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FARM ORGANIZATION WITH SPECIAL REFERENCE TO THE NEEDS OF TECHNICAL, INDUSTRIAL, AND ECONOMIC DEVELOPMENT OF AGRICULTURE

SECOND OPENING PAPER

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IN this paper I wish to deal with the more important systems of labour organization in agriculture. Particular attention will be given to two systems: to that of the family farm and to that of the large farm operating with hired labour. Finally, I will enter into the forms of tenure: State ownership, rented farms, and owner-operated farms, the latter including individual ownership and collective ownership.

The characteristics of the family farm lie in the fact that the main labour requirements are met by the owner and his family. The owner and his family regularly take part in manual labour. Their efforts are supplemented only to an insignificant extent by hired labour. As large farms I would define those on which the attention of the operator is entirely directed to management and his capacity for manual labour is not utilized. All labour is done by hired workers. Between the two extremes, the type of family farm and the large farm as defined, all transitional stages are to be found. But I wish to emphasize these two types as representing two opposite poles. I intend to review the problems on the following lines:

1. According to the standards of farm management, i.e. the efficiency of family farms and large farms in questions of agricultural technique and organization.
2. According to their importance from the standpoint of national economics, i.e. in the food-producing capacity and as consumers of industrial commodities.
3. According to their sociological importance for the maintenance of the people.

1. What are the advantages and disadvantages of the two systems under varying physical and economic conditions of production?

Let us start with the family farm and see what advantages or disadvantages it presents in comparison to the large farm. I will omit purely live-stock farms without any arable land. Let us take

single-crop arable farms and presume absolutely no technical development. The organization in large units will offer no essential advantages against family farms, except that the large farms may rely on better trained personnel than the family farms. Turn, however, to a condition of highly advanced technical development. We realize best the differences that then arise between family farm and large farm, by comparing two extreme examples, for instance, the wheat farm as a family enterprise in Canada or U.S.A., and the great mechanized wheat farms of Russia. If the individual family farm can be provided with enough land to make full use of all technical equipment, such as tractors and combine-harvesters with all accessories, a further increase in size towards the large farm offers in this respect no enhanced advantages. Perhaps in the large farm machinery of greater dimensions working more economically can be used, but in this respect we soon come to a limit at which further enlargement of the plant ceases to be economic, and where only the use of several plants side by side distinguishes the large farm from the family farm.

Under such conditions, the scope of mechanization is not materially wider on the large farm than on family farms, but it can well be claimed that, thanks to the great number of machines, the large farm is in a position to run repair workshops of its own, and can derive certain advantages through being able to keep its own stock of spare parts. In marketing, the large farm may also be superior to the family farm, because of its ability to market in great quantities. It can also claim certain advantages in storage, when needed, by being able to put up the necessary buildings, silos, &c., on a large scale. But against these advantages of the large farm, a number of disadvantages are to be pointed out. Every expansion of the unit, every accumulation of machinery and utilization of large labour forces is accompanied by new problems of organization, hampers supervision, and often retards the utilization of the means of production at the optimal moment. Since in agricultural practices so strictly tied to certain dates (e.g. the right moment for ploughing, for harvesting, &c.) all delay may lead to material losses, disadvantages of this kind can counterbalance very substantial advantages of the larger unit. Furthermore, the family unit is a more elastic labour system than hired labour. This is particularly significant in farming because of the sharp alterations of peaks of labour requirements and quiet times. Even by a well-developed system of piece-work wages, the farm with hired labour can only partially attain such elasticity, and to a lessening extent the greater the number of workers. The greater

the share of family work or, at least, the closer the personal touch between the farmer and the workers, the easier it is to attain a certain elasticity of the labour system.

If the size of the large-scale unit oversteps certain limits, the transport problems within the farm lead to increasing difficulties. The development of the giant units in Russia, although they attempted to overcome these difficulties by mobilizing flying squads of workers, very clearly showed the disadvantages and dangers that lie in choosing too large a unit. The catastrophic experiences of the first years quickly led to a reduction of the size of the unit in that country.

