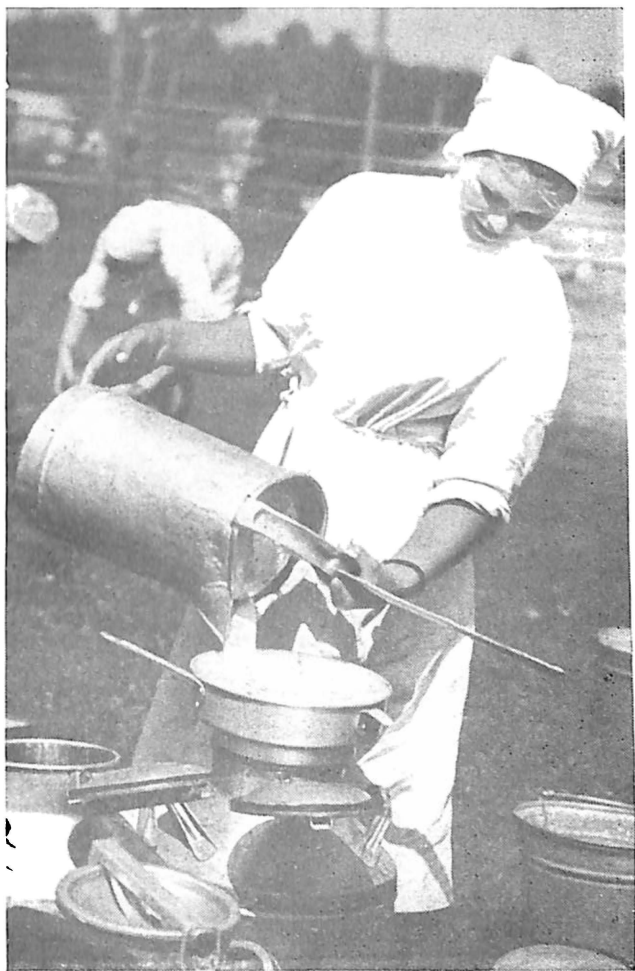


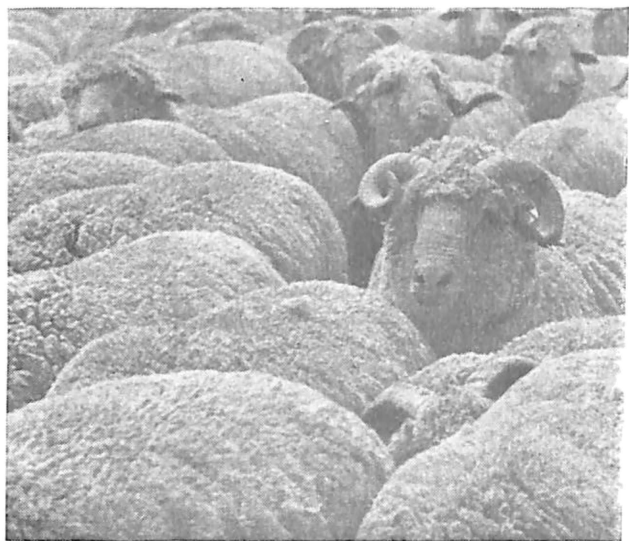
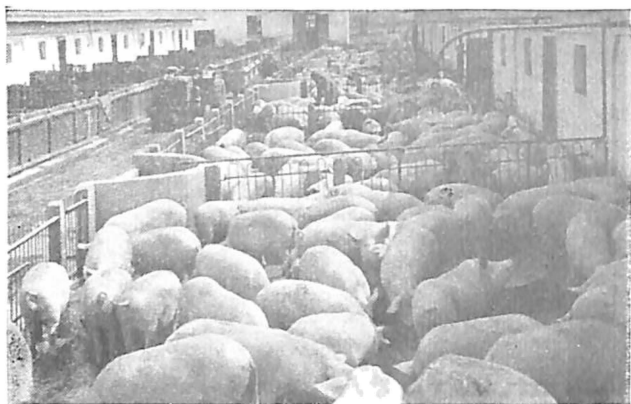


