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THE ORGANIZATION OF A UNIFIED AGRICULTURAL DEVELOPMENT PROGRAMME

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THERE is hardly any country in the world today which has an altogether stagnant social or economic life. All countries desire economic growth at least to the maximum capacity of their own resources. In fact there is a widespread feeling in all countries that to an increasing extent the resources of all states together should be available for the development of all. While on the one hand the growing sense of oneness which stirs the minds of all enlightened people everywhere is the mainspring of this new approach of a united world effort to ensure progress, the technological changes which are piling up in rapid succession, especially in the most advanced countries, are making the adoption of such a united world policy both feasible and desirable. The less fully developed countries now have an opportunity, by their own efforts and with the assistance of more advanced nations, to ensure progress much more quickly than was considered feasible only a few years ago.

While every developing economy has its own special features which have to be taken into account in chalking out and implementing its programmes of economic growth, there are certain common features in regard to the position of agriculture in these plans which merit special consideration. As a rule in an undeveloped state a country relies mainly on subsistence agriculture, or on commercial agriculture conducted by colonial settlers who employ local populations on terms which border on subsistence. The non-agricultural complement of the domestic economy is relatively small and, as a rule, is about as unprogressive as the agricultural sector. In seeking modernization of such an economy by democratic methods basic importance naturally attaches to agriculture, which employs by far the largest proportion of the population. As holdings are small, however, and as in fact they often tend to be stereotyped by early stages of land reform measures, the process of modernizing their techniques and maximizing their yields presents special difficulties.

The most approved form of meeting the challenge of this situation

is described as community development and national extension as they operate in several countries in South Asia. The substance of these programmes is to be found in the lines of policy followed in many other developing economies as well. As economic progress is desired through democratic methods the greatest emphasis is placed on social education and on institutions of voluntary self-help. In addition to the normal contents of school education, broad civic and elementary scientific and industrial education is imparted to children as well as to grown-ups. While some basis of theoretical and descriptive education is essential in any such process of enlightenment, the curriculum is so framed and methods of instruction are so shaped as to connect education with the needs and prospects of the betterment of the life of the people. In rural environment these prospects concern the occupational reformation of the agricultural population and the alteration of their habits of living so as to be helpful for achieving modernization and progress.

In view of the major objective of developing a free and democratic pattern of society the programme of occupational and social reformation must needs be formulated and implemented by democratic methods. Much of the planning and mobilization of resources takes place at the national levels of democratic organization. But both for ensuring speedy progress, and for drawing out to the fullest possible extent the resources of initiative and effort on the part of the people, the formulation, adoption, and execution of local plans of development have to be left to the peoples' own organizations. Civic councils, co-operative societies, and other cultural and occupational bodies constitute the many-sided institutionalization of democratic life in a progressive society. According to the resources available to each country opportunities are being offered to agriculturists generally, and to small farmers in particular, to participate in this process of modernization and democratization of their life. Along with the agricultural population of rural areas, non-agricultural complements of the economy such as artisans or small business enterprises also come in for their share of legitimate opportunities for growth.

In almost all developing countries national governments, with varying but on the whole a generous and increasing measure of international help, have set about improving the overall services available to the agriculturists. Schemes of irrigation, of transport, of power, and of fertilizer supply are being adopted on a large scale. Considerable national and international investment is going into such schemes. To enable the cultivators to participate in programmes of the most profitable utilization of these and other national resources

of agriculture schemes of research, extension, supply, credit, and marketing are being put into force. In varying measure these schemes are proving successful. To the extent to which resources available to each state are augmented, these schemes of promoting all-sided rural development will succeed, both in increasing production and in raising the general levels of living.

Welcome as such change is it constitutes a relatively small achievement compared with the need and expectation of large-scale and early transformation of the economies of developing countries. Even the consumption needs of a people seeking progress through ordinary democratic methods are not always met by the highest production which is possible in the existing circumstances of each country. To take the example of India, which has not an altogether unfavourable institutional or economic environment to contend against, which in fact has adopted a policy of progressive planning, it will be seen that the levels of achievement in agriculture after nearly ten years of concerted action, though they are by no means insignificant, are not sufficiently high to ensure self-dependence even in matters of food supply. The moral of the situation is that the extension and democratic institutionalization followed as parts of an overall programme of planned growth do not by themselves succeed in ensuring the required supplies of essential agricultural products. If these supplies are to be obtained in required quantities, and if their rate of increase is to be commensurate with the anticipated increase in demand, a concentrated and intensive programme on a somewhat selective basis must be followed. This is a necessary supplement to the programme of general extension and of community development which is incorporated into the normal welfare administration of the State.

There is a deeper reason for advocating the adoption of an intensive agricultural development programme as an integral part of developmental planning in a democracy. If a developing economy is to reach a stage of revolutionary change and of sustained growth, the impact of that change must be massive enough to affect the character of the economy and to create a surplus and a momentum which will carry forward the change to continuing progress. In rural economies of small and comparatively resourceless farmers the results of extension services and of the allied measures of institutional assistance are comparatively slow in effecting large-scale technological improvements or in creating a surplus of resources or of capacity which can be normally utilized to bring about greater and greater progress. In some areas, for reasons either of religion or of

class unless all the needed services which would influence the whole nature and productivity of the economy are simultaneously utilized, the rate of change will not easily attain the intensity and comprehensiveness of a revolutionary movement. In other words, in democratic and developing economies it is well-nigh impossible to bring about an agrarian revolution, the counterpart of an industrial revolution, without an intensive programme of agricultural development.