If, therefore, in single-crop farming, the family farm can be supplied with land of sufficient area to allow of full utilization of technical equipment, it will very well be able to compete with the large-scale farm, unless technical advance provides large machines which are so superior to the smaller models that the use of the largest machines is very considerably more advantageous than the use of smaller plants.

What is the aspect of the problem if we think, not of single-cropping, but of diversified soil utilization? Consider this system, first without live-stock.

The tendency towards diversified arable farming commences as soon as the ratio of population to the available soil increases, thus necessitating a higher utilization of the land. Diversified arable farming, particularly the inclusion of root crops, checks the wholesale mechanization of all field work; and, where mechanization is attempted, the simpler types of machinery no longer suffice, and here also diversity is required. As of necessity more intensive soil utilization by means of a variety of crops reduces the acreage that can be operated by the family unit, the chances of full utilization of technical equipment decline. Under such conditions, less efficient utilization of machine and of building equipment in family farms compared with large farms is to be noticed. The increasing volume of production per unit of land is often accompanied by a declining volume of production per unit of labour, because the efficiency of the individual worker can no longer be so adequately supported by technical equipment. This process is more pronounced in the family farm than in the large farm which, under these conditions, can still use technical equipment more readily. Against these now very apparent advantages of the large-scale farm in comparison with the family holding, the following disadvantages are to be found. The more diversified the soil utilization becomes and the greater the importance of obtaining fullest utilization of the productive capacity of the soil, i.e. of getting

the highest possible yields per unit of land, the more vital become the fine details of all technique. The full utilization of optimal dates, the exploiting of the smallest areas of land, the accurate execution of all work, are all factors which now gain increasing importance. But the larger the farm, the more difficult becomes the control of these factors; supervision becomes difficult, the more one must rely on hired workers not personally interested in the results of their work. The personal interest in the family unit and the greater possibility of obtaining the fullest results by personal effort counterbalance many of the technical advantages of the large farm—on the assumption of an equal standard of professional training. It is extremely difficult to ascertain these various advantages and disadvantages in terms of figures. Attempts have been made in this direction, but the results are usually unsatisfactory, because the personality of the operator is the deciding factor, and this factor, not expressible in figures, outweighs the others.

The next system to consider is that in which live-stock enterprises are combined with the diversified soil utilization.

The development of the live-stock enterprise usually entails greater outlay on buildings, at least in all zones with unfavourable climate. This means a greater burden of building capital for the family unit, because where the number of live stock is small the utilization of the buildings is inferior compared with the large farm; that is to say, the unproductive outlay for equipment that can be only inadequately utilized is here still more noticeable. But the advantages of better utilization in the large farms are restricted; there are limits, soon reached, beyond which the utilization of the buildings does not grow, because the optimal size has been reached and no further advantages are to be gained by larger buildings. This drawback of incomplete utilization of buildings in the live-stock enterprise of the family farm is counterbalanced by the greater chances of individual treatment of the animals. These advantages are particularly important wherever high efficiency of live-stock production is demanded. The counteracting advantage of the large-scale farm is that it can employ specially trained men for the various types of live-stock. But, on the other hand, there are increasing dangers in collecting together great units of live-stock, especially when great physiological demands are made upon the animals. As soon as the management unit of high-yielding animals grows too large, the dangers of disease become so imminent that they completely outweigh all advantages of technical equipment and of marketing that might be derived from the large size of the unit.

Again, these various advantages and drawbacks of family farms and large farms can scarcely be expressed in figures. If it is attempted to arrive at precise conclusions as to the productive efficiency of the different size units, such calculations can only be made for strictly bounded areas with uniform physical and economic conditions, but, even in such cases, the calculations must include many errors, because the issue is too strongly influenced by the undefinable personal factor of the operator.