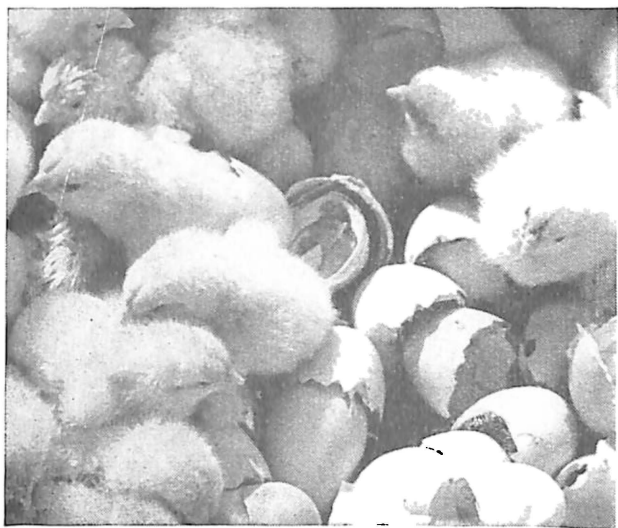




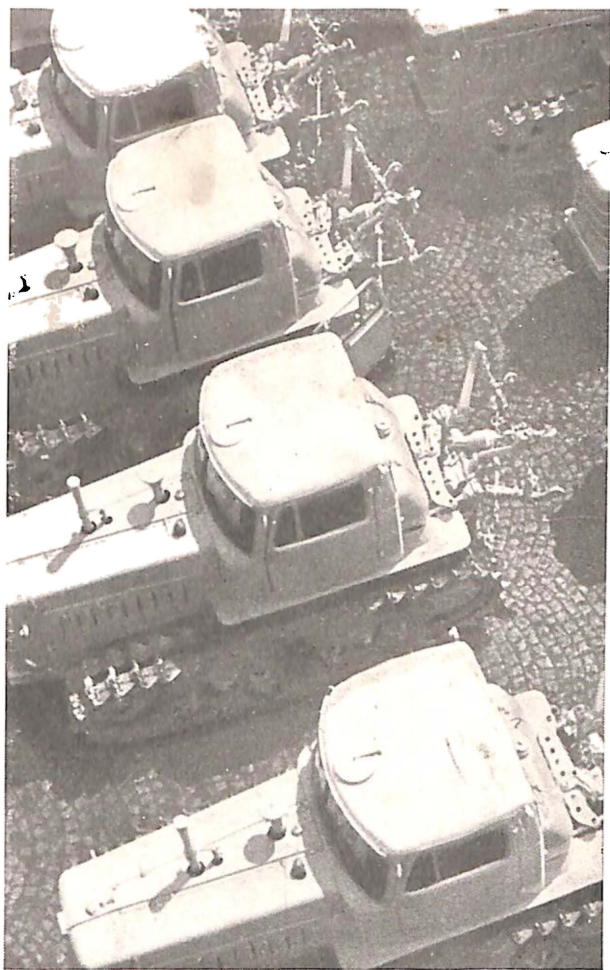


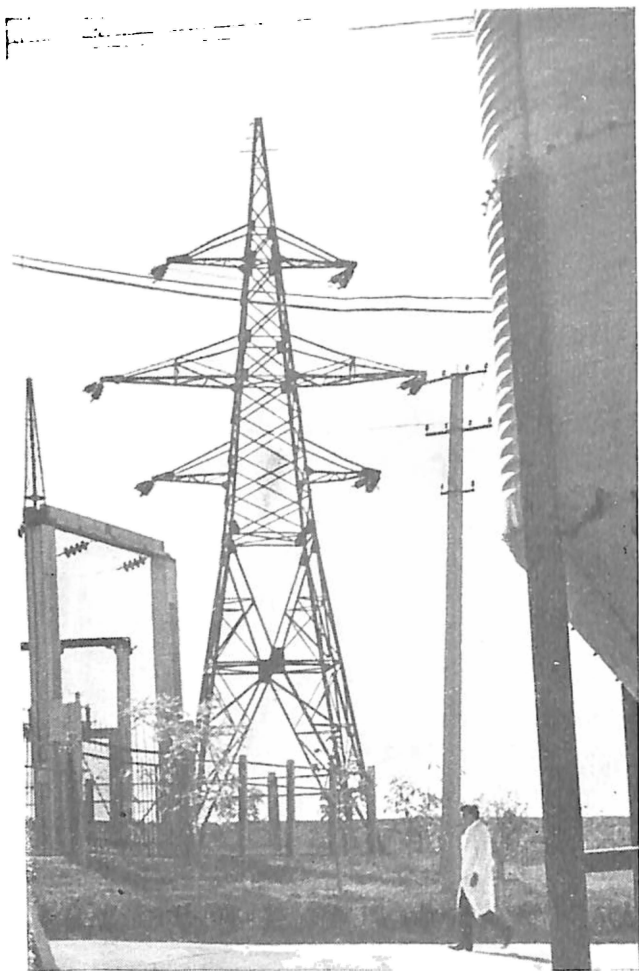