Once it is decided that, as an advanced and completed form of extension and community development, a concerted effort at bringing about a striking transformation in technological level and in productive achievement is to be made, two or three criteria of choice naturally present themselves. It goes without saying that an area which has shown little interest in normal extension work or in the programmes of corporate and self-reliant action for community development, would normally not recommend itself for more ambitious and intensive use of these very agencies of reformation. To produce the most striking effect most quickly it would also be necessary to pick out areas which have high potentiality and low risks. Good soil, assured water supply, progressive farmers, access to markets, habits of successful co-operative association are some obvious principles of choice.

These are more or less the criteria followed in the selection of pilot districts in each state of India for the introduction of the Intensive Agricultural Development Programme. For instance, Ludhiana, the district chosen in the Punjab, which is reputed to be the best agricultural state in India, has all these advantages in large measure. The total area of the district is 789,000 acres of which 613,000 are under crop. Of this, nearly 63 per cent. is irrigated. Wheat, gram, and maize account for nearly 450,000 acres, sugar-cane, cotton, and groundnut being the other crops. Currently, 202 of the 922 villages of the district have been chosen for the first year's programme. These selected villages are distributed among all the blocks of the district in which the normal extension and community development activity has been in operation for some years.

The strength of the extension staff acting in several capacities has been augmented so as to ensure that an extension agent, called the village level worker, is made available for every 400 families, and a suitable number of agricultural technicians and co-operative officials have also been appointed in addition to the normal staffing of a block. All the staff has undergone the requisite training, both technical and grammatical. Essential supplies such as seed, fertilizers, pesticides, agricultural implements, iron and steel, cement and

bricks have been made available. These have been stored in godowns conveniently situated in each block, and they are in the possession of farmers' co-operative organizations through whom they will be issued to the selected farmers as and when necessary. So far as it is necessary, these issues in kind will be made on credit, which will be given also for meeting such other inputs as the farmer is not expected to pay for out of his own savings.

The village worker, acting under the advice of agricultural technicians, prepares a plan for improved farm management and crop cultivation for a two-to-three-year period in the first instance. The physical and financial implications of such a plan are then worked out, and these are the basis on which suppliers of credit and of producer goods assess the legitimate needs of members. In their turn the resources of the relevant co-operative institutions, including marketing institutions, are strengthened so that whatever is legitimately needed by a farmer under a technically approved plan is financially and physically placed within his reach. Apart from general overhead services and the strengthening of the staff no direct subsidy of any sort is provided, as the selected farmers are expected and helped to be more self-reliant, more efficient and more progressive.

In this programme of intensive, all-round provision of productive aids to farmers in an environment of high potential, a very crucial question of selecting individual farmers for inclusion in the scheme presents itself. On the one hand the resources at the disposal of the nation, or the State, are limited; on the other the average size of holding is so small as not to be capable of providing the optimum, or even an economic, scale for the investment of the recommended inputs. If then large-scale and quick augmentation of net productive capacity is to be brought about it can only be done by directing the application of the intensive programme towards the economic-sized holders. Experience has shown in many places, including the district of Ludhiana, that among this class of farmer can be found a number of leaders who utilize all the assistance provided to them in a most profitable manner. Very soon standards of mechanization and of efficient cultivation are reached which compare well with conditions in advanced agricultural countries. Such farmers blaze a new trail in agricultural pursuits. For the first time agriculture comes to be recognized as a promising industry or business. The fund of enterprise and saving in the community becomes more easily exchangeable as between agriculture and industry.

Conditions are thus made favourable for a self-sustained process

of growth in which land, labour, capital, and enterprise tend to be organized at increasingly higher levels of productivity. The same district which is a successful agricultural district has blossomed out as an enterprising and resourceful industrial district as well. What is being attempted in selected parts of India has already been practised with success elsewhere. For instance in Egypt, which has a rare combination of soil, irrigation, and skill, high productivity has been attained in several places, and at least one influential school of Egyptian agrarian reformers holds the view that the best course of economic progress for the country is to promote the policy of 'a golden acre' or of 'building sky-scrapers into land'. Concentrating productive resources on the most promising situations so as to produce most striking and cumulative results is a natural policy with an obvious economical appeal. It also becomes a socially justifiable policy when it is followed as a supplementary plan of intensive action, which is an accompaniment of a general programme of extension and community development.

The relevance of an economic, and preferably an optimum, unit in a scheme of concentrated all-sided investment of productive resources, a package programme of agricultural development, is crucial. To mass large resources on small uneconomic holdings is wasteful. Such a course, far from engendering revolutionary growth, spells national devitalization. What hope is there, then, for a nation, which must put up with a large number of small uneconomic holders for a long time, to benefit from a 'package programme'. It does not follow that large units are necessary for the success of an agricultural programme. Farms of about 15 or 20 acres of irrigated land have been seen to offer very attractive opportunities for skilful, mechanized, modern farming. Such units are well suited to derive effective advantage from public, co-operative, and institutional agencies. A group of medium-sized farmers, co-operatively associated with one another for securing common services, is the best hope for the success of an intensive agricultural development programme.

