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AGRICULTURAL PLANNING FOR MADRAS

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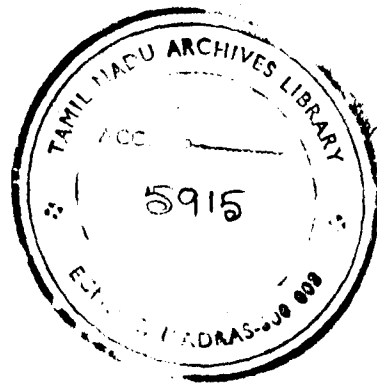
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PREFACE

This book is a companion volume to my work on *Madras Agriculture* published by the University in 1950. There a study of agriculture as it was carried out in the State then was made, and in this book an attempt is made to depict in broad outline the directions in which development should take place. Emphasis is placed on the principles to be observed and the methods to be adopted in planning and executing a programme of expansion.

The end of all economic planning is the increase of wealth production with a minimum expenditure of resources and the relating of the quantum of wealth produced in each line to social need. This objective has been kept steadily in view, and the programme of expansion chalked out has, in addition, been based on the resource pattern in existence. The development which can take place in the short period is severely limited by available resources, but they have to be stretched as much as possible to make good the deficiencies keenly felt today and engineer an increase in agricultural production. How this may be done is broadly delineated.

I am thankful to the Vice-Chancellor and the Syndicate of the University for sanctioning the publication of this book as a University publication. I take this opportunity to express my thanks to the Chief Engineer, Irrigation, Madras State, for sending me some unpublished data relating to contemplated irrigation schemes in the State.

University of Madras,
28th October, 1953.

C. W. B. ZACHARIAS

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CHAPTER I

GENERAL PRINCIPLES OF PLANNING

Economic planning can be both loosely and rigidly defined. When loosely defined it reduces itself to 'a procedure, a means to a given end', in which a rational choice of the best means available to attain the purpose or goal in mind is effected. It will just simply be the arrangement of the scarce factors of production in relation to the demand for them in such a way that the satisfaction or utility derived from them is maximized. For this all that would be needed would be, given full knowledge, a rational handling of the problem and the use of as much foresight as one can command. In this sense, as F. A. Hayek has said, "every body who is not a complete fatalist is a planner, every political act is (or ought to be) an act of planning, and there can be differences only between good and bad, between wise and foresighted and foolish and short-sighted planning".¹ Such planning would include all individual planning in an ostensibly unplanned economy as well as every manifestation of State interference with the free working of the economic system with a view to maximizing efficiency. Even under Capitalism such planning takes place continuously. "The basic difference", as Barbara Wootten has said, "between the planned and the unplanned economy is not that human volition is absent from the latter, but that the scope of particular decision is there more narrowly limited".² Scientific management and rationalization and the restrictive measures adopted by combines would all be planning of this sort, for all of them have the over-all aim of rational co-ordination of means and ends.

But when strictly and rigidly defined, planning would mean, as Dickinson and Ropke have said,³ the making of major economic decisions—what and how much is to be produced, how, when and where it is to be produced, and to whom it is to be allocated—by the conscious decision of a determinate authority, on the basis of a comprehensive survey of the economic system as a whole. "The

1. *The Road to Serfdom*, p. 26.

2. *Plan or No. Plan*, p. 47.

3. Dickinson: *Economics of Socialism*, p. 14; Ropke: *Socialism, Planning and the Business Cycle—Journal of Political Economy*, 1936, p. 336.

essence of this method of planning", according to Ropke,⁴ "is to replace the mechanism of the competitive market by commands from above, and to transfer the all-important decision over the use of the productive forces of the community into the office of a Government department". In similar strain says Prof. Lionel Robbins,⁵ "A planned economy must be planned from the centre. This is the only intelligible meaning which can attach to the concept". In like manner says F. A. Hayek,⁶ "What our planners demand is a central direction of all economic activity according to a single plan, laying down how the resources of society should be consciously directed to serve the particular ends in a definite way."⁷

4. Ropke: op. cit.

5. *The Economic Basis of Class Conflict*, pp. 50 and 51.

6. *The Road to Serfdom*, p. 26.

7. The emphasis placed on the existence of a single plan in Prof. Hayek's definition is objected to by certain democratic socialists as a wrong interpretation of what they mean by economic planning. Thus E. F. M. Durbin wrote, "Planning does not in the least imply the existence of a Plan—in the sense of an arbitrary industrial budget which lays down in advance the volume of output for different industries" ("The Importance of Planning," *New Trends in Socialism*, pp. 43-44). To him and others of his persuasion planning is just "a principle of administration and not an inflexible budget of production" (*Problems of Economic Planning* by E. F. M. Durbin, p. 95). It is just "a new method of taking economic decisions, a new principle of economic administration, and not the imposition of any economic tyranny upon a free society" (op. cit. pp. 96 & 97). Or again, "The element common to all the forms of new control we regard as 'Planning' is the extension in the size of the unit of management and the consequent enlargement of the field surveyed when any economic decision is taken. . . . All forms of planning machinery extend the area of economic life surveyed by the deciding authority and increase the number of and importance of economic quantities that can be controlled by someone" ("The Importance of Planning," *New Trends in Socialism*, pp. 149-150 by E. F. M. Durbin). There will be 'a change in the direction of responsibility,' that being shifted from a private company or group of shareholders to the representatives of the community sitting upon the Board of a Public Corporation under the superior oversight of the Supreme Economic Authority, "but the economic system administered need not be used to implement any 'plan' in the sense of a rigid programme of production arbitrarily determined."

All the same Durbin admits that it is possible in a planned economy to construct statistical budgets of production for long periods ahead, and in this sense to have many industrial plans, but these plans will not be arbitrary or inflexible, but are drawn up "to work out the logistics of preferences freely indicated by the consumer" and are capable of being altered to suit new conditions.

This conception of planning comes midway between the two extremes mentioned earlier and is really an attempt to reconcile consumer sovereignty with central administration.

Between these two extremes it is possible to have different degrees of planning, some of which, while retaining the fundamental structure of Capitalism would try to introduce more order and greater stability and co-ordination in individual activities through voluntary action, while others would make serious encroachment into certain aspects and certain sections of that structure and give directives from above as to what the individuals concerned should do. A great deal of what goes by the name of planning in democratic countries really falls between these two extremes, and falls short of ideal planning in greater or less degree according as they have a sectional or over-all view of economic activities. Time was when it was dogmatically asserted that planning, strictly defined, was practicable only in a socialist State with all the means of production owned by the State and State's power extending to all individual actions, even to the extent of directing consumption and labour employment. The fact that a planned economy was first inaugurated in Soviet Russia lent support to this view. But the experiments conducted in Nazi Germany and Fascist Italy under fundamentally capitalist regimes first revealed the possibility of a planned economy within the capitalist structure and opened out a great vista of State direction of economic activities in non-socialistic States. Since then, partly as the result of the success of these experiments and the experience gained in the administration of war economics during World War II and partly as the result of the flashing of the light of economic analysis on to the problem of planning, it has been increasingly realized that economic planning is fundamentally different, at least in theory, from Socialism and that its practical implementation does not depend upon the socialization of the means of production. Just as Socialism without central planning is conceivable, and was actually conceived in that manner till about the fourth decade of the twentieth century, so also central planning without socialization of the means of production is increasingly thought to be possible within the capitalistic structure. This would doubtless mean modification of the structure, over large sectors, in ways which would eliminate the essential characteristics of Capitalism, nonetheless, the resultant organization will not be socialistic but a hybrid between the two. Sir Arthur Salter in his 'Framework of an Ordered Society' has with painstaking care attempted to show how planning and individual freedom may be reconciled on a nationwide scale without putting the price system out of action or the State embarking upon coercive processes of an unwelcome kind. His programme involves the minimum degree of resentful direction from above and as close an

association, on a voluntary basis, of the great body of producers in the formulation and execution of the plan as is, under the circumstances, conceivable. In principle his device for formulating the plan is not very different from the one actually implemented in Soviet Russia, for there too the plan grows from below and is not absolutely dictated from above, but significant differences will exist between the two in the approach made and the general attitude evinced towards the plan.

But planning under Capitalism may take other forms than what Sir Aruthur Salter has visualized, virtually involving a much greater degree of dictation from above and a ramified system of controls and supervision. The degree of interference will depend on the magnitude and dimensions of the plan and its deviation from the normal or the pre-planning course of economic activities. In quite recent times the conception of a mixed economy under planning has come into greater vogue. Capitalism as it exists in most countries today is not of the 19th century unalloyed kind, but with a great deal of State activity interspersed with individual activity. On this structure when planning is imposed, the State sector may make further encroachments on the private sector, as has been happening in Britain under planning today, or leave the *status quo* in structure undisturbed. Whether the one or the other would happen would depend on the nature of the plan and the socio-political theory which lies behind it.

But whether it be under pure Socialism or under a modified Capitalism that planning is inaugurated, for a planned economy to be established, the plan must be a Central, Social plan. It must be Central in the sense that it applies to the whole economy conceived as an integrated whole and has behind it the authority of the Central Government. It must be Social in the sense that it is decided upon by society as a whole, acting through the State, and from the point of view of the common good. These two attributes may be said to be the essentials of a plan, for without them the plan will lack homogeneity or nationwide appeal. A national economy has an inter-dependent unity though many sectors and many regions are comprised in it, and this makes it difficult for a sectional or regional plan to be formulated unrelated to its effects on other sectors or regions. However partial the objectives of planning may be to start with, for success and completeness the whole economy has to be covered. And when it does so, it will impinge on the interests of everybody in society and make its acceptance and

subsequent execution depend on social approval and the common good it furthers.

Nevertheless regional or sectional plans have a place, not as independent entities, but as inter-dependent parts of a central plan. The manner in which plans are actually formulated, whether from above or from below, would show the importance resting on such planning. Not even in the smallest of economies is it possible to get a grasp of the whole economy and of the multitudinous activities carried on there, except through sections and regions. A plan cannot but be the result of co-ordination and integration of the parts which go to form the whole. This means that sections of the plan will have to be worked out in detail separately before any attempt can be made to evolve out of the separate plans a cogent and logically complete central plan. But even when the separate plans are shaped, it would be necessary to keep in view the over-all needs and objectives of the complete plan. The fundamental purpose of the plan, the main principles to be adopted and the objectives to be furthered, all pertain to the plan as a whole, but the sectional plans should reflect them in the measure in which they are components of the over-all plan. This requirement satisfied, it would be not only possible, but even necessary, to formulate plans sectionally.

One of the fundamental aspects of a plan is the purpose behind it. Plans without declared purposes are, as Marshall Stalin put it, just prognoses, guess plans, which bind nobody.⁸ The importance of a purpose is seen in the fact that once it is set, the ultimate end to be achieved is made clear and the selection of means can be done from the point of view of their efficiency to attain the end. All people concerned will be bound by this purpose and should pursue it in all their activities under the plan. "A purpose is (no doubt) an idea, a product of the intellect, but it is also an idea affirmed by the will, so that it becomes an objective of action".⁹ And in order that there may be unity of purpose, the accepted purpose should be communicated to all concerned and should be made to function as the basis of any diffusion of initiative contemplated under the plan. This will safeguard the development of sectional plans in conformity with the general purpose of the over-all plan.

The purpose of a plan may be any, and an examination of the ostensible purposes behind the many plans which have been inau-

8. Quoted in *Ordeal By Planning* by John Jewkes.

9. *Central Planning and Control in Peace and War*.

gured in different countries shows that they may diverge greatly and may range from industrialization as in Argentina or modernization as in France to the raising of the standard of life as in India or the full employment of resources as in U.S.A. Among the many possible aspirations behind planning a few stand out clearly as more comprehensive and surcharged with greater popular appeal. They are as stated by John Jewkes in his *Ordeal by Planning*

- "1. to make a steady, continuous and full use of the community's powers of production;
2. to dominate one's economic environment;
3. to operate economic institutions scientifically;
4. to provide all with higher material comforts;
5. to mitigate the grosser forms of inequality; and
6. to avoid economic fluctuations disturbing to the individual".

Any one of these by itself or a few of them conjointly may figure as purposes behind a plan, for they are not mutually exclusive nor conflicting, but on the other hand are worth pursuing simultaneously if the ultimate welfare of society is to be furthered. However the ultimate purpose of every plan should be social welfare and the ones mentioned above are from this ultimate point of view proximate and instrumental objectives.

Given these fundamental purposes, it would be necessary to so shape the plan as to serve these faithfully and to keep the desired and secondary objectives attuned to these main purposes. Industrialization, modernization, improvement of technique or organization, nationalization, collectivization of agriculture, agrarian reform, higher targets of production, etc. are some of these secondary objectives. They really belong to the different aspects and sections of the plan and help to determine detailed programmes there. The formulation of these, co-ordinated and integrated and in harmony with the general purpose or purposes, will be more than half the battle won, for once this is completed the prescription of methods and the allocation of resources will be, as far as theoretical planning itself is concerned, comparatively simpler. Doubtless the execution of the methods and the distribution of resources will be formidable problems in practice, but they are of a different character and require tools of a different order to solve them. Nevertheless a plan to be complete must comprise, in addition to the detailed statement of objectives, broken down statements of methods and allocations if it is to escape the stigma of being called just 'an exer-

cise in arithmetic' or a device to 'spread light over the distant goal'.¹⁰

To make the plan scientific and logically satisfactory an appropriate procedure should be adopted. Planning is essentially a process through which the plan gets gradually built up, and that process should pass through certain stages in logical succession. From the procedure adopted in some of the Western countries and from what appears needed on an analytical consideration of the matter, it may be said that there are seven broad stages in the development of a plan. They are

1. the formulation of a resources budget;
2. the estimation of the demand for different commodities and services;
3. the determination of targets of production;
4. the assignment of priorities;
5. the determination of the methods needed to implement the plan;
6. the allocation of resources, including finance; and
7. the drawing up of a scheme of distribution of the product.

Some of these stages are more easily negotiated than others, for they involve no policy making or the resolution of vital controversies. From this point of view stage (1) is the simplest, for it involves only the study and analysis of objective data. So also stage (6) will be non-controversial, once the targets are determined and the priorities assigned. The problem here will be one of administration, and though administration on a nation wide scale is different in degree and also in kind from administration firmwise or industrywise still the problems which arise will demand only administrative skill and will not involve political or ethical questions. Stages (2), (3), (4) and (5) are perhaps the most difficult to traverse, for the thorniest problems in planning will make their appearance here. Conflicts between social and individual interests and between different individual interests themselves will have to be resolved. From the multitudinous ends available those ones will have to be selected which appeal to the social conscience. All the structural alterations needed in the economy for implementing the plan will have to be devised, and the different targets co-ordinated in such a way as to lead to a frictionless operation of the productive mechanism. Decisions regarding consumption and capital for-

10. See S. E. Harris on the Bombay Plan in *Economic Planning*, p. 10.

mation, the relative development of consumption goods industries and capital goods industries, and how the needed savings may be engineered also will have to be taken. Many questions on which wide differences of opinion in the community will exist will have to be tackled and attempts made to reach agreement. Economic questions will here be intertwined with political and ethical questions and their solution will take place on the political rather than on the economic plane. The success of planning will depend on the success attending the solution of these problems. The solutions are bound to contain elements of compromise and arbitrariness which will introduce many illogicalities into the plan, but that is the concession which planners have to make in order to secure political acceptance for their plan. The task before the planners is formidable, and the larger the country, the more varied the resources, the more conflicting the interests, the more complete the planning and the more centrifugal the forces in operation, the more difficult the task of reaching agreement. But planning involves all this, and no country can embark on planning without being prepared to face these difficulties.

From the general procedure applicable to planning and indicated above, certain general principles to be observed in building up a plan may be deduced. *First and foremost* the general criterion to be adopted should be social need rather than individual or sectional needs or desires. In the estimation of demand for particular commodities and services and in the determination of targets for production this criterion should be paramount. A planned economy differs from an unplanned one in this important respect that there is the possibility in the former, since the State is ordering economic activity, of determining it from the point of view of what society as a whole needs for preserving, furthering and maximizing the welfare of the whole body. This would involve the replacement of the criterion of maximum profit of the individualistic economy by the criterion of maximum physical production, for society is interested not in maximizing the share of wealth going to the entrepreneur class as profit, but in maximizing the quantum of wealth produced.

Secondly, the organization of production should be such as to result in the full employment of all resources and in the most efficient way. The usual characteristic of an unplanned economy is that unused capacity and unemployed resources tend to exist even during periods of high activity, because of the unco-ordinated nature of the economy. It should be the distinctive mark of a plan-

ned economy and one of its *raison d'être* that all wastes are eliminated and efficient utilization of every thing available is made with maximum benefit. The resources budget will be an inventory in physical terms of all resources available and the plan should contain, under methods of implementing the plan, proposals for a complete mobilization of all resources. To start with, the scarce factors of production would set limits to the quantity of other resources, existing and potential, which may be utilized, but it is essential that the structure of production should be so shaped as to provide the most intensive use of the scarce factors and the maximum employment of the other factors along with them. When maximum production replaces maximum profits as the criterion, full employment of all resources will logically follow.

Thirdly, the determination of targets of production has to be realistic. The usual danger is that, starting from social need which is almost limitless, and an inventory of all resources, existing and potential, targets are fixed without reference to technical bottlenecks and organizational limitations. Very rarely is it realized, especially by academic planners, that the existing structure and methods of production form the initial basis of plans and targets and so they have to be adjusted to immediate possibilities. Doubtless a fuller and more effective employment of resources, the utilization of all unused capacity and short run alterations in productive mechanism will enable even immediate targets to be fixed at levels higher than in an unplanned economy. Still there would be limits beyond which in the short period it would not be possible to go. However as the plan progresses and as more radical alterations in the productive structure are effected and more of potential resources are converted into current resources, the targets of production could rise higher. Still at every stage realistic considerations should apply to their determination.

Fourthly, alterations in technique and organization should form important elements of the plan. Effective employment of resources would require that the factors of production are combined in the most efficient proportions and unit cost of production reduced to the minimum. But the choice of technique or of organization should be made to depend on efficiency, considered from all points of view. Under Capitalism, productivity per man hour or minimum cost per unit tends to be the sole criterion, and, frictions and bottlenecks apart, the actual choice is on the basis of this criterion. But under planning, the ultimate end being social welfare, those methods of production which inflict a great deal of human

costs, to use a Hobsonian phrase, while reducing economic costs will have to be eschewed. It is essential, however, to recognize in this connection that many of the evils associated with particular technique and organization are evils which arise in the manner of their use in a purely capitalistic regime to further the interests of capitalists, and not inherent in them. In a different context and for the purpose of serving other interests the same technique and organization may be made to yield all the good they are capable of without the evils usually associated with them. Machine technique, large scale organization, rationalization, scientific management, etc. when taken out of the context in which they happened to be inaugurated, and examined on merits would be seen to bestow more good than evil on mankind, and if incorporated in a wise plan will be accompanied by devices and measures calculated to mitigate the evil. If one of the important objectives of planning, viz. maximum production, is to be pursued diligently, all the tools and instruments fashioned by Capitalism for the purpose will have to be requisitioned, albeit bereft of their evil. And the time and manner of their introduction may be so adjusted as to suit the general tenor and objective of the plan.

Fifthly, there must be provision in the plan for adequate capital formation from year to year. To justify itself and to fulfil its main aim the plan must be built on the idea of an expanding economy. Even for maintaining wealth production per head constant, with increasing population, the aggregate quantum of wealth produced must increase from year to year. If there is, in addition, the further aim of increasing wealth per head as the plan progresses, an expansion of production is clearly called for. Some part of this expansion may be effected through an automatic increase of resources, the increase of population itself contributing to such an increase, but the major part of it will have to depend on the growth of material and immaterial capital. The building up of immaterial capital has to be achieved through ample provision for education and training of various kinds, special attention being given to imparting technical 'know how' to the occupied population. But alongside of the development of immaterial capital there should also be the building up of the physical equipment of the country. This should be provided for in the targets of production. These targets should apply not only to consumption goods and services, but also to capital goods, including in their category tools, machines, plants and installations, factories, workshops, roads, railways, waterways, irrigational works, hydro-electric works, thermal sta-

tions, houses, buildings and every other kind of work which contributes to the development of the physical basis of production.

This would be capital formation in real terms, but as a monetary counterpart to it, there should also be the requisite saving activity engineered in the community. In ultimate analysis capital formation rests on the community's savings, whatever method of finance is adopted, and so the plan, in its distributional aspects, should make provision for engendering the required savings. This would naturally involve imposing sacrifices on the people, for savings truly reflect the restriction put upon consumption, but care should be taken to see that those sacrifices are not made inordinately heavy or higher than needful. In the eagerness to expand production or to rise to a higher plane of production, one may be tempted to plan for heavy capital formation in the earlier years as occurred in Russia, unmindful of the hostility such procedure would generate in the community at large, but this should be resisted in the interests of the popular support which the plan should evoke and its final success.

This naturally leads on to the *sixth* principle, viz. the maintenance of consumption standards at satisfactory levels in the short run and in the long run, consistent, however, with the need for the expansion and development of the productive machinery. Capital formation or saving is just a means and not an end in itself. The end of planning itself is the increase of consumption, and so both in the short run and in the long run this aim should be kept steadily in view. In the interests of long run increase in consumption there could be some restriction of short run consumption, but it is needful to realize that the generation which undergoes the sacrifice may not identically be the one which finally enjoys the increase of consumption. There are therefore limits to which sacrifices may be endured for the sake of posterity. This consideration and the importance of the maintenance of consumption standards from the point of view of building up the immaterial capital of the economy would stress the inadvisability of overstepping limits.

Seventhly, the plan should contain a pattern of distribution of income attuned to the production plan and contemplated capital formation and consumption expenditure. This would seem to be needed not only to give effect to some of the important objectives of the plan concerning distribution itself, but also to safeguard the fulfilment of the production plans. On income distribution would depend the community's division of income as between consump-

tion and saving, and it is essential that this division, voluntarily made, is in harmony with the financial provisions of the plan. Else the execution of the plan would involve the application of measures calculated artificially to make this division different from what it would be under free choice. The fact that planning would be attempted under Capitalism where disposal over one's income is considered a precious individual right, makes it imperative that, to effectuate a desired consummation, the problem should be tackled at its source. That would obviate the necessity for much unwelcome and avoidable interference with individual freedom.

The pattern can be set only in broad terms, and will, in reality, take the form of enunciating the general principles governing the determination of the ratio of remuneration and perhaps fixing limits to the height to which incomes may be permitted to rise. These would be the principal ways in which the grosser forms of inequality may be eliminated, but for such inequalities as would still persist, certain other fiscal and financial measures may be needed.

Eighthly, the allocation of resources under the plan should be strictly on the basis of settled priorities. This has to be vouchsafed as a principle of planning for the reason that the pressure for increased allocation of resources in different lines would be difficult to resist, unless a strict adherence to the plan is accepted as a fundamental rule.

All these principles apply to the plan as a whole and also to each section of it in so far as the sections are expected to reflect the objectives and purposes of the over-all plan. But when they are applied to the sections certain modifications and qualifications may be needed to suit the nature of the sections, their range and the particular problems comprised in them.

Applying these considerations to the planning of Madras Agriculture, which is the study undertaken in the following pages, one may without hesitation say that principles 1, 3, 4 and 8 will have to be observed without modification and the other principles should be observed in the manner in which this sectional and regional planning is co-ordinated and made part and parcel of the central plan. So in the analysis made and the proposals considered in detail in the following chapters these principles will be given overriding importance.

Special Features of Agricultural Planning

Agricultural planning in any country is bound to be sectional planning, since it will comprise only one field of economic activity, however important that activity may be to the national economy. In those countries where agriculture already dominates the scene, agricultural planning will however form the core of over-all planning, and even plans of industrialization, if there are any, will have to be built round agriculture, as the release or formation of the resources needed for industrial development will depend on a careful planning of agricultural activity¹¹. In India where 87% of the population are at present dependent on agriculture, and the bulk of its national income derived therefrom, no planning can be complete or worthy of the name which does not give the primacy of place to agriculture. The character of the basic structure on which the plan is to be superimposed will powerfully affect the nature of the plan, and however much the desire may be to deviate from that basic character, that deviation is bound to be slight in the early stages of the plan. Even after the plan is completed and the economy has attained a new character, the importance given to agriculture will be only relatively, and not absolutely, lower. At no stage therefore in the progress of planning can agriculture be neglected or assigned a secondary role. From the beginning to the end agriculture would need to be planned with as much care and circumspection as any other field of activity.

This need arises not only from the importance which agriculture has in the national economy but also from the special features which characterize it. In all countries, even in the industrially advanced ones, production units are more numerous in agriculture than in any other line of production and lie scattered over large spaces that any kind of associated or collective action on their part is, in the nature of the case, fraught with greater difficulties. The individualistic tendency among agriculturists, strong even otherwise, is reinforced by the circumstances in which they are placed and virtually prevent any kind of co-ordinated activity. This implies that for the purpose of attaining declared objectives, agriculture would require planning from above in a greater measure than other industries. Furthermore, the basic conservatism and lack of progressiveness of agriculturists in general, their incapacity to readily adjust production to changing conditions of demand or

11. See "Agricultural Productivity and Economic Development in Japan" by B. F. Johnston, (*Journal of Political Economy*), December 1951.

respond adequately to environmental changes, coupled with the basic importance to all industry of the staple crops produced and their susceptibility to the impact of international events make it essential that for any kind of order to be introduced into agricultural production planning has to be resorted to. These reasons come to have an added strength in a country like India where agriculturists are proverbially unprogressive and bereft of initiative, where farms are, many of them, tiny holdings and far too numerous and altogether incapable of making appropriate responses to changing conditions and where general prosperity of the land is so much tied up with agricultural prosperity.

But while the need for planning in agriculture is great, the difficulties in its way too are great. The very individualism which characterizes the community and which makes planning imperative, would offer a stiff resistance to any kind of direction from above or outside, and the lack of the requisite sense of discipline among them would not only create administrative complexities, but may also make the execution of plans altogether fitful and uncertain. To evoke their enthusiasm and willing co-operation, age-long traditions and customs will have to be broken down, and this will be neither easy nor painless nor bereft of a true sense of loss. To most small holders the conversion of subsistence farming into farming for a common pool, a change which is inevitable under planning, will be tantamount to a loss of economic security, and from the sentimental and human point of view it would amount to a cutting of one's moorings and a drifting into the open seas without control over one's direction. Recalcitrance and resistance will therefore be fairly widespread, unless through education and propaganda their co-operation is evoked, or, failing that co-operation, some degree of coercion is applied. In a country like India with numerous small holders, either proceeding will be fraught with much difficulty, for the larger the number of units to be brought within the orbit of planning, the greater the educative or administrative problem. The very ignorance and illiteracy of the agriculturists, if wrongly handled, may offer dogged resistance to the planned effort, and entail the employment of an army of overseers and supervisors to safeguard the faithful execution of whatever is planned. In the formulation of plans too, if the procedure indicated in Chapter I is adopted much difficulty will be experienced in reaching agreement, unless through an adequate preparation of the ground and the resolution of village factions and feuds, a favourable atmosphere is created beforehand.

To mention these difficulties however is not to suggest the impossibility of planning in agriculture, but to indicate the need for a full consideration of all relevant circumstances and the formulation of a plan which takes them all into full cognizance. The easy-going habit of taking things for granted will be completely incompatible with planning here, for the only thing that may be taken for granted is that planning is not going to be easy. Under planning everybody is committed to the performance of specified jobs and the production of expected results, and the problem here is whether the agriculturists will be prepared to undertake such commitments or they can be trusted unaided and unsupervised to put forth the endeavour needed to produce those results. To the extent the agriculturists are so unprepared should the plan make provision for such contingency and incorporate in it all measures required for meeting the situation. That is to say, the degree of planning from above required will be in inverse proportion to the willingness of agriculturists to submit to plans.

While the need for planning and the difficulties involved are greater in agriculture than in other spheres of the economy, the principles which should apply are in the main identical with those which would apply to planning in general. Nevertheless the special features of agriculture and the special problems presented by it are likely to give a distinct orientation to those principles. Some of those special features are: (1) the comparative inelasticity in the supply of land area and the limitation imposed by it on activity; (2) the overriding importance of land use to society; (3) the great significance of the institutional arrangements relating to land ownership to the utilization of land; (4) the intimate connection which exists between the stake of the cultivator in land and his productive effort; and (5) the paramount influence of natural phenomena on the result.

The inelasticity in the supply of land area is only relatively to the supply of the other factors, for some increase in it is possible in all countries through reclamation operations and the conversion of uncultivated waste into cultivated land. Such conversions are however severely limited, physically and economically, in densely peopled countries, and so this inelasticity has very definite effects on land utilization. Since land is required for all purposes, agricultural and non-agricultural, and without land no activity can be pursued, this inelasticity brings in the progressive need for the most intensive utilization of the available supply. In agriculture, this need is heightened by the very special place occupied by land

area and makes it imperative that appropriate planning should be resorted to for the purpose of safeguarding maximum use.

Besides, the all-pervasive need for land in every kind of activity and the social necessity for maintaining the proper balance in the activities pursued makes land utilization of overriding importance to society. For what uses the limited land area should be made available is a social and not an individual problem, and its solution can be only in terms of a social plan of utilization.

But such planning will be facilitated only if the institutional arrangements which determine land ownership are made favourable. Those arrangements outside of Soviet Russia fall into a variety of categories at present, but all of them in effect favour individual ownership and individual use. For a social plan of utilization therefore, those arrangements will need to be rehashed and reoriented, and agricultural planning should therefore include in addition to the planning of land utilization, such changes in the institutional framework of land ownership as will provide for the easy implementation of social land use.

This must be achieved without damaging the incentive to productive effort which the sense of private property in land and the full enjoyment of the product of one's effort provides. The importance of the requisite incentive to put forth effort under planned production cannot be over-emphasized, and measures to safeguard that would need to be planned with as much care and foresight as the determination of targets or the allocation of resources. Agriculture has this problem in common with all other industrial activity, but in agriculture the relation between the cultivator's stake in land and his productive effort appears to be closer and tinged by traditional and sentimental considerations, in addition to the purely economic ones.

Finally, the extreme dependence of agricultural activity and the result of that activity on favourable natural phenomena makes planning much more difficult in agriculture and necessitates the provision of adequate margins for non-fulfilment of plans. That is to say, planning of agriculture cannot be so precise as it can be in industry, for in addition to the allowances that have to be made for human lapses, there is also the necessity to allow for unfavourable seasons, irresponsiveness of land and other vagaries of nature.

All this means that planning of agriculture has to be done with an aliveness to the special problems facing it and an awareness of the greater risks of non-fulfilment. It involves extra care and cir-

cumspection and the inclusion in it of not only measures immediately relevant to the attainment of targets of production, but also such measures as will create the context appropriate to the successful execution of planned activity.

These considerations are of peculiar relevance to the planning of Indian agriculture from the overwhelmingly large percentage of population at present occupied and dependent on agriculture, the extreme dependence of that activity on the monsoons and the wide differences in regional conditions. The smallness of the average holding at present, the wide divergences in land tenure systems, the importance of irrigation and the necessity to attain self-sufficiency in food and certain industrial raw materials concurrently with the maintenance of a balance between food crops and money crops are additional circumstances which give to planning a character of its own.

