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## COLLECTIVE AND STATE FARMING IN RUSSIA<sup>1</sup>

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WHEN, in the year 1929, a serious fall in grain prices began which resulted later in the fall of cattle and cattle-product prices, all countries realized the necessity, in view of the long duration of this symptom, of going to the bottom of the cause in order to be able to meet effectively and in good time the damage done to their own national economy and agriculture. It was clear that, caused by the previous high level of prices, a gradual extension of grain cultivation in vast territories of the globe had set in—territories which formerly were hardly thought of for grain cultivation and which now, thanks to the perfection of modern technical achievement, were brought into cultivation at an unexpectedly quick rate. These are the semi-arid districts of North and South America, and the vast steppe districts in South Russia. With the help of new technical achievements an enormous increase in production has taken place, a circumstance which, in view of the shrinkage of the purchasing power of the populations of the most important markets, through the World War and its aftermath, was so decisive in the formation of prices that it let loose a serious crisis for agriculture in almost all parts of Europe. For a long time it seemed as if the world's food supply would be put on a new basis. This was sufficient inducement for people to interest themselves in the new possibilities of production, their extent and limits, in greater detail. What would be the consequences of the new state of affairs for the remaining civilized countries?

It is my task to speak here about the new possibilities in Russia, and their practical application to other countries.

### I. PROBLEMS OF RUSSIAN AGRICULTURAL ORGANIZATION

The transformation of agriculture in Russia which has taken place in the last few years took the American organization as a model, but

<sup>1</sup> For the details here given I have used as supporting data, for the most part, observations made by myself in 1931 during a long journey of investigation, as well as the standard literature and verbal reports of German experts. The aim of my remarks is to cast light on the socialist construction of Russian agriculture and its prospects regarded from a scientific point of view. All political prejudices, therefore, must be eliminated.

the basis of the transformation was different from the American. Whereas, in America, capitalist striving after profit and individual initiative led to the application of modern machinery in completely new regions, the motive power in anti-capitalist Russia was quite different; for one thing there was the faith bordering almost on a religion in modern machinery on the part of the political party dominating Russia, and, secondly, there was the political desire of this party to bring individualist agriculture with its huge number of independent elements into harmony with their own philosophy of life. I met the transcendental faith in modern technical achievement again and again on my journey through Russia, and the *Mechanisazja* was considered the universal remedy for everything. The expectations placed in the mechanization of agriculture were extraordinarily high. It was thought that Russian peasantry, which had spread considerably after the Revolution and after the annihilation of the large-scale landowning class, was not in the position, in consequence of its inveterate backwardness, to meet modern demands in the production of goods and to keep pace with the achievements of socialized industry. For this the size of peasant farms was held to be too small; their organization was wrong; the small landholdings were too much split up and consequently produced too little; their development was much too slow to meet the growing demands of the town. Only properly organized large-scale farming, with first-rate technical equipment, provided with the latest achievements of agricultural science would be able to meet the tremendous demands put on it by the Soviet Union.<sup>2</sup>

Thus after the Russian Revolution the number of farms increased from 14 million in the pre-War times to roughly 25 million farms by 1928, but, during the last few years, there has been a period of expropriation first of the larger farmers (*Kulaks*) and then of nearly all the small peasants. The first collectivization of agriculture was to a limited extent included in the first Five Years Plan of 1928. As, with the exception of the poor peasants, the bulk of the owners of medium-sized or large estates were violently opposed to collectivization, it was carried through almost entirely by force, but it was completed more quickly than had been provided for by the Plan. In this way about 14 million peasant farms were transformed into 220,000 collective farms (*Kolchozes*); more than 7 million peasants with a relatively small proportion of the profitable soil remained in existence; 4 million disappeared. Besides this, all unoccupied land and the land of the great landowners (in so far as it had not previously been con-

<sup>2</sup> See *Construction of Collective Farms in U.S.S.R.*, Moscow, July 1931.

verted into peasant holdings) was put together into large state farms (*Sovchoses*), of which some 4,200 existed in 1931.