But where sub-marginal holders must continue to exist in large numbers for a long time to come it would be extremely short-sighted and self-defeating not to explore the possibilities of joint cultivation. In fact, the very physical advantages which justify the introduction of an intensive agricultural development programme also point to an obvious situation in which the same labour and capital employed on a larger unit will produce a higher net return for both than when they are employed on smaller units. If this is technically proved, and if on merits a farm plan for the constituent small farmers were to

indicate the benefits of joint farming on an optimum scale, there is no reason why normal extension agencies should not encourage that step.

In several countries, Mexico itself being no exception, it has been proved that a congenial group of small farmers can voluntarily combine on a strictly businesslike footing for profitable farm and animal husbandry. To a certain extent, the Kibbutzim in Israel also point to the same possibility. While, therefore, no general statement regarding the feasibility and advantage of joint farming among uneconomic holders can be said to be valid, and while a number of psychological and organizational difficulties would have to be met, the possibility and the benefit of promoting joint cultivation so as to ensure optimum or economic sizes of cultivated units must not be ruled out.

In any discussion of an intensive agricultural development programme two inescapable features of economic growth must not be overlooked. Agricultural progress is part of general economic progress, in the course of which it is inevitable that more and more people will go into non-agricultural pursuits, thus causing a progressive separation of people from land. Such a development is to be welcomed in most of the developing countries. As this change takes place available manpower for land use will diminish. A new situation will be created both in regard to the economy of mechanical cultivation, and the relative advantage of the prevailing size of land-holding. While chalking out a programme of intensive agricultural development, sufficient elasticity in organization and in tillage must be provided to facilitate these changes when they become natural and beneficent.

A pointed mention must also be made of the imminence of technological changes. While some of these changes point towards the possibility of an increase in the scale of economic units of exploitation, certain other discoveries point towards the possibility of smaller units becoming equally, if not more, economical. Connected with these trends in scientific discoveries is the question of capital investment and running costs. With frequent but progressive changes in technology capital tends to be obsolete. As the mechanized and highly structured pattern of cultivation gains the upper hand, the need for capital investment and for capital replacement becomes more real. At all stages of change, therefore, the relative merits of an intensive and unified, as opposed to an extensive and piecemeal, approach to facilitating progressive change must be rejudged. It is only to be expected that in this process of assessment international comparison, as indeed prospects of international co-operation, will loom large.

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Professor Karve has opened some new avenues of approach to economic development in agriculture, and I agree with him on most points. I venture to comment on four of them.

First, it was appropriate to emphasize the idea of the oneness of the world when so much stress is given to the division between developed and under-developed countries. We are all human, and some basic standards have to be applied to all of us. Dichotomy is an oversimplification. More work on sectoral analysis could give us more knowledge about the concrete development of different countries, and we should be closer to reality if we developed a typology of countries in economic development. The work of Professor Kuznets has contributed much along these lines. One has to agree with Professor Svernilson that economic growth has several dimensions. But he left some of his dimensions with loose ends which Professor Karve proposes to pick up and knit into a consistent plan which gives each dimension its proper role. Professor Karve's plea for planning on the *local* level as well as on a national level can be supported by ample evidence that decentralized and democratic planning can assure a faster and greater rate of growth than centralized and authoritarian planning.

Secondly, economic development always means economic change. This begs the question: when is a change a change? How big, intensive, and fast must a change be to be recognized as a change? Professor Karve stands for a revolutionary change, i.e. an agrarian revolution corresponding to the industrial revolution 'based on an intensive programme of development'. I agree with this. We agrarian economists should not follow agrarian isolationism. Agrarian development is part of over-all general progress. As a consequence the infrastructural change in agricultural development is very important. Economic growth cannot be adequately measured by the increase of the real national income per head. Professor Rostow's theory does not give a true picture. His take-off leaves us in the air. Economic change is a painful process of development creeping over the threshold of economic development rather than an elegant take-off.¹ Its main feature is the change in the structure of capital, in the different capital mix required. The capital income ratio which in a pre-development period was 2:1, has increased during the change period up to 6:1, because of the heavy load of partial capital coefficients of the infrastructure (transportation, electricity, land reclama-

¹ See our article, 'The threshold of economic growth', *Kyklos*, 1-1962, Basel.

tion, mining, &c.). Later on, when the infrastructure is built, the capital structure changes again, light industries prevail, and the ratio falls back, i.e. improves, to 3 : 1 or so. Technical progress adds considerably to reduction of the capital coefficient. Therefore, I would prefer to talk about this kind of change instead of the income *per caput* dimension. Professor Cairncross has given us some striking examples of the role the building of railways played in the past development of the now advanced countries. But it seems to me that he is somehow behind the times with regard to modern technology. The process of growth in history when five hundred dollars were enough to transfer a worker from agriculture to industry is not similar to the process which requires three thousand dollars or more per head for this process. The World Bank's representative, Mr. Reid, has shown the importance in contemporary development of building railways and roads, power stations and electric grids. In other words, the under-developed countries of today have to make three industrial revolutions simultaneously, all calling for heavy investment, which more advanced countries were able to spread over much longer periods of time, the one based on steam and steel, the second introducing electricity and motorization, and the third adding automation and nuclear energy. Competition in the modern world does not allow the process of development to be extended over long periods. Professor Karve stands for the concept of economic growth as a general process. I am inclined to go a little further, perhaps, in emphasizing the dependence of agricultural development on general economic growth. Roads come before fertilizers. At the same time I would not let the peasant population, as the poorest section of the community, bear the main burden of the overall development, not even on a voluntary basis, whatever that may mean.

