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PLANNING IN INDIAN AGRICULTURE

By

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It is customary for a President to begin his presidential address by expressing his gratitude to the members of the Society for having elected him to this august position and to say how greatly honoured he felt for the same. I should follow this customary practice. However, to say that I feel greatly honoured is a gross understatement of what I feel and what I felt when all this happened. As you know, it all happened at the last Conference. You will remember that last year when Professor Karve, at the end of a wonderfully irrelevant preamble, proposed my name for the Presidentship of this Conference, all of us were taken by surprise and you had voted me into the presidentship before you had recovered from the shock. Now that the thing is over, let me confess that I was equally surprised and that it took me some time to realize that I was honoured. Let me now proceed to unburden myself.

The Draft Outline of the Fourth Plan has been published and I suppose propriety requires that I take cognizance of the same and say something on the plan proposals on agriculture. You will remember that last year, the Ministry of Food and Agriculture published its own "Approach to Agricultural Development in the Fourth Five-Year Plan" and requested our Society to organize four regional seminars on the subject. We did this and duly submitted our report to the Ministry. It therefore seems almost obligatory that I should now devote my address to the proposals on Agriculture as they appear in the Draft Outline.

The new thing about agricultural development in the Fourth Plan is the New Strategy. You are going to discuss it during the next two days and I do not want to anticipate that discussion. Therefore, I shall address myself to a rather different question. It is not quite an integral element of the New Strategy. Nevertheless, it is central to planning for agricultural development. In the Draft Outline, it is recognized as such. Let me quote :

"Agricultural development has suffered on account of incomplete planning, particularly at the local levels. The central fact to be kept in view is that agriculture lies, almost entirely, in the private, unorganized sector. Agricultural production is, in consequence, primarily the result of individual planning or decisions taken and effort put in by . . . farmers . . . who control the actual production process. . . . An agricultural plan becomes a plan in the true sense of the term and the targets acquire real meaning, validity and sanction, only if the national goals or broad targets are concretized into a set of specific programmes through village, block and district plans and are accepted by the farmers as their own and there is a joint commitment on the part of the farmers, their institutions (co-operatives and panchayat raj), the State governments and the Centre to play their respective roles." (p. 181).

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Admittedly this is a crucial fact. Agricultural production rests in the hands of millions of farmers. Therefore, without their full acceptance of our plans, the planning would be reduced to a fruitless exercise of our proposing and the farmers' disposing. How do we then secure their acceptance? One of the means suggested is what is called complete planning particularly at the local level. Let me quote :

“In the Fourth Plan, an attempt was made in May 1965 to indicate production goals, programme targets and outlays to each State. The intention was that each State would break them up into district programmes and targets and the latter would further break them up into block programmes and targets. It was also proposed that an agricultural planning cell should be set up at each State headquarters with wholtime officers of the various departments concerned to work out clearcut programmes and give technical guidance for the further break up to block level. . . . When the overall plans of States for the Fourth Plan period are formulated, within the framework which they provide, steps should be taken to draw up district and block plans for agriculture and other sectors. These will serve as the basis for intensifying production effort at the village level.” (*loc. cit.* pp. 181-182).

Let us get this idea clear. The whole-time officers sitting in the Ministry and in the Planning Commission would indicate production goals, programme targets and outlays to each State ; the whole-time officers sitting at the State headquarters and in the proposed agricultural planning cells in the States, would break them into district programmes and targets, and would give technical guidance for their further break-up into block programmes and targets ; the latter in turn would serve as the basis for intensifying production effort at the village level. Once this was done, the national targets would be accepted as their own, by millions of farmers with whom rest the actual production decisions and the targets would thus acquire real meaning, validity and sanction ; finally a joint commitment would emerge in which the farmers, their institutions and governments in the States and at the Centre would play their respective roles. Amen.

We are told that this was not done in the Third Plan and that it was partially responsible for the shortfall in agricultural production. I suppose we should believe. However, it would be only fair to say that the concept of preparing district and block plans, by splitting the national and state plans, has existed ever since the beginning of the First Plan and that exhortations to that effect have been made since then in almost identical terms. I suppose I am also right in believing that ever since the establishment of community development blocks and especially during the Second and the Third Plan periods, block plans prepared along these lines were a part of the essential stationery of the Block Development Officers. Nevertheless, it did not help to enthuse the farmers or to induce them, to use another phrase, “to take the right decisions consistent with national goals and policies.” What then is the basis of these expectations and hopes being placed in the local plans of this variety ?

I suppose you will want me to dismiss these phrases as part of that hocus-pocus which somehow seems to be so necessary to make a five-year plan stand together. I would be happy if that was all. But, I am afraid, it is worse than

that. I think these expectations and hopes are genuine and sincere. Thus viewed, they appear to me to be characteristic expressions of our long-standing attitudes towards farmers and rural people generally and of our assessment of their intelligence. We think they are children. It is high time we realize that they are adults. If we do not, the danger is that the farmers may begin to treat us like children.

In order to secure greater participation of the farmers in our plans, we have tried yet another, and it seems to me, a more sensible approach, namely, the establishment of panchayat-raj institutions at the district and the block level. In fact, in the matter of plan implementation, especially at the local levels, this is the single, most important thing which we have tried to-date. Nevertheless, I must ask : Does the establishment of panchayat-raj institutions at the district and block levels alter the relations between the plan and the farmers ? I am afraid, it does not, and I see no reason why it should.