What are the external physical and economic conditions which point, assuming that we have the choice, to one or the other pole, to the family farm or to the large-scale farm? The more restricted the food area of an economic unit, i.e. the more importance that must be attached to a high production of food per unit of land, the more emphasis must normally be given to the family farm as applying the greater amount of labour per unit of land. This tendency can the more readily be followed, the higher the educational status. If, on the other hand, the economic unit has surplus supplies of land, and therefore the full utilization of the labour unit is most important, and if, further, there are great differences in the educational standards of the population, then the trend must shift more to the large units, because in these units, by means of the superior training of comparatively few operators, a higher level of efficiency of all labour employed can be attained.

2. What are the demands of national economy upon agriculture, and how do the family farm and the large farm stand in relation to meeting these demands? Primarily, a certain volume of food production is required of agriculture. If sufficient land is available and if only a limited amount of labour can be devoted to food production, preference must be given to the forms of organization which give the greatest productive efficiency to the unit of labour. We have seen that this can be attained both in family farming and in large-scale farming. The volume of food produced per unit of labour and also the surplus marketed may be equal in each form of organization, if only the family farm can obtain full technical equipment and land enough for complete utilization of machinery. The factor deciding which form is to be preferred will primarily be the educational status of the population. This factor strongly influences the farming ability and also the personal morale of the individual.

If, on the other hand, there is a shortage of land, but a numerous population in the economic unit, i.e. if high demands are placed on the output of the unit of land and on the volume of processed livestock produce, diversified farms with an intensive form of soil utiliza-

tion and with a strongly developed live-stock enterprise must be aimed at. There is more likelihood, therefore, of a tendency to give preference to the family farm, although it may produce less per unit of labour and may have a certain dead burden of inadequately utilized buildings and technical equipment. This policy may be pursued as long as the total volume of food production (vegetable and animal) per unit of land is higher than, or at least equal to, the output per unit of land of the large farms. We have already seen that there are great possibilities in this respect. But the question must be considered, whether the cost of production is not unduly high owing to the unproductive outlay for incompletely exploited buildings and machinery; for, if we supply the family holdings with only very little land, this dead outlay increases very materially. For instance, on German peasant holdings of medium size, the investments per unit of land in buildings and machinery are considerably higher than on large farms, although the greater outlay does not represent a more efficient technical equipment than that of the large farms. The example of the Canadian and American wheat farms proves to us that the family farm need not always be encumbered with more unproductive building and machinery investments than the large-scale farm. But when we come to compare larger and smaller farms organized for mixed farming with strongly developed live-stock enterprises, under otherwise equal conditions we note this increased burden on the family farms, and we must study the question, whether the resultant increase in costs of production is not a danger to national economy and therefore undesirable.

If we want to arrive at clear conclusions, we must first of all decide whether national economy primarily demands the cheapest possible production or whether other national demands, also of purely economic character, be more important. In reviewing the development of the great economic crises of the recent decades and also of the past century, I believe that their underlying causes were mainly a disturbance of the balance between all branches of production, and a disproportionate relationship of production of agricultural and industrial goods and of the capacity for the consumption of these goods. If we look particularly at the great agrarian crisis of the post-War period, we find that opinion varies as to the causes. The crisis primarily made itself felt in the complete breakdown of the system of distribution, that produced a state of affairs in which part of humanity was stifled in abundance whilst in other parts of the world millions were faced by starvation. Certainly, the collapse of the distributing system, upset by political action, by

currency policy, and other influences, was to a large extent to blame for the spread of the crisis. But are the causes not more deeply rooted than in the distributing system? Are they not to be sought in an unbalanced development of the volume of production in the various economic sections and in the varying consuming capacity of these sections? Is it not the case that a very definite balance in production and consumption rules the economic situation, and is it not far more important to strive for such a balance, to give equilibrium of production and consumption within an economic unit, rather than to regard the cheapest and most rational production as the sole economic goal?

