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NEW WAYS OF INTEGRATION IN AGRICULTURE

OTTO SCHILLER

IN the last few years new forms of integration came up here and there in West Germany's agriculture. Similar phenomena can also be observed in some neighbouring countries, like France, Denmark and Sweden. It may be assumed, therefore, that we have to do with a new development which at present in its initial phase is of minor practical importance but may gather momentum in the years to come. To analyse its motives and its trends may be of particular interest under the aspects of similar tendencies in India's agriculture.

One of the main factors for structural changes in Western agriculture is the rapid progress in the techniques of agricultural production. To utilize the economic advantages of modern techniques operational units of a certain minimum size are needed. For some operations the farm unit itself must be of a sufficient size. For others, like marketing for instance, it is enough to attain larger units of operation by the co-operation of numerous farms. Co-operative activities in the field of marketing and supply and processing of agricultural products are well-known and already in former times have contributed much to the progress of agriculture, especially in the regions where small holdings prevail. Under the new conditions of the European Common Market even more co-operation is needed for farmers who have to compete with their products on markets which are made easily accessible also to farmers of other countries. This is one of the reasons for the adoption of new forms of integration which are called "vertical integration." The meaning is that all processes in the chain, linking the producer and the consumer of agricultural products, like farming, marketing, storing, processing and wholesaling should be integrated in a way that the supply of the consumer with large quantities of uniform, high quality goods can be secured.

Vertical integration can work successfully only if in the first stage of the whole procedure, *i.e.*, in the farming process some rules of joint action are observed. The farmers concerned should be ready to direct the planning of their production in a way which corresponds to specific requirements of consumption. In this connection at present in West Germany the question is being under discussion whether it is advisable and admissible to have the farmers organized in so-called producer-associations with obligatory regulations for the kind and the volume of production. It has been argued by the opponents that such kind of integration, if made obligatory on the basis of a majority vote, would have a monopolistic tendency and would not be in conformity with the rules of free economy and with the German legislation prohibiting the formation of any cartels. In France, however, some regulation of this kind on a voluntary contract-basis are working successfully.

The discussion in West Germany has made it clear that for the regulation and integration of production processes under the conditions of a free economy there are certain limitations as far as its general adoption is concerned. This does not exclude, however, the possible integration of a certain group of farms in farming processes. This is called with a new term the "horizontal integration." To have the farming processes of a whole group of farms more closely connected or integrated two ways can be adopted: The first is the amalgamation of the respective farms into one operational large scale unit. This would be similar to what is called in India "co-operative farming with joint use of land." The other way is the integration of certain farming processes by inter-farm co-operation. In West Germany nearly exclusively the latter form of integration is applied in a restricted number of cases. In France, however, in the last few years also so-called group farming with joint use of land came up here and there. This group farming is distinct from the Indian way of co-operative farming insofar as it developed without any planning and Government action and even without legal registration. The groups in most cases are too small to be registered as co-operative societies and only recently by a new legislation the legal status of such partnerships has been determined in France.

Inter-farm co-operation in farming operations and animal husbandry, as shown by the examples of West Germany and some neighbouring countries, can be adopted in different forms. In some cases some working processes which are carried out jointly are combined with others carried out individually. In other cases a certain branch of the farm economy is turned over from the individual farms to joint management. In all cases, however, the individuality of the member-farms is preserved. It is the task of this kind of co-operative or joint action to promote the economy of the member-farms but not to promote the economy of a common farm. Typical examples of inter-farm co-operation in farming operations are, for instance, some communities in West Germany and also in Switzerland specialized in wine-growing and fruit farming.¹ In connection with land consolidation, all plots allotted to vineyards or orchards are combined in a common plantation with a uniform lay-out for the same varieties to be grown in large blocks. The direction of rows and the distance between them are also uniformly determined. Each landowner gets one or more rows allocated to him in accordance with the size

1. See Otto Schiller, "Co-operation in Farming Operations," Year Book of Agricultural Co-operation, Horace Plunkett Foundation, London, 1959.

of orchard or vineyard originally owned by him. In this way the combination of co-operative and individual working processes is facilitated.

The spraying of fruit trees or vines which on individual farms is often not performed intensively enough, can now be carried out by the co-operative society. The same applies to working processes requiring special skill, such as the pruning or grafting of fruit trees. The various tasks can now be carried out with more expert knowledge than on small individual farms.