The collectivization was carried out with extraordinary rapidity, for which reason alone production naturally suffered much injury. To this was added the resistance of the peasants and of the *Kulaks*. From the autumn of 1932 until the spring of 1933 resistance again reached a peak, only to end with the surprising defeat of the peasantry in the spring of 1933.

The new socialist construction of Soviet agriculture culminated in a transformation of peasant farms into large co-operative farms of a kind hardly distinguishable in principle from the new large state farms. By this step, the Soviet Union has settled for itself the old agrarian problem, more or less evident in all countries, 'Large-scale versus Peasant farms', by a biased decision in favour of large farms. It was expected that large farms properly organized would make exhaustive use of the much-admired technical equipment, resulting in an undreamt of increase in yield and consequently an increase in the standard of living of the masses and an increase in the power of the Soviet Republic. Another decisive factor was that, in this way, it would be possible to transform all peasants into 'agricultural factory workers' and thus to win over new proletarian masses, with a pronounced class consciousness, and new fighters for socialism.<sup>3</sup>

Between the large state farms and the *Kolchoses* there were, and still are, of course, a variety of not unimportant differences. The workers on the state farms are wage-earners, while the workers on a collective farm are its members, the peasants. In practice, however, this difference is no longer very great, because even the peasant farmers are not much more than labourers. The circumstances under which the peasants on the *Kolchoses*, compared with the state farms, might be regarded as unwilling workers, were rectified to a very great extent by the general application of the principle of output or piece-work wages. But the wage-share of the *Kolchos* peasant, since it is dependent on the results of the work done and on the harvest, are much less stable than the piece wages of the worker on the state farm. The state farms, furthermore, have been granted preferential treatment in the giving of credits and in the supply of new machines. State farms always received the newest machines, which they frequently passed on to the *Kolchoses* after a year's use. In the provision of credit to the *Kolchoses*, consideration was given to the extent to which they had fulfilled the prescribed production for the state. As the will to work and the joy in labour had suffered extraordinarily in the

<sup>3</sup> See N. Subow, *Socialist Factories for Bread, Meat, and Butter*, Moscow, 1931.

collective farms, the raising of the prescribed quantities of products for the most part left much to be desired. Consequently, in comparison with the *Sovchoses*, the *Kolchoses* were frequently at a great disadvantage.

The task of modernizing the *Kolchos* enterprises rested in the first instance with the M.T.S., the machine and tractor stations, to which, besides the political management, a group of experts is attached, consisting of an agronomist, a plant-breeder, an animal-breeder, a veterinary surgeon, and an engineer. Moreover, the arrangement of the work of the *Kolchoses* was worked out in the greatest detail, each man being given his function. The division into working groups or brigades is well known, as also the original valuation of work done according to various principles, e.g. according to the capital brought in, according to the needs of the member, and according to the output of work. To-day the principle of payment by results as expressed in the piece-work system is in general acceptance. The apportionment of the output between the state, the *Kolchos*, and the individual members is made according to a somewhat complicated plan. An investigation by one of my pupils, Dr. Mentzel, showed that in the district examined one-third of the total output went to the state, one-third to the collective farm for the future carrying on of the farm; one-twelfth into the funds of various societies, and the remainder, only roughly one-quarter of the output, went to the *Kolchos* members who thereby eke out a very modest existence.<sup>4</sup> In order to strengthen the interest of the *Kolchos* peasants in increased output, the state shares were definitely fixed and the subscriptions to the various funds were restricted, so that there remained a larger share for the *Kolchos* peasant, the surplus of which he can dispose of on the open market. The small private business of the *Kolchos* peasant has also been somewhat extended from its former minimum. But the possibilities of free sale are comparatively limited as the imperative demands of the state requirements have to be met.

Apart from this the mechanization of the *Sovchoses* and the *Kolchoses* is carried out on the same principles, though the *Sovchoses* are, as already mentioned, better equipped with tractors; the latter not infrequently take over the cultivation of fairly large areas for *Kolchoses*, which in addition to tractors use horse teams (unfortunately much neglected during the transition period) for the field cultivation. For the *Kolchoses*, machine and tractor stations (M.T.S.) have assumed great importance. On the basis of special agreements with

<sup>4</sup> See H. E. Mentzel, *Organization of Labour and Distribution of Output in the Russian Collective Farm*. New German Investigations, Berlin, 1934.

the *Kolchozes* they carry out the tillage, sowing, and harvesting on the *Kolchos* farms.