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CHAPTER II

THE BASIC STRUCTURE OF AGRICULTURE

To ensure proper agricultural planning, the first requirement is the constitution of a favourable basic structure for agriculture. This basic structure comprehends the system of land tenures and land rights as well as the system of cultivation or land use adopted. Both may be said to be basic to the agricultural industry, for while the first determines the relation in which the different classes of agriculturists stand to land, the second determines their respective functions in the industry and their proportionate share in the aggregate return. In addition, the legal and institutional set-up relating to land inheritance and transference, the type of farming followed, the size of holdings and the scale of operations will all be germane to it, for they all cumulatively determine the distinctive character of the agriculture of any land and circumscribe as in a ring fence all possibilities of improvement.

That the reform of this structure is the preliminary step in agricultural re-organization will be understood as soon as the importance of this structure in giving form and character to the agricultural economy is realized. In the first place, it is this structure which determines what technical methods and organizational forms may be adopted. Secondly, it determines the kind and degree of incentive provided for the different participants in the work of farming. Thirdly, it determines the relation in which the agricultural economy will stand to the general economy of the country and the kind of balance generated in the latter thereby. For the agricultural economy itself the basic structure provides the background against which all plans have to be formulated, and consequently it conditions the nature of those plans, the chances of their fulfilment and the implementation of a self-generating cumulative process of development. The plans formulated within the existing structure can be only of a modest character and will lack range and scope, for none of those radical changes in technique or organization can be contemplated, and even those measures which are found technically possible may be frustrated in execution by the absence of the proper kind of incentive in the cultivators. The first need, therefore, is to re-orient the basic struc-

ture and introduce into it features favourable to a progressive and expansionist agriculture.

In considering desiderata here and delineating lines along which reform should be effected, it may be laid down as almost axiomatic that the reformed structure should be in perfect accord with the developed industrial structure so as to form a modernized whole with it, and should, in addition, incorporate in it received notions regarding land rights and efficient cultivation. In most old countries, Western Europe not excluded, the agricultural economy, till very recently, remained outside the modernizing process and presented an anachronism in a fast developing industrial civilization. In India too, though the industrializing process has been slow and is still incomplete, the incompatibility of the unchanging agricultural economy with the evolving industrial set-up has been no less marked. This has acted in no small measure as a sort of a brake on industrial development itself. So for facilitating the forward movement in industrial development and, more specifically, for ensuring a regeneration of agricultural activity itself, a structural harmony should be effectuated between the two branches of the economy. In a planned economy agriculture cannot be permitted to be a drag on the general economy.

Such harmonizing does not, however, mean a mere industrialization of agriculture along modern lines, an imitative application of the industrial structure to agriculture, but rather a re-organization in ways which will facilitate an economic utilization of resources with maximum effect. Structure and organization in both industry and agriculture are only means to an end, the end being the maximum production of wealth. If that end could be attained with structural forms which will retain those peculiar traits of agriculture held valuable in the past and still held laudable from the social and human points of view, there can be no reason why they should not be preferred to a mere imitation of industrial forms. In most old countries agriculture is not just business, but rather a way of living, hallowed by tradition and kept in being by the peculiar institutional set-up raised round about it. To make it more business-like and economically efficient should be one of the aims of reform, but in doing it the strength of the affiliation which the agricultural community has to some of those institutions should be recognized and a realistic and practical approach to the question should be made. Land ownership and cultivation have for long ages formed the centre of the rural social organization that any great wrench from the present state will cause such an

upheaval in the social framework as to break it altogether. What has painfully been achieved in Russia under revolutionary conditions and totalitarian methods will not be open to other countries strongly tied to the democratic ideal. A peaceful transition from an inefficient and degenerate structure to an efficient and buoyant one, capable of preserving itself without external props and, if need be, transforming itself into higher forms in course of time, is all that a democratic context will permit.

The resultant structure, though it may fall short of the ideal and may lack some of the attractive features of the industrial structure, can still function as a working partner with it and help to form a unified whole.

In deciding upon the different elements of such a structure, there are a few fundamental questions to be settled first, viz. in whom should the ownership of land vest, whether intermediaries should be permitted between the State and the actual tiller of the soil, what functions and status should be assigned to the landless proletariat, and what should be the operating unit in farming.

On the question of ownership of land the view is widespread today that it should vest in the actual cultivator. Recent agrarian reforms in Central, Eastern and Southern Europe under which the larger estates have been broken up and settled as smaller holdings, the zamindari abolition movement in India seeking to replace the zamindari tenure by the ryotwari tenure and the restrictions placed on alienation of land to non-agriculturists in many countries have all been in pursuance of this growing view. But nowhere have these measures been carried to their logical conclusion and non-cultivators completely excluded from ownership. Political as well as economic expediency has dictated moderation in their application. But the principle once accepted is bound to secure progressive realization, and in course of time all the non-cultivators will have to face expropriation. In this view there is the tacit assumption that individual ownership of land should be preferred to State or collective ownership. These latter categories, however, are not serious alternatives to the first, outside of socialist economies, and most Committees and Commissions on agrarian reform have dismissed them as inconsistent with prevalent notions on land rights. As far as India or the State of Madras is concerned State ownership *versus* individual ownership is no longer a live issue, a sort of practical compromise between the two having been achieved under the ryotwari tenure. The emphasis is now on securing adequate rights to the cultivator in order to provide the required incen-

tive for efficient cultivation. But the issue between collective ownership and individual ownership is now joined and has grown in importance with the successful working of collective farms in Soviet Russia and other communist controlled countries. Collective ownership of land in this country, however, can be contemplated only in the event of collective farming being adopted as the general type of farming. Collective ownership and collective farming obviously go together, for land owned collectively can be easily cultivated collectively, and collective farming as it is practised in those countries where it exists has collective ownership as one of its essentials. Even the proposal of joint village management originally made by Mr. Tarlok Singh and recently recommended for adoption in India by the National Planning Commission would require for its speedy and successful implementation collective ownership of all the land in a village. Doubtless joint village management under individual ownership of land is conceivable, but would carry with it a logical inconsistency, and ownership there would be reduced to a nominal position, devoid of all its natural prerogatives. Both collective farming and joint village management would be conditioned in India by the possibility, political and economic, of replacing individual ownership by collective ownership of land, and so the issue between these two is really anterior to the decision relating to the type of farming or management to be adopted. Viewed thus, there is hardly a case for collective ownership of land after such a long period of individual ownership and the consequent disappearance of the old community feeling in villages. The Congress Agrarian Reforms Committee, the Land Revenue Reforms Committee of Madras and the National Planning Commission have all rejected collective farming as a desirable general type in this land mainly on the ground that the collective ownership of land which it involves would not be acquiesced in by rural folk. The desire to hold land is so strong among them that they will not, except under a degree of duress unthinkable at present, agree to part with their lands. This apart, in the absence of that high degree of community feeling which appears to have characterized the village communities of olden days, there would be a lack, in collective ownership of land at present, of the requisite incentive for efficient work. So neither economically nor politically or socially can collective ownership be deemed expedient. Under the proposals made by the Congress Agrarian Reforms Committee village communities will be vested with some land rights, or at any rate with the social control of land use, but such rights will not be tantamount to collective ownership of land.

Both State ownership and collective ownership being thus deemed inadvisable in the circumstances of this country, the only possible basis for a proper system of land rights is individual ownership of land. But whether this should be peasant proprietorship where the ownership is vested in the cultivator himself, or some type of landlord tenure where there will be the divorce of cultivation from ownership, or a mixture of both, as exists at the present time over large areas of the country, is a question which can be answered only with a full sense of the realities of the situation. Consistent with the growing opinion, it may be easily said that ownership should be vested in the cultivator. The "cultivator" has been defined in the Bombay Tenancy and Agricultural Lands Act, 1948, as one who cultivates land on one's own account (1) by one's own labour; (2) by the labour of any member of one's family; or (3) by servants on wages payable in cash or kind, but not in crop-share, or by hired labour, under one's own personal supervision or the personal supervision of any member of one's family. This definition has been accepted by the Malabar Tenancy Act and by the Madras Land Revenue Reforms Committee. Under this definition, which by the way is wider than the usual connotation of the word, cultivator is made synonymous with agriculturist and owners and farmers of large mechanized farms will be included, provided they carry out the work of management and undertake the risks of the enterprise. Even owners residing at a distance and supervising through a member of the family will be deemed to be cultivators. This is perhaps too elastic a definition, and if adopted in the matter of vesting ownership, will create a class of owners whom it is not the intention of public policy or of social objective to perpetuate as owners. Residence of the owner in the locality and personal supervision by him, if he is not incapacitated in any manner, as suggested by the Agrarian Problem Enquiry Committee of Cochin (para 87), should be insisted upon if absentee ownership is to be finally eliminated.

But even with this modification in the definition, the real problem to be assailed is whether in existing circumstances, it can be given immediate effect to in the matter of vesting ownership. The large numbers of absentee owners or non-cultivating proprietors as they are classed in Census returns, will have, then, to be dispossessed of those lands which they now lease out to tenants, and the tenants, the actual cultivators, will have to be persuaded to become owners on such terms as the State may decide. The fear expressed by the Congress Agrarian Reforms Committee and the

Madras Land Revenue Reforms Committee in such procedure is that it may so drastically upset the agrarian economy as to defeat the main objective of the reform. While certain classes of owners will be dispossessed, certain classes of tenants too will have to be dispossessed of the lands they cultivate, for in the constitution of the new owners, principles applicable to economic farming will have to be observed. (It will mean also a virtual prohibition of tenancy which is playing today such an important part in agrarian economy.) Furthermore, the tenants should be financially able to meet the compensation payments and should feel it to be in their economic advantage to do so. If the tenants are expected to assume the full liability of ownership immediately, it is very doubtful if many of them would find farming profitable with a heavy load of debt to start with. In Eastern Europe, many former tenants of the fideicommissa, preferred to remain as tenants of the land settlement organization on the break up of the larger estates, rather than become owners of heavily encumbered property. The financial and economic difficulties in the way are real and, if not overcome by appropriate State policy, will frustrate the contemplated reform of land rights, but the more formidable obstacle alleged, viz., the discharge from employment of a large body of erstwhile tenants, will be the result not so much of the transfer of rights as that of the economic organization of farming which is inevitable in any kind of agricultural reconstruction whether it be accompanied or not by a reform of land rights. So the question whether the bigger landowners should be dispossessed of those lands which they do not get cultivated themselves and the ownership over those lands vested in the cultivators really turns on the justifiability of the step, *vis-a-vis* the landowners and the financial resources of the State and of the new owners to incur the liabilities involved. As regards the first, the principle of the thing has already been accepted in zamindari abolition, and it would be only a logical and perfectly just extension of the principle to apply it to the non-cultivating proprietors under the ryotwari and janmi systems of landholding. In fact the arguments advanced in favour of zamindari abolition apply with equal force to the intermediaries in other systems as well, and the State would be guilty of following an inconsistent and partisan policy if such an extension of the principle does not take place. As regards the second, the procedure adopted in zamindari areas of the State, paying compensation to the dispossessed owners and effecting a ryotwari settlement directly with the cultivators is available in other areas too and the financial liability as far as compensation is concerned is unlikely to be heavier than in the case

of the zamindaries. Considered from all points of view, therefore, the principle involved in zamindari abolition has clinched the matter, and the State cannot at this stage re-open the question whether ownership should be vested in the cultivator or not.

But the procedure to be adopted in the ryotwari areas of dispossessing the rent receivers and vesting ownership in the actual cultivators will have to be materially different, for legal and financial reasons, from the one contemplated under zamindari abolition. In the latter case, after the estates are taken over by the State a new settlement on a ryotwari basis will be effected with the ryots holding pattas under the zamindars and they will be required to pay the ryotwari assessment directly to the State. They will not be expected under the legislation that has been passed, to pay a purchase price for the land which would be vested in them as owners, though the State would be paying compensation to the zamindars. The presumption here, obviously, is that these patta-dars would have been the owners of their holdings had not the permanent settlement been effected, and so vesting ownership in them now would merely amount to a redress of an ancient wrong. While this is the legal justification for the contemplated procedure, financially also it is expected to be sound, in as much as the State would be deriving, under the new arrangement, a revenue in excess of the Peshkush which it has been receiving hitherto from the Zamindars. This excess could be utilized to meet the expenses involved in effecting a ryotwari settlement of the estates and to liquidate any debt which the State may have to incur in order to pay compensation.

But if the principle of vesting ownership in the cultivator is extended to the ryotwari areas and the rent receivers there are dispossessed of their lands, the legal and financial implications of the step will be different. The cultivators here cannot put forward any claim to the proprietorship of their holdings, and so the conferment of ownership on them will have to be made contingent on their agreeing to pay a purchase price. And financially the State will be compelled to insist on this price, as otherwise there would be no source of revenue open to it for recovering the compensation payments. Revenue accruing to the State here will in no wise rise as a result of the transfer of rights from the rent receivers to the cultivators. However the Congress Agrarian Reforms Committee, the Madras Land Revenue Reforms Committee and the Planning Commission have accepted this transfer of rights as the ultimate

objective of land reform.¹ But while the Congress Agrarian Reforms Committee is uncompromising on this question and would without exception severely limit the maximum size of a holding to three times the economic holding, the Land Revenue Reforms Committee would permit, 'as a measure of expediency', the existence of tenancy in order to avoid too sudden and drastic an unsettlement of economic and social conditions.² And this measure of tolerance is not to be a transitional one, but a permanent measure, since they see no valid reason to take any particular measures to eliminate non-resident landholders³ or to suppress the landlord tenant system⁴. The maximum size to the holding they have fixed⁵ will operate only in the matter of future acquisitions and will not be implemented in the case of existing estates. The ideal they have accepted, therefore, will not be reached in the perceivable future, nor will policy be deliberately directed to its attainment, but will have to be realized in course of time through the agency of such favourable forces as exist in the economy.

In the thinking of both these Committees as well as of the Planning Commission the idea of a maximum size to the holding is linked with the idea of vesting the cultivators with ownership. This is obviously due to their preoccupation with the necessity to effect a wide and equitable distribution of land among the cultivators and adopt a policy and a system of agricultural organization which will provide employment for as many of the rural population as possible. In the case of the Congress Agrarian Reforms Committee there was also the additional objective of limiting the size of individual income and thereby stopping the exploitation which, in their view, is the source of all very high incomes. In view of these objectives the technique of farming was taken as given and mechanization and large-scale production were excluded from consideration from the very beginning.

But the idea of a maximum size to the holding is not really germane to the question of vesting the cultivator with ownership, and cannot be conceived except on the basis of some given technique of farming. Even so it is bound to be arbitrarily determined,

(1. Report of the Congress Agrarian Reforms Committee, p. 24; Report of the Land Revenue Reforms Committee, p. 8; Final Report of the Planning Commission—Summary.)

2. Report, p. 8.

3. Report, pp. 30-31.

4. Report, p. 42.

5. Report, p. 12.

as is only too evident in the specific proposals made by the said Committees. Three times the 'economic holding' as the limit suggested by the Congress Agrarian Reforms Committee (endorsed later by the Planning Commission) or a holding carrying an assessment of Rs. 250 as recommended by the Land Revenue Reforms Committee are both based on the intensive non-mechanized technique of farming and are arrived at arbitrarily and bear no relation to the notion of an optimum farm. Both considerations on scrutiny will be found to be objectionable. Stereotyping existing technique displays an unprogressive attitude and an arbitrary determination of size, an utter disregard of the economics of the matter.

The reformed system of land rights, if it is to serve as an effective, helpful and elastic basis for progressive agriculture, should provide for improvement of technique and organization in the same way as it provides a new incentive for work and enterprise and a new attitude of mind to the business of farming. A rigid determination of maximum size is hardly conducive to this, and except that it gives effect to some sort of equititarianism in steam-roller fashion, it contributes nothing to making agriculture more productive or more profitable or engendering in individual cultivators those spurs to activity which are the real springs from which national prosperity flows. From the point of view of agricultural production, mechanized farming or large farms, if carried out by cultivators, should be welcomed, and if large estate owners should take to such cultivation rather than leave their lands to tenants, there cannot be any objection to their retaining such estates in ownership. Full opportunity should be given not only to existing but even to prospective large owners to turn increasingly to mechanized cultivation, and to facilitate that the State should refrain from limiting the size of an holding. All that would be necessary to give effect to the new conception of land rights would be to adhere to the strict definition of a cultivator and insist on residence in the farm and personal management and supervision by the owner.

The new system of land rights, however, would entail the prohibition of tenancy of all kinds. The existing tenants should be converted into owners of the lands they cultivate. But in doing so the present owners should be given the opportunity to take over from the tenants such land as they require for own cultivation if they so desire, subject to the condition that the farm organized thus is a compact farm worked under personal supervision. Further-

more, the tenants who would be given proprietary rights over the lands they cultivate, should have the minimum size prescribed by law and be willing to purchase the ownership rights either immediately or over a period of time. Such of those tenants who are already cultivating the minimum size will be faced only with the problem of purchase, and if they signify their willingness to assume that liability, a settlement can be effected with them straightaway. But in the case of those whose holdings are smaller than the minimum, a choice of new owners will have to be made, for it would not be advisable to perpetuate all of them as owners of sub-marginal farms. The number to be selected may be determined with reference to land area available for allotment, and the individuals may be selected on the basis of the comparative magnitude of their existing holdings and their willingness to assume the liability of ownership. This would mean the discharge of quite a number of existing tenants from the work of cultivation. They will either degenerate into the position of landless labourers or leave the agricultural economy to seek other avocations of life. This problem of unemployment which this policy will cause, is not one which can be lightly generated, for its solution is not easy and the consequence of leaving it unsolved will be more damaging to the economy than the improvement to it which the new settlement will effect. This has been the reason why the Committees and Commissions investigating this problem, fully alive to the realities of the situation, have refused to go the whole hog of the principles they have deemed to be right and advocated a measure of compromise to suit the practical problems emerging. Thus the Land Revenue Reforms Committee of Madras would permit the continuance of tenancy and also the existence of smaller holdings than the economic ones provided they are large enough to secure an adequate return on the investment made. In like fashion the Congress Agrarian Reforms Committee have expounded the concept of a basic holding, smaller than the economic holding, to serve as the standard unit of cultivation, but would nevertheless permit the existence of sub-basic farms. The idea behind the fixing of the minimum size for a farm at as low a level as possible is to provide land to as many cultivators as possible with a view to keeping as large a percentage of the rural population employed in agriculture and to satisfy, as the Minute of Dissent to the Congress Agrarian Reforms Committee Report has stated, the traditional hunger for land.⁶ But the retention of tenancy is not really necessary for this purpose, and

6. Report, p. 185.

so the Land Revenue Reforms Committee's findings in favour of its retention have to be attributed to their recognition of its intrinsic qualities and the practical difficulties involved in its prohibition. This specific recommendation regarding the continuance of tenancy is in keeping with their refusal to apply their maximum size for the holding to existing holdings, for if existing holdings larger than the maximum are allowed to exist, their cultivation would require the continuance of tenancy. All the same it goes against the view categorically expressed that it should be the aim of policy "to make cultivation and ownership increasingly coincide".⁷ If emphasis is placed on this, as has been done earlier in this Chapter, the problems of tenancy can be given the quietus it deserves, and the elaborate and nicely balanced arrangements suggested for ensuring fair rents and fixity of tenure can be eliminated. Under this arrangement owner cultivation will completely replace tenant cultivation; the existing tenants will be vested with ownership; the number productively employed in agriculture will hardly experience a diminution, and the standard of cultivation will be all the better for the replacement. The only uncertain factor is to what extent present tenants will be able and willing to become owners.

But the measure which will really create the problem of unemployment and rural unrest is the fixation of a minimum size for the holding. This, as has been pointed out earlier, is a requirement under economic farming or agricultural reorganization and is not directly germane to the question of land rights. Nevertheless it has bearings on it which cannot be ignored, and so it has to be examined in relation to both.

Three different concepts regarding the minimum holding have emerged in recent discussions of the question in this country: the economic holding, the basic holding, and the unit of profitable cultivation. The economic holding is a well-known category and requires no re-definition⁸. It carries with it the idea of full employment and a comfortable living standard for the family— notions which have been accepted as satisfactory criteria for the determination of minimum size. The basic holding is a novel concept, enunciated by the Congress Agrarian Reforms Committee and defined by the Land Revenue Reforms Committee as "a holding smaller than which would be palpably uneconomic from the point

7. Report, p. 8.

8. The Planning Commission's Family Holding is identical with this.

of view of efficiency of agricultural operations".⁹ The Congress Agrarian Reforms Committee's own definition is that it would be smaller than an economic holding but is not palpably uneconomic and would be capable of being built up by acquisition or otherwise into an economic holding". The unit of profitable cultivation is the one advocated by the Land Revenue Reforms Committee of Madras and precisely defined by them as one "on which an average family consisting of four persons working with ordinary prudence and diligence and with ordinary resources can secure an adequate return on the investment made". Of these three concepts, the second and the third palpably relate to productivity, physical or value, which makes it worthwhile to continue farming, while the first is related to the notion of a family and its requirements. The second and third concepts view agriculture or farming merely as an enterprise which gives an output not incommensurate with the input of the factors, man days put in by labour and the maintenance and depreciation costs of the live and dead stock. Viewed thus agriculture would be found profitable and productive from a purely business point of view and so could be carried on to the benefit of the aggregate national income. The idea behind it is that any organization, however small, which adds to the aggregate national income as much as or more than it takes away is for that reason economically beneficial. No account is, however, taken of the waste of resources involved, through the under-employment of those employed or the lack of any opportunity to maximize the return and minimize the cost or the insufficiency of the income of the participants to secure a tolerable living standard. These are important considerations and should be used as criteria in determining the minimum size. And the fact that neither in the 'basic holding' nor in the 'unit of profitable cultivation' these criteria play a part would seem to detract from their value or utility as concepts of minimum size.

On the other hand, the 'economic holding' is satisfying on these counts and is the concept which has received wide acceptance in all countries where farming is organized round about a family. While ensuring the efficiency of agricultural operations and an adequate return on the investment made, it will enable an economic utilization of the factors, provide a sufficiency of income to the cultivator and under given technique maximize the return and minimize the cost. This is admitted on all hands, and even those

9. Report, pp. 19 and 20.

Committees which have advocated the adoption of the other concepts to determine the minimum have done so not from a dissatisfaction with this, but from the practical necessity of providing as many agriculturists as possible with land.

The question then arises whether it is not advisable to make this the point of departure in agricultural organization. From the ideal standpoint there can be no doubt that all holdings should be of the economic size, and individual cultivation of sub-economic farms should be prohibited. This policy may be given effect to either by the provision that the economic size should be the minimum for cultivators or that sub-economic farms though permissible under the law governing landholding, should be cultivated only jointly with other such farms. It would appear, then, that the minimum fixed for individual cultivation need not necessarily be the minimum for landholding. The requirement as regards economic organization and the desideratum in the matter of landholding can be effectively reconciled in the possibility of joint farming of the smaller farms. This in effect is the recommendation made by the Congress Agrarian Reforms Committee, with the difference that they have adopted the basic holding which is smaller than the economic holding, as the line of demarcation¹⁰. Since, however, the economic holding is from the economic point of view superior in conception, it seems better to adopt that as the dividing line.

But whether sub-economic holdings are completely banned or they are permitted only under a system of joint cultivation, the new arrangement is bound to generate some unemployment in the countryside. That seems inevitable under any kind of agricultural reorganization and is really the price that has to be paid for a more efficient system of cultivation. How this problem may be tackled and the unemployed absorbed in other avocations of life requires serious consideration and will be dealt with in the later chapters of this book.

The Land Revenue Reforms Committee, Madras, have calculated that if 10 acres of wet or 15 to 20 acres of dry land be taken to constitute an economic holding in Madras, the reconstitution of sub-economic farms into economic farms will displace three-quarters of the cultivators now cultivating sub-economic farms in the ryotwari area, either as proprietors or as tenants, or in absolute

10. Report, pp. 25 and 26.

numbers about 48 lakhs of cultivators. On the other hand, if the calculation is based on 5 acres wet or 10 acres dry as constituting an economic holding, half the number of cultivators cultivating sub-economic farms will be displaced. This rate of displacement is undoubtedly alarming, and in the absence of other avocations to absorb the displaced people, cannot be thought of at all. A continuance of these sub-economic holdings under a system of joint cultivation will also displace some of the existing cultivators, but the displacement is likely to be less, its exact magnitude, however, depending on the technique adopted in the joint farms set up. If mechanized cultivation is adopted, the displacement will be large, larger than would be involved in the formation of economic farms, but if scientific intensive culture is adopted, the displacement is not likely to be higher than 18 to 20%. Even this lower rate would absolutely involve 13 lakhs of cultivators in the ryotwari area.¹¹ How many of these 13 lakhs are non-cultivating proprietors or non-cultivating tenants cannot be assessed before the publication of the Census figures of 1951. According to the 1931 Census there were about 6 lakhs of non-cultivating proprietors and tenants in the province, both ryotwari and zamindari areas taken together. On all accounts, therefore, the numbers involved will be large and so special measures will be required to meet the situation.

The inevitable up-surge of this problem has obviously prevented the Land Revenue Reforms Committee from fixing the lower limit for farms at the economic level. They appear to have been concerned also with the need to enable landless labourers and tenants to purchase land and attain the status of landowners. In like manner, the Congress Agrarian Reforms Committee too recommend the continuance of 'basic holding' and even their cultivation on an individualistic basis on sociological grounds which, according to them, are sometimes weightier than pure economic considerations in the formulation of economic policy. The hesitation of the Committee to adopt a policy which will involve much displacement of employed personnel is understandable and can easily be conceded as a valid ground, but their eagerness to satisfy the land hunger of the landless, even at the risk of an inefficient and uneconomic system of cultivation, is a concession to sentiment not warranted by the objective circumstances of the case. What the landless labourers and tenants in their true and long-run interest need is not ownership over a plot of ground which when cultivated

11. No data are available relating to the zamindari areas.

would yield an incommensurate return to effort, but a higher income and a better living standard which a heightened agricultural productivity alone can occasion. It is one thing to dispossess existing owners, for that would generate a grievance and a hostility, fatal to the smooth operation of re-organized cultivation, another thing to formulate a policy which will have the net effect of deliberately perpetuating and aggravating the canker in the body economic.

So it should be laid down as a general policy that fresh acquisition of land by an agriculturist, either in occupied or newly reclaimed areas, should not be of an extent less than what would make an economic holding. In occupied areas those who already have sub-economic farms may acquire enough land as will make, together with their old holdings, new economic holdings, but in newly reclaimed areas assignment should be only of economic holdings. Under this arrangement landless labourers and tenants who do not possess any land of their own already will be prevented from acquiring afresh anything less than an economic holding. Such a provision will naturally stand against their chance of possessing at least a tiny plot of land, but this prohibition, on the argument advanced above, will be seen to be well grounded in the true interests of society as well as of the individuals concerned.

As regards existing uneconomic holdings, no minimum size applicable to them need be fixed, but there should, nevertheless, be the stipulation that they may not be further sub-divided and fragmented and that their cultivation should be jointly with other holdings so as to form at least economic cultivating units. This means that joint farming should be compulsory for such farms and that the law relating to sub-division and fragmentation of holdings should prohibit, first, the sub-division and fragmentation of any sub-economic holding except to form new economic holdings, and secondly, such sub-division and fragmentation of economic and supra-economic holdings as will result in the formation of sub-economic ones. The contemplated law in Madras, as embodied in the Madras Economic Holdings Bill, makes such a prohibition, but the economic holding is there defined as the minimum unit required for profitable cultivation, and not, as has been done in this Chapter, as a unit which will ensure full employment and a comfortable standard of living to the family. A revision of the definition of an economic holding in the Bill is, therefore, required. The extent of an economic holding will vary from locality to locality and from class to class of soil, and therefore in determining the economic size

these circumstances must be kept in view. The best way to do it is, as the Land Revenue Reforms Committee have stated, to conduct a set of pilot enquiries in selected areas with reference to the representative types of cultivation. The sizes so determined should be notified as the economic sizes for farms in those areas and for particular types of cultivation.

In furtherance of this policy, as also in furtherance of the policy of vesting the ownership of land in the cultivators themselves, all further alienation of land to non-cultivators should be prohibited. This virtually follows from the suggestion made above that tenancy should be eliminated from the agricultural economy. It is identical also with the recommendation made on this behalf by the Land Revenue Reforms Committee, though they have not banned tenancy. The prohibition would apply to non-cultivators and not as in the case of the Punjab enactment to non-agriculturists, and so the field would be left open to new entrants to set up as cultivators even though they belong to non-agricultural classes. This would meet the criticism levelled against the prohibition of sale to non-agriculturists that there are no non-agricultural classes, strictly so, in this country and that such prohibition would unduly depress land values and reduce the credit-worthiness of the owners.

Under these arrangements existing landless proletariat will have slender chance of setting themselves up as owners, but will have to continue to labour on the farms of others as farm servants or as agricultural labourers hired by the day. Their numbers are also likely to be increased by the addition to their ranks of those tenants who fail to secure positions as landowners. In the larger farms throughout the year and in the smaller farms during the busy agricultural season there will be work to do for these, but it is very unlikely, under a system of rationalized employment, that all of them will secure work. The problem of diverting them to other employment in rural or urban areas will exist, and will have to be faced. The retention of landless proletariat as such in the new structure need not, however, be considered a drawback, for they would represent only the rural counterpart of wage labour in other sectors of the economy who, in any event, would persist, planning or no planning. If the elimination of wage labour is not a practical proposition in the industrial sector, there is no reason for any one to cavil at the impracticability of eliminating the landless proletariat from the rural economy. Their numbers should, however, be reduced to the minimum required for efficient cultivation and an

adequate income should be vouchsafed to them through the fixation of minimum wages and the provision of subsidiary occupations.

Thus under the alterations suggested above, landownership will be vested in the cultivators themselves without either an upper or a lower limit as to the size of the holding. Tenancy will be abolished. Individual cultivation will be permitted only on economic holdings. All sub-economic holdings will be under compulsory joint cultivation. Sub-division and fragmentation of holdings below the economic level and alienation of land to non-cultivators will be prohibited by law. Landless labourers will continue as such, but with minimum wages fixed and subsidiary occupations provided for them. Such a basic structure will be characterized by efficiency and elasticity and will form a proper background for the conduct of progressive agriculture.

CHAPTER III

TARGETS OF PRODUCTION IN AGRICULTURE

Whether economic planning would inevitably lead to the formulation of a plan or not has been a subject of controversy among writers on planning. Critics of a planned economy, such as Mises, Hayek, Lippmann and Robbins have categorically stated that to be meaningful a planned economy should be based on a single, central plan. On the other hand, democratic socialists like Durbin, Sweezy and others have denied the necessity for a single plan, interpreting economic planning merely as central administration of the economy, a method of taking economic decisions from the purview of the whole economy. That economic planning can be carried out without a plan is a little difficult to accept, and when the democratic socialists say so, one suspects that they give their exclusive attention to the 'process' to the neglect of the 'objective' or the 'result' of planning. The process is doubtless a central administration of the economy, a shifting of the responsibility of taking economic decisions from the individual producers to a public corporation acting under the directions and oversight of the supreme economic authority. But the objective behind the process of central administration must be the co-ordination of those individual plans which otherwise would have emerged, and the result of the process must be the formulation of a broad social plan of production. This much is admitted by the socialist writers. Durbin, for instance, admits that it would be necessary to draw up 'statistical budgets' of production for long periods ahead indicating requirements, and Sweezy concedes that from an estimation of demand based on population statistics, consumers' income, the distribution of income by size and the expenditure patterns of typical consuming units in each size class, production can be planned, subject to adjustment when necessity arises. In final upshot, therefore, the two conceptions of planning would appear to differ on the exact meaning given to the term 'Plan'. The first class of writers stress the rigidity of the plan once it is formulated and put into execution, while the second class claim a certain flexibility for their plans of production. Under both conceptions the need for the determination of targets emerges, the difference appearing to be only in the method employed and the basis adopted for their determination.