Thirdly, the comprehensive plan of Professor Karve is his third main point. When talking about economic growth it is not enough to take into account the rate of growth, nor the aggregate magnitude of capital investments. The important element is the indivisibility of capital assets, both technical and economic. Nowhere is so much investment wanted as in agriculture (both private and public). There is over-capitalization and under-capacity in use of resources. Spending a little here and a little there to satisfy all claimants means excessive waste in the long run. It is necessary to narrow the front of investments and attack the problems of growth with concentrated resources at the most important strategic points at the right time. Pilot projects can succeed if properly equipped and well integrated in the general plans. It is a matter of concrete policy how this

concentration is carried out, and here views differ from country to country. But one thing is evident. Such projects should not be show pieces or models for demonstration. They have to be carefully selected to create propagation and generate change. In this respect a multiplier-cum-accelerator effect in agriculture should be studied with more interest than before. One should not be afraid of being called a semi-economist by three-quarter Keynesians or one-and-a-quarter Pigouvians for that reason.

Fourthly, Professor Karve stands for the democratic process of development. This idea has not only a political and social but also its proper economic dimension. The philosophy of helping people belongs more to the eighteenth-century's ideas of 'enlightened absolutism' than to the mid-twentieth century. Today, 'doing good by doing well', will not do. If sustained growth is the goal, development should be for the people by the people. Education through action in conflicting interests represents the most effective and stable method of growth in the long run. For this education new peasant leadership is required among agricultural people; the old village *élite* is not effective for such efforts. This process is already taking place in many villages in many countries, and one has to recognize its value and importance for economic growth. The democratic organization of direct producers engaged in economic development is the appropriate answer to the risks of the painful process of growth.

Finally, I should like to say that experience shows that no improvement can be achieved by joint cultivation of land if some sub-marginal peasants are just put together. The institutional economy of scale does not allow for improvements, as it is offset by many other factors. What is needed in this case is more land and more capital, and this is exactly what is lacking in their individual holdings. The optimum size of an agricultural unit depends on many factors: technological (the size of land and divisibility of instrumental capital), economic (the size of the market or supply area, &c.), financial (returns to investment), spatial (distance and transportation costs), human (number of people living on the unit), management (ability of leaders, &c.). To find an optimum is a very complex task, which the *technocratic* approach will not solve.

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The unified agricultural development programme which Professor Karve has offered is based on the belief that in democratic and

developing economies it is well nigh impossible to bring about an agrarian revolution, the counterpart of an industrial revolution, without an intensive programme of agricultural development. In his view, the democratically based attempts at extension education and community development, acting alone without definite planning, cannot achieve the desired objective of massive agricultural growth needed to keep pace with demand for food products based on explosive population trends. Therefore, he proposes a concentrated and intensive programme on a somewhat selective basis creating a massive revolutionary change to produce sustained growth. Thus, his dual goals are an increase in agricultural output, especially foodstuffs, adequate to meet national needs, and a revolutionary change in the pace of agricultural growth, both within a framework which adheres to democratic practice.

Certain aspects of the intensified agricultural development programme might be considered as a specific application of Hirschman-Singer notions of deliberate unbalanced growth, but applied within an agricultural sector.¹ To the extent that the areas, villages, and farmers chosen for the intensive programme are close to the threshold of take-offs into self-sustained growth, they probably represent areas, villages, and farmers, where the rate of return on public and private investment is highest for agriculture. Thus, provided there are enough such areas, villages, and farmers, and provided there is not over-investment, the intensive technique may be most suitable and most efficient for achieving the first goal of increases in agricultural output.²

There are three major areas where I would disagree with Professor Karve's proposal or where I find inadequacies in his treatment of a unified plan for agricultural development.

First, I would have liked fuller treatment of three questions: (a) What *is* a 'unified' plan of agricultural development? (b) Why is a unified plan necessary for agricultural development? (c) What, if

¹ To the extent that the intensive agricultural programme increases the productivity in the agricultural sector required by corresponding increases in productivity and consequently incomes in the non-agricultural sector, the approach is sound. Increased food requirements brought about in a non-agricultural sector owing to growth, balanced or unbalanced, 'big-pushed' or strategic, can only be met by increased productivity in the agricultural sector. As pointed out by Professor Kuznets, failure to provide the food base for non-agricultural growth will result either in reducing the possibilities of general economic growth or in increasing the importation of food from abroad, both undesired results.

² I readily recognize that, in the Indian case, food requirements outweigh all other considerations in making the intensive programme a compelling necessity. Failure to expand Indian food production may have disastrous consequences.

any, are the limits to unified or non-unified agricultural development plans?