This brings us to the second important problem which agriculture has to face in national economy. Agriculture must not only provide food, but must also act as a market for the products of other economic sections. To what extent in this connexion must the cheapest forms of production of food be stressed in spite of an ensuing low consuming capacity for industrial commodities, or to what extent can a form of agricultural production working at somewhat greater cost be justified on the grounds that in this case agriculture becomes a great consumer of industrial commodities in the broadest sense of the word? That will depend upon the structure of the economic unit in question. If this economic area is densely populated, agriculture must aim at the highest possible production per unit of land, even if this entails a higher outlay on means of production and other commodities which indirectly increase the cost of production.

Under such conditions, there will always be the tendency towards the family type of farm, for under otherwise equal conditions these family units have greater capacity for consumption of industrial goods (means of production and of subsistence) and therefore tend to strengthen the home market; they produce large quantities of food per unit of land and therefore create powerful economic circulation in which production and consumption meet.

It is, of course, extremely difficult to find the limit at which the great consumption of industrial goods on the part of agriculture, which does not tend to reduce the costs of agricultural production, develops to such a stage as to lead to too costly forms of food production, which in turn lead to a reduced consumption of agricultural produce. I do not believe that our economic methods can manage to calculate and to fix this limit, which must depend on innumerable and most various factors. The collapse of the world's economic system proves to us how difficult such calculations are, especially on a large scale.

The failure of world economics to balance production and consumption in the various sections, resulting in endless economic crises, has fostered the growth of national economic units which now seek better balance in more restricted economic areas. It is well known what difficulties ensue, and particularly what difficulties arise in the exchange of goods between these national units which, in balancing their individual economic systems, have arrived at the most divergent price levels.

Increased home exchange, however, of goods within the narrower boundaries of such restricted economic units gives greater assurance and inner power to these units, and for such a development in highly industrialized countries the family farm offers greater scope than the large farm. In such an economic system, the family farm is also a more valuable member, because it is more elastic in consumption. As the business expenditure of the family unit is to a high degree influenced by personal consumption, this factor is far more elastic in consumption, although not in production, than in the budget of the farm using hired labour. This is the reason for the greater crisis-resistance of the family holding compared with forms of agriculture based entirely on hired labour. Under such economic conditions and with a good educational status of the rural population, the proportion of the large farms among the total of agricultural holdings can be fairly low.

3. Up to now we have confined ourselves to the economic problems of agriculture. But beyond all economic functions, the rural population has another significance in the life of the people. In the development of all civilized nations, a glance at history shows that the life and growth of all nations is completely linked to the development of the rural population of the nations. In the growth of the cities, any shift in the relationship of rural and urban population in favour of the latter is full of danger to the whole nation. We know that in the cities the families die out in a few generations; we know that the greater cities cannot maintain their population by means of their own birth surplus; they are dependent upon the steady influx of surplus rural population.

Thus the rural population is the permanent source of regeneration of the life of the people and a constant source of national vitality. The fostering of the rural population is not only important in a numerical sense; it is in my opinion of decisive importance to the development of the national character. I do not wish, however, to enter into these questions in detail as they are mainly influenced by ideals of *Weltanschauung* and faith.

How do the forms of organization, family holding, and large farm with hired labour, bear upon the problems touched upon? Does the family farm provide for a more populous country-side? Under equal physical and economic conditions, it does. In this case it forms a more abundant source of increase of population than the large farm. A quantitative study of the population policy must therefore give preference to the family holding. The peasant, in closest touch with his soil, also shows a certain superiority to the farm labourer. The ties of the soil, growing from work on soil of one's own, the sense of a life duty fulfilled; these are more than a source of subsistence. This feeling, that makes work more than an occupation providing the means of existence, that makes it a vocation and an inner calling, must of course mould most powerfully the spirit of man. This perception is the base of systematic promotion of the peasant in Germany to-day. The German word *Bauer* is more to us than the English word 'peasant', which in English and American usage is always associated with a certain backwardness. The *Bauer* is to us not a man who engages temporarily in agriculture, as some farmers do, in order to earn his living, and who is willing to exchange this profession for any other seeming to offer more profit.