In determining the target of production in any particular line, it is possible to make two different approaches. One may, for instance, proceed on the basis of what the people in authority consider, from an idealistic or social point of view, to be the quantity the community should have of any particular commodity or service, and fix the target accordingly, or, on the other hand, a target may be deduced from an estimate of the probable demand of the people, exercising free choice under a given income level and a given system of distribution. Under the first system there would arise no need, except under special circumstances, such as, an abnormal and unexpected reduction of the population, to alter the target or the plan of production at a later date, for what is ideally desired would continue to be so for long periods at a stretch. But under the second system, since the target is closely related to the demand of the consumers, it should alter with every alteration in their preferences, and if at any time, supply of a commodity should exceed the demand as actually realized, the target will have to be altered at subsequent stages on the basis of the inventories. However in actual practice, as is clearly seen even in those countries where the totalitarian ideology obtains, targets will in most cases be built up from below and not imposed from above, and therefore consumers' preferences and habits of expenditure will duly get reflected in them. An extreme rigidity for the plans or a great deal of flexibility would, therefore, be both unreal assumptions when related to the actual formulation and execution of plans. Great flexibility is posited for the plans by the democratic socialists in their eagerness to retain in the economy 'consumer sovereignty', but that this is a futile attempt and that this sovereignty is bound to be subjected to restriction and modification will become evident when one probes into the aims and objectives of planning. Those aims and objectives are ostensibly to give a social import to production and an ascendancy to social interests when in conflict with individual interests. These cannot be pursued without a suppression, in some measure, of the freedom of the consumer and the producer. The sooner this is conceded, the better it would be for a proper appreciation of the nature of a planned economy and the conditions and limitations under which plans have to be formulated and implemented. The correct position would then appear to be that a planned economy cannot work without plans, but that these plans need not be so rigid or unalterable as the critics of planning suppose. In formulating these plans, consumers' choice should be given proper weightage, subject to the overriding necessity to give effect to acknowledged social objectives.

Naturally it follows that one of the most important steps involved in implementing a planned economy is the formulation of plans of production. Such plans would contain over-all targets in all lines of production, their break down by periods as well as by regions, localities and producing units, estimates of resources required to effectuate the production, broad allocation of those resources, specification in general of the methods to be adopted and the most suitable organizational set-up and a detailed delineation of the administrative machinery designed to execute the plans. These requirements will characterize the over-all as well as the regional or sectional plans and will on examination appear to be the inherent qualities of such plans, whatever be their scope or range.

In fixing targets of production, availability of resources and the requirements of the economy are both basic data, and to which of these priority should be assigned would depend upon the prevalent flexibility in the quantum of resources and the urgency of the requirements. If some flexibility can be postulated in the quantum of resources, that is to say, if the resources which can be made available in any particular line, may be increased at will through a diversion from other uses or through an over-all increase of them, targets may be based exclusively on the requirements of the economy. Within limits it is always possible to increase the resources at command, be it land, labour, capital or enterprise, and so a planned economy can proceed on the assumption that the resources available in those lines of production to which top priority has been assigned are greater than are normally employed in them. Nevertheless, taking resources as a whole and making full allowance for possible increases, initially and at subsequent stages, they will be seen to set limits to aggregate production, and if targets taken together are to be realistically conceived, this limitation should be strictly kept in view. The system of priorities adopted will specify in which lines of production targets may be exclusively based on requirements and in which lines they will be severely restricted by availability of resources. Thus estimates of resources, the scheme of priorities and targets of production have all to be worked out concurrently, if realistic plans are to be evolved.

Applying these considerations to the subject of study in these pages, an attempt is made to determine targets of production for the principal agricultural commodities in Madras, taking into account consumer requirements as well as available resources. It goes without saying that the principal objective of planning in Madras agriculture is an expansion of production for the twin pur-

pose of making up deficiencies intensely felt to-day and increasing the aggregate output of real wealth in agriculture. Being a predominantly agricultural state, an increased production of wealth as a whole would, in the first place, wait upon agriculture contributing its due share to it, and in the second place, would mean raised incomes for all sections only if the agricultural community shares in it equally with the industrial. Furthermore, as investigations by authoritative bodies in other countries have revealed, in underdeveloped countries generally, agricultural development should lay the basis for industrial development, and the early stages of a plan of development will or should more or less confine themselves to investment in agriculture¹. Doubtless, India is not so under-developed as some of the other countries visualized by these bodies, nevertheless, the low productivity of Indian agriculture would render the adoption of such a policy equally imperative here.

In planning for increased production and determining targets in various lines, the scale of current production in terms of real wealth and the desirable quantum of that wealth should serve as basis. But wealth and not money value should be adopted as criterion, for, in the first place, targets have necessarily to be in real terms, and secondly, it is only thus that social need can be given priority over individual advantage. The alternative criterion would be money value, but under it there will be no guarantee that the socially desirable commodities will be produced in right quantities. Under a criterion of money value, aggregate money income as well as individual incomes will, doubtless, tend to be at highest points, nevertheless there is the danger of there being in the economy a shortage of essential consumers' goods. The present shortage of food in this country is an instance in point, for, without a doubt, one of the factors responsible for it is the higher money return in non-food crops. In Madras it has been found that on the basis of 1947-48 prices, the normal return per acre in non-food crops (taken generally) is over four times what it is in food crops. Under an exclusive criterion of money value, food crops will be replaced by non-food crops to the great detriment of social interests. In this particular example, the imbalance has been partly caused by the control scheme operating in the case of foodgrains, nonetheless, it helps to bring out the point that an exclusive adop-

1. See 'Agricultural Productivity and Economic Development in Japan' by B. F. Johnston, (*Journal of Political Economy*), December 1951.

tion of money return is liable to give an undesirable tilt to productive activity. When it is realized that increased wealth production is not desired in itself, but only as a means to the ultimate raising of living standards, the emphasis placed on real wealth, its quantum and its component, will be seen to be the proper thing to do in planning production. The study of current production is important, for a plan can only be built upon the existing structure and has to take into account the existing imbalance, the deficiencies experienced, the maladjustment between consumer demand and productive activity and the prevalent system of land utilization.

In accordance with these principles we may now proceed to determine targets for the various agricultural commodities in the State. This can be done, as stated earlier, only if concurrently priorities are assigned and an estimate of resources made.

Among agricultural commodities, rice and the millets form a homogenous group and can be treated together under the generic term of foodgrains. In view of the food scarcity experienced in recent years and the acute crisis which prevails even now, without a doubt, top priority can be assigned to their production. For the last three decades and more now, cereal production in the State has been drawing farther and farther away from population, giving rise to a serious and widening gap in production. Filling up this gap completely is a prime requisite from the point of view of the State as well as that of the whole country. Even in Undivided India a little over a third of the over-all Indian deficit pertained to this State and caused a grave problem to the Central Government. And now that the surplus grain producing areas have been absorbed into Pakistan, the Indian problem on account of this State has been rendered more difficult.

The solution for this problem, as commonly assumed, is the attainment of self-sufficiency in foodgrains for the country as a whole. But for that to be attained, the deficit units, especially those ones which have larger deficits, must adopt self-sufficiency as their regional objective. This would, however, be an important decision, and should not be taken without a proper consideration of the issues involved.

The fact that there has been a continuing and increasing deficit in a predominantly agricultural State as Madras is itself very significant. In the pre-war period it was obviously due to the higher cost of production relatively to imported grain, and in the war and post war period to the control imposed on grain prices.

In both periods the high cost of production and the insufficiency of the prevailing price to cover that cost have been the factors responsible for inadequate production. Conditions will remain unchanged if nothing is done by way of reducing costs, and under a policy of self-sufficiency the prospect will be higher grain prices. That this is the price that consumers as a body will have to pay for self-sufficiency has to be fully appreciated before adopting that policy. The inevitability of this is also reinforced by the consideration that any replacement of cash crops by food crops will reduce the aggregate money income of the agricultural community, unless grain prices are allowed to rise and make the money return per acre under food crops correspond to the money return under non-food crops. A fall in aggregate money income of the agriculturists will directly have the effect of reducing consumption, including food consumption, so that in the final upshot increased food production may well be accompanied by a fall in the demand for food. Planning of food production would thus involve not merely increasing production, but also concurrently generating the requisite demand for it. And this would require a raising of food prices so as to keep aggregate income at the level required to maintain production.

It is doubtless true that low food prices while they mean low money incomes will also mean low consumption costs, but the difficulty is that the burden of low food costs for the community will be thrown entirely upon the food producers who under a policy of self-sufficiency will form the large majority of the cultivators. So to introduce greater equality into the relative incomes of food and non-food producers, as well as to equate costs with prices and to maintain aggregate money income at the desired level, food prices will have to be raised.

This necessity is not stated here for the purpose of condemning self-sufficiency as a policy, but rather to urge the importance of implementing other policies too appropriate to the new situation, in order to make the initial policy effective and beneficial. In fact, taking into consideration the domestic situation of the country in relation to the world situation, a policy of self-sufficiency in food is more or less imposed on this country. Foodgrains production in the world as a whole in the post-war period has been insufficient to meet world demand, and though in recent years with the regaining of production levels in war devastated countries, the situation has been slightly eased, world production on the whole remains insufficient to meet the needs of the increasing population. So this

country will be ill-advised to place reliance on the diminishing possibilities of importation. Furthermore, imported grain has been found, in the post-war period, to be more costly than home-produced grain and has not been of the variety for which an internal demand exists. As far as this State is concerned, it is rice that is in deficit, and from the over-all Indian point of view too rice is in greater deficit than other grains. Surplus rice producing areas in the world are few, and under present conditions their surpluses are inadequate to meet the Indian deficit. For increasing rice production, therefore, this country must take a hand, and since this State is exclusively rice-consuming, its responsibility in increasing that production needs hardly any emphasizing.

Assigning, then, top priority for foodgrains and fixing self-sufficiency as the goal, the target for grain production may be determined. In calculating requirements, various criteria may be adopted, as has been done in the past in the evolution of food control policy in the State. Some of these criteria were used for determining rationing requirements, while others related to requirements under decontrol. The former set of criteria does not concern us, for in planning for self-sufficiency, we have to be guided by what the community would require when all controls are removed and the consumers are given perfect freedom in determining their demand for food. Even under such a policy, three different criteria may be thought of: (1) Requirements under a balanced diet according to nutritional experts, (2) requirements on the basis of an adequate cereal diet and (3) requirements on the basis of effective demand given a certain freedom to the consumers in the matter of their preferences. Of these three, the first will not be relevant to a short-term plan which can hardly alter food habits of the people, but which will have to adopt those existing habits as the basis of its calculation. For a longer term plan operating over a period long enough to get food habits altered, it will be very significant, but the time required for it is so long, not less than a generation, that that objective can only be kept as a distant goal. Immediately a balanced diet cannot be contemplated, for, in the first place, it will be costlier and will be beyond the financial capacity of the poorer sections of the people, and secondly it will not appeal to the consumers, their food habits remaining unaltered for the most part.

An adequate cereal diet is more attractive and will be more realistic, but the difficulty involved here is that the rate of consumption per adult per day adopted as the basis of calculation may

have little relation to what the consumers, given free choice, will actually consume. Their consumption will depend upon incomes, prices and their food habits and all these will alter under planning, and so there can be no guarantee that consumers' purchases will add up to the aggregate produced on the basis of an adequate cereal diet. Food habits have in recent times been imperceptibly changing. The richer classes, largely as a result of education in dietetics, consume less cereals now than half a generation ago, and in cereal consumption itself wheat has been increasingly taking the place of rice. Rural folk too, even small holders and tenants among them, have been switching over from millets to rice. And all sections of the people have had to effect changes in their dietetic habits during the period of rationing. To what extent, therefore, cereal consumption will increase under derationing cannot be stated with any certainty. Possibly it will rise to 20 oz. per adult per day, suggested by the Economic Adviser to the Government of Madras², if the earlier food habits should get re-established. Since however nothing definite can be said about it and there is the strong probability that some alterations in those habits will be of a more permanent character, effective demand under derationing may not be identical with the ideally determined quantity. In fact, in an economic system where the demand for any commodity is to be left to consumers' decisions, an arbitrary determination of the rate of consumption, however desirable, would be inappropriate.

The best method under the circumstances would be to base the calculation of requirements on the probable effective demand. To do so it would be necessary to take effective demand as it prevailed in the pre-war period and consider what changes are likely to be effected in it as a result of the redistribution of income which took place during the war and post-war periods. Effective demand as it prevailed in the pre-war quinquennium, 1934-39, was 386 lbs. per head per year or roughly 17 oz. per head per day, on the basis of total production and net importation.³ Adopting this as the basic datum, we have to see whether any alteration is called for to make allowance for subsequent changes in food habits and income distribution. It is generally agreed that the inflationary redistribution of income has favoured the agriculturists, the business classes and the wage earners, and adversely affected the salaried middle

2. Grow More Food Campaign by Dr. B. Natarajan, All-India Agricultural Economic Conference, December 1948.

3. See my paper, Cereal Production in Madras, *Madras University Journal*, Vol. XVI, No. 2.

classes, especially the lower income groups among the latter. It follows, then, that wage earners as a class will register an increased demand for foodgrains, but this will not apply to agricultural labourers who receive wages for the most part in kind and whose wages have not increased in the same degree as those of urban workers. The demand of the latter cannot be expected to rise higher than the pre-war level. This would be the case with the small holders and small tenants too who have no surpluses for sale and so have not shared in the prosperity of other agricultural classes. The lower income groups in urban middle classes also will experience a stagnant demand for foodgrains, for though their real incomes have fallen, necessitating a severe cut in consumption, that cut is likely to be applied in other directions than in the demand for the staple food. So taking the labouring classes and the lower middle classes into consideration, the only section among them likely to raise their demand for foodgrains is the urban workers' section, which in the nature of the case cannot be very numerous.

As regards the business classes, the bigger landholders and the salaried upper middle classes, their demand for foodgrains cannot rise higher than the pre-war level, for they were even then consuming all that they required. On the other hand, there is the strong probability that the new prosperity which they have been experiencing, with the exception of the last class, and the education they have received in dietetics in recent years would together lead to a curtailment of the demand for the staple grains. They have during the period of rationing virtually substituted other more costly and more nutritious types of food for the grains, and this habit is likely to continue even under decontrol.

So the conclusion that emerges is that, as against the increase of demand coming from the urban workers, there will be a curtailment of demand from the upper classes, both urban and rural, while all other classes will offer an unchanged demand. In all likelihood, therefore, the effective demand which will prevail under decontrol at the present time will not be very different from what prevailed in the immediate pre-war period. It seems, therefore, advisable to adopt the actual rate of consumption of 386 lbs. per head per year, which prevailed then, as the basis for calculating requirements. This means that the quantity of foodgrains required for the present population of the State of 58,700,000 (1953) is 10,090,000 tons. This quantity, however, is the husked grain requirement, and the unhusked produce which should be grown to yield this quantity of husked grain will be about 15.65 million tons. This

figure will fix the immediate target for grain production under a policy of self-sufficiency.

Normal production so far, excluding the recent years which have been characterized by draught conditions, has been of the order of 10.7 million tons (unhusked grain), consisting of 7.4 million tons of paddy and 3.3 million tons of millets. Increased production has, therefore, to be by 4.9 million tons, and if distributed in the same proportion as has hitherto been produced, paddy should increase by 3.4 million tons and millets by 1.5 million tons. This scale of production will cover the existing deficit, on the basis of this calculation, of 3.2 million tons of husked grain. This increase would represent a 46% increase over the average production during the quinquennium 1940-45.

The required quantities for the next five years are given in the Table below:

	Estimated population millions	Husked grain required. million tons	Unhusked grain required. million tons	Paddy. million tons	Millets. million tons
1953	58.7	10.09	15.65	10.81	4.84
1954	59.6	10.24	15.89	10.98	4.91
1955	60.5	10.40	16.13	11.15	4.98
1956	61.4	10.56	16.37	11.32	5.05
1957	62.3	10.72	16.61	11.49	5.12

By 1957 the increase in production has to be in absolute quantity by 6.11 million tons of unhusked grain. Of this, rice or paddy should increase by 4.21 million tons and millets by 1.90 million tons. Expressing this as percentage increases, paddy must increase roughly by 52% and millets by about the same percentage.

At the present time production is sufficient on the basis of the assumed rate of consumption only in six districts of the State, viz. West Godavari, Kistna, Guntur, Nellore, Chingleput and Tanjore. In all other districts there are deficits, with very large deficits seen in Malabar, Vizagapatam along with Srikakulam, Coimbatore and Salem, all above 200,000 tons. Detailed figures relating to require-

ments, normal production and the estimate of surplus or deficit are given in the Table below. 1951 population figures are used as those are the only accurate figures available for the districts.

*Immediate Requirements and Normal Production by
Districts in the State*

District	Population million	Requirements tons	Normal production (husked) tons	Surplus (+) or deficit (-) tons
Vizagapatam				
Srikakulam	4.2	723,750	342,000	- 381,750
E. Godavari	2.4	413,571	378,000	- 35,571
W. Godavari	1.7	292,946	380,000	+ 87,054
Kistna	1.8	310,178	342,000	+ 31,822
Guntur	1.5	258,482	325,000	+ 66,518
Nellore	1.7	292,946	324,000	+ 31,054
Cuddapah	1.2	206,785	173,000	- 33,785
Kurnool	1.3	224,017	184,000	- 40,017
Bellary	1.2	206,785	139,000	- 73,785
Anantapur	1.4	241,250	166,000	- 75,250
Madras	1.4	241,250	-	- 241,250
Chingleput	1.6	275,714	281,000	+ 5,286
Chittoor	1.8	310,178	200,000	- 110,178
N. Arcot	2.9	499,732	335,000	- 164,732
Salem	3.4	585,892	343,000	- 242,892
Coimbatore	3.3	568,660	280,000	- 288,660
S. Arcot	2.8	482,500	389,000	- 93,500
Tanjore	3.0	516,964	610,000	+ 93,036
Trichinopoly	2.9	499,732	318,000	- 181,732
Madura	2.9	499,732	307,000	- 192,732
Ramnad	2.1	361,875	230,000	- 131,875
Tinnevely	2.4	413,571	250,000	- 163,571
Nilgiris	.3	51,696	4,900	- 46,796
Malabar	4.8	827,142	325,000	- 502,142
S. Kanara	1.7	292,946	241,000	- 51,946
State	56.9	9,814,107	6,870,000	- 2,944,107

These figures pertain to the year 1951

The surplus of the surplus districts would just cover the requirements of Madras City and leave a quantity of 73,520 tons towards partially covering the deficit of the deficit districts of

3,258,877 tons. How the remainder of the deficit may be covered and an increase over that attained in order to provide for the increasing population in the coming years is the real problem facing the State. The plan of production, while fixing the target of production, should also lay down the methods by which the target may be achieved.

The total deficit to be covered, if immediately self-sufficiency is to be reached is 3.2 million tons of husked grain. To provide this, production of paddy must increase by 3.4 million tons and of unhusked millets by 1.5 million tons. The quickest way to increase production and one which will be found efficacious, both in the short run and in the long run, is intensive cultivation. This will make the most economical use of land, while increasing productivity per acre and per man, and will least disturb the existing balance in agricultural production. This will, in addition, be found to be easier to implement than other policies, and from the point of view of cost and return, more attractive. It has been the experience in this State under the Grow More Food Campaign that intensive methods give higher and more assured results than alternative methods of increasing food production, and do so with less expenditure of resources.

Intensification would naturally consist in the employment of improved seed, economic planting, more and better manuring, more effective supply of water, greater care and effectiveness given to the work of cultivation, the use of efficient and economic implements and a fuller utilization of occupied labour. To carry out this a more economic and efficient utilization of available resources and an extension of the programme of work already started under the Grow More Food Campaign would be all that would be needed. Intensification, doubtless, offers the line of least resistance as well as of maximum effect, and so should be given priority in the methods adopted for increasing production.

Dr. Burns in his Report on the Technological Possibilities in the Development of Agriculture in India has estimated that through improved seed, increased manuring and control of pests a 30% increase in production could be achieved, 5% through improved seed, 20% through improved manuring and 5% through control of pests. Economic planting and improvement in cultural practices would also contribute to an increase, but since such improvements have a wide range of variation, it is not possible to estimate a precise percentage increase. These percentage increases, however,

would materialize only under ideal conditions, with manuring done, for instance, at the rate of one ton of oil cakes for every 5 acres or high yielding varieties of seed alone used or the innumerable pests controlled through preventive and curative measures. With the conditions actually prevalent in field cultivation the methods adopted will fall short of standard efficiency, and only a portion of the gains will actually accrue. In the immediate future, therefore, only a 15% increase in yield can be expected of such intensive methods as improved seed, better manuring, economic planting, other improvements in cultural practices and control of pests. So crediting intensive methods with a 15% increase, for the State as a whole, food production will increase thereby by about 1 million tons. If the Japanese method of rice cultivation is adopted the yield per acre will rise a great deal more, for the average yield per acre in Japan is 2053 lbs. against the Indian yield of 939 lbs. Preparations have already been made by the Government of India to popularize this method in co-operation with Kora Kendra. A sum of Rs. 8 crores has been allotted for giving short term loans to cultivators. But for how much increase this method may be depended upon cannot be stated now, as it is not yet known how Indian soil and Indian cultivators will respond to this method.

The break down of these targets by districts is a fairly simple matter and would consist merely in fixing a 15% increase in yield in the existing acreage under cereals. The quantities of manure and seed required for such increases also can be calculated without much difficulty. After that is done definite measures will have to be undertaken to grow the seed and procure the manure required.

The time required for reaching these targets will have to be curtailed as much as possible, for the longer it is permitted to be, the greater the population to be provided for and the larger the leeway which will still remain to be covered. In a five-year period, at the existing rate of increase, the population of the State will increase by 3.7 million, demanding an increased provision of food-grains by about 700,000 tons. The sooner, therefore, the existing leeway is covered, the easier will become further increase to meet increased demand.

The rest of the required increase in production can accrue only through an extension of irrigational facilities and reclamation of uncultivated land. Extension of irrigation can be to both occupied land and uncultivated land, and in both cases an increase of production will be the result. If the extension is to occupied land,

there would be the possibility of either increasing the number of crops taken or of raising the yield of the crop or crops grown or of both. In wet cultivation the usual result will be the first, and in dry cultivation, the second. It may also be possible to change over from dry to wet cultivation and replace the millets by paddy or to increase the yield in dry cultivation itself through judicious watering. Cultivators in dry areas, as a rule, labour under the mistaken belief that irrigation converts dry into wet cultivation and remain sceptical of the benefits which dry cultivation itself will derive from periodical watering.

Of the acreage under paddy in the State, 11 million acres in all, 9 million acres are already irrigated, and out of the remainder, 1.4 million acres are situated in the districts of Malabar and S. Kanara, both of which are subject to heavy rainfall. The rest of the acreage is scattered in all the other districts, so that in no district, except in Chingleput, is there an appreciable unirrigated acreage to be brought under irrigation. In Chingleput there appears to exist an area of about 100,000 acres, and if on scrutiny they are found to be in compact blocks, an extension of irrigation can be effected to the benefit of the yield.

Irrigation can, therefore, be extended only to the millet acreage or to uncultivated land. The unirrigated acreage under millets is about 7.4 million acres, and if at least half of this is brought under irrigation, millet yield may be raised by about a million tons of husked grain. Millet acreage under dry cultivation is distributed in all the districts except Malabar, S. Kanara and the Nilgiris, and so by extending irrigation in all these districts the needed acreage can be covered. This means that irrigational development should take place in all the districts involving large acreages, not less than 150,000 acres in any district and in some districts rising up to 450,000 acres. Construction of small irrigational works, well-digging, tank renovation and the execution of irrigational works on minor rivers are the ways in which this may be done. The projects already under contemplation or investigation by the Madras Government cover almost all districts, and if these are supplemented by the construction of wells and tank renovation, it would not be difficult to cover the required acreage. The targets here would be 3.5 million acres of millet acreage to be brought under irrigation and the production of an additional 1 million tons of millets. The attainment of these targets would depend upon the speed with which the irrigational works could be completed and the finance made available for it. If a fairly long period is required, say 5

years, the targets of production will have to be put up by about 700,000 tons, for by the time the works are completed the demand for foodgrains would have risen through population increase.

There would still remain nearly 12,00,000 tons immediately or 19,00,000 tons in 5 years to be produced, and that can be done only through bringing new land into cultivation through reclamation schemes. The acreage required for the purpose is about 2.5 million acres to 3 million acres, and on this acreage paddy will have to be grown in order to maintain the proportion between paddy and the millets in over-all production. Reclamation of uncultivated land will have to be effected through eradication of weeds in weed-infested land, development of irrigational facility in dry areas now uncultivated or left in fallow and the drainage of water from boggy or marshy lands. In this State weed-infestation is not so widespread as in some of the other States of the country, and much land is not reported to be remaining uncultivated as a result of this. Nevertheless some reclamation through eradication of weeds or deep ploughing will be possible, and will have to be carried out with the aid of tractors and bulldozers. Boggy or marshy land is not a common feature in this country, except in certain selected localities like the Sundarabans of Bengal, and this State has not got any appreciable area falling into this category. Reclamation, therefore, waits on the development of irrigational facility, and in this respect not much difference will in practice prevail between new land brought freshly under cultivation and cultivated land to which irrigation water is freshly taken. The larger irrigation works, such as, the Tungabhadra Project, the Krishna-Pennar Project, the Ramapadasagar Project and some of the larger mid-term projects included in the Government programme will have to be relied upon to do this. The completion of these schemes will take a long time, longer than five years, and so the target acreage here can come only in the long-term plan. Details of these plans can be worked out only in relation to the irrigation schemes under contemplation. This will be taken up in a subsequent Chapter. Here all that can be said is that nearly 2.5 to 3 million acres of land will have to be reclaimed from the waste through irrigational development in order to raise the remaining quantity of foodgrains.

As regards other food crops, the only possibility in the immediate future, under a policy of attaining self-sufficiency in foodgrains, will be to carry on production as hitherto on the same acreage as is at present under them. Since the estimation of the demand for foodgrains has been based on an adequate cereal diet,

and not on a balanced nutritional diet, the demand for other food crops cannot be expected to be higher than what it is now, if allowance is made for the increase of population. So on the principle that production should as far as possible be adjusted to the probable demand, an increase in the same ratio as the increase in population is all that would be required. Some increase over the existing level of production may be rendered possible by intensification, and since in each of these foods an annual increase of one per cent is all that would be needed, it will not be difficult to engineer it through intensification alone.

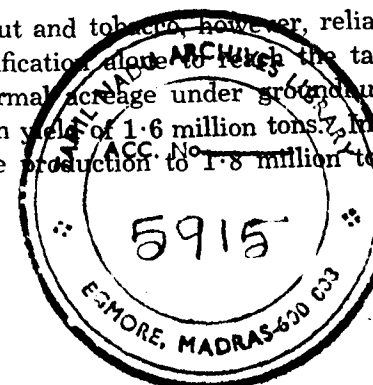
In the case of sugarcane improved varieties have already covered the entire acreage under the crop, and so, much cannot be done this way in the future. The average acreage under this crop during the period 1940-45 was 141,000 acres. In 1947-48 it went up to 272,000 acres, but declined to 176,000 acres in 1948-49. The yield in 1948-49 was 530,000 tons of gur. Other sugar crops had an acreage in 1948-49 of 75,000 acres. The target acreage for the sugar crops may be fixed at 250,000 acres and the production of gur at 700,000 tons. These were actually reached in 1950-51. In pulses the average acreage during the period 1940-45 was 2.9 million acres and under fruits and vegetables, 798,000 acres. Production may roughly be computed at 247,000 tons for pulses and 1½ to 2 million tons for fruits and vegetables. In 1950-51 the pulse acreage was 2.9 million and the acreage under fruits and vegetables 900,000. These scales of production increased by 5% in each case for the five-year period may be adopted as targets for the immediate future. Milk production also must increase to meet the demand arising from the increase of population, but this increase may naturally be expected to accrue from the increase of bovine population and better feeding of the animals. Between 1944 and 1951 there has been an increase of 8.7% in cows and she-buffaloes in milk and of 24% in she-goats.

For the three important commercial crops too, viz. cotton, groundnut and tobacco, targets for production will have to be fixed. Here calculation of requirements should be based on internal demand and export need. Our export trade continues to be dominated even at the present time by agricultural commodities, and this State's share in it is largely composed of the exports of these three commodities. And since even under planning it is imperative for the country to export in order to finance our essential imports, production must be so arranged as to provide for the requisite

exportation. In the case of cotton there is also the need to implement the policy of self-sufficiency, recently enunciated, to minimize our dependence on imported cotton. But this policy, it must be stated, can be given only an all-India application and cannot be accepted as a separate policy for the State. Our usual production is composed of short and medium stapled cotton, of which a part of the former we export. To meet our needs of long staple cotton we depend on imports from abroad and other parts of the country. It may not be possible in the immediate future to switch over to the cultivation of long staple cotton from the short staple varieties or abandon the lucrative export trade we are having in the latter. Nevertheless, in order to give effect to the all-India policy it would be necessary to replace short stapled by long stapled cotton in at least a part of the acreage, but to what extent it should be done can be determined only in relation to the all-India plan for cotton cultivation. This substitution, however, will leave the acreage unaffected and alter the quantity produced only slightly, its most important effect being a qualitative improvement of the yield.

So the principle to be adopted in determining targets for the three crops above mentioned will be about the same, viz. internal demand plus the need to export. On this basis targets of production may be fixed at 650,000 bales for cotton, 1.8 million tons for groundnut and 150,000 tons for tobacco. In the case of cotton the production level reached in 1941-42 on an acreage of 2.5 million acres was 560,000 bales. The acreage decreased to 1.6 million acres in 1948-49 and is now round about that figure. In 1950-51 it was 1.7 million. For the target to be reached therefore the acreage must increase to 2.5 million, unirrigated culture must be converted into irrigated culture and intensive cultivation must be practised on the whole acreage. If irrigation is extended to the half a million acres on which unirrigated cultivation now prevails, the yield will increase by 30,000 bales, and intensification of the whole acreage will result in an additional yield of 84,000 bales. The extension of acreage can be only to new land, for it would not be desirable to redirect the acreage under cotton which under the Grow More Food Campaign had been diverted to foodgrains.

For groundnut and tobacco, however, reliance will have to be placed on intensification alone to reach the target figures of production. The normal acreage under groundnut is about 3.9 million acres with an yield of 1.6 million tons. Intensification may be expected to raise production to 1.8 million tons. In tobacco the



normal acreage is 300,000 acres with an yield of 120,000 tons. This will have to be raised to 150,000 tons through intensive manuring, economic planting, control of pests and increased irrigation. If need be, the acreage may be increased by about 100,000 acres.