The panchayat-raj institutions are local governments at the district and block levels. That is how they are conceived and that is how they are constituted. Their purpose is to bring the popular government closer to the people. In the field of development, they secure association of the popular representatives with the administrative agencies in charge of the plan-implementation. This is obviously necessary and desirable. However, this in itself does not alter the central fact that while the plans are prepared by government, the production decisions rest with the individual farmers. Even if the panchayat-raj institutions prepared their own plans for the districts and the blocks, that would not alter the basic situation because the plans would still be prepared by certain organs of government while the production decisions would continue to be with the individual farmers. As I said, panchayat-raj institutions are popular governments at the local levels. But we must clearly reckon that these local governments are no more and no less popular than the governments in the states and at the Centre. Therefore, the agricultural plan does not acquire any real meaning, and the targets set out in it do not acquire any greater validity and sanction just because the district and block-level programmes are implemented by panchayat-raj institutions or even if certain aspects of the local programmes were worked out by these bodies. This has been the experience over the last five years. It could not have been otherwise.

In our anxiety to involve the farmers somehow in the plans of agricultural development, we have used some less reputable means. We have used national emergencies to sell our agricultural plans to the farmers. Our performance during these periods was utterly childish. We thought that if we declared an emergency, even the crops would set aside all considerations of season and weather and would, indeed, grow faster and taller. But it was worse than being just childish. It was sinful. We wanted to take advantage of the patriotic feelings of the people—it was said in so many words—to sell our plans to them. It did not work. We could have seen that it would not work if we had realized that farmers were not children but that they were adults.

How do we then secure the participation of the farmers in our plans of agricultural development ? Before we may answer this question, let us check what is the initial difficulty. Why is it that our plans for agricultural development are

not plans in the true sense of the term ? Why is it that the targets set out therein lack real meaning, validity and sanction ? I shall begin with a few preliminary propositions.

A plan is a plan in the true sense of the term when it is essentially a plan of action on the part of one who makes the plan. In the present context, if a government has prepared the plan, it must be a plan of action by government and other public authorities. The reason why our plan for agricultural development is not a plan in the true sense of the term is that it is not essentially a plan for state action. It is much more or much less than that. In fact, it covers many fields and areas over which the government has little authority to make decisions or initiate action. Consequently, many targets set out in the plan lack real meaning, validity and sanction.

Take for instance our targets of agricultural production, crop by crop. Admittedly, this is a matter primarily governed by the decisions made by millions of individual farmers. It is not therefore very meaningful to fix plan targets in this field. Even in respect of the so-called physical programmes, all targets are not equally meaningful. For instance, a plan target in major irrigation, in the sense of creating a certain irrigation potential, has a clear meaning ; but the plan target for minor irrigation, as it includes investment decisions of individual farmers in digging of wells, etc., is not equally meaningful. The targets for production of nucleus or foundation seed of improved varieties are meaningful ; but the targets for bringing certain acreage under improved seed are a fiction. Targets of production and import of chemical fertilizers are meaningful ; but the targets of organic manures and green manuring are worse than fiction—they deserve to be dumped into a compost pit.

Nevertheless, we have been planning in terms of these targets, because our plans include not only plans for government action but also our expectations and hopes as to how the millions of farmers would respond to these actions. I think it is essential to make a distinction between the two, and distinguish planning from speculative thinking about the future, and plan targets from statistical projections or economic forecasts. I am not saying that speculative thinking about the future and informed projections and forecasts are not useful. Such projections or forecasts are valid and useful even in a completely unplanned economy. They should certainly be useful in a planned or a partially planned economy. But they are not valid plan-targets because they lack sanction.

Let me therefore suggest that our plans for agricultural development should be confined to those fields and those items over which the government has authority to make decisions and initiate action and that our plan targets should be in terms of state action. As I have already indicated, there are many matters on which the government and other public authorities can make decisions and which affect agricultural production. For instance, through construction of irrigation works, government can bring more land under assured irrigation. Through increased domestic production or imports, government can make larger quantities of chemical fertilizers available to the farmers. Through fundamental research in agricultural sciences, the government can breed new high-yielding varieties and develop more efficient cultural practices. Government can spread this new knowledge

among farmers either through formal education or through extension services. Government can make production credit available to the farmers, and with appropriate price and distribution policies, government can affect the relative profitability of different crops to the farmer. Agricultural planning, in the real sense of the term, should be confined to these and such other areas in which the state has a clear authority to make decisions and initiate action.

The state has no such authority in the field of agricultural production because, admittedly, the ultimate decisions here rest with the farmer. He decides how much irrigation water to use, how much fertilizer to buy, which crops to grow and which cultural practices to follow. He must be willing to receive and adopt new knowledge, and he must be careful to use production credit for production purposes. There are innumerable such decisions which rest with millions of farmers and which affect the agricultural production. There can, therefore, be no plan-targets in these fields and no schemes and programmes to achieve them. Nevertheless, this is precisely the content of our agricultural production programmes in the districts and the blocks. We witness the district and block agricultural officers and the extension workers under them running around with targets of agricultural production, crop by crop, targets of areas to be sown under different crops, targets of areas to be sown with improved seed, targets of areas to be brought under new minor irrigation, targets of green manuring, and targets of compost pits to be dug. In all these cases, the officers and the extension workers know full well that what they can do in the matter of achieving these targets is extremely limited and that the final decisions lie with the farmers. But they receive orders from above in terms of these targets, and they must report the progress in terms of these targets. In consequence, a whole make-believe world is created in which targets are determined and progress is reported in terms of items over which the parties concerned have no authority or control whatever. No one believes in these figures and nevertheless everyone must engage himself in so much paperwork which is worse than wasteful—for it is intellectually corrupting. This must stop.