If at first the *Kolchos* farms functioned badly, it was not due merely to lack of the will to work nor of interest in labour, but also to the fact that tractors were not available in sufficient quantity. On the other hand, ploughing teams had been partly done away with by collectivization, the animals having been slaughtered and those remaining not properly looked after.

The result of the better equipment of the state farms with machines and other requirements was, first of all, that the area under cultivation increased with extraordinary rapidity; thus the extent of the *Gigant* in the year 1929 was given as 60,000 hectares, in 1930, 160,000 hectares, in 1931, 235,000 hectares.

The main trouble of the new large farms was to get suitable farm managers. This condition was more important for the state farms than for the *Kolchos* farms, as on the latter in most cases peasants entrusted with the work saw that it was done properly, even if unwillingly. In America, the pioneer country of mechanization, this consideration played a negligible part, as a quite different policy was pursued in setting the boundaries of the large farm (rarely above 1,000 hectares). There were not enough farm managers for such a large number of big farms; they had to be trained very quickly, as had the technical managers of the *Kolchozes*. Hence the extraordinarily large number of students at all agricultural colleges. There were 12,000 students at the School of Agriculture near Moscow in 1931. Although there were well-qualified Russian agriculturists of the old school, no trust was put in handing over the state farms to them as these men were looked upon as counter-revolutionaries. It was naturally worst when the management of large farms was handed over to party functionaries to whom, at the best, a trained agriculturist was attached.

A further difficulty in such far-reaching mechanization consisted in the Russian peasant and land-worker not being sufficiently experienced in dealing with sensitive motors and large machines and, as a result, many breakages occurred. The machine cemeteries on Soviet farms became uncommonly extensive; the repair workshops on the Soviet farms we visited were like big machine factories. In this respect, too, the American examples were much better off as there was any amount of qualified workmen.

Another difficulty was that through the centrally planned economy—all instructions being issued from Moscow—much friction and many stoppages occurred; the more strictly the plan was administered,

the more people tried to stick to the letter of it. Men who kicked against the ordinances were dismissed.

A good many breakages were due to the inability of the peasants and labourers to manage the large machines, but also to the fact that the home agricultural machine industry was in its very early stages. The machines delivered were frequently bad. With its highly developed industry, America, the pioneer country of mechanized agriculture, was in a much better position.

Next to the farm-manager question, the drastic specialization, most strikingly seen in the division between crop-growing agriculture and cattle-rearing, but which originally extended to every single branch of farming (*Rayonnierung*), had the most disastrous effect on the new Russian state farms. A distinction is made on the *Sovchoses* between exclusively grain farms, cattle-rearing farms, sheep-rearing farms, pig-breeding farms, &c. The collective farms, on the other hand, are mixed farms on which the various branches of agriculture supplement each other, as is customary in peasant agriculture. In the *Kolchoses*, of course, the stock is largely kept in special stock farms, cattle farms, sheep farms, &c. Yet more than half of the total stock is in the individual care of the peasant, most of the remainder being on the socialized stock-farms of the *Kolchoses*.

Agriculture, especially grain farming, is the primary interest of European Russia. The development of grain farms is the first charge both of the Institute for Mechanization at the Lenin Academy in Moscow and of the Agricultural High School, the former Timirjasev Academy, near Moscow. For the most part the new Soviet state farms were, at first, completely one-sided. The monoculture thus established facilitated the use of large machinery, but very soon, even by the time of my visit in 1931, the Soviet state farms realized that a regular succession of crops was imperative. Thus, on the *Gigant*, a five-course rotation of crops was instituted. (Fallow, winter wheat, summer wheat, hoed crops, half winter and half summer.) On the *Werblud* the rotation of crops was fallow, winter crop, summer crop, that is to say, the old three-field system, a specialized system of grain farming for which, on heavy soil, fallowing is indispensable. In order to facilitate the administration of large areas from one centre, the big Soviet state farms, *Gigant* and *Werblud*, were divided up into districts, each of about 10,000-14,000 hectares. With regard to stock farming, herding of stock in special cattle farms, often badly managed, increased the danger of epidemics which have caused considerable reductions in the numbers of Russian cattle during the last few years. Further serious losses in cattle were caused by the fact