All these targets with the methods to be adopted to attain them may be schematically represented thus:—

Foodgrains

Additional production required by 1957 ..	3.9 million tons of husked grain
Through intensification on existing acreage ..	1.0 million tons
Through irrigation of un-irrigated acreage under millets—3.5 million acres ..	1.0 million tons
Through land reclamation 2.5 to 3 million acres ..	1.9 million tons

Cotton

Additional production required ..	310,000 bales
Through intensification of existing acreage ..	84,000 bales
Through irrigation of un-irrigated cultivation—500,000 acres ..	30,000 bales
Through extension of acreage—900,000 acres ..	196,000 bales

Groundnut

Additional production required ..	200,000 tons
Through intensification on existing acreage ..	200,000 tons

Tobacco

Additional production required ..	30,000 tons
Through intensification on existing acreage ..	30,000 tons

Under these targets irrigation would need to be extended to 4 million acres already under cultivation and reclamation must apply to 4 million acres. As reclamation of land is dependent for the most part on irrigational development, the attainment of these targets may be said to depend on extending irrigation to nearly 8 million acres of land. The time required to do this would determine the period of the plan.

Intensification of cultivation on the cotton, groundnut and tobacco acreage will require 13 million tons of farm yard manure or 1.3 million tons of oil-cakes or 130,000 tons of sulphate of ammonia. These requirements will be additional to what is needed in foodgrains cultivation.⁴

These targets indicated above have all been calculated on the basis of requirements and available resources in the foreseeable future, assuming that demand conditions will remain more or less unchanged. The only real change allowed for is the growth of population. These assumptions are permissible in planning for a short period, say 5, 7 or 10 years, but would be frankly illegitimate in a long-period plan. In the long-period demand conditions will be affected also by alterations in the dietic habits of the people and allowance will have to be made for these also. In fact it should be the aim of State policy to gradually effectuate such changes in the habits of the people, both from the point of view of nutritional requirements and from the point of view of economic and effective land use. But it is not possible now to say what length of period would be required for completing this change, or whether it would be completed at all in that future period with reference to which alone plans can be sensibly formulated. Changes in dietic habits over periods of time will be a normal feature of the population and will depend on the progress of the science of dietetics on the one hand and the income and price levels prevalent in the economy on the other.

It is of course possible on our present knowledge of dietetics to formulate food requirements in the future on the basis of a balanced diet, provided we are fairly definite about the period for which we are planning and the population that is likely to exist then. But since in neither of these circumstances can any definiteness be attained, it would be futile even to make tentative calculations. All that would be possible and sensible would be to realize the broad directions in which targets relating to food production may have to be modified in the course of years.

Broadly it may be said that per capita cereal consumption will get reduced and the consumption of the protective foods, such as,

4. The Planning Commission's recommendations made in the Draft Five-Year Plan in respect of targets of additional production for Madras State are the following:—

Foodgrains—890,000 tons; Cotton—180,000 bales (392 lbs.); Oilseeds—100,000 tons; Sugar (Gur)—80,000 tons.

milk and milk products, fruits and vegetables and proteins and fats, will get increased, and so the requirement of the future will be a switch over from cereal cultivation to the raising of these latter foods. If this requirement is to be kept in view, the short-term plan of food production should be so formulated as to be capable of being dovetailed into the long-term plan as and when the necessity arises. In an agricultural plan this is fairly easy from the nature of agricultural activity and the flexibility of the physical and material basis on which it is operated. Crop production, the predominant feature of the short-term plan, is an annual operation, begun and completed the same agricultural year and decided upon from year to year, so that an expansion or contraction may be implemented without elaborate preparation or wasteful scrapping of built-up resources. This facility will exist in greater degree in the smaller farms than in the larger mechanized units, nonetheless, it is a general feature of agricultural activity as a whole. The problem of land utilization is thus seen to be an annual problem to be assailed anew every year in the light of the circumstances then prevailing, and though targets of production may be determined for a number of years ahead, when plans are formulated, they have to be clearly understood as tentative, susceptible of modification when required.

These considerations do not, however, condition those preparatory measures adopted to implement the short-period plan, for all of them are directed to expand the physical basis of agriculture and make two blades of grass grow where one grew before. For any scheme of land utilization, they will be found to be apt.

CHAPTER IV

INTENSIVE MEASURES

The achievement of the targets of production fixed for foodgrains and the principal commercial crops would require the implementation of many measures of intensification and extension of cultivation. Immediately through intensification production of foodgrains must increase by about one million tons of husked grain or 1.6 million tons of unhusked grain and through extension of cultivation by about two million tons of husked grain or 3.2 million tons of unhusked grain. At the end of a five-year period, the increase should be 1.9 million tons of unhusked grain through intensification and 3.8 million tons through irrigational development and extension of cultivation. The intensive measures which may be contemplated in this behalf are increased manuring, use of improved seed and tools, control of pests and diseases, economic planting and judicious watering, and under extensive measures may be included irrigational development to bring more land under cultivation and land reclamation. Both these sets of measures have already been inaugurated under the Grow More Food Campaign with some measure of success, and from that a rough estimate of what may be achieved through each measure may be made. According to the achievement audit of the Grow More Food Campaign carried out by Dr. B. Natarajan, Economic Adviser to the Government of Madras, the additional output due to intensification schemes during the six years, 1943-49, was 711,645 tons, excluding the increase due to control of pests and diseases.¹ The annual increase as a result of the steps already taken may then be placed at 119,000 tons. Of this nearly 70% may be attributed to increased manuring and 25% to improved seed. According to the achievement audit, adverted to earlier, manure supply increased production by 487,443 tons on an acreage of 100,180 acres over which the scheme operated.² No estimate is available as to the improvement effected by the employment of better implements or the practice of economic planting.

On the basis of these actual results obtained so far, the target fixed under intensive cultivation may be broken down into sepa-

1. *Food and Agriculture in Madras State*, p. 99.

2. *Ibid*, p. 99.

rate targets under each measure. Thus 70% of the target or 1.3 million tons of unhusked grain, should be produced through increased manuring and 25% or 470,000 tons by improved seed, and the remainder of 130,000 tons by other intensive measures. This method of breaking down the intensive target would introduce the needed sense of realism into these targets and at the same time clearly indicate in which direction or directions concentrated effort should be applied.

Under the targets fixed in an earlier Chapter, intensification measures are required also in the production of commercial crops, such as, cotton, groundnut and tobacco, and there also a similar breakdown of targets can be made. But there, almost the whole increase, except in the case of groundnut, will have to be secured through intensive manuring, and even in the case of groundnut the part which may be assigned to improved seed will be comparatively negligible. Increased manuring, then, should account for 84,000 bales of cotton, 200,000 tons of groundnut and 30,000 tons of tobacco.

Intensive Manuring: For attaining the target under foodgrains the quantities of manures and fertilizers required, on the basis of the actual quantities used in the Grow More Food Campaign, during the six years 1943-1949, would be, in addition to farm yard manure now used,

Chemical fertilizers	350,000 tons
Groundnut cake	1,500,000 tons
Other oil cakes	50,000 tons
Green manure seed	36,000 tons
Composts	1,500,000 tons

If to these quantities are added the manurial requirements in respect of other food crops and the commercial crops, chemical fertilizers may have to be raised to 400,000 tons and oil cakes to 2,500,000 tons.

The estimate for foodgrains is based on the actual quantities of manures and fertilizers supplied by the Agricultural Depots in relation to the increased foodgrains raised. But no deductions have been made in respect of those quantities of manures diverted by the cultivators from foodgrains cultivation to the cultivation of cash crops. It is generally admitted that such clandestine diversion has actually taken place, but in the nature of the case, it is not possible to get a quantitative estimate of it. In reality, therefore, lower quantities than these would appear to be sufficient.

The quantities required may also be calculated in a different way. Placing the nitrogen requirements at 50 lbs. per acre,³ it would be possible to discover the quantities of manures or fertilizers which would be required in addition to farm yard manure. At the existing rate of availability, farm yard manure will give about 17 lbs. of nitrogen per acre to the 23 million acres under foodgrains. The rest of the requirement will have to be supplied by chemical fertilizers, and that will work out to 340,000 tons of ammonium sulphate. Other food crops and the commercial crops cover now about 14 million acres, and if reliance is placed for manuring these on fertilizers exclusively, the rate of supply will have to be 50 lbs. per acre. That would mean an additional quantity of 300,000 tons. The total quantity of fertilizers required will, then be 640,000 tons. This quantity may be slightly lowered if oil cakes, green manures and composts are also used. But since their nitrogen content is low, the reduction will not be by more than 20,000 to 25,000 tons. The total requirements of manures may then be placed at —

Fertilizers	615,000 tons
Oil cakes	200,000 tons
Green manures	36,000 tons
Composts	1,500,000 tons

These quantities may be slightly varied, for instance, increasing composts and reducing fertilizers or oil cakes; nevertheless these are roughly the scales on which the different manures should be made available, if intensification is to produce its full results. Chemical fertilizers should include, besides sulphate of ammonia and other nitrogenous fertilizers, phosphatic and potassic fertilizers too in order to make good the deficiency of phosphoric acid and potash in certain types of soils. In the Tanjore, the Godavari and the Periyar deltas and in the district of Malabar a defective content of 'available' phosphoric acid is a common feature of the soils, and in Malabar there is, in addition, a deficiency of potash too.

The question now awaiting examination is whether these quantities will be available to the State. Taking chemical fertilizers first, their availability will depend upon the allotments made to the State by the Centre, and those allotments will depend upon production within the country and importation. In 1950, for which year figures are available, the quantity finally allotted to this State was 209,000 tons and a similar quantity may have been allotted

3. See *Reorganization of Agricultural Credit* by G. D. Agrawal, p. 86.
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in the subsequent year too. But the actual quantity received was only 165,000 tons. To meet the full requirement this allotment must be increased by 75%. This is the Centre's responsibility, the State's function in the matter being confined to convincing the Centre of the imperative necessity of discharging this responsibility in the quickest possible time. The Sindhri factory, which has recently started operating, is supposed to have an ultimate capacity of 350,000 tons a year, and even if the whole of this output be diverted to this State its full requirement will not be met. At present, however, through lack of demand the available quantity at Sindhri remains unused. In view of the difficulties of importation caused by the foreign exchange problem, attempts must be made to start many more such factories in India, for that is the only way in which the Centre can meet its responsibility in the matter to all the States of the country. This goes to show how inter-related the different sectors of an over-all economic plan are and how progress in one direction is severely circumscribed by progress in other directions. If foreign aid is available in the shape of loans or credits, such aid also may profitably be utilized in the immediate future for increasing our imports of fertilizers. But dependence should not be placed on it permanently, for the need for fertilizers will be a continuing need which can be met with ease and facility only through internal production. It seems, therefore, extremely unlikely that the Centre will be able to solve this problem of fertilizers in any satisfactory measure in the near future.

The State would be better advised, therefore, to place greater reliance on indigenous sources of manure and exploit to the full its resources in composts, farm yard manure, oil cakes and green manures. Even here there are a great many limiting factors. Groundnut cake production can rise only if there is an increase in groundnut production and an expansion of the oil-crushing industry in the State. In good years our production of groundnut is only about 1.6 to 1.7 million tons, all of which, if crushed within, will perhaps double the quantity of cake produced. The present production of cake is roughly estimated at 200,000 tons annually. In 1950-51 it was only 153,000 tons. With existing production of groundnut in the State, cake production may not increase. All that would be possible would be to stabilize production round about 200,000 tons.

So the only way in which an adequate manure supply may be vouchsafed to the producers is by conserving to the utmost the farm

yard manure produced on the farms and increasing as far as possible compost-making in urban and rural areas. The annual production of farm yard manure in the State, under existing conditions, may roughly be estimated at 224 million tons of fresh or 179 million tons of rotten manure, a third of which only is actually made available at present as manure to the farms. There is scope here, if proper conservation measures are adopted and the practice of burning cow dung cake prevented, to double the quantity available. It may not, however, be immediately possible to do it. But it should be the aim to increase it by 50% through proper conservation. Credit may, then, be taken for about 90 million tons of rotten manure. The increased supply of farm yard manure of about 30 million tons will do duty for 100,000 tons of sulphate of ammonia.

But the problem, however, is to conserve this quantity out of the manure produced on the farms. At present a large quantity is converted into cow dung cake and burnt as fuel, and the rest, intended to be used as manure, is kept in unprotected heaps that a great deal of wastage takes place. In the nature of the case, it is inevitable that there should be some waste, but the methods adopted in conservation should be such as to reduce this wastage to the minimum. Under protection, it is estimated, wastage will not exceed 1/5, while in unprotected heaps it may be 1/3 or even more.⁴ Proper conservation methods already inaugurated in the State consist of maintaining, under the supervision of the Agricultural Department, manure pits, dry earth boxes and loose boxes. The dry earth box method of preservation is said to be superior to the others in that 'it effects the maximum conservation of both urine and dung in a thorough state of decomposition, intermixed with straw, dry earth or other litter and well pressed down by the feet of cattle.' Through propaganda this method must be popularized among the agriculturists, as offering a solution both to the problem of manuring and the problem of the sanitation of Indian villages. It should be a programme under the plan to introduce this method on every farm, so that losses may be reduced to the minimum and the quantity made available maximized. In 1950-51 manure pits opened were only 87,327, the Byre system for conservation of urine was adopted only in 27,246 cases and loose boxes maintained formed only 1,281.

4. *Intensive Farming in India* by John Kenny. Also C. Benson, *The Care and Management of Farm Manure in S. India*, Bulletin of the Agricultural Department, 1912.

Side by side with these measures, steps should also be taken to prohibit the use of cow dung as fuel. The comparative cheapness of this fuel is the attraction for its widespread use, and so the real measure needed to stop this practice and make the prohibition effective is the supply of other kinds of fuel at as low prices as possible. That means that a programme of afforestation should be an accompaniment of the re-organization and reconstruction of farming.

The advantage to be gained by the fullest utilization of farm yard manure on the farms is that, on the one hand, it reduces to the minimum the expenses on manuring and, on the other, cumulatively improves the fertility of the soil. This manure, it is usually seen, has a progressive effect on the yield and tends to make the texture of the soil coarser through the admixture to fine soils of the needed organic matter. A re-organization of farms which will increase the size of each and reduce the total number in existence will by increasing the quantity of manure produced on each farm and reducing the number of boxes to be maintained greatly facilitate the adoption of this improved method of conservation and increase the quantity of manure made available for cultivation.

Another internal source of natural manure is compost of night soil and town refuse in the production of which a beginning has already been made in the State. Under the Emergency Food Plans for the years 1950-51 and 1951-52 production of rural compost was fixed at 93,720 tons and 104,706 tons respectively at a cost to the State of Rs. 93,720 and Rs. 104,706 respectively. This cost represents the bonus of Re. 1 per ton, subject to a maximum of Rs. 50 per ryot, offered to ryots for compost making. From 1945-46 onward compost making under the guidance of officers and Sanitary Inspectors trained for the purpose has been a feature of the Grow More Food Campaign, and in the four years 1945-46, 1946-47, 1947-48 and 1948-49 composts manufactured and distributed in rural and urban areas amounted to 70,134 tons, 88,356 tons, 56,260 tons and 122,980 tons respectively. In 1950-51, rural compost manufactured came to 95,983 tons, sufficient to manure 19,196 acres. No expenditure was incurred by the State in urban compost making, though its contribution to total compost manufacture was considerably greater. Composts prepared in municipalities and panchayats amounted in the four years to 80,340 tons, 101,500 tons, 104,920 tons and 108,119 tons respectively. In 1950-51, 94 municipalities and 220 panchayats were engaged in compost making and total quantity

manufactured was 232,169 tons.⁵ The price of compost is fixed in the different municipalities by local committees, and in 1951 the price so fixed varied from Rs. 0-7-0 to Rs. 5-0-0 per cartload of 25 cubic feet.

It is not possible to calculate with available data what the potential in the matter of this production is, but there can be no doubt that when all urban and rural areas are brought under the scheme, the quantity produced will run into many million tons. This source of manure supply will be second only to farm yard manure in quantitative importance, and since it will be a perennial source and comparatively cheaper, every effort must be made to increase its production and dispel the prejudice which cultivators now have against its use.

Green manures too are natural manures at present confined in their use to the paddy fields of the State. The annual acreage under it, in recent years, has been about 1 million acres with a total production of about 3 million tons. To develop this cultivation a scheme of seed multiplication and distribution was inaugurated in 1948-49, and under it 2,584 tons of seed were raised from 47,817 acres of seed farms. The total coverage of this seed was about 2 million acres and the increased production of foodgrains attributed to it about 21,000 tons.⁶ In 1950-51 the seed distributed amounted only to 728 tons. If the whole acreage under paddy is covered by green manure seed, increased production would be, at this rate, of about 100,000 tons. For this, seed distributed must increase to 10,000 tons and the seed farm acreage roughly to 250,000 acres.

The application of green manures should be at the rate of 5,000 lbs. per acre, if good results are to be obtained, but care should be taken not to use too much mineral fertilizers along with them. In addition to green manures raised on the fields, green leaf mould may be obtained from forest regions and applied to the soil with the same efficacy. To popularize this use, in the early years of the Grow More Food Campaign, a 5% reduction for the rate charged for the removal of leaf from reserved forests was offered by the Government. If a further reduction is effected there and the rate reduced to a nominal figure, more of this source of green manures may be tapped.

5. Food and Agriculture in Madras State by Dr. B. Natarajan, pp. 56 & 92 to 94; also Report of the Agricultural Department, 1950-51, p. 7.

6. Dr. B. Natarajan, op. cit., p. 92.

It is really only in paddy cultivation, where a plentiful supply of water is made available to the soils, that a green manure crop usually precedes the long crop paddy. The green manures usually raised are sun-hemp, daincha, kolingi, vempati, indigo, pillipesara, kannga leaves, avarai, etc. These however differ in manurial efficiency. Daincha can manure 4 acres of paddy if grown on one acre, while sun-hemp can do it only on two acres and vempati leaves on one. The advantage of green manures is that they supply the nitrogen and organic matter needed by the soil and return the phosphoric acid and potash they had absorbed from the soil in their growth, in an easily assimilable condition. They are also less expensive than oil cakes and artificial manures, costing only 1/8 and 1/10 of their cost respectively.⁷ In 1950-51 subsidized cultivation of green manure crops was started in Tanjore district under which ryots growing a green manure crop over a minimum acreage of 10 acres were given free manure seeds. In return they had to surrender extra grain of 480 lbs. per acre to the procurement staff.

Improved Varieties of Seed: The target fixed for the increase of foodgrains as a result of the utilization of improved varieties of seed is 470,000 tons or, in round figures, half a million tons of un-husked grain, forming 25% of the target under intensive methods. This target, as has been explained earlier, is based on the increase actually realized under the Grow More Food Campaign, viz. 28,000 tons annually. To achieve this, nearly 10,000 tons of seed had to be produced and distributed. For attaining the target fixed, production of seed must increase to 210,000 tons and the seed farm acreage to 900,000 acres. No allowance is made here for an increase in the seed rate, which, if made, may increase the yield by a greater extent. The high seed rate of 67 lbs. per acre will probably increase the paddy yield by 15 to 20% and the millet yield by 10 to 20%, and if this is practised, in the opinion of some, through the utilization of improved seed alone the whole deficit of the State may be covered. In the near future, however, it may not be possible to increase the seed rate to the extent necessary, and so the lower rate actually in vogue to-day is made the basis of the calculation. Even so nearly 1.0 million acres will have to be diverted as seed farms, but this will not adversely affect aggregate quantity made available for consumption, for even now a certain percentage of the annual crop reserved as seed is not available for consumption.

7. Principles of Paddy Manuring by W. H. Hamilton, Bulletin of the Department of Agriculture, Madras, 1911.

For growing the required seed and distributing it, the scheme of seed multiplication and distribution already in existence should be given an extended application so as to cover all the districts of the State in both paddy and millets, with special emphasis, however, placed on paddy. At present the seed distribution scheme applies to all districts in the case of paddy, millets and pulses, but the total acreage covered is only about 415,354 acres.⁸ The new strains to be popularized should be those already evolved by the Agricultural Department and found suitable for different seasonal and local conditions. The acreage under new strains at present is roughly estimated at 5 million acres under paddy. The remaining acreage to be covered is 6 million under paddy and 13 million under other cereals, a total of 19 million acres, to the whole of which the extension of the scheme of seed distribution should apply. This would involve an increase in the number of agricultural depots and the staff employed in distribution as well as a corresponding increase in the number of State farms and Primary and Secondary Seed Farms. Under the seed distribution scheme in existence the seeds produced in Research Stations are multiplied in primary and secondary seed farms in ryot holdings. The seed thus given is bought by the Government at premium rates of 25 to 35% and sold to ryots at the village site price of grain paddy plus 10% to cover part of the premium paid. The Government have to incur expenditure on this premium as well as on supervision of seed farms and roguing charges. To reach the interior villages and to meet the needs of small landholders, sale of seed on concession basis and exchange of improved seed for ordinary grain were also introduced.

Other Intensive Measures: In addition to manure and seed distribution, the intensive measures contemplated should include also supply of improved implements, upgrading of cattle, and control of pests and diseases. In the nature of the case, it is not possible to have definite targets here, for no information is available as regards the number of farms in existence today nor can any accurate calculation be made as to the number which will exist when all the needed organizational improvements are effected. The implements used on the farm will vary with the size of the farm, the technical methods adopted and the crop or crops raised, and since it is not possible with existing data to get an over-all picture of these, a quantitative estimate of

8. Report of the Agricultural Department, 1950-51, p. 9.

the number of implements or cattle needed is difficult to make. Furthermore, in the case of cattle, permanent upgrading is a long run process, which in a short-term plan can only just be started. In the short period of the plan more may be achieved by way of increasing the efficiency of cattle and improving their working capacity through better feeding than through selective breeding, and detailed measures required for this may be sketched.

Control of pests and diseases is a fruitful source of increase in yield where they exist, but only some crops and some localities are affected by them. No comprehensive data are available relating to their spread or their incidence, and in the absence of these it is impossible to calculate the saving in yield which will be effected through their control.

In these circumstances all that is possible is to qualitatively indicate the measures that may be adopted under each head and attempt to give as wide an application to them as is possible in the short period of the plan.

Quite a number of improved implements suited for the conditions in this State have been invented and placed on the market, and much propaganda and demonstration to popularize them in actual cultivation have been carried out. The response so far evoked has, however, been incommensurate with the effort expended, not because the cultivators have remained sceptical of the efficiency of the new implements, but because the smallness of their holdings and their inability to raise the required finance have made them apathetic to the innovations. In the changed set up of planning this apathy may be overcome, and should be overcome by an intensification of propaganda and the provision by the State or by some institutional credit agency of the needed finance.

Replacement of the wooden by the iron plough of a light variety is an urgent necessity, if the increased manuring and the supply of better strains are to yield their full results. The Meston plough and the P.S.G. 16-A, 16-B and No. 15 are some of the light ploughs at low cost already evolved in the State and manufactured for sale, and these can take the place of the wooden plough without involving much capital outlay for the cultivator or increased strain for the animals. According to the Census of 1944 there were in the State only 52,000 iron ploughs against 3.8 million wooden ploughs. Replacement of all these wooden ploughs by iron ones will not be a practical proposition in the near future, because of the production and investment difficulties involved and the low work power

of the animals, nor would there be the necessity for so many ploughs under the re-organization of farming already indicated. Nevertheless the final objective of replacing the inefficient wooden ploughs with more efficient ones should be kept steadily in view, and as much replacement as will be made feasible by the availability of iron and steel and the investment funds forthcoming should be effected during the period of the plan.

Just as in this case, so in the case of the other instruments of husbandry too replacement of inefficient by efficient ones should steadily take place. The seed drill, the guntaka or blade harrow, the papadam or bullock hoe, the mhote wheel, winnowers, scoopers, cultivators, chaff-cutters, levelling boards, bund formers etc. are some of the implements which may with advantage be introduced in actual cultivation. But a quantitative estimate of requirements is, in the nature of the case, not possible to make without an anterior knowledge of the total number of farms which will exist or the type of cultivation which will be followed therein.

Permanent upgrading of cattle can be effected only through selective breeding practised consistently and on a wide scale. The two main lines of this programme will be the selection and the stationing in convenient places of approved bulls and the castration of the nondescript, defective scrub bulls which usually roam the countryside. The first line of activity, as pursued in the State at the present time, consists in stationing stud bulls at Government farms, co-operative societies, veterinary hospitals and jails, in encouraging District Boards and private individuals and institutions in maintaining such bulls under the Grants and Premium schemes and in licensing approved bulls in private ownership for stud purposes under the Livestock Improvement Act of 1940. Stud bulls thus maintained by the various agencies, including buffalo-bulls, number approximately 1,690 at present, whereas the need, at the rate of one bull for every 100 cows, is for 50,600. To some extent this number may be reduced if artificial insemination is practised, but as yet only certain experiments have been conducted along this line. A wider application of this method and a state-wide enforcement of the provisions of the Livestock Improvement Act pertaining to licensing of approved bulls, will greatly increase the facilities made available for selective breeding. Upgrading is bound to be a slow process and will have to be undertaken by stages, and, as experience has shown, will effect permanent improvement only if high grade indigenous breeds are used for the purpose. But steps have to be taken forthwith for the selection of

such bulls by veterinary surgeons and their maintenance at convenient points for stud purposes. The formation of Livestock Improvement Associations among farmers and breeders and their close association with all governmental effort in this direction will expedite the work and at the same time create the appropriate atmosphere for enthusiastic response by village folk.

The castration of the scrub bulls is equally important in the upgrading process, but unfortunately in this State this aspect of the matter has not received the emphasis it deserves. Under the Livestock Improvement Act the Government have the power to enforce castration, but so far the Act has been put into force only in two tracts of the State, viz. the Kangayam tract and the Periakulam taluk of Madura district. The licensing of approved bulls, adverted to earlier, will involve the enforcement of this Act throughout the State, and when that is done, the provisions relating to castration also will automatically apply.

While upgrading through selective breeding is a long drawn out and cumulative process and can only be started in a short period plan, more by way of immediate result can be secured through concentration on the better feeding of cattle. This would involve the provision in larger quantities of the natural grasses, concentrated feeds and green fodder crops. Dry roughage is even at present available in sufficient quantity and will, under a plan of increased food production, increase in the future, but unless that fodder is supplemented by others which provide the proteins needed for growth and strength, the animals would tend to exist in a state of low vitality. Even in the case of dry roughage, certain localities of the State are scarcity or deficit areas (the Circars and Malabar for example), and these suffer from severe fodder famine in years of drought. A more even distribution of the dry roughage available, a proper regulation of grazing and the production of increased quantities of concentrated feeds and green fodder crops are the ways in which this problem of better feeding has to be assailed.

The grazing facilities available are the communal grazings in villages and forest grazing in Government forests, together yielding, according to the Provincial Fodder and Grazing Committee, natural grasses of the weight of 7.9 million tons. Some part of this goes to waste, being unused during the season of growth. To arrest this wastage, conserve the grasses in the form of hay or ensilage and make them available later in the year when fodder

shortage appears is the problem to be solved under grazing. On the communal grazings usually there is overstocking of cattle which reduces wastage to the minimum. But in forest grazings, as the Royal Commission on Agriculture have observed, areas distant from the villages usually lie unexploited, and it is here that conservation methods should be intensively practised. Regulation of forest grazing has already been started in the State under four systems, viz. the Permit system, the Village system, the Kancha system and the Panchayat system, and under all these systems some control over grazing is exercised, but the defect appears to be that a proper system of rotation has not been evolved or practised. The introduction of such a system and the preparation of hay or ensilage by the Forest Department out of unused grasses are perhaps the two ways in which a maximum utilization of available grasses can be effected.

The production of concentrated feeds in the State has been estimated by the Provincial Fodder and Grazing Committee at 1.9 million tons, representing a feeding stuff per head of cattle of $\frac{1}{2}$ lb. a day, just two-thirds of the minimum requirement. A 50% increase in production is necessary if the minimum requirement is to be met immediately. This may be achieved concurrently with increased food and cotton production, for among these feeds figure prominently rice bran, cotton seed, some pulses and by-products of pulses. Oil cakes too form an important feed, but an increased production of these will be possible only if the oil crushing industry is developed and all the oil-seeds produced in the country are crushed within.

The production of green fodder, as estimated by the Provincial Fodder and Grazing Committee, is of the magnitude of 3.3 million tons. An increase is desirable here also, as the nutritive value of fodder crops is higher than that of roughage or green grasses. But any increase achieved here should be through an extension of cultivation to the waste or through the introduction of a system of mixed farming, for otherwise the fodder crops will have slender change of success in their competition with other crops for the use of land.

CHAPTER V

EXTENSIVE MEASURES—IRRIGATIONAL DEVELOPMENT

While all that is possible under intensive measures may be done to increase agricultural production, the full attainment of the target figures will wait upon the extension of cultivation to current fallows and the cultivable waste. There is always a limit to what may be raised from a given acre, and though, through the adoption of scientific methods of cultivation, this limit may be stretched, beyond a point it would not be possible to go. A further increase of production can thereafter be secured only from an extension of the area under cultivation. The extensive measures examined in this Chapter have all the main purpose of bringing new land under the plough.

Those measures are principally two, viz., irrigational development and land reclamation. These two may under certain circumstances be operated unconnected with each other, and under other circumstances will be closely related. Thus, for instance, irrigational development may be undertaken in order to benefit land already cultivated and to give an assured supply of water to such lands. As such it will figure prominently under intensive measures, and in a country like India where large areas depend upon a precarious rainfall, no process of intensification of cultivation can be said to be complete which does not give sufficient attention to this. But often in very dry areas where under natural conditions pasturing alone is possible, the conversion of pasture lands into arable fields would depend on the provision of an artificial supply of water, and in all those cases reclaiming land from the waste is intimately related to the development of irrigational facilities. But irrigation here is treated under extensive measures for the reason that in the conditions prevalent in the State today and in the projects so far formulated it will play a more crucial role in the extension of cultivation to the waste. Nevertheless its significance in the programme of intensification should be kept in view. The increase of irrigational facility in occupied area has usually the effect of increasing the number of crops taken during the year, which in effect amounts to an increase in gross acreage. In addition it converts dry into wet cultivation, greatly increasing the yield per acre, and in definitely dry areas it enables a judicious watering of the dry crops them-

selves with significant benefit to the yield. From both points of view, therefore, the utmost stress has to be placed on it.

At present in the State, out of a total net area sown of about 31 million acres, 9.9 million acres are irrigated from all sources, forming 31.8% of that total area. Of the irrigated area, Government canals account for 4.3 million acres, tanks, 3.4 million acres, and wells with independent ayacuts, 1.6 million acres. Private channels and other sources, such as small wells, spring channels, kasams, etc., account for the rest.

The Government canal system comprises the irrigational systems of the Godavari and Krishna deltas, the Cauvery delta and the Cauvery-Mettur project, the Pennar River Canals, the Periyar Canals, the Srivaikuntam and Marudur Canals and the Kurnool-Cuddapah Canal. These cover the districts of East Godavari, West Godavari, Krishna, Guntur, Tiruchirapalli, Tanjore, Nellore, Madura, Ramanathapuram, Tirunelveli, Kurnool and Cuddapah. Tanks abound in the districts of Vizagapatnam, Nellore, Chittoor, S. Arcot, N. Arcot, Chingleput, Ramanathapuram, and Tirunelveli. Wells are mostly in private ownership, as also small tanks, and they are prominent in the districts of Nellore, N. Arcot, Salem, Coimbatore, Madura and Ramanathapuram. The districts which have no completed Government works at present are Malabar and S. Kanara on the West Coast, Salem and Coimbatore among the central districts, Bellary and Anantapur in Rayalaseema and the Nilgiris on the hills. But when the new works under construction at present are completed, most of these districts too will be covered, except perhaps S. Kanara and the Nilgiris.