The last question is especially important. Looking closely at the agricultural planning experience of developed, developing, and under-developed nations, one is immediately impressed with the obstinate resistance of agriculture to aggregate or national planning. There are special factors or characteristics of agriculture which seem to reduce the effectiveness of certain planning techniques whether they deal with a collectivized farm in the Soviet bloc, or with a commercial farm in the United States of America, or with a subsistence farm in south-east Asia. For the present discussion, I would like to advance two tentative propositions concerning the limitations of planning for agriculture in under-developed areas. First, agriculture is characterized by heterogeneity in its physical inputs (land and labour) and climatic factors. The quality of labour and managerial talent varies enormously among farm people. Soil, rainfall, humidity, hours of sunshine, &c., vary considerably, sometimes even within the same farm. These differences are the 'givens' within which the farm operator or manager's decisions must take place. National or even state decisions which ignore the basic heterogeneity of the inputs in agriculture can only result in failures. Cultivators already intimately acquainted with these givens are able to make wiser production decisions than a distant state agency. Another critical limitation for planning agriculture in any free society revolves around the relationship between national decision-making (or planning) and individual decision-making at the farm-firm level. Whenever a national decision runs counter to the interests of the individual decision-maker, as he sees it at the farm level, the agriculturist seems to be endowed with an amazing capacity to frustrate or subvert the national decision or plan. I would submit that in large measure the difficulty of precise control in the aggregate is due to the character of the agricultural productive process wherein there are such wide varieties of *foci* for decision-making which are capable of influencing the final outcome. The production decisions of the cultivator throughout the crop cycle are different and require different skills and knowledge: which crops to choose, which variety, when to plant, when to weed, when to fertilize. National decisions which in the cultivator's view go counter to his notions of survival and livelihood can be easily subverted.

Underlying many agricultural development plans is an implicit belief that much of the fault lies with the subsistence nature of the majority of food producers. Subsistence is equated with stagnation and cultural rigidities. Yet, there is some evidence that changes and

adjustments do and have taken place within subsistence and semi-subsistence farming areas.¹ Therefore, what may be necessary in order to develop adequate and effective agricultural development plans is far greater knowledge than we now have of all facets of decision-making, including particularly incentives at the farm-firm level for subsistence and semi-subsistence agriculture.

My second major criticism is that I have serious reservations concerning what is likely to be proven or even likely to be gained with any striking transformation in technological level and in productive achievement in a few areas and villages. The issue is not one of goal but of suitability of method. Perhaps, if made sufficiently intensive, well planned, well organized, and well managed, economic progress and technological revolution will take place in the few chosen areas, chosen villages, and chosen farms. But what then? All that has been proven is that amassed resources concentrated in a small, well suited, and well chosen area, village, or farm can achieve more rapid economic growth.² Is such a change likely to promote self-sustained growth in agriculture as a whole, or to spark the hoped for agrarian revolution?

The problem here is the weakness of any economic complementarity between developments in the intensive and in the neglected areas. Increased production in the intensive areas will induce investment in marketing, transport, and processing facilities serving the intensive regions (some forward linkage in the Hirschman sense) but, except for processing, little of the added capacity will serve the neglected areas. Hence, on an aggregate basis I can see no induced investments brought about in the neglected areas as a result of developments in the intensive areas. How much of a demonstration or imitation effect is there really likely to be between the intensive areas and the neglected ones, the intensive villages and the neglected ones, the intensive farmers and the neglected ones? Undoubtedly, there will be some interaction, imitation, or osmosis *within* the chosen

¹ For a partial listing see my paper 'Economic and non-economic factors in the agricultural development of south-east Asia: some research priorities' (unpublished, mimeo paper, June 1961).

² The objection is somewhat similar to a frequent complaint of U.S. academicians against private U.S. foundations. Very often by the very act of making a munificent research grant to a young lecturer you virtually guarantee his eventual success. Getting one very large research grant assures a second, and the lecturer's success in these ventures marks him as a chosen young man of Dickensian 'great expectations'. When all is done, the philanthropoids in the foundation point to the 'leading authority' whom they have created, explaining that they had been quick to spot his hidden talents when he was a struggling academician. Naturally, the unlucky academicians who were ignored complain that the very size of the grant made the young lecturer successful, not necessarily his talents. An intensive agricultural programme is apt to be similarly characterized.

village, between the selected farmers and the unselected farmers, provided the unselected farmers do not feel that the intensive programme has given a comparative advantage to the chosen few which they alone cannot hope to overcome.

There is an even more serious cause for concern in what I call the *diseconomies of duplication*. As Professor Karve well knows from the experience of India, successful pilot projects inevitably flounder when nation-wide duplication is attempted. Sometimes the cause is what my colleague, Dr. Mosher, refers to as the failure to appreciate the need for pilot projects as numerous as the diversity that is characteristic of agriculture and rural life. I would add the almost inevitable dangers of diseconomies of bureaucratic scale or, to use Professor Bićanić's term, there develop serious 'institutional inflexibilities' when one goes from the successful pilot project to a national programme. The difficulty in the present instance arises when one proceeds from an intensive programme in the suitable areas to the less well suited areas. How many suitable areas for intensive work is one ever likely to find in an under-developed area? How much more in the way of extra resources per farm are likely to be required to perform the same task for less well suited areas, villages, and farmers?