that, in the forcible collectivization, many were slaughtered. The stocks of horses, sheep, cows, pigs, and goats dropped by more than 50 per cent. up to 1933 in comparison with the figures of 1916 and with the still higher figures of 1929, and the live-stock output has also sunk considerably.<sup>5</sup> Thus, there has been since 1931 an extraordinary shortage of meat and other cattle products. The authorities seemed to have realized already in 1931 the danger to the people's food. Thus Subow said:

"The splendid successes in the setting up of Soviet farms have, in the main, secured a solution of the grain problem. Now that we have overcome the difficulties of the grain supply, we can proceed to the socialist reconstruction of cattle-breeding. The problem of cattle-breeding is the main issue of the near future. All the forces of both the party and of the working class will be devoted to the setting up of tremendous cattle-farms."<sup>6</sup>

We may say that the forcible collectivization had truly disastrous effects on the live-stock farming; with crop-farming, the quick pace of collectivization and the completely inadequate solution of the question of farm managers, especially on the Soviet state farms, brought with them serious setbacks; the yield per hectare sank and the weeds grew apace in the fields.

As, in spite of the setbacks, the Soviet Government has not departed from the measures adopted and obviously is not inclined to do so, we must ask ourselves especially from the point of view of central European economy: What are the inner foundations of methods of the new Russian economy? What are the pros and cons of the system of the Russian large-scale farming as seen on the one hand in the *Sovchoses*, on the other in the *Kolchoses*?

## 2. A CRITICISM OF THE NEW RUSSIAN SYSTEM OF FARMING

A German will inevitably ask with surprise: How is it possible to neglect cattle-breeding to such an extent as in Russia and even to take away a great part of the cattle from the individual care of the peasant? The explanation is that in the Soviet Union the authorities obviously had a very strange conception of agriculture, one quite different from that normally held elsewhere. The general opinion in central Europe and in the various other countries is that agriculture and cattle-breeding are most closely related and that farmers must be directly interested in the welfare of the cattle. In the factory-like transformation of agriculture with its use of large machines (tractors,

<sup>5</sup> See O. Schiller, 'Agricultural Production of the Soviet Union', *Reports on Agriculture*, Berlin 1934, vol. 19, chap. 2.

<sup>6</sup> See op. cit.

reaping and threshing machines, motor-lorries) we can see the peculiar Soviet conception of agriculture. But we cannot be satisfied with this explanation. The peculiarity of Russian conditions forces us to arrive at another judgement. On the Soviet state farms and on the farms of the *Kolchozes* most of the land is very fertile, even partly virgin soil. A great proportion of the actual grain-growing areas are located in the Black Earth Steppe country, as well as on the frequently no less fertile Podsol soils. On these fertile soils it is not nutrients but water which plays the main part. Water, not as with us nutrients, is for the most part the limiting factor. On such soils, a one-sided kind of cultivation, a sort of monoculture is technically possible, as the replacement of nutritive materials can be neglected. This is absolutely contrary to German agricultural production. For many centuries we have harvested crops from our cultivated soil, and this compels us to exercise a special soil-economy culminating in crop-rotation, whereby, besides market crops, above all grain, we also cultivate such crops as are consumed by the cattle, providing dung as a by-product, with the help of which the fertility of the soil is constantly maintained. In Germany, therefore, stock-farming and agriculture are interdependent, and besides grain we have to cultivate hoed crops and fodder crops in order to make the live-stock business possible. For this reason large implements and machinery, suitable only for monoculture, are automatically cut out and above all it is impossible to neglect the cultivation of fodder, as in European Russia. We need in Germany general purpose implements and machines and we cannot do without the peasant's hand-labour in the cultivation of plants and in the rearing of animals.