The total gross area under irrigated crops is about 11.7 million acres, comprising 8.8 million acres under paddy, 470,000 acres under cholam, 311,000 acres under cumbu, 170,000 acres under ragi, 191,000 acres under sugarcane, 86,000 acres under gingelly, 139,000 acres under groundnut, 4,000 acres under castor and 20,500 acres under cotton. In recent years the acreage under irrigated paddy has been on the increase, partly through diversion from ragi and cotton under the Grow More Food Campaign and partly through an extension of the area under the second crop. Much of the acreage under paddy is already under irrigation, and any further increase there will have to be in the gross area under it, through an increase in the acreage under the second or third crop. Under the dry grains, however, there is still an acreage of nearly 7.4

million acres to be irrigated. If irrigation is extended here, it would be possible either to change over from dry to wet cultivation and grow paddy instead of the millets or to increase the yields of the dry grains themselves through the substitution of irrigated for unirrigated culture. The substitution of irrigated paddy for the dry grains will raise the yield from an average of 612 lbs. to the acre to 1,790 lbs. per acre, and the substitution of irrigated for unirrigated culture in the dry grains to an average of 1,389 lbs. per acre. In the case of the commercial crops too the yields will appreciably increase under irrigation. In cotton, for instance, it will rise from 78 lbs. to 286 lbs. per acre.

Apart from these actual increases in production which irrigation will effectuate, the great benefit conferred by it is that it gives protection to an unprotected area, by making available an assured supply of water in place of the precarious dependence on the fitful monsoon. Large areas of this State outside of the deltas and the West Coast require such protection, for in those regions neither the South-West nor the North-East monsoon can be wholly depended upon. Even localities where there is an abundance of rainfall, if it is not well distributed, may require the protection afforded by irrigational works. Such areas, equally with areas of scarce rainfall, have suffered in the past from famine conditions.

To give this protection to the famine areas, to increase the yield in dry cultivation and to facilitate an extension of the area under cultivation a forward step in irrigational development has to be initiated in the State. The target acreage for an extension of irrigation in occupied areas is of the order of about 3.5 million acres and in uncultivated land of about 4 million acres. This measure of extension will enable the raising of an additional 1 million tons of millets in occupied area and nearly another million tons of cereals on fresh land brought under cultivation. How this development may be effected is the problem awaiting investigation.

Irrigational Projects Under Contemplation: Under the 46 long-term and mid-term projects contemplated in the State at present, irrigation will be extended to about 5.8 million acres, which is only 1.7 million acres less than the target figure mentioned above. Among these 46 schemes are included the three long-term projects, the Ramapadasagar Project, a detailed investigation of which has not started, the Krishna Pennar Project for which blue prints are now ready, and the Tungabhadra Project

which is already under construction. The Ramapadasagar Project will cost, as at present estimated, Rs. 130 crores and take 12 years for completion; the first stage of the Krishna-Pennar Project is expected to cost Rs. 77.6 crores and take 7 years for completion; and the Tungabhadra Project will cost Rs. 18 crores and take 6 years to be completed. Since the last scheme is already more than half finished, it may be included in a short-term plan for five years, but not the other two schemes, nor the mid-term project, Gandhikota Scheme, if linked with the Krishna-Pennar Project. The remaining schemes will irrigate an acreage of only 1.12 million acres. A list of all the schemes with details relating to cost, time required for completion, ayacut contemplated, districts covered, etc., is given in the Table on pages 72-75. The data in the Table were kindly supplied to me by the Chief Engineer, Irrigation, Madras State.

All the 46 schemes taken together cover 21 districts of the State, the districts not covered being Ramanathapuram, S. Kanara, the Nilgiris and Madras City.

For an appreciable improvement in irrigation, the Krishna Pennar Project also should be included, for that scheme is more important than all the others, and alone is expected to increase irrigated acreage by 3.6 million acres when fully completed. The time required for completion of the first stage is only 7 years, and so it may be possible to include it in the plan, if the plan is extended by that period. The acreage irrigated with the completion of the first stage will be 21.0 lakhs acres, almost completely in occupied areas. The Ramapadasagar Project is not at present considered a practical proposition, as certain insoluble engineering difficulties are expected to arise and its construction, if undertaken, will absorb certain rich mineral areas.

During a seven year period, therefore, if all the schemes are executed at a cost of about Rs. 150 crores, the new acreage irrigated will be brought up to 3.22 million acres. This is the maximum that may be expected of the long-term projects during a short period.

While these are the immediate possibilities, only 13 of these schemes, including the Tungabhadra Scheme, are at present under construction, and so have found inclusion in the Draft Five Year Plan of the Planning Commission. In the Final Plan the Krishna Project also is included without detailed estimates. The total cost of the 13 schemes will be Rs. 44.24 crores, but provision made during the five years of the Plan is only for Rs. 34.08 crores. The new ayacut expected of them is 6.1 lakhs acres. Details of these schemes

S. No.	Name of Project	Total cost. Rs. lakhs	Period for completion. years	Ayacut contemplated. acres	The names of the districts to be benefited.	Remarks
1.	Lower Bhavani Project	907	5	2,07,000	Coimbatore District	Half the area contemplated is to be cultivated with cotton and the other half with the irrigated dry food crops.
2.	Malampuzha Project	308	5	40,000	Malabar District	
3.	Mettur Canal Scheme	245	5	45,000	Coimbatore and Salem Districts	
4.	Rallapad Project II Stage	58	5	12,000	Nellore District	Improving the existing drain in Kistna Delta.
5.	Ramperu Drain	96	3	10,000	Kistna Delta	
6.	Cauvery Delta Drainage Improvements	30	completed	—	Tanjore District	To improve the existing drainage facilities.
7.	Manimuthar Project	398	5	20,000	Tirunelveli District	
8.	Upper Pennar Project	84	5	6,000	Ananthapur	
9.	Bhairavanitippa Project	93	5	8,500	Bellary and Ananthapur Districts	
10.	Aranjar Reservoir Project	96	5	2,500	Chingleput	
11.	Walayar Reservoir Scheme	100	5	6,500	Malabar	
12.	Mangalam Reservoir Scheme	45	4	4,030	Malabar	
13.	Tungabhadra Project	1800	6	2,50,000	Bellary, Kurnool and Hyderabad State	Scheme completed.
14.	Upputeru Improvements	86	4	10,500	W. Godavari and Kistna Districts	
15.	Manimukthanadhi Reservoir Scheme	66	3	4,000	South Arcot	II crop on 1300 acres of single crop. Existing 2500 II Crop 2000.
16.	Palakazhipuzha Scheme	89	3	3,700	Malabar	
17.	Pedanandipad Scheme	66	4	25,000	Kistna	
18.	Thoppiar Scheme	52	3	2,335	Salem	
19.	Munakara Reservoir Scheme	94	4	1,175	Malabar	Existing 5098. Single crop into double crop 10-34 acres.
20.	Krishnagiri Reservoir Scheme	167	4	7,500	Salem	
21.	Porandalar Project	65	4	8,000	Madura	
				Single crop wet 2,000		
				Irrigated dry		
22.	Mid Pennar Project	55	3	5,850	Ananthapur District	
23.	Gundalacamma Project	200	*	2,850	Guntur	*Scheme deferred.
24.	Tanileru Scheme	100	4	6,000	West Godavari	
				I crop 3,000		
				II crop		
25.	Budameru Reservoir Scheme	105	4	13,000	Kistna	3384 acres dependent in 9616 acres of new.
26.	Chinnar Scheme (Salem)	59	3	1,190	Salem	Existing ayacut 1842.
27.	Vaniyar Scheme	46	3	3,550	Salem	

S. No.	Name of Project	Total cost Rs. lakhs	Period for completion years	Ayacut contemplated acres	The names of the districts to be benefited	Remarks
28.	Chinnar Scheme (Tiruchi) ..	23	2	3,000	Tiruchi	
29.	Gomukhanadhi Reservoir Scheme ..	67	3	5,000	South Arcot	
30.	Lower Sagileru Reservoir ..	50	3	3,000	Cuddapah	
31.	Atleru Project ..	35	3	4,349	Nellore	
32.	Pullambady Scheme ..	84	4	22,000	Tiruchi	
33.	Kistna Pennar Project ..	7760	7	36,00,000	Kistna, W. Godavari, Guntur, Kurnool, Cuddapah, Nellore, Chittoor and Chingleput Districts	Power will be developed with an installed capacity of 250,000 K.W.
34.	Vaigai Reservoir Scheme ..	229	4	12,000	Madura	
35.	Sathanur Project ..	225	4	20,000	N. Arcot and S. Arcot Districts	
36.	Amaravathi Reservoir Scheme ..	272	4	15,000	Coimbatore	
37.	Kannikarapuzha Scheme ..	290	4	24,000	Malabar	
38.	Gandikota Project ..	816*	6	150,000*	Nellore and Cuddapah Districts	* When linked with Kistna Pennar Project. † When taken up as an independent scheme.
		346†		50,000†		
39.	Vamsadara Project ..	650	4	225,000	Visakapatnam	
40.	Kattalai High Level Canal Scheme ..	111	4	20,000	Tiruchi	* Scheme deferred.
41.	Makkvagedda Scheme ..	70	*	12,000	Visakapatnam	
42.	Reservoir Across Jangavathi ..	110	3	11,000	Do.	
43.	Tuni or Thandava Reservoir ..	57	2	13,300	Do.	
44.	Aliyar Dam ..	60	3	10,000	Coimbatore District	Besides additional II crop for 9.5 lakhs acres. 100,000 K.W. of firm power will also be developed.
45.	Ramapadasagar Project ..	6000	12	10,30,000	Vizag and E. Godavari	
46.	Giriyar Project ..	30	2	1,000	Tirunelveli	

are given in the Table on p. 77. Financial difficulties, paucity of engineers and technicians and shortage of materials may be said to stand in the way of the other contemplated schemes. The resolution of these is a pre-condition for embarking on them.

The Krishna-Pennar Project: The revised Krishna-Pennar Project is expected to cost Rs. 130 crores when completed, but is divisible into two stages, the first stage costing Rs. 77.6 crores and the second, Rs. 52.4 crores. The total area expected to be irrigated is estimated at 3.6 million acres, but the completion of the first stage, in 7 years, will enable it to command an ayacut of 2.1 million acres, most of which will be in occupied area.

The Scheme contemplates the construction of two dams, one on the Krishna at Siddeswaram in Kurnool district and the other on the Pennar at Someswaram in Nellore district. The two reservoirs formed will together have a capacity of 555 thousand million c. ft. which will be about six times the capacity of the Mettur reservoir. This capacity will be divided into 279 T.M.C. ft. at Siddeswaram and 276 T.M.C. ft. at Someswaram. The lakes formed by these dams will be connected by the Krishna-Pennar Canal dug through the Mittakondala cutting between the two rivers. The waters of the river Krishna will be diverted through this canal into the Kunderi river and through that river into the Pennar river.

The two reservoirs will together irrigate 3.6 million acres of land in West Godavari, Krishna, Guntur, Kurnool, Cuddapah, Nellore, Chittoor and Chingleput districts in two crops. Of this, about 2.1 million acres will be first crop and 1.5 million acres second crop. Two canals will carry water from the Krishna reservoir, viz. the Krishna-Pennar West and East Canals, and the Pennar North South Canals, the Kavali Canal, the Madras Canal and the Kanupur Canal will secure water from the Pennar reservoir.

In the first stage of execution both the dams will be completed, but only four canals will be built, viz. the Krishna-Pennar West Canal, the Kavali, the Kanupur and the Madras Canals. The 2.1 million acres irrigated will be made up of 7 lakhs of first crop under the new canals and 14 lakhs acres of second crop, partly under the new canals and partly in Krishna and Nellore deltas under the Vijayawada and Pennar anicuts respectively. In the second stage, the three remaining canals will be dug, and as a result the first crop area will be raised to 2.1 million acres and the second crop area to 1.5 million acres. In addition the Gandikota reservoir fed by the

S. No.	Name of Project	Total cost. Rs. lakhs	Period for completion. years	Ayacut contemplated. acres	The names of the districts to be benefitted.	Remarks
1.	Lower Bhavani Project	907	5	2,07,000	Coimbatore District	Half the area contemplated is to be cultivated with cotton and the other half with the irrigated dry food crops.
2.	Malampuzha Project	380	5	40,000	Malabar District	
3.	Mettur Canal Scheme	245	5	45,000	Coimbatore and Salem Districts	
4.	Rallapad Project II Stage	58	5	12,000	Nellore District	
5.	Ramperu Drain	96	3	10,000	Kistna Delta	Improving the existing drain in Kistna Delta.
6.	Cauvery Delta Drainage Improvements	30	Completed	—	Tanjore District	To improve the existing drainage facilities.
7.	Manimuthar Project	398	5	20,000	Tirunelveli District	
8.	Upper Pennar Project	84	5	6,000	Ananthapur	
9.	Bhairavanitippa Project	93	5	8,500	Bellary and Ananthapur Districts	
10.	Aranian Reservoir Project	95	5	2,500	Chingleput	
11.	Walayar Reservoir Scheme	100	5	6,500	Malabar	
12.	Mangalam Reservoir Scheme	45	4	4,030	Do.	
13.	Tungabhadra Project	1800	6	2,50,000	Bellary, Kurnool and Hyderabad State	Scheme completed.
		4331		6,11,530		

Krishna-Pennar West Canal will irrigate 1.5 lakhs acres. The project, when completed, will strengthen existing irrigation of 1 million acres in the Krishna delta, and 0.1 million acres in the Nellore delta. The distribution of the acreage of the first crop in the districts covered will be as follows:

		1st Stage acres	2nd Stage acres
Kurnool	..	1.61 lakhs	2.46 lakhs
Cuddapah	..	1.79 "	0.54 "
Nellore	..	4.29 "	7.74 "
Chittoor	..	0.12 "	0.36 "
Chingleput	..	1.15 "	4.11 "

The total acreage of 1.5 million acres of second crop will be divided between the Krishna and Pennar deltas in suitable proportions, Krishna getting between 4.5 lakhs acres and 7 lakhs acres and Pennar getting between 7.5 lakhs acres and 10 lakhs acres.

The stage plan, when completed, is expected to increase cereal production by 1 million tons and raise the revenue by Rs. 2.7 crores. It will also provide drinking water for Madras City. When the full plan is completed, food production will increase by 1.6 million tons of rice and 1 million tons of millets and revenue will be raised by 5 crores. Furthermore, there will be a power generation of 100,000 K.W. continuous and an installed capacity of 250,000 K.W. Fish production in the reservoirs and canals is expected to be about 27,000 tons valued at Rs. 1.2 crores. Flood control and partial irrigation will be the other benefits accruing.

Part of the cost will be covered by a Betterment Levy which is estimated to be Rs. 11.36 crores for the stage plan and Rs. 42.58 crores for the full plan. The direct return on investment in both stages of the plan will be of the order of 3.5%

The Kosla Committee appointed by the Government of India to examine the Krishna-Pennar Project prepared by the Government of Madras have criticized the project on the following grounds:¹

1. Taken from the Press Report published in the 'Hindu,' December 14, 1952.

1. That the available supplies in the river at Siddeswaram will be 15% less than assumed and that both reservoirs will submerge large cultivated areas (nearly 3 lakhs acres) and displace about 1.5 lakhs of people in all.

2. That the cost of the project is likely to be considerably higher than estimated and the revenue accruing to be much less.

3. That the food yield and rate of development of irrigation will both be less than estimated.

4. That the benefits of the project will largely accrue to areas already served by existing irrigational works and that the emphasis of the project on the whole is on the second crop and not on the first crop.

5. That the designed capacities of the canals in the scheme are too large, but the duties assumed for them too low.

6. That the project will debar permanently the irrigation of an area of about 4 million acres of the lower Krishna basin in the upland tracts of the Guntur and Nellore districts.

The Committee after enunciating the principles which should govern the formulation of the scheme, have put forth an alternative plan for the utilization of the waters of the Krishna and the Godavari. Their plan contemplates three stages of execution and three reservoirs on the Krishna, one on the Godavari, the Indravati or the Pranhitta, a diversion barrage on the Godavari at the site of the Ramapadasagar dam, another on the Pennar and many canals taking off from all these reservoirs. The dams on the Krishna are to be at Siddeswaram, Nandikonda and Pulichintala.

Stage I will comprise the construction of the dam at Nandikonda, the canals on the left and right sides of it, the diversion barrage on the Pennar, the Madras Canal, the Krishna-Pennar East Canal, the Kavali Canal, the Kanupur Canal, all as proposed in the Krishna-Pennar Project, but with reduced dimensions, and the re-modelling of the Kurnool-Cuddapah Canal. This dam is to be a joint venture of the Governments of Madras and Hyderabad. The area commanded by the scheme will be of the order of 4.55 million acres of which 2.3 million acres will be irrigated.

Stage II will comprise the construction of the dam at Siddeswaram as proposed in the Krishna-Pennar Project, the Krishna-Pennar Link Canal, the Krishna-Pennar West Canal for direct irrigation and the replacement of the Mittikonda cutting proposed in the Krishna-Pennar Project by a tunnel.

Stage III will comprise the construction of the Pulichintala dam on the Krishna, a storage reservoir on the Godavari, the Indravati or the Pranhitta, a diversion dam on the Godavari and a left bank and a right bank canal taking off from the barrage.

The first stage is estimated to irrigate 3.71 million acres of dry and wet crops, equivalent to the irrigation of 2.2 million acres of wet crops, and the first and second stages together will irrigate 4.5 million acres of dry and wet crops, equivalent to the irrigation of 2.6 million acres of wet crops. The third stage will extend irrigation to 3 to 5 lakhs acres of second crop.

The cost of the first stage will be Rs. 85 crores and of the first and second together, Rs. 125 crores. The cost on the Pulichintala dam is put at Rs. 7.5 crores.

In the light of the Kosla Committee's criticism and their alternative plan, the Government of Madras are prepared to slightly modify their original proposals, but they consider that a modified Krishna-Pennar Project would serve the immediate needs of the State better than the alternative plan of the Committee. They insist on priority being assigned to making Krishna waters available to the drought areas of the State frequently liable to famine, such as, Rayalaseema and parts of Guntur and Nellore. They also justify their emphasis on the second crop as more conducive to quicker food production and the increase in the production of rice which is in greater demand in the State than millets.

The Tungabadra Project: The Tungabadra Project is the only large scheme included in the Draft Plan for Madras. Though the period for completion is fixed for it at six years, it was possible to include it because work had already commenced on it and is expected to be completed during the period of the plan. The scheme is specially intended to benefit the Ceded Districts of Bellary and Kurnool where irrigational facilities are very scarce. The total area irrigated in this State will be 294,210 acres of which 36,000 acres will be wet or garden land. The rest of it will be first crop land on which dry grains or cotton can be grown under irrigated culture. The whole area is expected to be protected from famine.

The scheme is a joint work undertaken by the Madras and Hyderabad States together and intended to benefit large areas in both States. It consists of a masonry dam across the Tungabadra and canals leading away from it. The dam will be 150 ft. high and 1½ miles long and form a reservoir which will submerge an area of 140 square miles. The capacity of the reservoir is estimated at

112 thousand million c.ft. of water, of which Madras's share will be 65 thousand million c.ft. Irrigation is combined with power generation, and installed capacity is expected to be 21,000 K.W. with a continuous production of 7,000 K.W. The cost of the whole scheme is computed at Rs. 18.2 crores and of the hydro-electric scheme alone at Rs. 7.9 crores.

Other Large Schemes Under Construction: Another large project included among mid-term projects and already started is the Bhavani Project to benefit the Coimbatore district. The total cost of the scheme is estimated at Rs. 9 crores and the period for completion at 5 years. Work is progressing rapidly and nearly 10,000 men are working on it daily. When completed the first crop ayacut will be 2 lakhs acres and the second crop land, 85,000 acres. Half of this area will be suitable for cotton cultivation and the other half for irrigated dry grains.

In addition to these, there are also six other fairly large projects under construction, the Malampuzha Project for Malabar, the Mettur Canal Scheme for Coimbatore and Salem, the Rallapad Project, II Stage, for Nellore, the Ramperu Drain for Krishna, the Cauvery Delta Drainage Scheme for Tanjore and the Manimuthar Project for Tirunelveli. These have contemplated ayacuts ranging from 10,000 to 45,000, and, in all, will irrigate an area of 1.3 lakhs acres. One of these has already been completed, the Cauvery Delta Drainage Scheme, and the others require periods of five years and less for completion.

Minor Schemes: Besides these major schemes, the State can undertake also the construction of minor irrigation schemes in those localities where the need, as also facilities for execution, exist. These minor schemes under existing practice are financed out of revenue and are under the administrative control of collectors of districts. Three hundred such minor schemes, covering all districts of the State, have been contemplated under the Grow More Food Campaign, and about 150 of them, irrigating an area of 377,522 acres and costing Rs. 92 lakhs, were completed by 1947-48. Increased food production attributed to this is 342,825 tons. All the schemes when completed will irrigate an area of 537,186 acres, nearly half of which will be virgin land. The increase in foodgrains production which will be caused thereby is estimated at 600,000 tons.

Since the scope for major irrigation schemes in a short period is limited and the works under construction are expected to extend

irrigation to only about 6.1 lakhs acres, emphasis should be placed on these minor schemes, and the utmost possible here should be carried out. The merit of these minor schemes is that they can be completed within a short period and can be undertaken in localities which, as a rule, are not commanded by the major schemes. To benefit such localities, therefore, the minor schemes are essential, and since they supplement the ayacuts under the major schemes, they help to effect a permanent increase in irrigated acreage. But they depend for their effectiveness on rainfall and are best undertaken in areas satisfactory in this respect. They will then serve as perennial sources of irrigation. In selecting minor works for execution those districts which are at present ill-served by irrigational facilities and which remain uncovered by the major schemes contemplated should be preferred. Chittoor, N. Arcot, Ramanathapuram, Tiruchirapalli, the Nilgiris and S. Kanara fall into this group. The case of the Nilgiris is exceptional and S. Kanara has such heavy rainfall that irrigational works are perhaps not needed; but the other districts should not be left in the cold. These works, in the same manner as the major works, depend for their execution on the supply of the requisite materials, such as iron, steel and cement, and on technical and supervisory skill. The bottlenecks existing at present in some of these should be speedily removed through the aid of the Central Government.

Tank Renovation Scheme: Another resource available to the State for an extension of irrigation is the renovation of existing tanks. This work has been going on since 1944 and as a result of it nearly half a million acres have been added to the ayacuts commanded by them. The work consists in removing silt from tank beds and raising the level of bunds and weirs and repairing channels and drainage systems. If this restoration work is carried out over the 35,000 tanks in the State, it is estimated that effective irrigation will be made available to 5 million acres in their ayacuts. The cost of the renovation schemes is computed at Rs. 19 crores and the work is expected to be completed within a period of five years. Alongside of the work of restoration, steps are also being taken to prevent further filling up of tanks with silt, and to that end the proposal under contemplation is that the ryots should be relieved of their kudimaramath responsibility and the Government themselves should discharge the function of keeping the tanks in good repair. The villagers' responsibility is sought to be replaced by a small acreage fee. From 1949-50 onward provision has been made in the budget for this work.

Well-digging Scheme: In addition to State works, private works too, such as wells, can contribute to an improvement in irrigational facility. The part which the State can play here is to induce the agriculturists to construct wells and to that end give loans and subsidies to them and provide help in the form of soil surveys and trial borings. The grant of loans for this purpose under the Land Improvement Loans Act has been a longstanding practice, but owing to many difficulties, the response on the part of the agriculturists was not very great, till the food crisis supervened. Under the Grow More Food Campaign an Accelerated Wells Scheme was inaugurated. Under it a half subsidy loan is given for well construction or repair, including renovation of old tanks too, the loan being repayable in a period of 26 years. The subsidy is subject to a maximum of Rs. 300 per well and Rs. 500 per tank. On the Nilgiris the maximum fixed per well is Rs. 500 and in the Ceded Districts, Rs. 750. The loans are interest free and the subsidy is shared between the Central Government and the State Government in the ratio of 50 : 50. Subsidies paid between 1943-44 and 1948-49 in respect of 221,204 wells amounted to Rs. 5.07 crores². Provision made in the budget for loans for the years 1949-50 to 1952-53 were as follows: Prior to 1949-50 separate allotment under this head was not made.

1949-50	Rs. 1.5 crores
1950-51	" 1.52 crores
1951-52	" 0.38 crores
1952-53	nil
1953-54	nil

New wells constructed and old wells repaired upto 1948-49 were 84,812 and the area newly irrigated is estimated at 102,751 acres. This new irrigation under normal conditions will enable an increased food production of 51,336 tons.³ At a more accelerated rate of well construction, say double the rate which prevailed between 1943 and 1949, new acreage irrigated by wells during a five year period may be brought upto 200,000 acres. The cost involved in the form of subsidies would work out to about Rs. 10 crores. Private expenditure on wells will also come to about the same figure. This is the contribution that may be expected of private irrigational works. The distribution of these wells may be carried

2. Article by O. P. Ramaswami Reddiar, 'The Mail', August 13, 1949.

3. Appendix III, *A Statistical Assessment of the Grow More Food Campaign in the Madras Province* by Dr. B. Natarajan, Economic Adviser to the Government of Madras.

out on the basis of the available underground water resources, special attention being given to those areas where other works are not feasible. There is also the possibility of the construction of tube wells in select areas, though cost of construction is likely to be very high and facilities rare. In the opinion of experts, not much can be done in this State by way of tube well construction. And a well is likely to have the prohibitive cost of Rs. 50,000. Some big landlords, however, with large estates can profitably construct them.

The total possibility in the matter of irrigational development in a five year plan will be as follows:—

Major Works	1.12 million acres
Minor Works ⁴	0.50 million acres
Tank Renovation Scheme	1.60 million acres
Well Construction	0.20 million acres
Total	3.42 million acres

If the period is extended by two years and the first stage of the Krishna-Pennar Project included in the programme and more wells are sunk, the acreage will rise to 5.6 million acres. The total Governmental outlay for the five year period will be Rs. 104 crores and for the seven year period, Rs. 185 crores. This will work out to Rs. 26.4 crores per year at the higher rate.

It is thus seen that with some alterations in the existing plan and the inclusion of the Krishna-Pennar Project and certain other major mid-term schemes under contemplation in the plan and an acceleration of the well-digging scheme, almost the whole of the required acreage can be covered in a period of seven years. But it cannot be stated now, in the absence of detailed data, how much of this will be new acreage in the culturable waste or current fallows. Such data as are available go to show that the bulk of the extension of irrigation will be in occupied areas.

Part of the finance needed for these projects may be raised through betterment levies, as is actually contemplated at present, and the rest also should be raised in rural areas as voluntary or compulsory loans. This matter, however, has to be related to the other financial requirements of the plan and will be considered along with them in a subsequent Chapter.

4. In the Final Plan of the Planning Commission the target fixed for minor irrigational works, including tanks and wells, is only 556500 acres.

EXTENSION OF CULTIVATION—LAND RECLAMATION

For an extension of cultivation into the cultural waste or current fallows, in addition to the provision of irrigational facilities, measures for the reclamation of land are needed. The type of reclamation measure needed would depend on the condition of the land, its topography, the nature of the undergrowth on it and the ease or difficulty with which it may be brought under cultivation. In general, current fallows may be brought sooner and with less difficulty under cultivation than culturable waste, though the line of demarcation between the two is arbitrarily drawn. According to the practice prevalent in this State, uncultivated land and even land once cultivated but abandoned from cultivation during the six years immediately preceding the classification, is classed as culturable waste, while cultivated land more recently abandoned comes under current fallows. There is *prima facie* ground for thinking that land once cultivated can be more easily brought again under the plough than land never cultivated before, though in some special cases this view may have to be revised. As a rule, therefore, reclamation measures needed on current fallows will have to be different, at least in degree, though not in kind, from measures needed on the waste land.

There are at present about 11.5 million acres of cultivable waste and 9.3 million acres of current fallows existing in the State. (These figures are based on the average for the years, 1940-45). Since 1947 the tendency has been for current fallows to increase in area, due perhaps to an abnormal failure of the monsoon for a number of years in succession. This increase is hardly compensated by any extension of cultivation to the waste, and so signifies a net reduction in the occupied area. To regain the area thus lost in recent years as well as to effect a net over-all increase in the occupied area is the problem awaiting solution under reclamation of land.

Physically considered, the reclamation process may be fairly simple on some types of land, given the man power, the material requisites and the needed finance. In weed-infested land, for instance, or on land where the undergrowth is slight, deep ploughing with the aid of a tractor and a levelling with a bulldozer will physically prepare the land for cultivation, and if water is made avail-

able from an irrigational source or through rainfall, cultivation can proceed apace. Much of current fallows will belong to this category, and may be brought under cultivation once more with comparative ease, if the weeds are removed and water is made available. In Uttar Pradesh and in Madhya Pradesh weed-infestation has been the principal cause for leaving land uncultivated even in areas where rainfall is adequate for the type of cultivation followed. In Madras, however, this evil, according to authorities, is not so widespread as to render large areas uncultivable, though the weed is ubiquitous and affects much land in patches even in occupied areas. The problem here, as seen in current fallows, is lack of adequate water and the low fertility of the land which makes economical cultivation impossible.

On other types of land, however, reclamation work is bound to be, even physically, long and arduous, from the character of the topography, the nature of the surface soil or the type of natural vegetation prevalent. If the land is malaria-ridden, as often happens in hilly regions, preliminary work to rid the place of malaria will have to be undertaken before actual reclamation work starts. In Araka Valley in Vishagapatnam district and in Wynaad taluk of the Malabar district where reclamation work is now proceeding, this is how the problem is being assailed.

Physical ease or difficulty apart, much of cultivable waste and current fallows remains uncultivated because their cultivation under existing conditions is not an economic proposition, or financial difficulties stand in the way of embarking upon the needed investment. The water problem is the most intractable problem, and individual effort, except in stray cases, can hardly solve it. The finance required for investment is so large and the return on it so uncertain and inadequate that no individual can undertake such investment as a business proposition. The nature of reclamation work is such that unless an entire area, too large for any individual to undertake, is reclaimed altogether and the irrigational facility required provided, no lasting conversion of uncultivated to cultivated land can be effected. This is work falling within the special province of State activity or of a large and financially strong private corporation operating on the model of chartered companies set up in colonial territories. But private corporations will enter the field only when convinced of the profitableness of the venture, and since this is doubtful over large areas, they can hardly be considered practicable propositions. Still, where there is facility for their formation, they should be permitted to operate, subject to stringent control by the State.