Let us then ask : What is it that the state can do in respect of all such items in which the ultimate decisions lie with the farmers ? As I see it, there are three functions which the state can perform in this sphere. They are : (1) to educate and to improve the farmer as a farmer ; (2) to reorganize the production apparatus in agriculture so as to enable the farmer to take better care of his land and water resources ; and (3) to create appropriate institutions in order to improve the decision-making in agriculture. These are the three functions which the state can perform in this sphere and these should constitute the essential elements of the district-and block-level programmes for agricultural development. The first is a task of education. The second is a task of much detailed work on the ground. The third is a political task. We have neglected all the three because of a mistaken belief that we could achieve the production targets directly without bothering to improve the man, to improve the land and to improve the institutions governing the relation between man and land. Let me consider these one by one.

As I said, the first is the task of education—of adult education to adult farmers. Indeed, this is the legitimate function of agricultural extension. But our extension service has not been oriented to dissemination of knowledge. Instead, it has

been geared to the administration of certain schemes and programmes which, we expect, will achieve the production targets directly. In consequence, the extension worker today need know little about agricultural technology and farm economics ; what he must know are the details of official schemes and the rules and procedures of granting loan and subsidy assistance under them. This is what he extends to the farmer. This has created wrong motivation among farmers and wrong orientation among the extension workers.

There is a new variety of extension men we are now training in the universities. They need know even less of agricultural technology and farm economics. They are masters of extension as such. Hence their expertise is mainly in sociology, psychology, social psychology, educational psychology, group dynamics, leadership structures, motivational patterns and several other luxuries. With so much sophisticated extension education, I am afraid, they will have little to extend except themselves.

Let us for a moment ask ourselves, what is the fundamental task before us. A major plank of the New Strategy is greater application of the latest advances in agricultural sciences. How do we achieve this ? The programme administration seems to have a pretty simple notion about it. Apparently, a major scientific break-through has occurred and the advances achieved thereby are available in neat, ready-to-serve packages. All that is needed now is smart salesmanship backed by credit. Permit me to say that this is essentially a foreign concept propagated by foreigners and accepted by administrators who are equally foreign to their people. It is founded on the presumption that production targets can be achieved without bothering to improve the man, without educating the farmer as a farmer, and without his intelligent participation in the process. This is wrong. What we have before us is a task in education, not in programme administration or in sales promotion. I wish I am able to carry to you my conviction that this is a fundamental task and that it must be approached in a fundamental manner.

To be sure, the importance of education to farmers is now recognized. In fact, in the Draft Outline, there is a paragraph devoted to it. It is observed that "it is inherent in the process of transformation of traditional agriculture into modern agriculture that the primary producer—the farmer—should be enabled to understand and adjust himself to new technology." With this objective in view, it is proposed to provide special facilities for farmers' education. However, I am not sure that much thought has been given to the content of this education. It is obvious that this education must focus on explaining to the farmer, the essential difference between traditional and modern agriculture. Let us see what it is.

As I view it, the essential difference between traditional and modern agriculture is the difference between certain basic attitudes to life. We may conveniently classify them into three: (a) difference between traditional and modern attitudes towards Nature and man's place in it; (b) difference between traditional knowledge and modern science; and (c) difference between traditional and modern attitudes to certain economic aspects of human life and endeavour. It is essential that the farmers understand these differences. Let me consider them one by one.

The traditional attitude towards Nature is one of awe, a sub-conscious fear that to disturb Nature would ultimately bring disaster, and hence a conviction

that man must make his living by working with Nature. The attitude arises because of lack of knowledge regarding the working of Nature. It is one of the functions of education to explain the working of Nature and to indicate the possibilities of modifying and harnessing it in the interest of man. In the context of adult education to farmers, the simplest way to do this is to explain to the farmer the working of several natural phenomena, especially biological phenomena, which affect his everyday life—facts of plant and animal life, difference between health and disease, and the basis of the universal struggle for existence and survival that goes on mercilessly in the kingdom of Nature. It is thus that the farmer will realize that this is a struggle which man must win if he has to survive, and know that modern science has placed in his hands the necessary tools.

The second aspect requiring education is the difference between traditional knowledge and modern science. Traditional knowledge is authoritarian in the sense that it is handed down from one generation to the next by the authority of tradition. On the other hand, modern science is experimental. Every bit of it is supposed to be verifiable by experiment or observation, and it is the privilege of every man to put it to such a test and to reject it if not verified and to publicize his findings in a manner that they in turn may be verified. This difference between traditional knowledge and science is likely to be overlooked by official extension agencies, because within the official hierarchy, knowledge and all that passes under that name, moves from the Secretary to the Deputy Secretary or from the Director to the Deputy Director, until to the last functionary at the village level, all along fully protected and secured with the sanction of authority. As a consequence, when his turn comes, the last extension man at the village level himself tries to pass on to the farmer, the little piece of knowledge or information, in an equally authoritarian manner. It is often believed that this is how it should be. For instance, it is said that if the farmer knew the experimental basis of the agronomic recommendations and knew the wide variability to which the results were liable, it would make it even more difficult to secure his acceptance of the new technology. It is therefore suggested that the new technology to be recommended should be presented to him in the simplest and in the most categorical manner. This is plainly wrong. It does not work either. The farmer soon discovers the large variation to which the results of the recommended practices are liable, and the extension man has no more than mere apologies to offer. It is not only wise but also essential that the farmer is informed fully about the experimental nature of all agronomic recommendations.