However amazing the centralization of Russian national economy may appear at first sight, and however great the increase in the use of power resulting from it may appear, such a procedure is completely inapplicable to German conditions. For Russia, it is only a question of time how long such agriculture is possible without replacement of soil nutrients. No one can prophesy to-day as to this period of time. I was told on the *Gigant*, four to five years, on the model farm *Chutorok*, perhaps thirty to forty years. Whatever the truth may be, the time will certainly come for Russian agriculture, when a transition to rotation of crops and to a close combination of agriculture and animal husbandry will become necessary. It may be that Russians will not be satisfied, as of old, with the minimum yields which can be achieved for many years without manuring, which is the yields resulting simply from the natural regeneration of conditions necessary to fertility (cf. in this connexion the experiments carried

on over many years at Rothamsted). The individual peasant farm, however, has, so far, proved superior for cattle farming, and even Russians have not yet shown us how to build up a productive cattle-economy with agricultural state labourers on the Soviet state farms.

While our prediction as to the live-stock enterprise is unfavourable since all experience shows that the anxious care of the self-interested peasant is absolutely essential, a somewhat more favourable opinion can, for the time being, be formed about the future of crop farming and especially about the cultivation of grain. Various circumstances point to the fact that Russia has realized the vital importance of the farm-manager question in the administration of Soviet state farms. It has also been realized that there are limits to the practical efficiency of the farm manager. Such huge farms as the *Gigant*, the *Werblud*, and also *Chutorok* simply cannot be administered from one centre and by one manager. Such bold ventures are doomed to failure from the outset. The division of the *Gigant* and the *Werblud* into smaller farm-units points to a realization of this. The manager of the former German concession-farm *Drusag*, Dr. Dittloff, incidentally calls attention to the fact that on his 11,000 hectare farm he had, in addition to his office work, to cover roughly 60 km. twice daily by car in order to see even something of his farm. On the same basis, the manager of the *Gigant* would have to cover at least 1,500 km. daily in order to keep in touch with his farm. Dr. Dittloff thinks only an aeroplane could cover this distance. I was told in administrative quarters in Russia, with express reference to the farm-manager question, that the most practical size of a farm was one of 12,000–15,000 hectares. The engineer in charge of agricultural machinery considered 60,000–70,000 hectares as the optimum, as that would allow for a complete use of large machinery. Dr. Dittloff considered the size of the *Drusag*—11,000 hectares—to be the utmost a manager with the help of modern means of transport could just reasonably supervise. According to a recent law of 1932, farms are limited to 40,000 hectares with sub-divisions of about 8,000–10,000 hectares.<sup>7</sup>

At this point there arises the consideration of the economic returns. The idea at first prevailed in Soviet economy that no attention need be paid to economic returns. The business manager therefore played a minor part, the agricultural engineer being everything. But a change in opinion was clearly visible as far back as 1931. It was recognized that accountancy was indispensable, for a great part of

<sup>7</sup> See also O. Schiller, 'The Agricultural Problems of the Soviet Union, 1931/32', *Reports on Agriculture*, 1932, vol. 16, chap. 3.

the machines had to be bought abroad and paid for with foreign currency, obtainable only by the export of Russian agrarian products, mainly grain. The drawing of grain from Russian agriculture went so far that the peasant population's standard of living was, in parts, brought down far below the minimum of existence. Dependence upon foreign agricultural machinery inevitably compelled a keen attention to accounting. As the home soil is not inexhaustible in its yield, Russia had to try to buy foreign articles with as little sacrifice as possible of home agricultural products, or, still better, to do without this foreign supply altogether.

Although to-day they have now achieved the latter goal, i.e. the import of agricultural machinery being no longer necessary, and an attempt is being made at reckoning economic returns in Russia, the position is that the costs of work—which consist of a certain amount of bread—are low, and the cost of capital, covering the expenses of replacing the buildings and machinery are ultimately also costs of work. As buildings have been taken over as they were, without much change being made, and for the time being very little is being done to them, accounting, in effect, covers the cost of mechanization, which is being paid for by the lowness of the workers' subsistence minimum (1 kg. of bread per day) as well as by the direct wage-cost itself.

It is extraordinarily difficult to carry out such a calculation for the separate farms for the simple reason that Soviet state farms, as stated, do not defray the expenses of a real amortization for the machines, but only the interest. Naturally, as machines are later used in the *Kolchozes*, the costs of amortization must ultimately be included in the calculations.