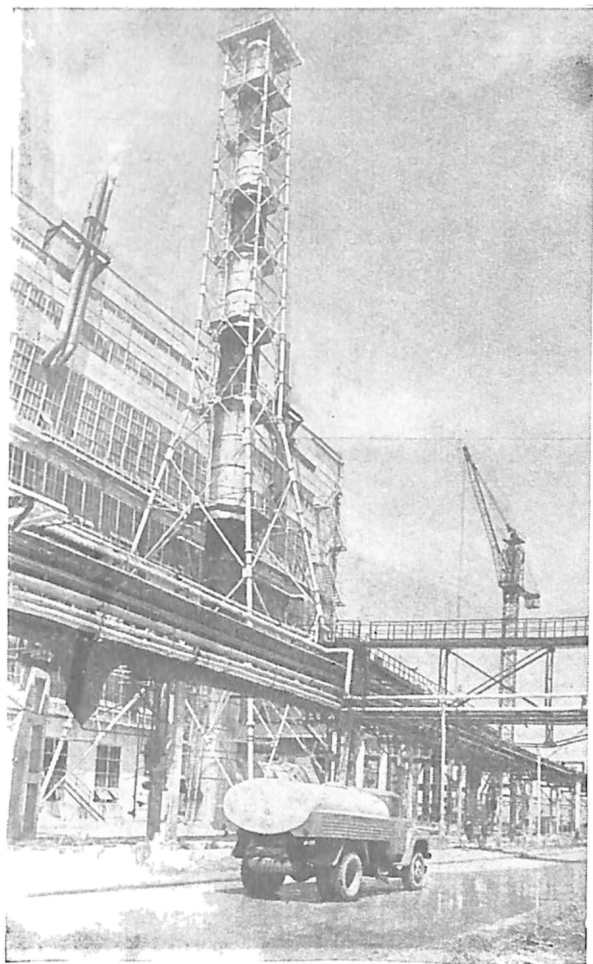




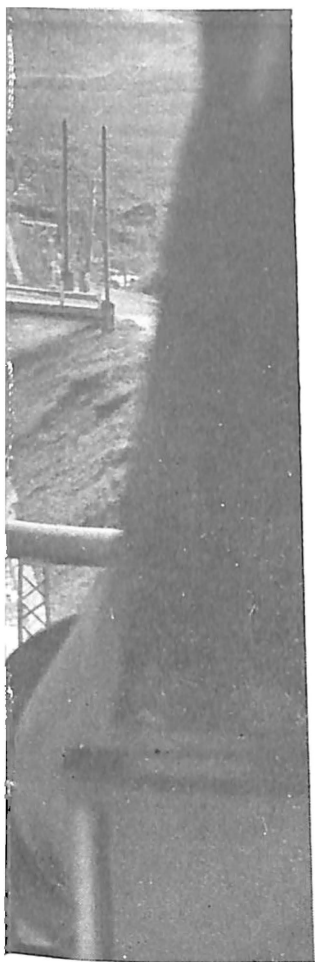


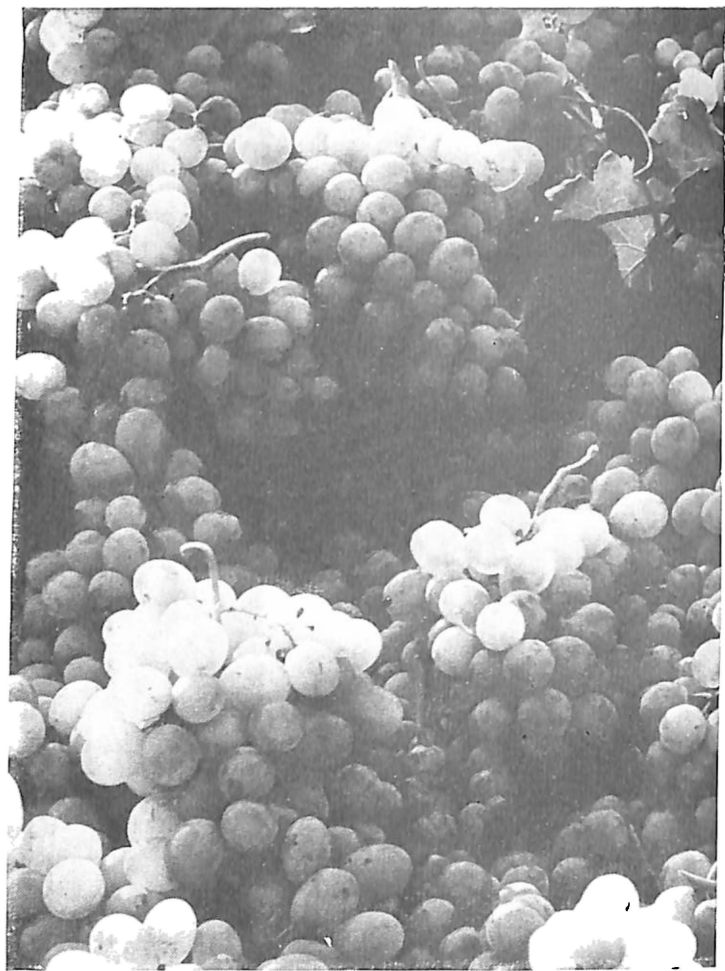