It is important to have certain working processes carried out individually and to have each member of the society harvest the fruits of his own land. In this way personal attachment to the soil and personal interest to take care of it and to improve its fertility is preserved. By individual harvesting the complicated system of book-keeping is avoided which must be kept on collective farms to calculate the labour contributed by each member when distributing profits.

There are also a few cases of wine-growing communities in West Germany where the cultivation of field crops in distant fields is carried out jointly with the help of tractors owned by the co-operative society. It is a kind of subsidiary joint use of land determined to save labour for the intensification of the main branch of member-farms, namely, wine-growing.

Inter-farm co-operation in animal husbandry is mainly characterized by the joint management of a certain branch of economy in order to intensify other branches in which the respective member-farms are specialized. In a French community, for instance, visited recently by the author, the rearing of calves is made the subject of co-operative action. All female calves of the 30 members a few days after birth are handed over to the co-operative society. They are raised jointly up to the age of 11 or 12 months and then turned back to the member-farms which are specialized in dairy farming. In Denmark and Sweden as well as in West Germany there are some cases of co-operative stables where the cows of the members are milked jointly with the help of milking machinery. This again is an example for useful combination of joint and individual working processes in individual farms. Common pastures for young cattle or pigs are another example.

More recently, there are some examples where the process of integration in agricultural production can also go ahead on a commercial basis. Joint use of agricultural machinery, for instance, is not only the subject of co-operative activity—be it as one of the activities of a multipurpose-society or as the special task of a society established for this purpose. There are also cases where one of the farmers or a professional entrepreneur is keeping the tractor which is used in a number of farms on hired basis. More recently so-called machine-banks came up in some communities in West Germany. Private owners of machinery, on a mutual exchange basis, are planning and organizing better exploitation of their machinery which is used also in other farms. But these machine-banks are distinct from machine stations existing in Sweden which hire out agricultural machinery to individual farms.

In West Germany and also in France the question has been discussed whether farming or animal husbandry could be made the subject of a stock company esta-

blished for this purpose by a number of farmers as shareholders. A typical example of this kind of enterprise is the so-called cow-hotel or cowtel which is in the stage of establishment in the neighbourhood of the city Essen in West Germany. It is planned for 2,000 dairy cows contributed by farmers who are the shareholders of the company and will get a dividend according to the value of their contribution. In some way the features of this enterprise are similar but in some respect also distinct from the well known Aarey Milk Colony near Bombay.

It is the question whether the examples of new forms of integration in agricultural production as quoted above may have some instructive value also for India's agriculture. Obviously, agricultural holdings in India to a great part are too small, which undoubtedly is a big obstacle for the introduction of modern agricultural methods. But it should not be overlooked that this is not the case with all Indian farms. According to available data in 1960-61, 6.91 per cent of the operational holdings have had a size of over 20 acres with an area of 37.30 per cent of the total area sown.² At least for these farms—their number being estimated at about 3.6 million units³—one could possibly assume that they could be brought to an adequate level of modern techniques as well as the farms of the same size group in Western Europe. Modern farming methods require for their application larger operational units. These 20-acre farms could also apply these modern methods economically if inter-farm co-operation is organized in the right way.

Of course, farms in size-group above 20 acres are relatively small in number. For all other farms smaller in size the combination of a certain number of them seems to be the only possible way to come to operational units of an adequate size. But it is often overlooked that for uneconomic small-scale farming the alternative is not only economic large-scale farming on co-operative or other basis but there is also a third possibility, namely, economic and modern farming in farming units of a middle size. This is exactly what is shown by the experience of Western countries.

In countries, like U.S.A., West Germany, Sweden and others the average size of holdings is gradually going up. Many small-scale farms are given up and their land is used to enlarge the size of other farms. But generally this is not a transition from small-scale to large-scale farming but rather a trend towards the family farm of a medium size. This trend is the result of the shortage of labour which is felt in many Western countries. In West Germany, for instance, some time in the past large-scale farms (over 250 acres) and also of those in the large-size group of family farms (from 125—250 acres) were shrinking in number, most of them becoming smaller. With the present stand of progress in agricultural techniques the family farm managed without the help of hired labour (in West Germany of 25 to 125 acres) is obviously still of a sufficient size to allow the adoption of all modern methods, be it on an individual or on an inter-farm basis. The situation may change with further progress of technology. But this is not of practical importance for the foreseeable future.