On the whole, however, reclamation work is largely a responsibility of the State, to be discharged in the true long-run interest of society and in disregard of any immediate financial return to it. Happily this is recognized as such today in this country, and the Central Government is actively engaged in furthering it to the limit of its capacity. Under the five-year plan drawn up by the Food Ministry in 1947, a Central Tractor Organization and a Central Ground Water Organization have been set up to concurrently pursue reclamation and irrigation work and bring waste land under cultivation. According to the *Eastern Economist*, the total expenditure incurred on the Central Tractor Organization upto August 1952 was Rs. 5.5 crores and the area reclaimed, 4,66,000 acres.¹ To what extent these figures are reliable cannot be stated. At any rate, the figure relating to the extent of area reclaimed seems to be erroneous, for according to a statement made in the House of the People by the Union Food and Agriculture Minister, the area reclaimed by the Central Tractor Organization during the 5 years from 1947-48 was 7,20,870 acres.² In 1952-53, however, it reclaimed 5,10,000 acres.^{2a} In 1948-49, this Organization had eleven units of 150 tractors each, 375 of which were purchased with the loan of \$10 million from the International Bank for Reconstruction and Development. In the three years 1949-1952, 15,400 tractors were imported, but only a part of it went to the Central Organization. According to the Food and Agriculture Minister's statement, adverted to earlier, there were in May 1951, 8,022 tractors engaged in field work. The States are supposed to own 1,560 tractors in addition. Not all the imported tractors are fit for reclamation work. The heavy crawling tractors are used for this purpose but the medium sized and light tractors are fit only to be used in the follow-up cultivation. But even these lighter tractors will be found useful in bringing fallow land once more under cultivation.

The five-year plan drawn up in 1947, fixed a target of 6 million acres for land reclamation, but progress has been so slow that only a little more than a tenth of this figure could be reached. The Draft Five Year Plan prepared by the Planning Commission has, therefore, fixed the target for the Central Organization at the more moderate figure of 1.5 million acres (double what was achieved in the past quinquennium) and a cultivation of fallow land of 4 million

1. *Eastern Economist*, August 15, 1952.

2. *The Hindu*, December 18, 1952.

2a. Press Communique issued by the Consultative Committee of the Colombo Plan. *The Mail*, 18th October 1953.

acres. At the rate of 15 tractors required for reclaiming 10,000 acres in one season, 10,000 tractors would be needed to reclaim 6.5 million acres of land in one season.³ The number available with the Central Tractor Organization is undoubtedly much less, which accounts for the moderate target.

The Central Ground Water Organization is intended to conduct surveys for tube wells, train drillers and engineers and help in actual construction. It maintains a Central Drilling School for training and carries out sample surveys. Under the five year plan drawn up in 1947, the target for tube wells was 4,500 to irrigate 3 million acres. No information is available as to what extent this target has been reached.

The Ground Water Organization at the Centre may not be of much use to this State, as the experts appear to be of the opinion that much scope does not exist here for tube well construction, except in the district of S. Arcot. But the Central Tractor Organization should be of great service in reclamation work. Much has already been done by it in Uttar Pradesh and Madhya Pradesh in clearing weed-infested land, and in the same manner large areas of current fallows in this State too may be brought back into cultivation with its aid. The tractors owned by the State number only 329 at present (268 owned by the Agricultural Department and 61 by other Government departments). Of the 268 tractors owned by the Agricultural Department only 136 have bull-dozer attachments. Eight of these tractors are of the heavy type. Private parties and co-operative societies own another 243. If reliance is placed on these alone, the work will be carried out too slow to give any appreciable result. The aid of the Central Tractor Organization has, therefore, to be requisitioned, if a significant improvement is to be effected.

In the five year plan submitted by this State to the Planning Commission for inclusion in the all-India plan, reclamation work occupies an insignificant place, and except for a provision of about Rs. 30 lakhs for colonization schemes and a few more lakhs for training drillers and the purchase of tractors and boring instruments, no allotment of money is made for reclamation. For 1951-52, which is merged with the National Five Year Plan, under Scheme 4, Reclamation by tractors and bull dozers, provision is made for the purchase of 53 tractors. In the Grow More Food Programme too reclamation was comparatively neglected. During

3. *Eastern Economist*, Independence Number, August 12, 1949.

the years 1942 to 1948, land reclaimed and assigned for cultivation was of the total area of 285,000 acres, but actual cultivation was started only on 170,000 acres. Increased foodgrains produced on this acreage is estimated by the Economic Adviser to the Government of Madras at 286,000 tons. This gives a rate of 3,580 lbs. per acre, which is very much higher than the highest normal yield per acre under irrigated paddy culture and nearly double the State average. The estimate, therefore, cannot be relied upon to serve as the basis of the calculation required under planning. Probably the whole area is under irrigation and two crops are taken during the year.

In calculating the land area required for raising an additional million tons of foodgrains through extension of cultivation, a lower yield per acre should be adopted as the basis, for there is no guarantee that irrigational facilities will be available over the whole of this area. Most of the irrigational schemes under construction or projected, will benefit occupied areas to a great extent than new areas, and so over the greater part of reclaimed land, cultivation may have to depend upon rainfall or on underground water resources made available through well construction. The average yield of the State per acre under unirrigated culture is 1,300 lbs. for paddy, 580 lbs. for cholam, 540 lbs. for cumbu and 715 lbs. for ragi, and if calculated on this basis, nearly 2.5 million to 3 million acres will have to be reclaimed and brought under cultivation to raise an additional yield of 1 million tons of foodgrains. If this is fixed as the target for a five year period, reclamation work must proceed at the rate of at least half a million acres per year. The tractors and bull dozers required for this would be about 750 to 1,000 which it would not be very difficult to procure from the Central organization. And if reclamation work is concentrated on fallow land in preference to culturable waste, the work can be completed with comparative ease. But the cultivation of this area will depend upon the adequacy of rainfall, and since in this matter we are dependent entirely upon nature, it would be inexpedient to fix the target here so high. Half the figure or quarter million acres per year may be within practicability. That means that additional production which may be credited to extension of cultivation will be only half a million tons of foodgrains by the end of a five year period. If, however, through a combination of fortuitous circumstances, a higher production becomes possible, it will help to cover some part of the gap still to be covered towards the attainment of self-sufficiency in foodgrains.

At present the method adopted in the State in reclamation work is to assign Government land to private persons or land colonization societies and help the people with loans and grants and hire out tractors and bull-dozers to them from the Agricultural Department. Land colonization societies are formed for civilians as well as for ex-service men in areas where land is conveniently situated for reclamation. There were on 30th June 1952 (the latest figures available) 33 such societies for civilians and 11 societies for ex-service men with memberships of 3,417 and 1,318 respectively. Interest free loans are given to these societies for reclamation work and for the purchase of bulls and implements and free grants towards the share capital of members and for the purchase of seed, manure and sometimes bulls. In 1950-52 these amounted, in the civilian societies to Rs. 60,777. Loans and grants given to societies for ex-service men are usually met out of the amounts sanctioned from the Post-war Services Reconstruction Fund, as also by the Government of India and the Government of Madras. By 30th June 1952 the amounts thus sanctioned totalled Rs. 29.50 lakhs. The civilian societies were on 30th June 1952 indebted to the Government to the extent of Rs. 2.47 lakhs and to the Central Banks to the extent of Rs. 39,392.

In addition to these societies there are also 35 land reclamation societies to help private persons who wish to reclaim land with loans. Long-term loans are given to these societies by the Government, while short-term loans are secured from Co-operative Central Banks. These societies had a membership of 7,178 and a share capital of Rs. 79,822 on 30th June 1952. On that date the total of reclamation loans given by Government amounted to Rs. 1.64 lakhs. Private persons to whom new assignments of land were made were given, under the Grow More Food Campaign, certain concessions, such as remission of dry assessment and even water charges for a number of years, a subsidy of Rs. 10 per acre of land reclaimed and interest free loans as well as loans at the low rate of 3% through Governmental agencies.

All these measures would perhaps be needed in reclamation areas even under planning, for private persons and societies will have to be the agencies through which reclaimed land is cultivated. When large areas are available for reclamation and the joint effort of many people as well as the aid of mechanical methods is required, colonization societies will be found to be more efficient agencies than individuals, for they can more easily command the needed resources and carry out the work with greater economy.

In some cases, the expenditure involved may be so large that either the State or a resourceful corporation or joint-stock company formed for the purpose alone will be in a position to carry it out. Co-operative societies or corporations may be formed even in areas held in private ownership, if the land can be taken on lease or compulsorily acquired under the Compulsory Land Acquisition Act. The question whether private corporations should be allowed to reclaim and cultivate land bristles with difficulties and may appear to be objectionable from some points of view, but in the absence of any other agencies available for the purpose, there may not be much harm if they are permitted to do so under appropriate restrictions. The State can always reserve the right to acquire their rights after payment of adequate compensation.

The land area reclaimed in Madras State from 1st April 1946 to 31st March 1950, a period of four years, was 94,583 acres. The assignment of land to competent ryots, landless labourers and ex-service men started in the State as early as 1942-43, and in that year covered an area of 75,576 acres. In the four subsequent years the acreages were 48,068 acres, 31,865 acres, 14,513 acres and 12,073 acres respectively. In 1948-49 land reclamation by mechanical methods was adopted with the result that 35,569 acres were reclaimed in that year at a cost of Rs. 7 lakhs.⁴ In 1949-50 and 1950-51 the acreages reclaimed were 58,315 acres and 66,720 acres respectively.⁵

This rate of development is all too slow for the attainment of the target fixed earlier for the five year period. Quarter million acres per year is the requirement, and unless the Central Tractor Organization's aid is requisitioned and the State embarks on a forward policy in reclamation, the target figure will remain a distant, unattainable goal. Since under mechanical methods the work is more expeditiously done and since those are the only methods efficacious in the areas still awaiting reclamation, measures should be adopted to implement them. The cost is likely to be heavy, for at the rate of Rs. 7 lakhs for 35,569 acres, quarter million acres will cost about Rs. 0.5 crores, and the total expenditure during the five year period will amount to Rs. 2.5 crores. The purchase of the requisite machines will cost another Rs. 10 crores. But related to the cost under hand methods or to the value of the food or other crops which may be grown, it would appear to be lower and worthwhile.

4. Dr. B. Natarajan: *Food and Agriculture in Madras State*, pp. 73-76.

5. Report of the Agricultural Department, 1950-51, p. 91.

The work of reclamation through mechanical methods is being carried on in almost every district of the State through the help given in the matter by the Agricultural Department. Tractors with bull-dozer attachments are hired out to private people by the Department for clearance, levelling, bunding and reclamation of waste and fallow land. In the Tungabhadra Project area as well as in the Lower Bhavani Project area tractors and bull-dozers are used to clear forest land and settle evacuated villagers from the submerged areas. This activity of the Department has been on the increase since 1946, and at present there seems to be a clamour for the machines from agriculturists. Bull-dozers are used also in the clearance of cyclone-and-flood-affected lands, as also in the restoration of flowing conditions in rivers and spring channels. A beginning has been made in the use of the tractor in puddling operations on wet lands in paddy cultivation.

The hire charges levied by the Department are Rs. 10 per acre for ploughing by all types of tractors and Rs. 5 per acre for shallow ploughing. In addition, transport charges for the tractor, the ploughing outfit and for oil at Re. 1 per mile for each item separately have to be borne by the hirer. The charges for bull-dozers are Rs. 12 per hour of working for the heavier types, diminishing to Rs. 10 per hour and Rs. 8 per hour for the lighter types. Here also transport charges have to be borne by the party.

Two tractor workshops are maintained by the Department, one at Coimbatore and another at Bapatla, for the fabrication of spare parts and the repair of worn out parts. A supply of spare parts is kept in readiness to meet demand. Trained Agricultural Engineers tour the countryside instructing the drivers and machinemen engaged on these machines in the proper way of handling and lubricating them and carry out the needed repairs also. The manufacturers' representatives too, such as Messrs. Larsen and Toubro Ltd., Volkart Brothers, Rallis (India) Ltd., hold refresher courses for the workers on these tractors and carry out free inspection of tractors periodically. Private people are encouraged to purchase tractors on the hire purchase system and the Department receives applications and grants solvency certificates to those considered worthy.

This work, so well started, has to be extended considerably and the active co-operation and participation of private people and co-operative societies formed for the purpose, enlisted, both in the purchase and in the utilization of these machines for the work on hand, if steady progress is to be made towards the target figures.

CHAPTER VII

ORGANIZATIONAL IMPROVEMENTS

In addition to all that may be done by way of intensification and extension of cultivation, the attainment of the targets fixed and the progressive increase of agricultural output in correspondence with the increase of population would appear to wait upon improvements effected in farming organization. This is an aspect of the matter which has received very little attention in the past in this country. While since their inception the agricultural departments in the States and at the Centre have done a great deal of work to improve the technique of cultivation, little effort was put forth by them or any other agency to bring into existence an improved type of farming organization. Here and there, no doubt, experiments in consolidation of holdings were tried, albeit on a very small scale but with some success in the Punjab and Central Provinces (now Madhya Pradesh), but even in this matter this State lagged far behind. But consolidation of holdings, by its very nature, could remedy only some of the drawbacks of peasant, small-scale farming and helped only those farms which in aggregate extent were large enough to form economic units. Since the large majority of farms in India are submarginal and uneconomic, consolidation by itself cannot remedy their major defects.

In this State where the average extent of the holdings is 3.7 acres (1941), and in some districts as low as 2.2 acres, and a very large number one acre and less in size, the very smallness of the size constitutes a problem in organization, different in character from fragmentation for which consolidation is thought to be a remedy. Very little has been done for the elimination of this problem.

The wide prevalence of dwarf holdings in a predominantly agricultural State is an effect of population pressure and is necessarily a bad sign, unlike an industrial country, in as much as it reflects the low incomes and low standard of living of a numerous body of peasants. The problem it generates is, as Doreen Warriner has pointed out,¹ both technical and organizational. The technical problem proceeds from the high man-land ratio, the excessive number of work animals to the acre, lack of efficient tools and imple-

1. *Economics of Peasant Farming*, p. 156.

ments, the low intensity of livestock production and the too intensive grain cropping. On the organizational side the defect is seen in over and mis-investment of fixed capital and a low ratio of working capital to the acre. The conjoint result of both types of defect is seen in the low productivity per acre and per man and the progressive decline in the yield from land. Arresting this decline and creating the conditions favourable for the adoption of those intensive methods adumbrated in an earlier Chapter, are the necessary preliminaries to an all-out effort to increase the yield, and here it would be seen that the removal of the defect in organization will simultaneously resolve the technical problem of production too. Just as in industry improvements in the technique of production synchronized with great changes in organization, so in agriculture too the two must go together if a higher level of productivity is to be attained.

In deciding upon a suitable type of farming organization for the State of Madras, the excellences of the known types of farming organization and the appropriateness of these types to the conditions prevalent in the State should be canvassed. The type that is widely prevalent in the State, as well as in India as a whole, is the individual small-scale cultivation carried on by peasants where they exist or by tenants who, from the point of view of farm management and farm operations, are almost identical with the peasants. As alternatives to this there are the capitalistic farm, the co-operative farm, the collective farm and the State farm. The question awaiting examination is whether, if introduced, these latter types would register an improvement on the existing organization. The examination may be conducted purely from the view point of farming organization, as distinct from land owning, for though in practice farming organization simply and directly emerges from the way in which land is held, for analytical purposes the separation is possible and may be necessary.

Viewed as farming types, all these have the common feature that they represent large-scale farming, involving the possibility of introducing mechanized methods of production. They are nevertheless operative without mechanization and yet derive some significant economies of scale. State and Collective farms in practice tend to be larger in size than the other two types, and consequently offer greater inducement for the mechanization of the processes. In fact in the U.S.S.R. where these exist on a considerable scale, the decision to mechanize agriculture was taken before the collectivization process was started, and collectivization and the inaugu-

ration of State farms came on later as a necessity for the implementation of the earlier decision. This doubtless has accounted for their larger size. Some of the collective farms in the Steppes and forest regions of the Eastern Part of the U.S.S.R., have an average size of 6,000 acres. All collective and State farms in that country run into thousands of acres.² But both capitalist farming and co-operative farming can be carried on without mechanical aids and are so carried on in many cases even at the present time. British farming became mechanized after it had become capitalistic, while in Israel to-day which displays the best examples of co-operative farming, mechanization has hardly made a beginning.

While mechanization would appear to require very large farms as units of cultivation, very large farms also, running into thousands of acres, would require mechanization for efficient operation. Else, the distribution of acreage over space and the large number of men employed would present unmanageable problems. So in selecting the type of organization suited to this State, or for that matter, this country, the possibility or desirability of introducing mechanization should be an important consideration. In all densely populated regions, with little empty space available for a thinner and more even distribution of population, the large-scale unemployment which the introduction of full mechanical processes will create, in the absence of any concurrent industrial expansion, would appear to limit the size of the operating unit. Mechanization itself will be tardy in coming, even if other facilities exist, from the prevalent low cost of labour and the consequent unattractiveness of introducing labour saving devices. It is estimated that a full mechanization of the processes in Indian farming will cause unemployment to over 75% of the labour engaged now, and in absolute numbers nearly 67 million workers will be rendered workless in the country. In this State at the rate of 75%, the unemployed would be about 9.5 million. The possibility of diverting this surplus labour to unoccupied areas, roughly 20.5 million acres of cultivable waste and current fallows in this State, or of absorbing them into expanding industry or tertiary employments would decide the desirability and feasibility of mechanizing our cultivation. Under planning, attempts will doubtless be made to do all this, but the inherent difficulties involved in reclaiming land or engineering the requisite capital formation for an adequate expansion of industry would render the process long and slow. In the

2. *Year-Book of Agricultural Co-operation*, 1950, p. 161.

immediate future, therefore, i.e. in the period for which a practicable plan may be formulated, the absorption of surplus labour will be possible only to a limited extent, and within that limit only can mechanization be thought of. In the newly reclaimed areas where the problem of displacement of labour or the elimination of any vested interest will not arise, mechanization can be easily introduced. In fact without mechanical aids, such as the services of tractors and bull-dozers, weed-infested lands or rugged soils cannot be brought under cultivation, and the impetus given to the adoption of mechanical methods at initiation would render their subsequent development also easy. Barring this, it is very doubtful whether there is much scope in the immediate future for any appreciable development of mechanical methods.

It is easy to say, as some have done³, that the spectre of unemployment is exaggerated or the capacity of the economic system to absorb the displaced persons is greatly under-estimated, or to accept the notion without critical examination that mechanization by itself will step up the economy of the country to a higher level. That unemployment will result on a large enough scale to be a menace to the smooth execution of the plan and that the absorption of the displaced persons will be a tardy and difficult 'process of shift and adjustment' cannot be gainsaid. This is admitted on all hands, and dispute exists only in the matter of the magnitude of the problem and the availability of the facility required to solve it with ease. The idea that mechanization, by itself, will step up the economy of the country to a higher level is based on the tacit, but unwarranted, assumption that a given area of land will yield more under those methods. This has not been proved to be true. On the other hand, there is mounting evidence to show that yield per acre is static though yield per man rises. That yield per man will rise is almost self-evident, for fewer men will work on a given area and produce the same or nearly the same as before. But that this increase also means an increased yield per acre is a mistaken belief engendered by the increase in aggregate production of agricultural produce in the U.S.S.R. under the plans. This increase is wrongly attributed to mechanization, while correctly it should be attributed to the increased acreage brought under the plough. Mechanical methods doubtless helped in the redistribution of farming population over a large area and an increase in the area cultivated, but

3. See *Indian Agriculture and Its Problems*, Edited by A. N. Agrawal, p. 141.

their effects on yields per acre have not been such as to benefit them appreciably. In fact the whole experience of Soviet Russia, throughout the period of her plans, in spite of a combination of machine processes and scientific culture, has been that they leave yield per acre almost static.⁴ In a comparison effected by L. E. Hubbard⁵ between the average yields in 1901-10 and 1923-32 in all grains, in rye, winter wheat and spring wheat, it is also seen that while the yields of collective mechanized farms were slightly higher than the yields of peasant farms, they were definitely lower than those of private estates. Between 1932 and 1938, the Soviet yields improved, but the average grain yield throughout the country was no greater than on the private estates before the Revolution, but was certainly better than on pre-war (1913) peasant land. The low average was partly due to the inclusion in the calculation of the low yields in the semi-arid steppes and the northern regions to which cultivation had been extended. "Nevertheless", in the words of L. E. Hubbard⁶, "however one regards the grain problem, the enormous amount of capital invested in the means to produce agricultural machinery, in land improvement, in the selection and breeding of new and improved seed grain, in supplying chemical fertilizers, etc. has resulted in a disappointingly small improvement in the yield of the soil."

Still mechanization has its advantage in that it raises productivity per man and reduces the cost per bushel of corn raised from the soil.

In a forward movement in the industrialization of the country, therefore, mechanization of agriculture should have its place, both to bring the agricultural economy into line with the general industrial structure and to engineer an adequate marketable surplus in agriculture at a reduced expense in man power. Industrialization will, without a doubt, make drafts on man power available in agriculture, and while in the initial stages, that demand may be met by redundant labour, in the later stages it may be necessary to reduce the demand in agriculture in order to free sufficient man power to meet it. This should be done without in the least reducing the marketable surplus in agriculture, but, on the other hand, increasing it to the highest possible extent, for in an under-developed country, according to the thesis propounded by Mr. Maurice Dobb⁷,

4. *Economics of Peasant Farming* by Doreen Warriner, pp. 172 and 173.

5. *The Economics of Soviet Agriculture*, pp. 250 and 251.

6. *Op. cit.*, p. 253.

7. *Some Aspects of Economic Development*, p. 45.

economic development is in some measure limited by the size of the marketable surplus in agriculture. So in choosing the type of organization best suited to the State, the possibility of mechanizing farming processes to some extent in course of time should not be completely excluded from consideration, though in the near future its scope is severely limited.

This would mean that the organization selected should enable the conduct of large-scale farming and eventually offer facilities for the introduction of machine methods. Conditions favourable for these should also emerge from the system of land holding adopted and the principles of land use laid down.

From this it does not, however, follow that any one of the large types mentioned earlier may be adopted. Scale of operations is only one of the characteristics of a type, and usually becomes less significant, once a minimum economic scale is assured. More important than that is the measure of incentive provided by the type and the compatibility of its structure with the established temperament and social aspirations of rural folk. Judged by these latter criteria, not all the large-scale types will appear equally suitable. State and collective farming will be seen to stand on a different footing from co-operative farming, and these three, from capitalist farming.

The formation of State or collective farms in occupied areas will constitute a revolutionary change from the existing set-up and cause such dissatisfaction in the peasantry as to obliterate, almost completely, the advantage or benefits that are claimed for them. The expropriation of the present owners, which both these types of farms will involve, and the subsequent nationalization or collectivization of land is not on a par with the nationalization of industry, and so should not be considered practicable and desirable because the latter is. It is facile to make such a deduction from a seeming similarity and so it is all the more necessary to set out clearly and precisely all the implications of such a transformation. When land owned and cultivated by the peasantry is nationalized or collectivized, the status of the workers on the land is completely changed, and independent farmers are converted into a landless proletariat. It involves a social, economic and psychological revolution; and the new position which the erstwhile peasants come to occupy will be novel to them and utterly incompatible with their whole outlook on life. This would be disastrous to the social order and to the new farming organization, for the very people who are expected to work on the new farms will start with a sense of injury and

grievance and be completely hostile to the new arrangement. But the nationalization of industry does not carry with it this danger. The position of the workers in industry, from the General Manager right down to the lowest paid employee, will be hardly altered. They would continue to be employees of the State instead of a private corporation and would continue to have the same social and economic status as they were wont to have. Their interest in the concern and the incentive provided for work would experience neither increase nor diminution, unless State employment registers an improvement on private employment.

This difference between the two measures has to be kept in view when considering the desirability of these two types of farms. In addition, State farming has the defect that its management will be in the hands of a bureaucracy, on the honesty, integrity and incorruptibility of which its efficiency will depend. In this country such qualities cannot easily be associated with the bulk of the bureaucracy, and, while all nationalized ventures will be tainted by this drawback, it will be of special significance to State farms where a high degree of disloyalty will be inherent in the workers, reduced, as they will be, to the position of mere labourers. The ability of bureaucratic management to run such farms with economy and efficiency is not in question here, though in this matter too some difficulty may be experienced in securing proper personnel trained in large-scale farm management. Business administration, as is well known, requires specialized training, which the bureaucracy in existence does not have. Nor can the State secure the services of trained personnel on a large enough scale from private employment as it can do in the case of industry. Qualified men simply do not exist in this land. So the adoption of State farms as a general type in the land will wait upon importation of trained ability from abroad or the training of the requisite number within the country itself. But this apart, the larger and more fundamental question is whether the trained bureaucracy when put in charge can be trusted to use their ability honestly and completely in the interests of the State. The desirability, apart from practicability, of inaugurating State farms, as a general type, will depend on the answer to this question. Low productivity and consequent high cost of operation are the natural results of dishonest or inefficient management, and under such conditions the new organization will hardly appear to be an improvement on small-scale individual farming.

As the Congress Agrarian Reforms Committee have recommended, State farms have a place in this country only as experi-

mental or demonstration farms, to try out new methods of farming and serve as models to the cultivators. This work has necessarily to be undertaken by the State, as at present, and in view of the later possibility of mechanizing cultivation, such methods also may have to be tried out in the first instance on some large State farms. Furthermore, in newly reclaimed areas, if other types of farms do not emerge, the State may have to organize farms of its own. Here, however, there will be a clean slate to write upon and no dispossessed vested interest to contend with, and the heavy investment expenditure which has to be incurred will be within the possibility of the State alone.

Collective farms will not be under bureaucratic management but in the hands of the majority of workers who will form the collective body. This will in some measure solve the problem of management and give a more satisfactory status to the workers and evoke in some degree their interest in the farm. But land will be collectively owned or held and the individual owner who surrenders his land to the collective organization will lose his rights of disposal over his land and of withdrawal from the organization, but retain only the right to a share in the income of the farm in respect of such land. This would amount to a loss of the sense of possession which is a just source of pride and satisfaction to peasantry all the world over. Some sense of this possession may be retained by following the Russian practice of giving each member a small piece of land adjacent to his dwelling for individual cultivation and enjoyment, but the way in which cultivated fields are arranged in the greater part of this State would make such an arrangement impracticable.

Voluntary formation of such farms, therefore, will be fraught with great difficulty, and if compulsion is exercised, as was done in Russia, the hostility of the workers in their subsequent working will be a canker in the organization for which the association of the workers in the management will hardly be a solvent. If, in addition, the policy followed in the U.S.S.R. of the State virtually dictating from above the activities of the collectives be adopted, the control which the members would exercise over the affairs of the farm would be just nominal.

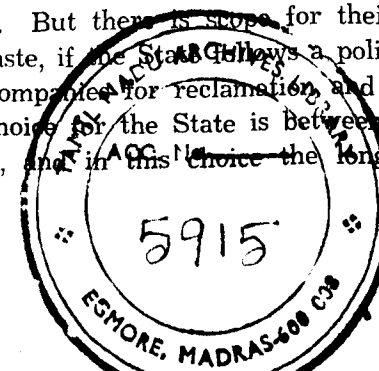
Almost all the objections raised against State farms will equally well apply to collective farms run in the Russian way. They would be incompatible with the temper of Indian peasantry and go against their cherished desires. Nevertheless, as in the case of

State farms, they may be found practicable in newly opened areas where individual farms have not had the occasion to arise.

There remain, therefore, only capitalist farming and co-operative farming as alternatives to individual small-scale farming. The suitability of these for this State, as well as for this country, may now be examined.

Capitalist farming of the large type may be carried out by individual or joint-stock companies on owned or leased land. Where individuals own large areas, as in zamindari tracts, the owners themselves or rich resourceful tenants or companies formed for the purpose may carry on large-scale cultivation operations with the aid of landless labourers and with or without mechanization. It is necessary, however, in such cases that land should belong to one owner, for only then would its cultivation by the owner or a tenant or a tenant company be facilitated. Even after the abolition of zamindaris, such large estates are likely to vest in the dispossessed zamindars as private or sir lands under ryotwari pattas, and there would still exist the facility for their cultivation on the capitalist model. From the point of view of economic or efficient operation, such farms cannot be objectionable, but usually objection is taken to them on the ground that they tend to perpetuate gross inequalities in land holding and deny the opportunity to landless labourers to attain the status of landholders. It is accepted as almost axiomatic that a more equal distribution of land is in the social interest and that the satisfaction of the land hunger of the cultivators is the discharge of a legitimate duty of the State. Neither of these propositions can be accepted without question, and, as has been pointed out in the Chapter on the Basic Structure of Agriculture, the true interests of the people concerned will not be served by the proposals made. In fact, as long as the State permits the continuance of the capitalistic organization in industry, no case will be made out for its prohibition in agriculture.

Even so, in occupied areas such farms will be the exception rather than the rule, for large estates in single ownership are few and will be fewer still after zamindari abolition. And it would hardly be possible to convert existing small holdings into large capitalist farms. But there is scope for their emergence in the uncultivated waste, if the State follows a policy of assigning land to joint-stock companies for reclamation and exploitation. Here, however, the choice for the State is between State, collective or capitalist farms, and in this choice the long-run social interest



should be allowed to tilt the balance. In the event of nil scope for State or collective farms in such areas, no great harm will be done if joint-stock or single entrepreneur capitalist farms are permitted there under the oversight and control of the State. In the colonial development of Africa, South-East Asia and certain other lands, as also in the building up of the tea and coffee plantations of this country, joint-stock enterprise has played a significant role, and given the facility for it, it may play a similar role in developing the under-developed areas of this country. But care should be taken to see that the evils associated with colonial development do not spring up here.

Co-operative farming as a general type for the organization of farms has many features to commend it and is devoid of those grave defects noticed in the case of State or collective farms. Under it the members who form the co-operative will retain their individual ownership over the lands they pool together and will share in the net produce in the ratio of the land contributed. In theory they will have also the right to withdraw from the co-operative and release their lands or an equivalent area from the common pool. In practice, however, this will have to be severely discountenanced to ensure the continuity of such farms, and in the event of compulsion being exercised in their formation, altogether prohibited. Still the retention of individual rights in land and the right to bequeath it which this will carry, will satisfy the aspirations of the peasantry and clearly differentiate such farms from collective farms. The collective body of members will be in full charge of the management of the farm, except in so far as they have to adjust their over-all designs to the requirement of the plan, and in the selection of methods and the manner of their execution they would be free from outside interference. All the advantages of large-scale farming can be gained, and in course of time, as the members get accustomed to collective action, the willing co-operation and enthusiastic participation of the members can be secured.

Cultivation of the farm will be carried out as a unit and the individual owners will have to relinquish their right to do what they like with their lands. This will amount to a suppression of individual initiative, and may stand in the way of the formation of such farms, but the participation of all the members in the formulation of decisions will to some extent compensate them for any sense of loss they may have. Still, the surrender of the right of disposal over one's land will not be acquiesced in without much trepidation; and inexperienced, as the cultivators are with the

working of such farms, there will not be much enthusiasm in the initial stages of their formation. In this country except for the few farms which have been started in Bombay, Uttar Pradesh and Assam and the initial attempts made in this State at Marudur and Nelvoy and a few other places, such farms are new and unfamiliar to the people. Doubts can, therefore, be legitimately cast on the willingness of peasants to form them or on the prospect of their success after formation.