The third aspect requiring education is the difference between the traditional and the modern attitudes to certain aspects of human life and endeavour. In contrast to traditional attitude in this respect, the modern attitude seeks to distinguish the behaviour of man as a consumer and his behaviour as a producer, and advocates that the latter behaviour should be governed primarily by economic considerations. In the context of a farmer, this means that the farmer should be able to make a distinction between his household and his farm, between his mother and his cow, and should be able to look at the farming as a business requiring decisions on economic considerations. I have in mind decisions in relation to new inputs and new technology as also in relation to alternative investment choices. The extension worker today has neither the basic knowledge of the issues involved nor any relevant data to base his extension advice on. The farmer has

certainly some notion of the governing considerations. However, a systematic formulation and conscious realization of the same on his part are needed.

These are then three aspects which require education in order to prepare the farmer for a transition from traditional agriculture to modern agriculture. It is necessary to establish appropriate institutions which will impart this education to adult farmers in an informal manner. It is obvious to me, and I suppose you will agree with me, that this is not a function which can be trusted to programme administration. I do not therefore favour the proposal, made in the Draft Outline, to locate the farmers' education centres at the Gram Sevak Training Centres. The Gram Sevak Training Centres are too much programme-oriented. They are also too few in number being just 100 in the whole country. There will have to be many more farmers' education centres, ideally at least one for each block. I think that an agricultural high school, which has a reasonably good farm attached to it, offers the most suitable base to locate a farmers' education centre. There are several reasons for this choice. In the first instance, it will place these centres firmly within the educational environment and at the same time sufficiently close to the ground. Secondly, because many of the students in the high school will be sons of farmers from the surrounding area, it will provide culturally and emotionally a most satisfying ground for the adult farmers to meet. Thirdly, the location of a centre at a high school and consequent visits of groups of farmers to the place will unavoidably affect the formal teaching in the high school and will orientate it towards agricultural problems of the local area. Fourthly, I envisage that the teaching staff giving formal courses in the high school and giving informal instruction in the farmers' education centre form a common pool so that, as far as possible, all members of the teaching staff participate both in the formal teaching in the high school and the informal instruction in the farmers' education centre. This is bound to improve the quality of instruction in both the courses. Finally, I imagine that the teaching staff will have opportunity to try out the new technology on the farm attached to the high school and satisfy themselves about the merits of what they recommend. Lack of such facility is the most serious handicap of the present-day extension-worker. He is a talking machine without competence, facility or responsibility to practise and demonstrate what he preaches.

Having thus located the farmers' education centres at the agricultural high schools, I suggest that courses of varying durations, say from one to ten or twelve weeks, should be offered to farmers in the area. In view of what I have already said, I suggest that the instruction should include three types of courses : Firstly, it should cover basic facts regarding plant and animal life, reproductive processes, plant and animal diseases of common occurrence with special emphasis on their bacterial and virus origins, disease control, hygiene, public health and family planning. A small laboratory should offer facilities to test soil, water, blood, urine, stool, sputum, sections of diseased plants and animals, etc., and the farmers should have an opportunity to view, first-hand, these natural phenomena through a microscope. Instruction in such basic scientific aspects requires many aids. However, if for reasons of economy, we must choose one single instrument, it seems to me that the microscope is the most potent of them all. It offers a real peep into the working of Nature and lays bare many of her secrets. Its impact is direct and immediate, because the experience is first-hand. Other media of communication such as posters and screen have of course their uses. But they are a poor substitute for the microscope.

A second set of courses to be offered should cover detailed instruction in the management of soil and water and in crop and animal husbandry appropriate to the region. Emphasis should be on the difference between the traditional practices and the new technology being recommended and the experimental basis of the new recommendations should be fully explained. The agricultural farm attached to the high school should prove useful for this purpose. Besides, the farmers should be deliberately encouraged to record systematically the results of any trials they might conduct on their own farms with the recommended practices or any other practices they might evolve as superior, and to report them in a seminar. In fact, in each agricultural season, a systematic programme of experimental trials on recommended practices and any other practices reported by the farmers as superior, should be executed with active participation of the farmers, and the results discussed in a seminar of the participating farmers. This proposal should be distinguished from the existing programme of co-ordinated trials conducted all over the country to determine the adaptability of different strains of crops. It should also be distinguished from the programme of tests and demonstrations on farmers' fields in order to convince them about the efficiency and superiority of certain recommended practices. The purpose of a systematic programme of experimental trials to be conducted and reported upon by the farmers under the guidance of the farmers' education centres is educational and hence more fundamental, namely, to inculcate in them the spirit of scientific enquiry, careful experimentation and observation, systematic recording of results, and objective discussion. I am aware that the spirit of scientific enquiry is not a common commodity. I know that it cannot be cultivated in all minds. However, I know equally well that its occurrence is not more common among the university-trained than among the illiterate. It must be a function of education and instruction to discover and encourage wherever it exists.

Another purpose of involving the farmer actively in a programme of experimental trials and of creating a systematic record of the results is to feed the research stations and laboratories with problems back from the field. At present the traffic is very much in one direction—from the research stations to the farmer. This needs to be corrected.