2. See National Sample Survey: Sixteenth Round, 1960-61, Cabinet Secretariat, Government of India.

3. National Sample Survey: Eighth Round: 1954-1955, Some Aspects of Land Holdings in Rural Sector, Cabinet Secretariat, Government of India.

It may be assumed, therefore, that also in India for many years to come the medium size of farming units should suffice to open the way for all possible technical and technological progress considering also the fact that modernisation of agricultural techniques in this country is still in its initial phase of development. The progress of mechanisation, for instance, does not require the transition to large-scale farming as demonstrated quite clearly by the example of Western countries with highly mechanised agriculture. As outlined above, there are different forms of integration for the economic utilization of huge agricultural machinery, like tractors or combine threshers, in family farms of medium or even small size. Other measures which in many cases can be carried out economically only on the basis of integration are irrigation and plant protection. But also for these measures integration on the basis of inter-farm co-operation is an alternative to the transition to large-scale farming by pooling the land resources.

The transition of large-scale farming seems to be the final aim of co-operative farming as envisaged in India's Five-Year Plans. For the time being, however, operational units of existing co-operative farming societies in most cases cannot be classified as large-scale farms but rather as farms of medium size. Their fields are often splitted up in numerous plots so that economies of scale can only insufficiently be utilized. This may change when the initial phase of development is concluded and actual "village co-operative management" will take place. In such cases the whole village area of a certain community could represent one operational unit, which is an exception until now. Since the average size of cultivated area in the Indian villages is around 6.50 acres we would really have to do in such cases with large-scale farms.

It is well known that to achieve this aim there are many obstacles based on the traditional structure of Indian villages and the psychology of its inhabitants. Where these obstacles can be overcome co-operative farming may well prove to be a proper solution. In other cases it should be considered that there are also other forms of integration in agriculture not requiring joint use of land. Where the holdings are too small for the adoption of progressive farming methods it is not necessary to combine hundred or more of them to one large-scale farming unit. It may suffice to combine 2—5 of them to farming units which are big enough to introduce all kinds of technological progress with the help of inter-farm co-operation.

What minimum size of holdings is required for an efficient application of inter-farm co-operation may vary from region to region. This minimum size—not identical with the optimal size—could be determined in the different regions by scientific methods. To combine some holdings to farming units of a sufficient size is not an easy task but easier at least than the amalgamation of many holdings to a large-scale co-operative farm.⁴ If on the basis of such farming units inter-farm co-operation would be organized in the right way the main obstacles for the introduction of progressive farming methods would be removed.

4. The author has discussed the "establishment of farming units" in "Co-operative Farming and Individual Farming on Co-operative Lines" published by the All-India Co-operative Union, New Delhi, 1957. See also Otto Schüller, Report on Problems of Co-operative Farming in India, Report of the German Delegation to India, Government of India, 1960.

A new way of integration in agricultural production now-a-days is adopted on a large scale in Egypt. On the basis of the so-called "Unified crop rotation" the holdings—most of them of a very small size—are grouped together in sections according to the irrigation system. In these sections of the village area all plots belonging to numerous owners are cultivated in a common crop rotation with the same crop. With this arrangement nearly the same advantages in the economy of water, in plant protection or in the use of machinery can be achieved as they are expected in the case of large-scale co-operative farming. The experiences made in Egypt with the adoption of these new methods are not yet sufficiently analysed and described in the scientific literature. But they may prove that even on the basis of an agrarian structure with farming units of insufficient size inter-farm co-operation of smallholders preserving their individual use of land may lead to an essential progress of farming techniques and agricultural production.

An increasing degree of integration is obviously a typical feature of modern agricultural development. Due to the great variations in socio-economic and political conditions integration in the various countries is going on in quite different forms. It would be wrong to assume that there is any pattern or model which can be adopted everywhere. Certainly, the co-operative model exists nearly in all countries. But its forms are so different in the various countries that in some cases the common feature is mainly that the same term "co-operative system" or "co-operative movement" is used. Also outside the co-operative framework, as outlined above, interesting new forms of integration developed in different countries on the basis of spontaneous initiative from the side of the farmers themselves. Even there where the main force of integration is planning and guidance from above it is usually the aim to avoid any rigid pattern. Flexibility in the promotion of various forms of integration seems to be advisable. For this purpose the experiences of other countries may be of some value and should carefully be studied. If all possibilities to promote agricultural production with the help of the one or the other form of integration are used in the right way, an essential progress of agriculture may be expected.