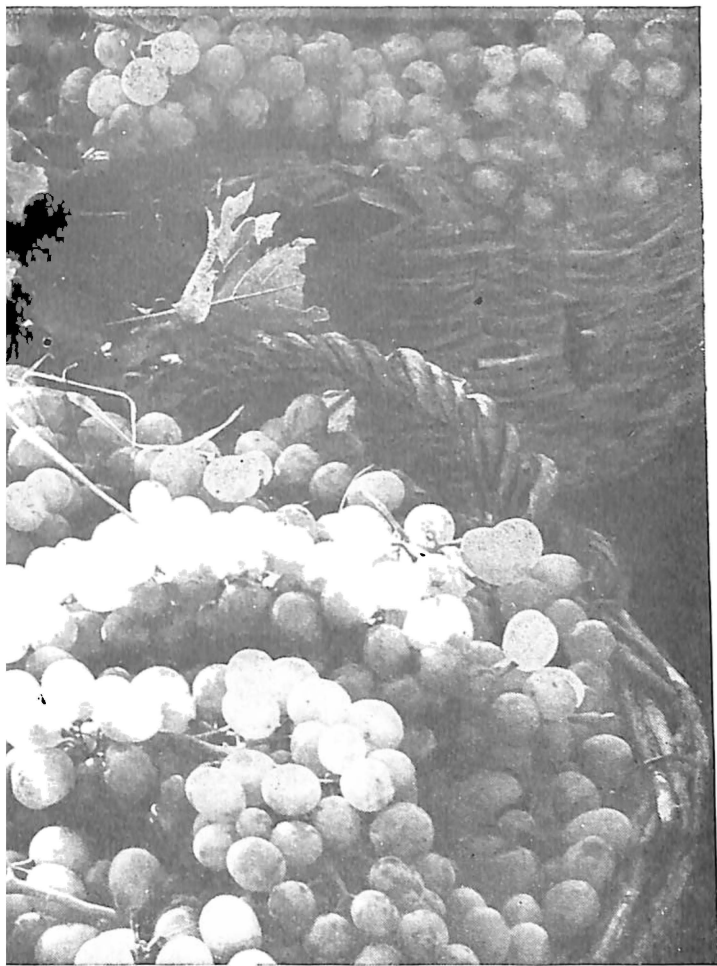






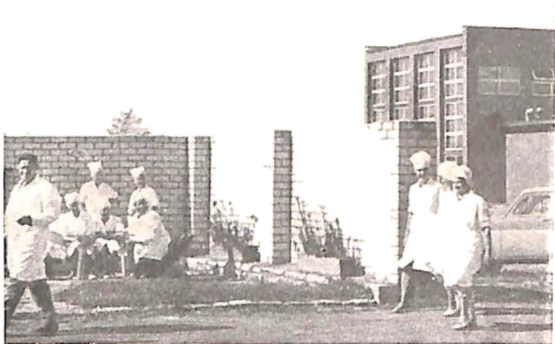


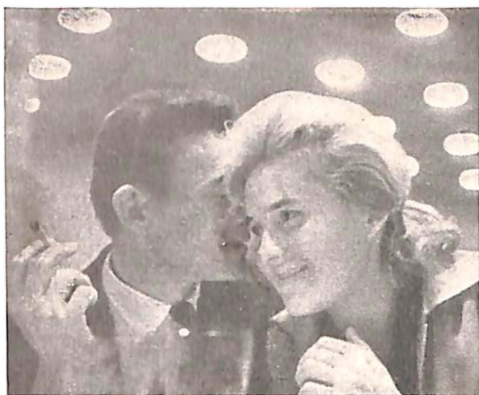