A third set of courses to be offered should cover the economic aspects of farming. We must admit that in spite of much effort in farm-business surveys and farm-management studies, we have as yet very little to offer to the farmer. Recent trends in university-level courses in farm management also seem to take us further away from the decision-making processes of a farmer. I suppose we should be very humble in this field. I suggest that we should encourage and assist a few farmers in each area to maintain faithful records on cost and returns in their farm business. Such records should constitute the teaching material in the courses on farm economics. These records should be analysed and their economic meaning should be discussed in active participation of the farmers. The aim should be to create cost-return consciousness among the farmers. In the process, we shall have ample opportunity to learn some farm economics ourselves.

This is broadly the content of the courses which, I suggest, should be offered to groups of farmers who will visit the farmers' education centres located at the

agricultural high schools. The instruction should be completely informal and, I emphasize, it must not lead to any certificate or diploma recognizable for a government service. Depending upon what we have to offer, I think a number of farmers in the area will show interest and will actively participate. But I shall be satisfied even if only a few hundred farmers in each area join this movement, because later they will constitute the most natural and the most effective media of communicating the new attitudes and the new technology to the other farmers in the area. Let us be quite clear on one point : If we are looking for a technological transformation in agriculture, it will be brought about not by the efforts of a programme administration, nor by the activities of a politician, but by assiduous and scientific attention to their farms by a few professional farmers in each local area. All that the government, both in its administrative and in its political wings, at the centre as well as at the local level, can do in this respect is to create conditions to promote such attitudes and scientific interest among farmers. I believe, the programme of adult education to farmers along lines I have indicated, will initiate the process.

Let me now move on to the second of the three functions which I said the state should perform at the local level, namely, reorganizing the production apparatus in agriculture so that the farmer may take better care of his land and water resources. There are two proposals appearing in the Draft Outline which are relevant to what I wish to suggest. One appears in the section on soil conservation. There it is admitted that "so far, soil conservation has been limited to erosion control measures in widely dispersed cultivated areas," and it is proposed to undertake soil conservation programmes in the Fourth Plan "on the complete watershed basis." It is suggested, for instance, that in ravine lands, major emphasis would be given to the treatment and protection of agriculturally productive table lands and stabilization of marginal lands. In arid and semi-arid areas, the minor irrigation programme would be effectively correlated with soil-and-moisture-conservation programmes with emphasis on contour bunding, controlled grazing, and pasture development. The second proposal appears in the section on what is called Ayacut Development to be undertaken in irrigated areas. The essential ingredients of this programme are: "crop planning, regulation of irrigation water, land shaping and consolidation of holdings, soil surveys, arrangements for supply of inputs, extension and demonstration, credit, co-operatives, storage and marketing, communications and agro-industrial development." While I wholly appreciate the importance of all the ingredients mentioned in this long list, I suggest that we should have a small pause, for mere breath, after soil survey. Otherwise, I am afraid, the concept may degenerate into one of those intensive and integrated approaches.

You will then see that the two proposals, one under soil conservation and the other under Ayacut Development, in fact, constitute a single programme directed to improving the use, promoting conservation, and facilitating development of the soil and water resources of the country. I believe that planning for this purpose is the essence of area-planning and that, wherever necessary, the area-planning in this sense, must cut across political and administrative boundaries between states, between districts, between development blocks, between villages and finally between individual proprietary rights. I do not know whether, in the two proposals made in the Draft Outline, it is intended to cut across these political

and administrative boundaries and especially across the existing layout of the individual proprietary rights in land. If it is not, most of the ingredients of the two proposals will be found operationally ineffective.

This requires, what I have called, reorganization of the production apparatus in agriculture. As soon as I say this, you may expect me to advocate co-operative or collective farming. However, what I have to say is somewhat different, and I wish to emphasize the difference. All along, we have assumed that the programme of co-operative farming is directed, in the main, towards the solution of problems presented by the class of small or uneconomic cultivators. Thus the starting point of co-operative farming is a class of cultivators. To be sure, their lands come along; but judging from the manner in which we have debated the question whether co-operative farming requires pooling of lands, I presume that the lands come along only incidentally. As soon as we agreed that the pooling of lands was essential, we moved to the position that not only lands but all production equipment and resources belonging to the members must also be pooled. So once again, the lands come only incidentally as part of the total production equipment. It is not my intention here to examine these propositions and to describe the many futile complications they have led us into. My purpose in mentioning these is only to request you to forget them all for a moment, because, in common with the two proposals made in the Draft Outline, central to my concept of reorganizing the agricultural production apparatus, is not a class of cultivators, but a block of land with its soil and water resources.

Consider, for instance, a block of irrigated land consisting of, say, a few hundred acres. The proprietary rights in the land in this block were most probably established long before irrigation came in and so, I suppose, must be much of the physical layout of fields and plots on the ground. When irrigation came in, the physical layout of the proprietary rights was regarded inviolable and the irrigation channels were laid out accordingly. As we can see, they are not designed to achieve the most efficient distribution of water. Some of the lands are uneven, and levelling would greatly improve the utilization of water. But it is not done because the existing layout of the proprietary rights comes in the way. The cultivators in the block are usually free to cultivate whatever crops they choose, and the crops often require varying quantities of water at varying intervals. This leads to innumerable disputes, unauthorized breaches into the water channels and consequent waste of water. There are no proper paths laid out to reach all the fields, and one person's crop stands in the way of another person's harvesting and removing his crop from his field. This results in unduly late harvesting and consequent damage to some crops, or else disputes about trespassing. If one sees these people closely, working in the fields and moving around, one notices that they are causing innumerable such inconveniences to one another. The irony of the situation is that every one realizes this and yet every one feels so helpless about it.