Third, and most important, there are serious welfare and policy problems connected with the issue of the selected versus the neglected areas, villages, and farmers. I found no mention of a welfare rule whereby we might justify the concentration of resources into the 'suitable' areas, villages, and farmers—which Professor Karve indicates are exactly those areas, villages, and farmers already forging ahead—at the expense of other, perhaps more needy, depressed areas. Perhaps a Pigouvian compensation principle might be employed for this purpose wherein the gain from the high productivity areas should be sufficient to make all sectors better off, with or without redistribution of the gain. It is not clear in Professor Karve's treatment whether the expected gains in production, and hence in income, are to remain in the chosen area or are to be taxed away for state reinvestment or redistribution. If left in the hands of the producers, the gains may or may not be reinvested into the farm since farm families in low-income nations admittedly have rather high marginal propensities to consume, and the income elasticity of demand for food in low-income nations is also high. Hence, from a short-run standpoint, the effect may be to raise the levels of living of the selected areas, villages, and farmers without much of the increased productivity being translated into improved agricultural capacity and farm net worth. Even the use of a stark economic principle of compensation leaves one less than

satisfied when placed within the political or policy realm, especially in a democratically based society. I daresay that numerically the areas in India, e.g., which would be neglected under such an intensive scheme in all probability outnumber the chosen ones. The neglected villages will outnumber the intensive ones; and the neglected farmers will certainly outnumber the selected ones. These facts are apt to have very real and painful consequences for the planners, administrators, and, of course, the politicians. Following Professor Karve's criteria, if we pick districts and villages with high potentiality and low risk, good soil, assured water supplies, progressive farmers, access to markets, and habits of successful co-operation, and if we then choose within each district and village only farmers with holdings of economic size, we are in effect adopting a policy of aiding the affluent farmers in each community who have the *least* problems.¹ On what political or ethical basis can we justify this choice of the best farmers?

The dilemma is not new. I recall similar situations when development programmes have been aimed at economic development with the primary goal of increased food production. In these cases, the inescapable conclusion was that the quickest, cheapest, and most efficient way of securing food gains was to devote resources to the large, commercial farmers, not the small, subsistence units. The essential problem arises in the conflict between the desire for economic growth and the desire for economic justice. The conflict is perennial, besetting the economist and agricultural economist in their roles of adviser, programmer, and planner. The present proposal for an intensive agricultural development programme delineates the fundamental issue clearly. Creating wider gaps within agricultural sectors is likely to intensify political and social frictions at a time when national unity on a common goal of economic development is essential. Yet the crying need is more food, food, food for more people, people, people!

As dedicated social scientists in this era of profound, rapid, and sometimes violent technical and human change, what is *our* answer? Do we want more food or greater economic justice? Do we want faster economic growth or greater human freedom?

¹ The Indian farm family habit of living in tightly packed villages rather than on scattered farmsteads aggravates the jealousies caused by selection. The poorer farmer living in a typical Indian village knows all the income and assets of his wealthier neighbour and soon sees that the new programme is not serving him but his more fortunate and richer neighbours.

A. G. LLOYD, *School of Agriculture, University of Melbourne, Victoria, Australia.*

May I ask Professor Karve about the role of factor prices in his unified development programme? Factor prices have been badly neglected at this Conference so far. I will illustrate by recounting a discussion I had with an Indian who visited Australia recently on the question of the mechanization of the very large farm he was managing. We sat down together and analysed his problem on the data he provided and came to the conclusion that it would probably be profitable for him to dismiss two hundred workers and buy tractors. However, the factor prices we used in our analysis were very unrealistic. He would make quite considerable savings in wages by dismissing those men, but the wages he was paying them, although very low, were much higher than the opportunity costs of that labour. In fact, the social opportunity costs of the workers to be dismissed would be practically zero, since it would be a long time before any of them would be re-employed. On the other hand, the capital costs we used in our estimates were very low—4 per cent. interest on a state loan—which is surely much lower than the social opportunity costs of capital in India. This imbalance of factor prices gives further encouragement to conspicuous investment and does not result in optimum use of very scarce capital.

It may be that a general dynamic analysis, taking into account the external economies generated by capital intensive methods, would ease my apprehension, at least for some types of investment, but initially I am sceptical.

M. EZEKIEL, *Department of State, Agency for International Development, Washington, D.C., U.S.A.*

I would add two supplements to Dr. Wharton's fundamental question. First, in under-developed countries generally the total number of people employed in agriculture as an historical fact rarely begins to decline until the country has passed the point where the total number of people engaged in normal agricultural employment falls below 50 per cent. So long as 60 or 70 per cent. of the total gainfully employed population are working in agriculture, even though you have rapid economic development, the non-agricultural area does not absorb workers fast enough to keep up with the total growth in population. You can have a rapidly increasing income at the same time as you have an increase in the number of workers both living

and working in agriculture. I do not have the book here but, as I recall it, the percentage of the population gainfully employed in agriculture in India is still far above 50 per cent., perhaps 70 per cent. or higher. With normal rates of growth, even accentuated rates of growth, it will be ten or twenty years, probably, before they reach the turning-point where the new additions to the working force are absorbed as fast as the population grows. So it will be ten or twenty years before the people who do not benefit from this scheme as a whole begin to have an opportunity for gainful employment outside agriculture. They may as individuals, but as a total of the population they will not.