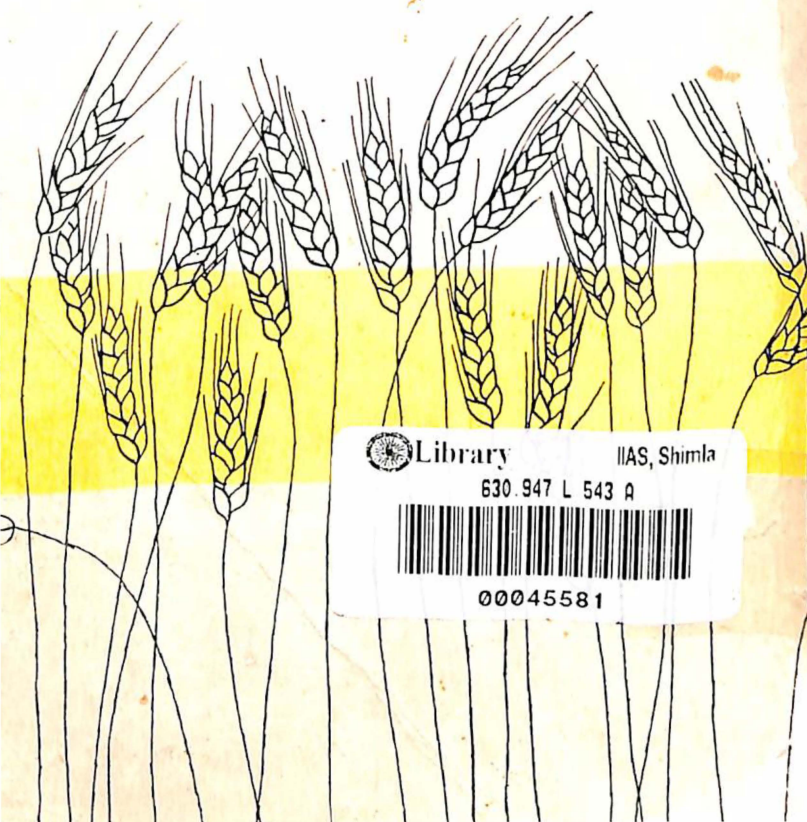




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