Let us for a moment suppose that this block of land covering possibly a few hundred acres, was all owned by a single proprietor. Suppose further that the proprietor knew something about the soil and water conservation or that he had employed a good farm manager. In such a case, I imagine that the proprietor or the manager would have surveyed the block of land, determined the contours

and levels, and laid out the irrigation channels, fields, foot-paths and cart-tracks accordingly. He would have levelled the fields and he would have divided the entire block of land into suitable sub-blocks for cultivation of different crops in appropriate rotations. In short, he would have developed the block of land and achieved a more efficient use and conservation of its soil and water resources.

Let us now ask : Why cannot we do this to the block of land on which a number of individual proprietors are sitting in a disorderly fashion causing inconvenience to themselves and damage to the soil and water resources ? Let me tell you immediately that the individual proprietary rights are not coming in the way and that we do not have to abolish them and rush to co-operative or collective farming. It is only the existing layout of these rights that comes in the way. All that we have to do is to inform and convince the proprietors that they have been sitting in a disorderly manner and that it is possible for them to sit in better order and to greater mutual convenience and benefit. This requires a certain amount of detailed physical planning on the ground and a certain effort of educating the people concerned. We have as yet done nothing in this direction. I suggest that we should make an early beginning.

Let us see what are the necessary steps. As I have said, the starting point is a block of land which is likely to be benefited by such a reorganization. I shall later describe how to locate such blocks. Let us for the time being begin with the existence of such a block. The first step then is to appoint a Farm Planning or an Area Planning Officer. Whatever his name and title, we should understand that he is one who knows that farm planning has to be done on the farm. In other words, the farm planning that he will do is not of the linear programming variety. Secondly, even if we may call him an officer, we should understand that he is an agricultural technician. Within the sphere of agriculture, I suppose, his expertise would be in agricultural engineering. His job will be to survey the block of land for its soil and water resources, determine contours and levels, treat the entire block of land as a single farm, and plan the layout of the fields and plots, irrigation channels, footpaths, cart-tracks and the like. He will not, of course, plan any farm houses and cattle sheds, because, as we know, the block of land is, in fact, not a single farm. Having prepared the ground layout, he will prepare and submit a project report indicating the necessary development works which must be executed. These will include levelling, bunding, minor irrigation works, irrigation channels, paths, and the like. In consultation with an agronomist, he will also divide the whole block into sub-blocks indicating which crops may be grown in which rotation. Having done this, the development and utilization plan for the block of land will be published.

Then must begin the process of education and persuasion. Its purpose is to secure the consent of the persons concerned to the proposed plan and to a scheme of redistribution of the land among themselves. The principle of redistribution should be that everybody should get back as far as possible an area approximately equal to or equal in value to his original holding within the block and that any marginal losses should be fully compensated by those who gain thereby. You will thus see that in its formal procedures, the programme is similar to one of consolidation of holdings though, in their content, the two programmes are, of course, fundamentally different. I am aware that the acceptance of the develop-

ment and redistribution plan will require considerable education and persuasion. In the initial stages, we may have to offer certain incentives such as contribution to the development costs and technical assistance for subsequent management. However, I believe that once a beginning is made and the advantages are demonstrated, the resistance will diminish. I shall presently suggest more concretely how a beginning may be made.

For the time being, let me proceed on the assumption that the plan is accepted by the people concerned. The next step will then be to get the essential development works executed as speedily as possible and with as little disturbance to current cultivation as possible. As soon as this is completed and the land is divided into plots according to the planned layout, it will be redistributed according to an agreed scheme with full proprietary rights as before.

You will thus see that co-operative or collective farming is not a necessary part of the reorganization of the production apparatus I am proposing. Indeed, the reorganization I am suggesting is a physical reorganization of the production units on the ground and it is completely compatible with individual ownership and management of land. Nevertheless, it seems to me that it will be necessary to create, among the cultivators in the reorganized block, an appropriate organization to look after those aspects of their farm business which obviously require joint attention. For instance, in the context of an irrigation block, management of water and enforcement of an agreed cropping-programme will obviously require joint decision and action. Division of a block into sub-blocks and agreeing to a certain cropping-programme in each sub-block may be useful even in an unirrigated block of land, for that will greatly facilitate cultivation, protection and the watching of crops. Spraying and dusting of crops with pesticides and weedicides may also have to be enforced jointly. The maintenance in good repair of all development works such as bunds, irrigation channels, roads and paths must, of course, be a joint responsibility. In sub-marginal lands suitable for developing only as pasture and woodlands, the joint management may have to be extended to certain production aspects as well. For instance, for pasture cultivation, it may be convenient to plough and sow with improved grasses an entire block of land without dividing into separate plots. Rotational grazing will also have to be managed jointly. For woodland development, suitable blocks of lands may be planted, protected and exploited jointly. The particular activities where joint decision and action are necessary and beneficial will of course depend upon the nature of the land use. However, nowhere will it be necessary to abolish individual proprietary rights in land. All that will be necessary is to set up appropriate organizations among the cultivators to look after those aspects of land management which require joint attention. I shall shortly come to the form of such organizations.