That leads me to my second question. Would it not be possible, in addition to this proposed programme of centring all the help on the best, ablest, and largest farms, to plan some experiments in other villages on different lines as Dr. Wharton suggested, perhaps taking some villages in which more intensive aid is given uniformly throughout the village, and see what the results were after two or three years. See the social results as well as the total physical farm production. Also, would it be possible to experiment in some other village on aid to the best farmers, the best-suited farmers, tied in with aid from them to their smaller neighbours? I realize that perhaps 75 per cent. of the land in these selected villages may be in the largest efficient-size farms, but even so, I suspect that only 25 per cent. of the people are, and it is about the other 75 per cent. of the people that Dr. Wharton has raised some very significant questions. I suggest that some such experimental methods may help to find ways of approaching the problem, instead of waiting ten or twenty years for the development to operate for the population as a whole.

J. W. MELLOR, *Cornell University, Ithaca, New York, U.S.A.*

I am troubled by Dr. Wharton's comments on the concentration of resources on the better farmers. It seems to me that in most low-income countries there is a dual problem. There is one of increasing agricultural production. There is another of rural poverty. The roots of these two problems tend to lie in different households. Thus, a programme to attack the problem of agricultural production may usefully concentrate upon the more affluent members of the society. Frequently, a different kind of programme will be required if a significant short-run improvement is to be made in the conditions of the lowest income elements of the rural population. Of course, in the long run, improved agricultural production will have useful side effects in alleviating rural poverty.

There is a danger implicit in operating unified agricultural development programmes. A number of countries have made it a matter of dogma to attack agricultural development through a single programme such as by credit or extension, or a specific form of tenure. I am concerned that we may now have a new dogma of package programmes. The danger is that we may ignore important problems of allocation by making an inventory of all the possible actions which may have some impact on agricultural production, and then attempting a programme which tries to do something in each one of them. It may be, however, that only a few of them are limiting factors in any particular place. Thus, there is a significant problem of diagnosis, a problem of trying to find out which things may be limiting in one time and place. It is important that we make this careful diagnosis area by area. Here I would be in agreement with some of Dr. Wharton's comments. We have to make this diagnosis area by area for the reason that, if we move in with a whole group of activities in one area, we may be using one of our scarcest resources lavishly. The resource I have in mind is administrative and organizational capacity for running a vast number of programmes which include research, stabilization of marketing, and the rest. If there are only two or three limiting factors in an area at one time, we should concentrate our scarce administrative organization on those particular things. This requires careful diagnosis of specific situations.

R. KRISHNA, *Institute of Economic Growth, New Delhi, India*

Dr. Wharton has posed a basic issue, namely, whether the limited resources available for rural development should be spread evenly all over the country-side on grounds of social justice or allocated so that the more promising areas are favoured in the interest of a rapid increase in production. But considered in practical terms, in the light of Indian experience, it is not an either-or issue, but an issue involving the determination of proportions. Initially we started out on the community development programme with the intention of extending at least a minimum of resources all over the country-side. This programme is going on, and eventually—we hope very soon—minimum resources will be deployed everywhere. This is in deference to social justice. And yet, when we do that, we find as a fact of life that different areas with the same deployment of resources grow at very divergent rates. The capacity of different areas to grow differs. In the light of this experience it is only common sense that since it is right also to increase production, we further encourage the more

promising areas. In practice, therefore, it becomes an issue between dividing resources between a minimum deployment of resources everywhere on grounds of social justice and encouraging the farms with best growth to keep growing. This double issue is resolved much more easily by very considerable foreign assistance. With local resources it might not be possible. Theoretically I should point out that when resources are limited, social justice although very desirable, may be a great luxury. If resources are abundant, you can keep everyone reasonably satisfied and yet keep the promising farms growing faster in the interest of production.

H. S. MANN, *Department of Economics, Government College, Ludhiana, India.*

It appears to me that too much importance is being given to these pilot projects. We have to look at them as experiments and, as Dr. Ezekiel has suggested, we need more experiments under different situations. Professor Karve says that it would be extremely short-sighted and self-defeating not to explore the possibility of joint cultivation. In this connexion I would like to report on our experience with co-operative joint farms in the Punjab State. I have been engaged in a study of these farms for some years. There, the decision whether to join a co-operative farm or to leave it is entirely voluntary on the part of the members. Co-operative farms with working peasants as members had short lives of from two to four years. The members who have always been their own masters on small family farms do not like to take orders from the manager of a co-operative farm. In the absence of personal interest and incentives, the efficiency of the member workers seems to settle down to the level of the slowest. The landowner in the Punjab, even if he owns only two acres, enjoys the highest social status, and, on joining a co-operative farm, he finds his status reduced to that of a farm labourer. Even in the few cases where the cultivators had better incomes as members of co-operative farms, they reverted to private family farming in order to regain their social status in the village and enjoy a feeling of independence.

Co-operative farms with non-working landowners as members organized to evade the impact of land reform measures had a longer life. But workers on these farms who are hired on monthly or yearly wages do not get any share in the profits as they are not members of the co-operative.

It is generally believed that co-operative farming would be successful on new lands where farmers who do not have any proprietary

rights are settled. But the experience with such farms in the Punjab has indicated that while it may be easier to organize co-operative farms on newly settled lands, their successful working is by no means assured by the absence of ownership rights. The by-laws of the Ex-servicemen Co-operative Tenant Farming Societies in the Punjab had to be amended to permit individual cultivation after one year of joint farming during which many difficulties in the day-to-day working of the farms were experienced.