Nonetheless, it would be found necessary, to put the farming organization of the country on a satisfactory basis, to make an attempt to form such farms, especially among cultivators of uneconomic holdings. In their case the alternative to such farms will be a continuance of sub-marginal farming in dwarf holdings with hardly a possibility of improving cultivation. Consolidating them into individual economic farms is fraught with greater difficulties and would involve, as has been stated in an earlier chapter, dispossessing many of their cherished possession of land. Compelling them to form co-operative farms will be an easier process and would more readily be acquiesced in when the alternatives are set out clearly to them. The Congress Agrarian Reforms Committee have recommended that co-operative cultivation should be enforced in the farming of sub-basic farms, considering basic farms to be sufficiently large to ensure profitable agricultural operations. Since the concept of the basic farm is unsatisfactory in certain essential respects, as has been pointed out in an earlier chapter, and the line of demarcation has really to be drawn at the economic holding, compulsion in the direction of co-operative cultivation may legitimately be applied to all uneconomic holdings.

This compulsion, though it goes against the grain of Co-operation, is justified on the ground that uneconomic holdings cannot, consistent with the need to adopt an improved organizational structure, be permitted to continue as individual farms and the possibility of their being consolidated voluntarily into co-operative farms is remote. Planning necessarily involves some restriction on individual freedom and a direction of individual activity to common purposes, and in such a context the element of compulsion in the formation of these farms will not be jarring on the general set-up. In fact the idea of compulsion has got associated with co-operation for some time in this country.

In what manner this compulsion may be exercised and what should be the minimum and maximum size of these farms have to

be decided in relation to the lie of the holdings, their number in each locality, the prevalent man-land ratio, the kind of personnel available to run them, etc. No *a priori* assertions can be made in these respects, since local conditions vary so greatly. And to ensure their successful working after formation, certain special facilities should be provided for them. These may take the form of a government grant to meet the initial cost of formation and layout of the farm, grants and loans for land improvement and the purchase of seed, manure, implements, cattle, etc., remission of land revenue in part or in whole for a specified period, supply of water from irrigational sources free or at reduced rates and gratuitous scientific and technical advice through officers of the Agricultural, Veterinary and Co-operative Departments. These concessions may be made applicable to co-operative farms voluntarily formed also among holders of economic holdings. Once it is admitted that the co-operative farm offers a superior organizational type to individual cultivation or other large-scale types, inducements should be given to the peasants to form them wherever possible. Here, however, compulsion need not be contemplated immediately, as its necessity is not so clearly established as in the case of uneconomic holdings.

Co-operative farming as generally understood has four distinct sub-types comprised in it, viz. co-operative better farming, co-operative tenant farming, co-operative collective farming, and co-operative joint farming. These four types have been examined, as regards their suitability for Indian conditions, by the All-India Planning Committee on Co-operation, as also by the Congress Agrarian Reforms Committee. Both bodies came to the conclusion that while there was scope for the employment of one, two and four in this country, the third was clearly unsuitable. The third type is identical with the Russian collective farm which has been discussed in the earlier part of this Chapter, and so need not be examined here again.

Co-operative better farming is the one already familiar to Indian cultivators, and it comprehends in its scope all the ancillary measures connected with farming, without however including cultivation itself. Co-operative endeavour here will extend to the purchase of farming requisites, the sale of the produce, the supply of credit, consolidation of holdings, improvement of rural welfare, etc., but in the main work of cultivation each individual farm will act as a separate entity. The Congress Agrarian Reforms Committee have recommended this type of co-operation for all basic and

supra-basic holdings which, according to them, are to be permitted to conduct individual farming. Converted into terms of the categories recognized in this book, this would mean that all economic holdings where individual cultivation is adopted should be brought within the system of co-operative better farming. As recommended by the Committee, all individual cultivators in a region, without exception, should be members of a multi-purpose society and in unison deal with their problems of supply, sale, credit, etc. The element of compulsion is present here too and is justified on the ground that without it progress will be slow and fitful and the needed reconciliation between social and individual interest will not be effected.

If individual farming is to be permitted, and it will be shown later that it will be necessary and advisable to do so, co-operative better farming, as understood here, will be the way in which some of the economies of large-scale operations can be secured by such cultivators. This is, therefore, a variety of co-operative farming which should find a place in the organizational set-up of agriculture.

Co-operative Tenant Farming is the kind of co-operative farming which has actually been started in this State, at Marudur and at Nelvoy. Under it the owners pool their lands, and the organization may purchase or lease land in addition, and all the land is leased out to the members in small holdings on the payment of a rent. The whole area is cultivated on the basis of a plan laid down by the society, but the actual execution of the plan in each holding is left to the discretion of the individual tenant. After paying the rent, the rest of the produce is enjoyed by the tenant cultivator. The purchase of seed, manure, implements, cattle, etc., is undertaken by the society for all members, and also the sale of the produce. But there is no compulsion on the member to join the scheme of joint purchase or sale. Out of the rents paid by the members, the expenses of the society are met, a reserve fund is built up and the residue divided among the members in the ratio of the rents paid by them.

This type of society registers very little improvement on small-scale individual cultivation and would introduce by the back door tenancy which, as has been shown earlier, it is advisable to suppress. Instead of owning the land he cultivates, the cultivator here will lease it from a society instead of a landlord. The rent charged may be kept within reasonable limits, but that is about the only advantage that can be claimed for it. The incentive provided by ownership

and the economies of large-scale operations will all be lacking. If individual owners can be induced to form a co-operative farm, there is no reason why it should adopt this form which in effect represents a retrograde step in some directions. The Marudur and Nelvoy societies were formed out of land leased from landowners and with landless labourers as members and so adopted this particular type of organization. But the development one expects to see in the formation of co-operative farms is one where the landholders themselves associate for the purpose of unified operations. In such an association the tenant type will be incongruous.

The last type of co-operative farm is the Co-operative Joint Farm where the lands are pooled together by the members who own them and cultivated jointly as one unit, the members receiving wages for the work done and a share in the profits in the ratio of the land contributed. The management is in the hands of the whole body acting collectively and all transactions are effected in common. This is the true co-operative farm. It secures for itself all the economies of large-scale cultivation and, for its successful working, demands a high degree of co-operation from its members. It is this form which is here advocated for compulsory adoption in the uneconomic holdings of the State. For economic holdings too it is recommended for voluntary adoption, and it is believed that in course of time, when cultivators see the superiority of such farming in the compulsorily formed societies, they will be induced to accept it as the general type all over. This will be facilitated if to start with the economic holdings are associated in co-operative better farming.

Meanwhile farms which are of the economic size and above should be organized for intensive individual cultivation. In a densely populated area with little new land available for extension, the intensive cultivation of small farms tends to maximize the yield per acre and, at the same time, to provide employment for as many as possible. As long as these small farms are of the economic size, farming operations can be carried on a profitable basis, full employment will be provided for the members of the family and the income of the farm will be sufficient to enable the maintenance of a comfortable standard of living by them. Peasant farming of this type in China, Japan, Eastern, Western and Central Europe and other densely populated areas of the world has been seen to be the most efficient system of farming under the circumstances and superior in some respects to large-scale mechanised farming. In this State, while the bulk of the holdings fall into the uneconomic cate-

gory, there are still large numbers which are of the economic size, and these, pending their transformation into co-operative farms, should be permitted to be worked under individual farming. These farms as well as all the Co-operative, State or Collective farms should adopt scientific methods of cultivation and attempt at the improvement of yields per acre. Every increase in yield per acre under a system of economic farming will concurrently mean an increase in yield per man and a reduction in the cost per bushel of corn raised. In addition, peasant farming, as practised in the more advanced countries of the world, is seen to promote a better utilization of the labour force, an increase in the volume of savings, the maintenance of soil fertility, and a more equitable distribution of income.⁸ This last was a declared aim, partly political and partly economic in nature, in the parcelling out of large estates among small peasants in the Central and Eastern European countries, and has been one of the aims in Zamindari abolition in India as well. But the equalization of property and of income effected by such reform is moderate in character. No where, for instance, has there been a complete abolition of the proletariat from the land.⁹

A better utilization of the labour force is secured partly through maximization of the volume of employment through investment in farm livestock and partly through the employment of a good and efficient standard of technique. The family labour of the small individual farm is usually a fixed factor which requires maintenance throughout the year, working or not, and so full employment can be provided for them only through keeping livestock on the farm, in addition to arable cultivation. The livestock kept on the farm tend to be larger per acre than on large farms where only the minimum labour force required for work throughout the year is permanently maintained.

Maximum utilization thus proceeds from the intensive employment of labour on small farms, for which on large farms there is not sufficient inducement. There is doubtless the suspicion that this intensification involves lower earnings for the labour employed and a consequent lowering of the standard of living, or in other words, the increase in produce per acre is through a greater employment of labour. This makes the labour cost involved in raising a unit of produce higher on a small farm than on a large farm.

8. D. Warriner: *Economics of Peasant Farming*, p. 140.

9. *Ibid*, p. 141.

Notwithstanding this, under circumstances where the alternative to this practice is a minimizing of labour cost at the expense of large unemployment or under-employment, any increase in the produce raised should be counted a sheer gain. For densely populated areas with few alternative avenues of employment, intensification of this sort is the only method by which fuller employment can be provided and living standards raised to the highest possible level. So it is that in Western Europe where mixed farming is practised on a large scale, peasant farming is successful in yielding a good standard of living to the farmer and his family. This success in Western Europe, in the opinion of D. Warriner, is the main argument in favour of peasant farming.¹⁰

Mixed farming, full facility for the practice of which exists only in peasant farming, also conduces to the maintenance of soil fertility. In the opinion of some it is only the family farm which can really maintain soil fertility.¹¹ Others would not go to that length, but still maintain that the family farm has an advantage in this respect over the capitalistic farm. The advantage accrues from the fact that on the large scale farm a separate cost has to be incurred to maintain fertility, and this cost is not likely to be incurred since it is unusual for such farms to be worked on the basis of the long view.¹² In the upshot, for society, the maintenance of soil fertility will work out cheaper under a system of small family farms.

The volume of saving too is proportionately greater in small than in large farms. This is the sequel to over-investment in small farms, necessitated by the intensive nature of the culture practised. To maintain the capital investment and if possible to add to it, a high degree of saving becomes necessary. The total volume of savings too tends to be greater under a system of small farms, but most of these savings go to the purchase of land or get invested in many small channels that there is no way of increasing productivity through appropriate investment. Thus capital shortage for purposes of economic development and a high degree of saving co-exist, making progress to a higher plane of productivity difficult. More employment, as D. Warriner has pointed out, for the existing labour supply is thus provided, but the situation carries with it the danger that there will be no scope for increasing employment to

10. D. Warriner: *Economics of Peasant Farming*, p. 147.

11. Dr. O. E. Baker, quoted in *Economics of Peasant Farming* by D. Warriner, p. 148.

12. D. Warriner: *op. cit.* pp. 149 and 150.

meet the needs of an increasing population embarking on industrial development. "The only criticism to make of the peasant economy on economic grounds is that it does not provide the means of growth."¹³ However, if agencies are brought into existence for mobilizing these small savings and directing them into right channels of investment, as for instance the co-operative movement, this defect of the small farming system may be to a great extent eliminated.

Considering all aspects of the matter, therefore, pending the formation of co-operative farms, individual family farms of the economic size should be permitted. As the experience in Western countries has shown, the size of the farm is not so important as the capital invested per unit of labour in determining productivity, and "an increase in the productivity of labour appears to occur without a fundamental change in the size of farming enterprises."¹⁴ So coupled with co-operative better farming societies, the individual economic farm has not only a survival value, but even offers scope for an advance to a higher plane of production and income.

13. *Op. cit.*, pp. 154 and 163-166.

14. *Ibid.*, p. 4.

CHAPTER VIII

REFORM OF THE RURAL CREDIT STRUCTURE

The execution of the intensive and extensive measures delineated in the previous chapters will provide the physical and material conditions needed for an expansion of productive activity. But alongside of these the cultivators would require certain institutional aids to production, equally essential. One such aid is finance or credit, and certain others are technical advice regarding scientific cultivation and stock raising and appropriate organizations for marketing and other ancillary activities. Satisfactory arrangements here will be found to be as necessary for planned production as a suitable basic structure or a proper organizational set up for agriculture. Among these aids to production, arrangements for the supply of adequate credit will assume primacy in that without that aid the facilities provided by the State under the intensive and extensive measures adumbrated earlier will lie unexploited. In a monetary economy finance functions as the life blood of the economy, setting it in perpetual motion; and in the context of time consuming processes of production, its essential role is to circulate in such a way as to sustain continuous activity. In agriculture, no less than in industry, finance in the form of credit is needed to play this essential role. But while industry usually has the whole well-organized banking system and other financial institutions of the country at its disposal, agriculture in almost every country is ill-served in this matter. In this country and in this State of Madras, lack of credit facilities for agriculture has long been felt as a real handicap to agricultural progress, and in spite of many attempts made in the past to place the agricultural credit organization on an efficient basis, slender success has attended those efforts. The need exists, therefore, for a thorough re-organization of the credit edifice. This re-organization has, doubtless, to be carried out by the State, for the whole experience of the past shows that the rural credit organization cannot be expected to right itself unaided.

But a re-organization of the credit structure waits upon a prior settlement of the rural debt problem. The problem of credit supply is on the one hand intimately related to the problem of rural debt and on the other to the problem of mobilizing rural savings. A proper adjustment of rural debt, as the Gadgil Com-

mittee on Agricultural Finance have stated, is a condition precedent to the re-organization of the credit structure, for without that being effected, the load of debt from which the agriculturist suffers will, while reducing the scope for an expansion of activity to negligible dimensions, sap all initiative and kill all incentive to production and absorb the major part of the credit still available to him for its repayment. The existing inordinate demand from the rural community for loans to service prior debt leaves little of long-term funds for the improvement of land, as is made evident by the nature of the transactions of co-operative land mortgage banks, and even diverts short-term funds from their legitimate uses. The only way to remedy this state of affairs is to adjust the size of the prior debt in each individual case to what will be just and proper and within the capacity of the solvent debtor to repay out of the margin available in his income. The Rural Banking Enquiry Committee, obsessed with the difficulties involved in the adjustment of debts, have given their findings against such adjustment, but in doing so they have obviously overlooked all the handicaps with which the debtors will be faced, if the debts remained unadjusted. Taking both aspects into account, adjustment would appear to be the lesser evil. A downward revision through the application of the principle of *Danduput* and the introduction of fresh terms of repayment, designed to lighten the burden of the scaled down debt, are the measures required for this, and should be undertaken by the State along the lines embodied in the Agriculturists Relief Act of Madras of 1938.

The debt problem is slightly different to-day from what it was in 1938 when the aforesaid legislation was passed, but the main principles embodied in that enactment are still applicable to all cases, and especially so in those cases where the burden of debt has remained unchanged, in spite of the new prosperity which the agricultural community as a whole has experienced through a rise of agricultural prices. Certain sections of the agricultural community, such as small holders and small tenants, who have had no surpluses for sale, have not obviously participated in the prosperity, and, therefore, there is the likelihood, as a result of the rise of agricultural costs, that their position *vis-a-vis* the debt has deteriorated rather than improved. At the 1945 enquiry into the debt position carried out by the Economist, specially appointed for the purpose, it was found that the small holders, tenants and landless labourers needed relief urgently as they were faced with deficits in their budgets, and their position could not have materially altered, ex-

cept in the direction of deterioration, during the subsequent period of about seven years. The kind of relief they require would be reduction of debt to about half the present dimension and the spreading of repayment over a period of time. In some bad cases a declaration of insolvency and an adjustment of assets towards the debt may be essential. Medium size landholders also will require easy terms of repayment, though in their case a reduction in the size of the debt may not be called for. Reduction of the debt has to be enforced through appropriate legislation, but that has to be accompanied by the setting up of an agency, governmental or institutional, to take over the scaled down debts from the private money lenders to whom they are owed at present. This latter proceeding, as the experience in the past has shown, is as essential as the scaling down itself, if a successful solution of the debt problem is to be achieved.

The present magnitude of the debt is not known, but in 1945 it was of the order of about Rs. 175 crores. It may be about the same now, in view of the fact that the reduction caused by increased prosperity in some cases has been offset by an increase of debt in the lower classes of the rural population. If through arbitrary action, the debt owed by small holders, tenants and labourers is reduced to half, the total debt after the reduction will be of the magnitude of about Rs. 135 crores, half of which, or slightly less than that, will be short-term debt. The amount of debt to be taken over may be placed at Rs. 70 crores.

Of this debt of Rs. 70 crores, nearly Rs. 64 crores will be owed by landholders, large and small, and only the remainder of Rs. 6 crores will be the debt of landless tenants and labourers. The 1945 enquiry showed this to be the ratio. The treatment to be accorded to these two sections of the debt will have to be different, in as much as only the landholders will have the security of land to offer against the debt. Suggestions are given below as to how this debt should be taken over and the present creditors adequately compensated. According to the suggestions made by the Gadgil Committee on Agricultural Finance, the adjustment of debt in the case of those who have a transferable interest in land should be compulsory, while such adjustment in the case of the others should be undertaken only on application.

The Central Land Mortgage Bank of the State, with the aid of the primary banks, may be chosen as the agency for taking over the debt of the landholders. In token thereof all subsisting mort-

gages should be cancelled by appropriate legislation and fresh mortgages in favour of the Central Land Mortgage Bank should be executed by the debtors. The existing creditors or mortgagees should be compensated by the Bank by the issue of twenty-year annuities payable by the Bank and guaranteed by the Government. The value of the annuity may be fixed in such a way as to give a present discounted value to it of the amount of the debt transferred at the prevalent long-term rate of interest, say $3\frac{1}{2}$ or $4\frac{1}{4}$, the rate offered on the debenture issue of the Bank¹. These annuities should be declared to be freely marketable and acceptable as security for advances by the Reserve Bank of India to scheduled and co-operative banks. The present creditors who receive these annuities will then have the option of keeping these annuities and receiving payment for twenty years, or selling them in the securities market at a price which will fully recoup them for the debt transferred. The total payments they will receive by way of annuities will not amount to more than twice the principal of the debt, even if the rate of interest applied in the calculation of the annuity goes as high as 5%. It would not be necessary in the present situation to raise it higher than that.

On the debt transferred to the Bank, the debtors should pay annually 10.5% of the debt for twenty years; 5% as interest, 5% towards repayment of principal and $\frac{1}{2}$ % to cover management expenses. The rate of interest charged them may be lowered, if a lower rate is adopted in the calculation of the annuity. The idea is that after deduction of the management expenses, the total annual payments received should fully cover the liability of the Bank in respect of the annuities issued. At the end of the twenty year period, the debts would have been liquidated at the same time as the annuities cease.

Under this arrangement the creditors will be vouchsafed an annual guaranteed payment for twenty years, or the opportunity to realize their credits immediately, and since avenues for the more lucrative investment of the realized amounts will hardly exist in a reformed credit structure, the probability is that most of them would choose to keep their annuities with them till maturity. Even in the improbable event of many of them being sold in the market, the amount realized will go to provide investment funds in rural or urban areas. No institution or agency will guarantee their purchase, and so their sales will depend upon the general willingness

1. The rate offered on the latest debenture issue (i.e. 1953) was $4\frac{1}{2}$ %.

of the investing classes to hold them in preference to available alternatives. Their attraction to the general investor will in the same manner act as an attraction to the creditors also who receive them from the Bank. Only in the event of opportunities being given for private lending in rural areas at higher rates of interest will there be an inducement to effect their sale on a large scale, and this would turn on the character of the credit structure prevalent there and the kind of restrictions placed on private lending, if permitted at all.

On the other hand, the debtors would be freed from the clutches of the moneylenders and would have their debts placed on a new footing, on terms more favourable for their ultimate liquidation. They would cease to operate as a dead weight on agricultural enterprise.

The adjustment of the other part of rural debt owed by tenants and landless labourers will be a more intricate problem, in as much as they have no tangible security to offer against the debt, and many of them being of unknown creditworthiness, the taking over of the debts will involve the agency concerned in a very risky undertaking. Many of the tenants also will cease to be tenants, if the proposals made under the Basis Structure of Agriculture are carried out. About 2/3 of the present tenants and labourers are seen to be in debt. Very few of these indebted tenants will be in a position to transform themselves into owners at the reform of land tenures, and so most of them will deteriorate to the position of labourers. In any settlement of their debts, therefore, it is better to treat them all as belonging to the class of labourers.

The settlement of these debts will not, however, be so imperative for the efficient conduct of agricultural enterprise as the settlement of the debts of the landholders. Still, from the point of view of the maintenance of proper living standards, this class of people need relief as urgently as the other class, and since they have so long been overlooked in debt relief measures, a proper adjustment of their debts under planning is called for.

This problem however is more difficult to solve than the other problem in as much as the bulk of the debt here is unsecured and short term. That perhaps accounts for the hesitation on the part of Governments to include these categories of debt in debt reduction legislation. It is difficult to make satisfactory proposals of legislation here or to clearly distinguish the different categories of

debt from one another. Still an attempt has to be made to tackle the problem.

In doing it, the two principles which have got implemented in general debt reduction legislation may be incorporated here also, viz. that all long-standing debt should be cancelled and that the remaining debt should be reduced in magnitude. One category of long-standing debt is the debt which the Panniyals owe to their masters and which enables the masters to hold them in some sort of bondage. All debts of this kind whenever incurred should stand cancelled forthwith. So also all debt based on documents, if proved to have been long standing, though renewed from time to time through new entries in books or the execution of fresh promissory notes, should be cancelled on the presumption that large sums of money have already been paid as interest. This cancellation, as the Sub-Committee on Agricultural Finance has suggested, should be made on application by the borrowers. Such applications will obviously be made only if there is satisfactory proof to the effect that the debt has been longstanding. All other categories of debt which are obviously short term should be reduced to half their magnitude. This provision should automatically apply to the whole of the remaining debt of these classes of agriculturists.

The relation between credit supply and mobilization of rural savings also is very close. In fact it has become increasingly clear in recent years that rural funds must provide all the working capital needed by agriculture and allied industries. This is partly due to the balance having tilted recently in favour of the agriculturists and partly to the absorbing demand for urban funds in urban areas themselves. Debt relief legislation perhaps marked the turning point in the flow of urban funds to rural areas, but the trend got accelerated during the increased tempo of activity in urban areas during the war and post-war periods. Under planning it is idle to expect any reversal of this trend, and so it looks almost certain that rural areas will have to depend on the savings generated there for all the investment activity contemplated.

The trouble with rural savings at the present time is that such of them as are made, lie scattered in small dribblets all over the countryside that an effort is needed to bring them together, and secondly, much of them are not made, though the ability exists, from a lack of the saving habit and the new temptation to indulge in increased consumption expenditure. The problem has, therefore, to be assailed in two directions, viz. the institution of suitable

agencies to mobilize the savings and a new drive to generate the maximum of saving. The institutions set up and the other facilities provided for mobilization may act as an inducement for an increased inculcation of the saving habit, still an all-out drive would require the incorporation in it of other instruments of propaganda as well.

The institutions chosen for this purpose should be capable of playing the twin role of mobilizing savings and dispensing credit, for, as the Rural Banking Enquiry Committee have pointed out, the agriculturists would be prepared to entrust their savings to such institutions only as would be ready, in times of need, to give them accommodation too. These institutions are, therefore, best studied in relation to the provision of credit facilities.

Rural savings would appear to be needed not only to serve as the basis of the short-term funds required by agriculturists and other rural folk, but also for such long-term and mid-term investment as would be left to the private sector to effect, and for a great part of the public investment which it is incumbent on the State to undertake as part of the plan. Questions relating to the magnitude of such public investment and the ways and means of gathering the necessary finance will be treated in a subsequent chapter under the head of Financing the Planned Programme. Here the role of rural savings in the private sector alone is considered. The two questions are not, however, unrelated, and while dealing with one the other will have to be kept in view; nevertheless the two need separate discussion.

Prior debt adjusted in the way suggested earlier, long-term funds would be needed by agriculturists for effecting improvements on land, such as, construction of wells, levelling, fencing, contour building, bunding, etc., and also for land purchase in order to convert an uneconomic holding into an economic holding or to transform tenancy into ownership. With the State undertaking a great deal of public investment with a view to developing the physical basis of agriculture under the plan, the scope for land improvement by private owners will get steadily circumscribed, and the need for funds for this purpose will form a diminishing proportion of the total funds needed in the private sector. In the nature of the case, it is possible only to get a very rough quantitative estimate of requirements here, for the plan itself would change the entire basis of any possible calculation. Even at present, in a capitalistic economy, from want of data it is impossible to make a calculation of what is needed, taking actual investment as the basis.

For land purchase, on the other hand, more funds would be needed than at present, in view of the new opportunity which will be given to tenants to become owners, but even here as very little data exist relating to the land area and the number of holdings held by tenants in zamindari and other landlord areas, no computation of any accuracy can be made. Such uncertainty characterizes the transactions relating to the conversion of uneconomic to economic holdings too.

Well-digging, under the plan, for extending irrigational facilities will be a major item under long-term investment, and according to certain calculations made in the chapter on Irrigation, the private funds needed for it, in the absence of Government loans, for a five-year period will be about Rs. 10 crores. This will work out to about Rs. 2 crores per year. If the present scheme of half subsidy loan should continue, the Government will assume responsibility for raising this finance. The other items also under long-term investment may be roughly estimated at Rs. 2 crores per year. This would exclude investment on newly reclaimed land for which also the State may have to assume responsibility.

Medium term funds required for investment on implements, machinery and cattle have been roughly estimated on the basis of existing need at Rs. 7 crores per year.² These requirements will get reduced, on the one hand, through a reduction in the number of farming units under the proposed organizational changes, and on the other, increased through the employment of machinery, improved implements and the upgrading of cattle. On the whole, perhaps a 50% increase in the estimate will not be far wrong. Requirements here will have to be computed at Rs. 10.5 crores a year.

In like manner the short-term funds required for meeting expenditure on annual agricultural operations will also rise through the use of increased manure and improved seed, through the conversion of dry into wet lands and through the extension of the cultivated area. This rise may be roughly estimated at Rs. 30 crores, bringing the total short-term requirements to Rs. 230 crores.³

The total funds required, then, will amount to about Rs. 245 crores. A third of this may be expected to be contributed by own

2. See author's *Madras Agriculture*, p. 158.

3. See author's *Madras Agriculture*, p. 157.

funds, possessed by the richer sections of the agriculturists. In addition there will be available the annuities paid in respect of adjusted debt, roughly amounting to Rs. 5.4 crores per year, and the existing short-term funds annually borrowed and repaid, amounting to about Rs. 85 to 87 crores. In all, the funds which may be expected normally to circulate in rural areas, without including the new savings effected through increased prosperity, will be about Rs. 173 to 175 crores. The remainder is the measure of the increased funds required in the rural private sector of the State to give effect to the plan. Distributed over the 35,800 odd villages in the State, it will work out to Rs. 15,000 per village. The over-all credit requirement will work out to about Rs. 46,000 per village. To this sum will have to be added the contribution that each village should make towards the financing of public investment. This matter will be dealt with in a subsequent chapter. The savings drive inaugurated and the machinery and the institutions set up for the purpose should have the over-all figure per village as their objective.

The measures appropriate to the mobilization of these funds as well as the grant of loans to the agriculturists may now be considered. The institutions at present available in the rural areas for this purpose are the post office savings bank, the co-operative credit societies, the co-operative land mortgage banks, the indigenous bankers and the village moneylenders. Of these the first is engaged only in collecting savings and the last two in giving loans. The savings collected by the post office savings bank are made available to the Government, and indigenous bankers and moneylenders work, in the main, with their own funds. The constitution of the post office savings bank is such that it can do only the present work of collecting funds for the Government, and this institution will figure as a potent instrument in mobilizing savings for the financial requirements of the public sector. The retention of indigenous bankers and moneylenders in the field will make available to the community such funds as are not likely to be entrusted with the other institutions. These will continue to be of large magnitude as long as the institutional credit arrangements are insufficient or they fail to attract these funds or private lending continues to be a more profitable business.

So the only existing organization engaged in the discharge of both functions, mobilization of savings and the grant of loans is the co-operative organization. This organization has been in existence for nearly half a century, and with the passage of time has increased

in size and efficacy and in the extent of its business with the rural community. But when taken in relation to need and what was expected of the organization, its performance has been disappointing. Even in those States where the credit movement has progressed to a greater extent, many defects, much inactivity and unsatisfactory results characterize it.

The present state of the rural credit structure is unsatisfactory from any point of view, and in its existing state is ill-fitted to meet the demands made on it by present agricultural activity. Reform is needed urgently, and such reform as may be effected, should take into account the new responsibilities which planned and expanded agriculture will place upon it.

In recent years, a few authoritative Committees have examined the position and made valuable recommendations. They are the Agricultural Finance Sub-Committee of the Policy Committee on Agriculture, Forestry, etc., the Rural Banking Enquiry Committee and the Informal Conference convened by the Reserve Bank of India. For the State of Bombay, the Nanavathi Committee also has reported on the question. And at present the Reserve Bank is engaged in a field enquiry into the problem, and when the result of the enquiry are known, much valuable material, it is expected, will be available for the formulation of the right policy in the matter. In the meantime, on the basis of the information available and the suggestions already made, a policy for the State may have to be formulated.

All the aforesaid bodies have placed a great deal of emphasis on the need to develop the co-operative credit movement, so that in course of time it may become the dominant organization in the rural credit structure, but at the same time they deplore the present state of the organization and express the view that it may take long for it to attain that position. Thus the Agricultural Finance Sub-Committee of the Policy Committee on Agriculture, etc., stated, "the need for seeking an alternative to the co-operative pattern at the primary stage is chiefly due to the uncertainty of progress of the co-operative effort. If it could be guaranteed that co-operative credit organizations could be set up to programme and could be made to work at minimum efficiency all over the country there would be little objection to relying almost entirely on co-operative effort in this case". The Rural Banking Enquiry Committee also, while in general favouring the idea of encouraging and supporting and even subsidizing to a limited extent co-operative societies and making full use of them, admit that the co-operative structure

where it comes into direct contact with the rural people, is weak and would need a reorientation to effectively play its role in the provision of credit facilities to the agriculturists. Still the latter Committee, unlike the earlier one, would place greater reliance on the co-operative structure to rise to the occasion than any new organization like the Agricultural Credit Corporation suggested by the earlier Committee. Other bodies too, such as the All-India Co-operative Planning Committee, the Nanavathi Committee and the Informal Conference convened by the Reserve Bank of India have expressed their views in much the same strain.

It is clear, therefore, that authoritative opinion is definitely in favour of making the co-operative organization the central organization in the rural credit structure. The only Committee which have recommended the establishment of Agricultural Credit Corporations in every State, to give different kinds of credit to the agriculturists, is the Agricultural Finance Sub-Committee, but the reasons adduced by them have not commended themselves to the Co-operative Planning Committee or the Rural Banking Committee which examined the proposal *in extenso*. The Co-operative Planning Committee, presided over by Mr. Saraiya, were clearly of the view that such aid and support by the Government as were contemplated to be given to the Agricultural Credit Corporation, if given to the higher co-operative organizations, would enable them to discharge the functions expected of the Corporation, with the additional advantage that they were already well entrenched in many States and would not need to be set up anew. They further pointed out that the new Corporations could not carry out this work without the aid of primary organizations like co-operative societies or borrowers' groups, and that the existence in the same field of two alternative organizations drawing support and assistance from the State would not contribute to economy or to the long-run interest of the co-operative organization. These arguments are in the main approved by the Rural Banking Committee, but they do not go to the length of rejecting the proposal, their view in the matter being "that no universally applicable pattern or machinery can be laid down for all regions, and that in each region an adequate machinery should be developed in conformity with local circumstances, traditions and ideas." They concede that in some regions the establishment of new organizations like agricultural credit corporations or banks may be necessary, nonetheless, they favour the full use of existing machinery before setting up new institutions.