In the study of the economic problems of family farm and large farm, advantages and disadvantages were on both sides; one could often be in doubt which form should be preferred. From the point of view of national economy, some aspects of production and consumption left the question open. But from a sociological and biological viewpoint, the superiority of the family holding is beyond doubt, subject to the condition that one can make this holding a true peasant homestead. I think these considerations will influence the development in the direction of the family holding; the economic problem will mainly be to find forms and equipment for the family farm, which enable it to compete in technique with the large farm.

Finally, I would like to touch upon the question, which form of ownership is to be aimed at in farming, State farm, rented farm, owner-operated farm, and in the case of the latter, individual ownership as family holding, or collective ownership.

Let us first examine the State farm and attempt to determine for what purposes State ownership appears suitable. In doing so, State management appears to me to be primarily desirable wherever, in any form of production or distribution or in any service, a monopoly must be attained, because very unequal service is required and the public is best served if a total efficiency is reached by amalgamat-

ing a great number of small services, each in itself not economic, but together providing important service to the community. This is the case with the postal service, with transport and railway services, and also in the production and distribution of other goods and services such as electricity, water, &c. A further condition for efficient operation of State enterprise appears to me to be a perception of the range of duties and easy supervision of all measures. In such enterprises, one must be able to act according to clearly drawn-up plans, with precisely measureable processes and with easily controllable decisions, for inevitably State management leads to a certain development of red tape. Bureaucratic management will only work efficiently under the conditions just enumerated.

How does agriculture lend itself to these conditions? Action according to precise plans drawn up in figures is exceedingly difficult, because the constant changes due to climate and weather continually call for new decisions which must be made on the spur of the moment and immediately carried out. That is a form of action exceedingly difficult under State management. A further condition was that all measures carried out should be easy to control as to their efficiency. In the case of the taking of decisions, that again is very difficult in farming, because very often actions that were at the moment correct prove inefficient owing to subsequent change of conditions (weather). Therefore, State management in agriculture often hampers the decisions of the responsible officer and checks his willingness to assume responsibility. Important decisions are not taken at the critical moment and, instead, directions of the superiors are asked for.

A classic example of this development was that of the Russian *Sovchos* farms. Here the development reached such a stage that finally all important decisions were only made at the order of a central office which decreed when to plough, when to seed, when to harvest, &c. Any one who had the opportunity of examining these farms could estimate the immense damage done to their management by this system. State management appears to me, therefore, the most unsuitable form of management conceivable for farming.

What about the rented farm? In earlier papers we have heard so much of the advantages and disadvantages of rented farms that I need not deal with this problem. In spite of all we heard, I am convinced that the owner-operated holding is the type to be aimed at, supplemented, however, as far as necessary by rented farms.

The question must still be faced, whether, in view of the inadequate utilization of greater technical equipment on family holdings,

these difficulties should be met by loosening the individual ties and by co-ordinating a greater number of such holdings into a collective unit. I consider co-operative action for dealing with difficulties of marketing and for the utilization of certain technical means of production, which the individual farm cannot make use of, perfectly feasible, as long as this does not sever the ties of the individual to the land. As soon as this occurs, I believe that the sociological damage, as well as the disadvantages resulting from the inevitable loss of labour elasticity due to the dependency on greater economic units, will be so great as to weigh heavier than the technical deficiencies of the family farm.

The progress that can perhaps be achieved by collective farming, as compared with the efficiency of individualistic farmers, can only be great if the educational status of the individual is relatively low. But even then, the surer path of progress in agriculture seems to me in the long run to be the raising of the educational status of the individual—of the peasant. This path also appears to me the more beneficent to the health and welfare of the nation, whereas collective agriculture, in spite perhaps of momentary successes, appears to endanger the great values which are to be found or to be created in an effectively developed peasant agriculture.