Let me first discuss the more practical question how we may make a beginning along these lines. I think, all new irrigation projects offer the best opportunity to make a beginning in this direction. A new irrigation project transforms, overnight, dry land into irrigated land and thus brings immense benefits to the persons whose lands are irrigated. It changes the pattern of land use and hence offers an opportunity to rationalize the entire layout on the ground. Thus viewed, an irrigation project, whether major, medium, or minor, should constitute not just

an irrigation project but a comprehensive land-and-water-development project in the area. This means that the project should concern itself not only with the construction of irrigation works and distributaries as at present, but also with the preparation of an efficient layout for the whole area commanded by the irrigation works, complete with levelling, bunding, field channels and roads, and execute the necessary works. For this purpose, the project authority should acquire necessary control over the whole concerned area for a brief period and after executing the works return the lands to their owners in a reorganized layout. This might add to the construction cost of the project somewhat, but it will ensure speedy completion of all preparatory work necessary for an efficient use of the new water-resources.

The reason why I suggest we should begin with the new irrigation projects is that they give us a ready opportunity and a certain authority to move in this direction and introduce a new concept of physical planning at the ground level. There is yet another consideration in my mind. It is not quite germane to my main theme this morning. Nevertheless, I shall mention it because, I think, it should receive urgent attention. I have in mind the question how we may ensure a more equitable and a wider distribution of the benefits of development undertaken at the cost of the whole community. Irrigation projects provide a glaring example of what might happen otherwise. At present, the benefits of these works are distributed extremely unequally. At one extreme are the farmers whose lands receive the new irrigation waters. Overnight, the productivity and security of these lands is enhanced several fold and their owners reap the windfall gains. At the other extreme are the people who are displaced by the irrigation works. They lose everything and are moved several miles away from their ancient homes. In between lie the farmers whose lands lie just outside the command area. They watch their neighbours grow rich overnight.

Such are the glaring inequalities which a new irrigation project creates in the rural area. The project is executed at the expense of the entire community but its benefits are confined to a few. All attempts to recover even a part of the cost through betterment levy have proved ineffective. Those who get, get it free. There is also no sustained effort to secure for the community at least a part of the gains flowing from such works through appropriate taxation of agricultural incomes. Thus the inequalities initially created by the irrigation works, grow year by year. The New Strategy to be adopted for agricultural development during the Fourth Plan, will accelerate this process, because the strategy requires that those who have water should receive preference while giving the high-yielding seed, fertilizer, credit and extension advice. The hope is that this minority will then grow all the food that the country needs. They may as well do this. In the meanwhile, and subsequently, they may blackmail the country and extract more and more advantages. They may tell us that betterment levy, irrigation charges, agricultural income-tax are all disincentives to greater production and therefore none of these must be levied. We must listen. But, they may very well grow food enough for the whole country. If and when they do, we shall wonder how those millions who could not participate in the production process, would buy the food they need. This is a sure method of creating a surplus in the midst of poverty.

But this is a subject you are going to discuss during the next two days and I must not anticipate your discussion. All that I need emphasize for my present

purpose is that irrigation works create glaring inequalities in the rural areas and that, once created, the inequalities grow at an accelerating pace. We should see therefore if we could do something initially to ensure that the benefits of irrigation would be distributed somewhat more widely and equitably than at present. If we adopt the project approach involving a fresh layout and a redistribution of the proprietary rights, it may be possible to distribute the benefits more equitably than at present, provided we adopt this as a deliberate policy. We may then be able to give a fairer treatment to the persons displaced by the irrigation works and settle them within the areas commanded by the irrigation works. We may also be able to accommodate within the commanded area a few farmers from the neighbourhood. This means that the original owners of the lands now being irrigated by the new works would get back not their entire lands but only a part of them. Let us say, for purposes of illustration, that the original owners would get back only half the area but now fully developed by the new works. The remaining half would then be available for settling the displaced persons and for sale to farmers in adjoining areas. It is through such sales that a part of the initial development costs could be recovered. In the scheme of redistribution, it may also be possible to reduce somewhat the existing inequalities within the project area. For instance to those who have very small holdings in the commanded area, their entire lands might be returned fully developed while a proportionately larger cut might be made in the larger-sized holdings. These are matters of detail. The main point to remember is that we need explicitly introduce the principle that the benefits of development undertaken at the cost of the whole community must be distributed more widely and equitably and that those who receive the benefits must pay at least part of the costs. The irrigation works create the most glaring inequalities but offer the best opportunity to establish this principle.

The point is extremely important. However, as I said, it is not germane to my main theme this morning. I must, therefore, return to my theme and say that the new irrigation projects offer us an excellent opportunity to make a beginning with a new concept of physical planning on the ground. Once we achieve success in a few such areas, agriculture there will be so visibly different from agriculture elsewhere that it will provide a standing demonstration of the new concept. We shall then be able to move with greater ease in areas which are already irrigated and where vested interest is entrenched. We may be able to move even in dry areas where the benefits of reorganization may not be equally obvious, and in submarginal lands where there is no conscious recognition of the fact that so much land resource is being under-utilized or, in fact, is being wasted. We shall thus be able to extend the operation to a number of areas with very different resources of soil and water. In anticipation, we should make an immediate beginning in the identification of such blocks of lands where the reorganization is likely to be beneficial and start preparing detailed plans for the same.