Under the package programme, farmers in the pilot district would enjoy the economies of size in the matter of marketing, in the purchase of farm requirements and in credit, but joint farming, which may result in loss of incentives, has no further economies to offer.

I have some brief comments on the importance of basic research at the farm level for agricultural development in India. Professor Karve rightly states that, even with a policy of progressive planning, the levels of achievement in agriculture after nearly ten years of concerted action, though they are by no means insignificant, are not sufficiently high to ensure self-dependence, even in the matter of food supply. During this period of ten years India has abolished the zamindari system, has decided on a policy of ceilings on landholdings, has established an extension service, and launched programmes of rural community development. But with all this, the increase in agricultural production has not been proportionate to the efforts. Farming continues to be a way of life rather than a commercial enterprise. Partly this is due to insufficient resources being allocated to research and education. In our desire for quick results, policy making and policy implementation have been running ahead of research. We decided on a policy of ceilings on land holding without any studies on the size and distribution of holdings or on the optimum sizes under different circumstances. The census of landholdings did not cover the whole country, and in some states was limited to holdings above ten acres. We have been consolidating landholdings in the Punjab since 1948, but we have no published data on the size and distribution of owned and operated holdings.

We have the national extension services which will cover the whole country by 1963. The extension agent should carry the results of agricultural research to the farmer. Here we have a large organization without much basic research at the farm level, the results of which will be useful for the farmer. Each farmer should have a farm plan. The extension agent should help him in framing this plan. But where are the research studies on which the extension agent would base his recommendations? Do we have any studies on the optimum

allocation of farm resources? Do we think in terms of costs and returns? Do we have any information on production coefficients? Can the extension worker recommend the application of chemical fertilizers without any soil tests? These are some of the questions which may partly account for the inadequate results in agricultural development in the past decade. Under the package programme it is hoped that research and education will receive the needed attention.

D. G. KARVE (*in reply*)

Some supplementary remarks arising out of the discussion seem to be in order. Before I make them, may I point out that my allegiance to the Government of India is undoubted? It is clear from my paper that I have drawn my illustrations from India more than from any other country. But I present it neither as an Indian nor as a paper primarily about India. It is an agricultural economist's attempt to face a situation in agricultural development that one comes across all over the world and especially in countries which are seeking development. I would request you to look at it from that angle; otherwise one is likely to be tripped up by all kinds of sentiment.

There is not the slightest doubt that if the so-called intensive development programme undertaken in any country were merely for the purpose of creating show pieces they would be worse than useless. They would be blots on the progressive economic policy of the State. Our purpose, however, is to plan, not for a day, not for a year, but for some ascertained and previously planned stage at which a certain developed equilibrium is to be reached by all sections of the community. It is not by the hour, it is not by the day, that justice has to be doled out or progress measured. I grant the point that in this process nobody should be the worse off. But everybody is interested, not in his day-to-day intake, but in how he and his descendants will live in days to come. Therefore, this programme of intensive and unified development which I have described in my paper, is justified only if it is supplemental to a generalized programme which takes care of everyone so far as circumstances permit.

Secondly, I made it clear that any general programme of human agricultural development, and especially a programme of intensive agricultural development of this type, has a certain relationship with the over-all programme of economic development. As my friends have already made clear, this is a programme of finding out how far investment both internal and international can be made available. Please, do not look merely at the east; look also at the south. Dozens of new countries are emerging which will be still emerging for a

long time. It is a problem for them and a problem for their friends to consider how the capital can be found. Even international capital is limited in quantity. Should it be frittered away by having a comparatively low level of productivity all round, or should an attempt be made really to raise the whole production process and structure to a level where there can be some hope of a community's taking its place within a foreseeable future as a self-sustained and fairly progressive society? That latter is the only justification for an intensive development programme. It has no justification in a merely static or comparatively static society.

One aspect of the matter, which Dr. Ezekiel brought out, should be noted. It is similar to the point raised by Mr. Lloyd. There is no doubt that even where in aggregate a country's population is 60 or 70 per cent. agricultural, there are certain to be situations and areas within that very country in which that proportion is not so overwhelming. It is in such places that the critical transformation becomes easier. For instance, in parts of India less than 60 per cent. of the people are in agriculture. There is a comparative balance in such places, and it is there that concentrated efforts will spark something like a new movement which will affect other areas also. The other aspect of what Dr. Ezekiel said was really more significant. The attempt to have unified agricultural development is not a dogma. It is not a basket in which to put all the eggs. It is a supplementary programme, and as such is open to a number of variants.

SHERMAN E. JOHNSON, *Economic Research Service, U.S. Department of Agriculture, U.S.A.*

I ask your indulgence to make a couple of comments because my name was associated with this discussion. It seems to me that two points have not been clearly brought up. There was an implication in the discussion of centralized planning in the package programme. Actually, as it was devised at any rate, the programme would involve diagnosis by areas and then helping villagers make their own plans for improvement. This gets fairly close to the farm planning, farm development, or whatever you want to call it, that has been done in a good many countries, but with the added assistance that is needed to break the bottle-necks. If that programme does not work, it is up to us, agricultural economists, to devise a better alternative. In other words, if we are critical of this approach, let us, all of us who are concerned with this problem, devise a better way to help farmers to improve production and income.