Production costs in Russia are all the lower, the lower the repair-costs of the machines can be kept, i.e. the lower the labour costs, which is to say, the lower the subsistence minimum. When, within recent years, Russian dumping on the world grain market was being discussed, this aspect of the relatively low costs of production should always have been taken into consideration.

Whether or not the expectations placed in the new large-scale farms—whether *Sovchoses* or *Kolchozes*—will be realized, depends, in addition to the problem of farm managers, on the will to work and the interest in the work which people can permanently engender under the conditions mentioned. It is a vital matter for Russian agriculture how far it will succeed in overcoming permanently the passive resistance of peasants whose farms have been forcibly collectivized. As, after the surprising increase in work done since

the spring of 1933, the judgement seems to have fallen definitely in favour of collectivization and as a tremendous increase in the production of Russian agricultural machinery and tractors is going on, it will be necessary in the near future to reckon with progress of production—at any rate in crop-farming.

At present there remain as unfavourable factors: too much red tape in the centralized economy; the peasants' lack of interest in their work and, in conjunction, the poor output of work and the lack of care for cattle and for buildings and equipment.

If, therefore, we prophesy more favourably for crop-farming than for live-stock farming, this can be regarded as a *plus* only in comparison with the utterly backward peasant economy *before* collectivization. The above-cited defects of the new agriculture show clearly that 'trees do not grow in heaven'. The fear is accordingly unfounded that Russian grain exports may become a serious danger to the world market, and that, in its wake, Russian national economy will increase to such an extent that it may crush western-European economics. The ruling class of present-day Russia wants a factory-like transformation of Russian agriculture, and people originally spoke of 'grain factories', 'meat factories', 'butter factories', &c. Russian agricultural economy, ultimately Russian national economy, must inevitably come to grief on this basic attitude. Russian agricultural products are mainly dependent on the weather, more so in such a primitive, agrarian country than in agricultural countries with a high civilization. The neglect of cattle-rearing, however, and of its basis, as well as the impossibility of creating a high-class cattle economy with a proletarian rural population, on the one hand, deprives Russian economy of the possibility of investing the surpluses of farm products in good years in the most practical way, namely, in live stock, and, on the other hand, will always jeopardize the people's food in bad harvest years, because the greatest food reserves in an agricultural country lie in the cattle economy, and in Russia the live-stock business shows only an impaired capacity.

The means for improvement always keeps forcing itself upon us—return to individual peasant farms. There can, however, be no talk of returning to the old, primitive form of peasant farming. Modern technical equipment and the education of the rural population in its use must be kept up even if to-day's path of agricultural economy be quitted; a transition must be made to the individual peasant farm by applying the mechanical cultivation of the soil co-operatively, as we see it in *Tos*,<sup>8</sup> a stage preceding collectivization.

<sup>8</sup> Stands for the co-operative society for the communal cultivation of the soil.

Mr. Münzinger's report shows what importance modern cultivation of the soil with the co-operative use of machines can have for the peasants.

I would point out, in conclusion, that we cannot set aside the most prodigious experiment hitherto carried out in the history of the world, the reorganization of Russian agriculture in our own time, simply with a shake of the head or with contradiction. This experiment can only be understood when judged by Russia's particular conditions and we can take a good many hints as to what is technically possible and not possible, what is economically admissible and what is inadmissible. If with Russia and also the socialist enthusiasts of other countries in mind, we have to refuse to over-estimate the importance of modern machinery in agriculture (I recollect for example that August Bebel, like present-day Russians, over-estimated the value of technical equipment in agriculture), let us nevertheless, in view of peasantry's hard fight all over the world, consider it as a specially important task to give the machine the place it deserves in individual peasant farms, namely, that of lightening the work for peasant man and woman. Machinery ought to be in the service of the farmer's house, farm, and field purely as working equipment for the farm and not as a piece of magic, compared with which man's efforts and strivings necessarily pale into insignificance and from which miracles in the service of mankind might be expected. Whereas, with us in Germany, the machine is destined to serve the individual farmer in agriculture and is given to him as an instrument, in Russia—as with us in other spheres, e.g. traffic and industry—machinery dominates the whole system of production and that we decline to have for our agriculture.