I imagine that we may have to undertake this work in three stages. In the first stage, we may aim at demarcating large geographical areas which are suitable for comprehensive planning for development of their land and water resources. I presume that in most cases these will be areas corresponding to river valleys, basins, watersheds, etc. These are easily identifiable, but unfortunately have not been so identified until now. Our thinking on regional planning is still too much conditioned by the administrative boundaries of districts and tahsils. These areas,

therefore, need to be demarcated and giving concrete identity by putting together all the relevant agro-climatic facts relating to them. I suppose this is a task for the geographers. In the second stage we must undertake detailed topographical survey of each such region and work out plans for the development works that must be carried out in order to improve the use, conservation and development of the land and water resources of the region. This must be the task of the civil engineers assisted by agronomists and soil scientists. The aim must be to prepare and keep ready to be executed, a programme of productive rural works in each region. In the absence of such a ready programme, we are today wasting what little effort we are making in the direction of utilizing our vast manpower. In the third stage, we must move closer and within each region, identify smaller blocks of land inside of which reorganization of the physical layout of the fields, etc., will prove beneficial, and prepare detailed plans for them. This is the task of agronomists assisted by civil engineers. Once we have such detailed plans ready for any block, the process of education and persuasion must begin in order to secure the consent of the cultivators for the plan of reorganization. They stand to benefit but they must be convinced of the same. This is a task of the social-political workers assisted by economists and other social scientists who are willing to work close to the soil and the people.

This brings me to the third and the last of the tasks which, I suggest, the state should undertake at the local level, namely, to create appropriate institutions in order to improve decision-making in agriculture. We require such institutions among farmers to deal with those aspects of their farm business where joint decision and action are needed. I have already indicated a number of such functions in connection with the farm management within a reorganized block of land. Those are all functions directly concerned with the efficient management and use of the land and water resources in the block. There are a few ancillary functions as well where joint decision and action are beneficial, for instance, provision of essential supplies, services and credit, and processing and marketing of farm produce. It is now generally agreed that these latter functions should be looked after by co-operatives of farmers. I fully agree with this accepted policy. I shall not therefore elaborate on it any further. Instead, I shall briefly discuss the form of organization necessary to look after the management of soil and water resources in a reorganized block of land.

My first reaction is that this should also be left to some kind of a co-operative organization of the farmers concerned. However, I can see the difficulty. A co-operative form of organization requires that the membership be voluntary. Obviously, this will not do for an organization which must make day-to-day decisions regarding the soil and water management in a given block of land and must enforce them. All cultivators of land within the given block must therefore of necessity be members of the proposed organization. This means, I presume, that the proposed organization must be a statutory body established by law as, for instance, is a village panchayat. I suggest that in every block of land where the physical layout on the ground is proposed to be reorganized, simultaneous with the process of reorganization, should be set up a democratic statutory authority. Its jurisdiction should extend to the block of land and its functions should be confined, at any rate initially, to the management of soil and water in the block. It must have financial powers to raise resources to meet its expenses and it should

be serviced with competent technical staff. Later, it may be possible and advisable to expand its functions to cover provisions of essential supplies, services and credit to the farmers in the block and to arrange for the processing and marketing of their produce.

Let me emphasize that the basis for the establishment of such statutory bodies is a plan to reorganize the production structure, the physical layout on the ground, in a block of land. It is the reorganized layout which creates the necessary physical conditions where joint decision and action become both inevitable and beneficial. Without such a necessary physical structure, even a statutory body will have no functions to perform in the field of agricultural production. This is precisely what has happened to village panchayats today. We have charged them with several functions in the field of agricultural production, such as preparation of production plans, securing minimum standards of cultivation, bringing under cultivation waste and fallow lands, preservation and improvement of village forests, promotion of co-operative management of land, so on and so forth. In the absence of a rational production structure on the ground, none of these functions make any sense.

Friends, I am aware that I have taxed your patience too long. Let me therefore sum up. I have only two simple points to make. One is that I fully approve of one of the elements of the New Strategy, namely, greater reliance on agricultural science and technology. I believe that this has two corollaries which we have neglected so far. Firstly, we need a vast and an enlightened programme of adult education oriented to cultivate necessary scientific attitudes among farmers. Our approach so far has been too much administrative and too little educational. Secondly, we must create opportunities for the technically trained and scientifically oriented personnel to perform technical and scientific functions. We have too few persons in this class at all levels and we are wasting them all, from top to bottom, in preparing meaningless plans and trying to administer them. The programme of adult education among farmers and the programme of physical reorganization in agriculture with a view to more scientific management of our agriculture will both provide, I expect, ample opportunity for the technically competent persons to demonstrate application of agricultural sciences to agricultural production. My second point is that I fully sympathize with the Minister in his feeling of helplessness when he realizes that the actual production decisions in agriculture, in fact, rest with millions of farmers. However, I submit, the alternative is not to take these decisions in our hands. This is not only because it is politically not possible, but because we really do not know enough and we need the active participation of the farmers in the process of decision-making. For this purpose, two conditions must be satisfied. One is to reorganize the production structure on the ground and thus create necessary physical environment wherein the farmers may meaningfully participate in the new kinds of decisions needed for agricultural development. Second is to establish statutory authorities competent to make and enforce such decisions, close enough to the ground so that each such decision necessarily affects every farmer in the area and each farmer in the area necessarily participates in the making of every such decision.

These are the two simple points I wanted to make and I realize that I should not have taken so long over them. I am grateful to you for your patience and indulgence.