Immediately, therefore, their proposal is to strengthen the co-operative organization.

The weakness of the co-operative credit structure lies at present not in the superstructure, consisting of the District Central Banks and the State Apex Bank, but, as the Rural Banking Committee have stated, in the primary societies which come into direct contact with the borrowers. In this State, at present, the existing societies cover only 22,101 villages out of 35,837 villages, 67.97 per cent, and the bulk of them belong to class 'C' and about eight per cent to class 'D'. The population covered form 19.49 per cent of the total population. Average membership per society is only 87, and average loan per member is only Rs. 50. On an average, therefore, the total of loans given by a society during the year amounts only to Rs. 4,350. Of this total, roughly 75% are short-term loans and 25% medium-term loans. These average figures are, however, slightly misleading in that they hide the real state of affairs. Some of these societies are dormant, and the villages where they exist are denied the benefit of a society, and the loans given are unevenly distributed, as between the societies and as between members, that many villages and many members go even without the service indicated by these average figures.

It is this state of affairs which has to be rectified in ways which will provide every village with a society and every creditworthy agriculturist with the opportunity to meet all his credit needs with the loans provided by the society. To these ends reform has to be directed.

Two ways in which the primary credit society may be improved, so as to serve the new obligations laid upon it, are the conversion of it into a multi-purpose society with limited liability and its conversion into a full-grown rural bank, serving a group of villages. In this State the Government accepted the policy of converting credit societies into multi-purpose societies in G. O. No. Mis. 5613/Dev. Dept. dated 12-11-1949 and has given effect to it in the case of about 11,106 societies. In U. P. too similar steps were taken a little earlier. Instances of conversion into full-grown banks are fewer, but the Alamuru Rural Bank in Madras and the Co-operative Society in Bhuvil in Bombay are striking cases. Both types of improvement will have their utility in the efficient provision of credit, but solely from the point of view of banking and credit supply, the rural bank may be found superior to the multi-purpose society. The defect of the multi-purpose society, from this particular view point, is that it undertakes many different functions the

compatibility of which with full developed banking is largely in doubt. The other functions recommended for such a society in this State are sale of crops, supply of farmers' needs, such as, seed, cattle feed, fertilizers, implements and consumers' goods, collection of milk and its despatch to the market, dairying, rendering first aid to animals, maintaining stud bulls, stocking of agricultural machinery for joint use and encouraging subsidiary industries. These are, doubtless, functions which will tend to raise the standard of cultivation and help the agriculturists in their varied, but inter-connected, problems, and there is certainly much advantage to be gained by one co-operative institution undertaking all these simultaneously. Nonetheless, as the experience of banking institutions in urban areas has shown, it may not be wise and financially sound to combine full-fledged banking with other types of business.

This argument does not, however, discredit the multi-purpose idea or the conduct of simple credit business by such a society, but militates against the assumption by the society of the more complex types of banking functions. For such a development, if it is considered desirable in rural institutions, the rural bank for a group of villages of the Alamuru Rural Bank type is more suitable. The question to be examined, therefore, is whether there is need, under planned activity, for this particular development of banking in rural areas.

Under the organizational improvements suggested in an earlier chapter, the productive units in agriculture are likely to be larger than hitherto, and they are all expected to practise scientific methods of farming, requiring larger capital outlays. Very large farms will not be excluded, but will exist here and there, and though individual farming on economic farms will be permitted, the large numbers of non-economic farms will be organized in co-operative joint farming societies. They will all be in a position to adopt improved methods of farming and will have larger surpluses for marketing. Monetary transactions involved in the process of farming and marketing in every village will be not only of larger magnitude, but will transcend the circumscribed areas of the villages. To service these transactions effectively, not only loans would be required, but other banking facilities, such as, remittance facilities, discounting of bills and other agricultural paper, cash credit arrangements and the cheque system. The institutions which provide these facilities should also mobilize the savings generated in rural areas in as complete a manner as possible and depend, in the main, on rural funds to meet all their

financial needs. This means that deposits of all kinds should be received by these institutions. To meet all these requirements, banks of the full-grown type are essential, and they should come into existence in agricultural areas, even as they did in urban areas with the emergence of a need for them. In the surplus grain areas and in the areas principally devoted to the raising of commercial crops this need will manifest itself sooner and with greater insistence than elsewhere, since even now it is being felt there, still, as planning progresses, it is bound to become more general throughout the agricultural economy.

In view of this, it appears doubtful whether the policy of converting every rural credit society into a multi-purpose society is sound. It looks as though it would serve needs more effectively if some of the larger societies situated in the more important villages are transferred into rural banks, catering to the requirements of a group of villages. They should, however, retain their co-operative credit structure.

This development will enable the larger holders and the co-operative farming societies of the villages to satisfy their banking requirements through these banks, while leaving the smaller holders to confine their transactions to the multi-purpose societies. And since the aim of the co-operative movement will be to draw into its fold all agriculturists, the strength of the membership in each type of society will be large enough to ensure an economic volume of business. These rural banks can, in course of time, expect to attain the status of self-supporting units like the co-operative banks of urban areas, and will be potent agencies in the mobilization of rural savings.

Concurrently with these developments attempts should also be made for starting new societies and new banks in those areas where they do not exist now, so that the co-operative structure may be a well ramified structure, covering every village in the State. The present policy of the State, according to the recent direction given to the Department of Co-operation, is to draw into the movement 50% of the villages and 30% of the population. The coverage over the villages already exceeds this percentage, but the population affected still lags behind the target set. It is only about 19.5% Under planned activity, however, a greatly accelerated advance is called for, and the target has to be the complete enveloping of the total agricultural population by the movement. If along with this, the recommendation made by the Madras Committee on Co-opera-

tion, 1940, of inaugurating the scheme of 'full finance' is also adopted, the co-operative credit structure will be set well on its way to becoming the dominant rural credit agency in the State.

In similar fashion there should be an expansion of the land mortgage arm of the co-operative movement as well, in order to provide adequate facility for the supply of long-term finance. This section, as it exists in this State to-day, is a well integrated and organized section, and all that would be needed would be the establishment of more primary banks, so that every taluk will have such a bank and the Zamindari areas and the Ceded Districts, which to-day are ill-served by the organization, will also be brought within its fold. The adoption of the Torrens System in the Zamindari areas, pending their final settlement on a ryotwari basis, and the inauguration of a governmental scheme of subsidizing and aiding the banks of the Ceded Districts which are periodically subject to drought conditions, will facilitate the opening and successful working of such banks there. At the present time the bulk of the long-term loans taken out of these banks are for the servicing of prior debt, but with the debts adjusted in the manner explained earlier, these funds will all be made available for land improvement or for land purchase. Under the land tenure reforms suggested in an earlier chapter, the demand for long-term loans from the new owners of land will be great, and the land mortgage banks, effectively aided by the State, are the most suitable agencies for the supply of such loans. Well-entrenched already where they exist, and having a reputation for sound management, an expansion of their activity will be fraught with less difficulty than the establishment of a new agency, and even in those areas where they have to be newly set up, through the adoption of accepted and familiar ways of doing the business, they will serve the needs of the agriculturists better.

The total of loans given by these banks during the year is now about Rs. 83 lakhs and the whole amount is covered by debenture issues. The 130 primary banks now in existence actually serve only about 6,500 villages, though their coverage is over 18,400 villages. There are still 17,437 villages to be covered through the establishment of new banks, and each bank must extend its operations, so as to serve every village in the taluk where it is located. The total of loans which the system as a whole will be called upon to give during the year will not far exceed Rs. 2 crores per year, on the basis of the calculation made earlier in the chapter, and this will be within practicability, if the existing guarantee of the Govern-

ment is continued and, if necessary increased, on the debenture issue.

Along with these developments, certain improvements in their working also would need to be effected. Under present arrangements all loans are given for periods of 20 years, since most of the loans taken are for the liquidation of prior debt. With the disappearance of this category of loans and the coming into prominence of loans for land improvement, the period of the loan can be reduced in certain cases to 10 or 15 years and the number of loans of smaller amount than Rs. 1,000 increased. The financing of these loans can be through the issue of debentures for periods of 10 or 15 years. More expeditious sanctioning of loans also would be needed, and can be effected through the adoption of the suggestions made by the Madras Committee on Co-operation, 1940, on this behalf. Speedier valuation of land offered as security for loans and quicker assessment of the prospects of contemplated land improvements will both be facilitated, if the bank normally requisition the services of experts and keep in readiness a panel of such men in each locality.

The Mortgage Bank system will also have to discharge the function of taking over the secured part of the adjusted rural debt, under the proposal made earlier in the chapter, but that will not affect its position as a long-term lender of funds or its efficacy in mobilizing the savings of the community. In fact, there is the possibility that the annual payments made by the banks to the erstwhile creditors, failing other avenues of lucrative investment, will be used for the purchase of debentures issued by the system. These payments will annually amount to about Rs. 5.4 crores, and the rural credit system, as a whole, may expect to be replenished with funds to the tune of this amount. Part of this will be available to the Mortgage System.

In view of the considerable development of the co-operative movement already effected in the State and the integrated manner in which both the short-term section and the long-term section have been constructed, there would appear to be no need to set up an Agricultural Credit Corporation along the lines suggested by the Gadgil Committee. The State support and aid which such a Corporation would require, if given to the co-operative structure, will enable the latter to develop to the desirable extent and discharge all the functions which the Corporation is expected to discharge. Nevertheless the role which the State has been playing hitherto as a rural credit agency should be continued in those fields

of agricultural activity where, due to the inordinate risk involved or the peculiar nature of the activity, the co-operative structure cannot effectively function. In reclamation work, for instance, as also in the well-digging campaign, where a combination of grants and interest-free loans or loans at low rates of interest are needed, the State must continue to find the needed funds, even if actual disbursement is entrusted to co-operative organizations. In like manner, when calamities like floods, storms, earthquakes, drought, etc. overtake particular areas, and the relief required is on an extensive scale, the State alone will have adequate resources to meet the situation. It may not, however, be necessary for the State, when the co-operative structure is fully developed, to grant ordinary loans under the Agricultural Loans Act or the Land Improvement Loans Act. Such funds as are normally spent in this manner, enhanced to meet the expanded activity in agriculture, should be used to replenish the resources of the co-operative structure to the limit of the capacity of the State to do so.

In aiding the co-operative structure with funds, the Reserve Bank of India too, through its Agricultural Credit Department, should play a more significant part. The Informal Conference summoned by the Bank recently has made far reaching recommendations relating to the ways in which the Bank should supplement the aid at present offered to the co-operative banks, and the Bank has already embarked upon the task of implementing them in its working.

The recommendation of the Informal Conference consisted in a three-fold approach to rural finance, viz. (1) for enabling the Reserve Bank to function more effectively within the existing framework, (2) for enlarging the framework so far as that could readily be decided upon and carried out, and (3) for eventually designing a new and co-ordinated framework in the light of facts to be ascertained⁴. The framework within which the Bank may provide accommodation to co-operative credit institutions is determined by Section 17, Sub-Sections 2(a) & (b) and 4(a), (c) and (d) of the Reserve Bank of India Act, as amended and given effect to in 1951. The two amendments passed in 1951 enlarged the original framework to a certain extent. Under the enlarged framework, the Reserve Bank can give loans and advances to Provincial (now State) Co-operative Banks and Central Land Mortgage Banks

4. Report of the Central Board of Directors of the Reserve Bank of India, Reserve Bank of India Bulletin, August 1952.

for ninety days against Government paper, approved debentures of land mortgage banks, promissory notes of central co-operative banks endorsed by the provincial co-operative banks, promissory notes of co-operative marketing or warehousing societies endorsed by provincial co-operative banks and promissory notes of provincial co-operative banks supported by warehouse receipts or pledge of goods. These promissory notes to be eligible as security or for purchase, sale or rediscount should be drawn for financing seasonal agricultural operations or the marketing of crops. Rediscounting facility was originally extended only to promissory notes maturing within nine months, but under the amendments passed in 1951, the period has been extended to 15 months and the purchase and sale of such promissory notes and bills of exchange have been permitted. The Reserve Bank now gives rediscounting facility ordinarily for 12 months' bills and in special cases for 15 months' bills.

As a result of the recommendations of the Informal Conference, the cheaper facilities for remittance of funds and the exchange of notes and coins given to scheduled banks have been extended to co-operative banks and indigenous bankers too, and the stipulation that all advances should be repaid by 30th September has been given up. Each loan is now treated as a distinct transaction and the full period is allowed for each. A credit limit is fixed by the Reserve Bank for each central co-operative bank or marketing society, but it is related to the total outstanding on any day and not, as before, to the total of borrowings irrespective of repayments. These limits are reviewed from year to year.

The other conditions originally laid down for financial assistance to co-operative banks, such as submitting periodical financial statements in prescribed forms, submission to inspection by the Reserve Bank, maintenance of minimum balances with the Reserve Bank and the observance of instructions issued by the Bank regarding the criteria of sound banking, are all still in force, except that periodical inspection is now put on a voluntary basis. The conditions applicable to co-operative central banks, if their promissory notes are to be eligible for rediscount, are that they should give a detailed account of their financial position and the condition of the primary societies financed by them, maintain fluid resources amounting to 40% of their deposit liabilities, and confine their operations as well as of the primaries they finance to short-term financing.

Under Sections 19(2) (b) and 17(4) (c) the Reserve Bank offers loans to provincial co-operative banks at a concession rate of

1½% on bills and promissory notes drawn for marketing of crops or for financing seasonal agricultural operations, with the stipulation that the benefit of the low rate should be passed on to the ultimate borrower. This concession rate of 1½% has been maintained even after the raising of the bank rate to 3½%. In 1950-51 the loans sanctioned by the Bank to co-operative banks amounted to Rs. 7.62 crores and in 1951-52 to Rs. 12.80 crores. The apex co-operative banks of Madras and Bombay have resorted to these loans on a larger scale.

Another direction in which the recommendation of the Informal Conference has been given effect to is in the setting up of a Standing Advisory Committee to advise the Reserve Bank on matters pertaining to the Agricultural Credit Department and allied subjects. This Committee consisting of 14 experts in the field will have the responsibility of evolving proper standards for co-operative banks and making recommendations regarding fluid resources, inspection, audit, credit limits and co-operative education and training. An All-India training centre has been opened already at Poona, in the Co-operative College there, to give a short-term course of six months to the higher officers of the Co-operative Departments and the executives of the apex banks and co-operative institutes, and a longer course of one year for the lower officers. Personnel are also being trained in the Agricultural Credit Department itself for the conduct of the inspection of co-operative banks.

In the field of long-term credit, the Bank is precluded, consistent with its responsibilities as the Central Bank of the country, from doing much. Nevertheless it helps by purchasing 20% of the debentures issued by co-operative mortgage banks, provided they are guaranteed by the Government, and by tendering advice to the banks as regards the terms of issue.

All this has been made possible within the existing framework, as enlarged by the recent amendments to the Act, but the Bank is now engaged in exploring ways and means of designing a new and co-ordinated framework in the light of facts to be ascertained, and with this end in view is conducting an All-India Rural Credit Survey. A Committee of five eminent persons directs the survey with the assistance of a Technical Committee. The survey covers 75 districts and the field work connected with it has already been completed. The data collected have to be analysed and collated before the report can be published. The Survey comprises intensive inquiries on the demand side, conducted in 8 representative villages in each district, taking 15 agricultural families in each vil-

lage, and also on the supply side, covering all the different credit agencies, such as, co-operative institutions, money-lenders, indigenous bankers, commercial banks, etc. On the basis of the study of these data the Bank hopes to recommend alterations in the Act which will enable it to set up a suitable and adequate framework for rural credit.

The stage is thus being set for the Reserve Bank to play a more active and useful part in the grant of credit accommodation to agriculture as well as to rural and cottage industries, and in course of time the co-operative institutions will be enabled to draw such funds as they require to supplement their own resources from the Reserve Bank. But their own responsibility in gathering together as much of rural savings as possible and operating normally on a self-sufficient basis should ever be kept in view as one of their principal objectives.

If the co-operative structure is developed to the extent needed or desired, that organization, by itself, will be sufficient to take on the task of credit supply to agriculture. Aided on the one hand by the powerful resources of the Reserve Bank and on the other by the Government it should be able to meet all the legitimate and essential credit needs of the agriculturists. As this movement progresses and gathers momentum, it will fast become the dominant institution in the rural credit field, on its way to becoming the sole institution, and the other agencies now playing a significant role will weaken and languish and experience a natural extinction. Once the co-operative structure becomes the dominant structure, it will virtually determine the colour and set the pattern for the other agencies in the field and the competition it offers to them will be inefficient, if the agriculturists themselves respond in the requisite degree, to keep down the cost of credit and even apply some restrictions on their mode of operation. But while it is being developed, those other agencies must play their accustomed part, albeit under fairly severe legislative restraints.

Of the other agencies now functioning, the moneylenders are the most important, and while they have been of the utmost utility to the agricultural community, the cost of that service has been exorbitantly high and they have failed to secure the long-run interest of the community. Their malpractices and the harmful effects of their mode of operations on the agricultural classes are too well known to need repetition, but if they are to be permitted to function, they should be prepared to submit to such restrictions on their activity as would be unobjectionable to honest, respect-

able purveyors of credit. Legislative requirements that they should maintain proper accounts, give receipts to the debtors for all payments received, stop other malpractices and refrain from usurious methods are non-controversial matters, but that the rate of interest chargeable by them should be statutorily beaten down to the barest minimum, that they should be prohibited from charging compound interest, that the rule of *danduput* should be made applicable in their case and that interminable mortgages should be stopped are all restrictions which they would view as encroaching on their legitimate rights. But these principles have all got incorporated in legislation in different parts of the country and have already received *de facto* acceptance that it is now too late in the day to rekindle controversy. Legally the position is settled, but all the same, there exists the widespread view that these measures have tended to dry up the source of credit and divert rural funds to other avenues of investment. This result, if true, has been due to the unco-ordinated regulation of rural credit, and will be of little consequence, if the whole credit structure of the economy is regulated in co-ordination and institutional credit arrangements are progressively made to supplement individual credit.

So the case for the regulation of moneylending is well established; the only question in dispute is to what extent it should be carried, whether it should include registration and licensing, as has been done in Bengal, Bihar, Madhya Pradesh, Uttar Pradesh and the Punjab, or be confined to the statutory determination of the rate of interest, regulation of accounts and prohibition of land alienation to them. To ensure uniformity of practice all over the country, licensing may be deemed desirable, but the warning given by the Rural Banking Enquiry Committee in this matter is particularly apposite and should lead to a thorough examination of the conditions prevalent in each region and the prospect of progress with regard to the setting up of institutional credit agencies, before a decision is taken here. On the basis of the evidence so far available there is little reason to think that in this State licensing will so improve matters as to give such protection to the debtors as other pieces of legislation will not give. A land alienation act and a regulation of accounts act with a statutory limitation of the rate of interest and the establishment of such other conditions of lending as will make private lending less lucrative than it has been hitherto, will give the needed protection to the borrowers, and at the same time foster the development of institutional agencies. The statutory rate fixed should be capable of revision from time

time and should not exceed the ordinary rate at which the institutional agencies carry on transactions.

All the provisions which apply to moneylenders should apply to indigenous bankers too who carry on lending operations in rural areas. The volume of their business is not at present great, and they show a decided preference for financing marketing rather than cultivation, but they, equally with moneylenders, charge high rates and occasionally indulge in obnoxious practices. These bankers habitually deal in 'Hundis' and provide considerable accommodation to the trading classes, and will in future be able to render the same service to the agriculturists too, if the practice of drawing agricultural paper should develop. They should, therefore, be permitted to continue, and, if possible, expand their business in rural areas.

CHAPTER IX

THE ROLE OF THE DEPARTMENTS OF GOVERNMENT

Besides credit supply on an adequate scale, the conduct of planned agriculture would require a sufficient supply of all the material requisites of production and much help by way of instruction regarding the methods to be adopted. In both these aspects, the initiative has to be taken by the Government and the major responsibility borne by them, howsoever they may be aided in this work by non-official organizations. The machinery for the conduct of this work already exists, and the Government through its various Development Departments are doing a great deal along these lines. The three departments engaged in this task are the Department of Agriculture, the Department of Co-operation and the Department of Animal Husbandry. Of these, the first and the third undertake activities of direct benefit to the agriculturists, while the second is engaged in persuading the people to help themselves through the principle of association. Under a plan all these departments must function in their appointed way, albeit on an expanded scale, and make a signal contribution to the implementation of the plan.

The Department of Agriculture impinges on the agricultural economy in a direct fashion on a number of points, and its activity is mainly directed, in all those innumerable ways, to the improvement of technique and the increase of production in agriculture. This role will naturally get heightened under a planned programme, for a great part of the latter will depend for its execution on an increase in productivity per acre. While this department sallies out to make a deeper and a more permanent impress on the agricultural economy, its activities should be properly dovetailed with the activities of the other departments as well as with the spontaneous advance of the agriculturists themselves. To this end the Planning Commission in their Draft Five Year Plan have suggested the constitution of an Agricultural Extension Service drawn from the personnel of the three departments and charged with the responsibility of executing the developmental programme. The identical purpose underlies the constitution suggested for the District Development Council as well as the State Development Council. Co-ordination of the planned activities of the various departments in alignment with the general plan will be thus secured, nevertheless

it would be necessary to discharge each department's particular functions, whichever be the personnel charged with the task. In planning the activity and giving general as well as specific directions as to its conduct, each department in its sphere must assume responsibility and ever be ready to give such technical advice and guidance as would be needed for its execution. This realization has made the Planning Commission suggest that from the district level upwards the departments should remain separate and function as distinct entities.

The Department of Agriculture: The two main functions of the Agricultural Department as conceived and carried out at present are (1) research and (2) demonstration and propaganda. The departmental organization centres round these two activities, but as appendages to them and for their effective conduct, certain other functions too are assumed, such as education, the trading schemes and the grant of loans. For administrative purposes the supervision of the work of the Marketing Officer too is brought within the purview of the department. While all these functions have their effects on agricultural production and marketing, demonstration and propaganda and the trading schemes have a more direct and immediate effect on the implementation of the planned programme of production. These have to be expanded and strengthened as part of the plan itself in such a way as will cover every village of the State. Concurrently, the other functions too should be discharged, and even expanded, in so far as they condition the effective discharge of the two first-named functions. The responsibility for the conduct of the trading schemes is progressively being transferred from the Department of Agriculture to co-operative societies, and when that process is completed, the Department will be freed from the discharge of that function, though the co-operative movement will be called upon to shoulder it in an expanded measure.

The work of Demonstration and Propaganda, as organized at present, is in the hands of the district staff and the special staff associated with certain intensive schemes. The higher ranks of the district staff, such as Deputy Directors, District Agricultural Officers and Personal Assistants to the District Agricultural Officers have the work of administration and the supervision of the research stations in their jurisdiction, in addition to their work of propaganda, but the main work for which the district staff is organized is the popularization of improved methods of cultivation among agriculturists. The staff at present engaged in this work, inclusive of the special staff, number 746, of which 340 are taluk demonstra-

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tors and the rest fieldsmen and maistries. Every taluk has an agricultural demonstrator, and some have more, if special schemes are operative there. There are 100 additional demonstrators in 100 taluks in charge of the scheme of intensive cultivation, 72 additional demonstrators for the intensive manure scheme and some special demonstration staff for firka development and extension work in connection with sugarcane and cotton cultivation. Demonstration and propaganda work in plant protection is carried on also by the Plant Protection Officers and staff in certain regions of the State.

Demonstration work is carried on by the agricultural demonstrator, under the supervision and guidance of the higher officers and the help of fieldsmen and maistries, in demonstration plots and model farms. There were in 1951-52, 6,614 demonstration plots and a registered model farm in each taluk. Demonstration farms for fodder crops were maintained in 12 districts. The demonstration plots are run by private cultivators under the supervision and guidance of the Demonstrator for the purpose of demonstrating improved methods. They are located in central villages with a group of 4 or 5 villages attached to each of them and are shifted each year to a new locality, so that in the course of a few years all the villages in the taluk may be covered by them. Their number has been greatly increased in recent years in pursuance of the policy to intensify this work. In 1951-52 demonstration plots were being run at the rate of one plot for every 3 or 4 villages of the State. This number may be considered to be sufficient for the purpose on hand, provided they are evenly distributed over the State and every locality gets the benefit of such plots. In their organization and working the Honorary Propagandists, appointed recently, have been of much help, and with an increase in their number, this work will be carried out as efficiently as the circumstances demand.¹

Model farms are a recent innovation, and their purpose, as stated in the Report of the Department of Agriculture, 1950-51^{1a}, is to "bridge the gap between the scientist and the farmer." They are obviously in private ownership, but registered as model farms, and though they have been organized at the rate of one for every taluk, not much by way of progress seems to have been attained so far. These model farms, if properly run, will be an asset in the work of popularizing improved methods, and every effort should

1. The scheme of appointing honorary propagandists has since been given up.

1a. Report, p. 72.

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be made to make them, in increasing numbers, a permanent instrument of propaganda. In a land of many villages, for the farms to be within the reach of all villagers, there should be one farm for every firka, and this should be kept as the target in view.

The regular work of propaganda is carried on by the district staff through propaganda meetings, crop competitions, lectures, radio talks, exhibitions, agricultural vans and trains, leaflets and journals. In 1951-52, 9,474 propaganda meetings were held, 18 radio talks were given and the department participated in 201 exhibitions. Four journals, in the four vernacular languages of the State, are published every year, and occasionally leaflets are printed and circulated among the cultivators. A Villagers' Calendar and Guide is published in English, Tamil and Telugu. To make propaganda as effective as possible over the State, a pilot scheme of appointing honorary propagandists was inaugurated in 1950-51 in eight districts, but since only a few suitable men could be discovered, only 27 were appointed, and out of that only 23 actually joined duty. They helped in laying out demonstration plots, organizing village agricultural associations, holding exhibitions and running competitions. Such honorary service, if enlisted on a larger scale, will effectively supplement the work carried on by the Department and at the same time whip up popular enthusiasm in a remarkable degree.

The existing official arrangements for propaganda will quite do even under planning, especially when the Village Production Council, which will be in charge of the execution of the plan, interests itself in raising the standard of cultivation and effectively supplements official propaganda in the matter. Nevertheless, it should be the aim of the officers and honorary propagandists concerned, to organize village agricultural associations in as many villages as possible, to help arrange a follow-up programme. To sustain the effect of the meetings held and lectures delivered by the propagandists, there should be some organ stationed in the village itself, which through daily talk and discussion among members will help to keep alive the interest of the cultivators in the new methods proposed. It is the absence of such organizations in the past on a large enough scale that made the results of propaganda so incommensurate with the effort expended.

While the arrangements made and staff appointed for the purpose may be considered adequate, it would still be necessary to insist that the work should be done with greater enthusiasm and with

the implementation of appropriate technique. For extension work of any kind, specialized training is required, and such training should be given to all those, especially of the lower ranks, engaged in this work. The Planning Commission have stressed the need for it in the proposals they have made, and since those proposals contemplate the pooling of the staffs of the development departments, such training is imperative. But even in the event of each department undertaking its own propaganda work, trained ability can always be expected to maximize effectiveness. This specialized training may be given at the Agricultural Colleges now run, if that can be done economically, or at the training centres of the Community Projects Scheme where training of a similar kind is being given to the staff engaged in that work.

The other functions of the Department of Agriculture, such as Research and Education, must go on as hitherto and the maximum use must be made of the facilities already provided for them. Work under these two heads has been recently expanded, and no further expansion is immediately called for. But under Agricultural Marketing, there is need for the organization of regulated markets in certain areas largely devoted to the growing of commercial crops. Regulated markets exist at present for cotton, groundnut, tobacco, arecanut, gingelly and cocoanut, in ten districts with about 14 market yards opened and 70 godowns, but the full acreage under these crops is not covered by them. The acreages covered are in cotton, 1.3 million acres out of a total of 2.2 million acres, in groundnut, 2.1 million out of a total of 3.6 million, in cocoanut, 510,000 out of a total of 603,000 and in tobacco, 287,000 out of a total of 299,000 acres. The uncovered acreages are concentrated in those districts where market committees have already been appointed, and market yards may be established so as to cover the new areas with benefit to the producers. There are at present no regulated markets for foodgrains or other food crops, except the grading stations for ghee and eggs, as in the recent past, foodgrains being under control, no necessity was felt for inaugurating them. But with decontrol of food, the need has arisen for regulating their marketing also, especially in the surplus districts, and with a view to meeting that demand, efforts should be directed to opening such markets. Since even under planning, producers are expected to effect their own marketing, suitable environmental conditions should be created for an economical and efficient discharge of this function.

To give effect to these proposals not much by way of expanded staff or increased expenditure would be needed. The Agricultural

Department has, in recent years, been expanding at a rapid rate, and the present scale of expenditure is nearly eight times the pre-war expenditure. The budget for 1953-54 has provided for an expenditure of Rs. 328 lakhs, and an annual allotment of this amount increased by Rs. 50 lakhs during the currency of the plan is all that would be needed to carry on the activities of the Department along the lines suggested.

Department of Animal Husbandry: Another department of Government the activities of which are intimately connected with agriculture, is the Department of Animal Husbandry. This department is of considerable size at present and is engaged in the conduct of veterinary education and research, in the maintenance of hospitals, dispensaries and touring billets, of cattle farms and stud bulls, the control of cattle pests and the implementation of livestock improvement schemes. Since cattle play an important role in Madras agriculture at present and will have an undiminished role in a planned programme, both as work animals and as purveyors of milk, the great significance of the activities of this department in a planned development of agriculture cannot be overstressed.

Doubtless an expansion of its activities is called for in every direction, so that a gradual, nevertheless a permanent, upgrading of cattle may be effected as a potent instrument in the improvement of agriculture. Emphasis has naturally to be placed on cattle improvement schemes, such as the maintenance of stud bulls and the castration of the scrub bulls, so that village cattle may be gradually converted into better breeds. At present the stud bulls maintained in the State, by all agencies taken together, come to only 1,383 (1951-52), besides 354 approved buffalo bulls. The need for approved bulls has been calculated at 50,295 bulls and 20,196 buffalo bulls. There is much leeway to be made here, and unless immediate measures are adopted to increase the bulls at stud, the problems awaiting solution will be only scratched on the surface. In like manner castration of the scrub bulls must proceed apace and very large increases must be effected here. In 1951-52, the latest year for which figures are available, there were only 44,602 castrations performed by veterinary institutions. Doubtless private castrations take place on a large scale in the process of rearing up work animals, still there is the need for a controlled castration of Brahmini bulls which roam the countryside. If this does not accompany the provision of stud bulls, the purpose of the latter proceeding would

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be rendered ineffective. The Livestock Improvement Act should be enforced throughout the State.

The number of stud bulls maintained for breeding purposes may be considerably reduced, if a well ramified scheme of artificial insemination is inaugurated. At present this is practised only in Madras City and the mofussil towns of Coimbatore and Guntur, and the number of cows and she-buffaloes submitted to it does not exceed 700 or 750 a year. This is all too insignificant a number against the large number of cows to be covered. It should therefore be the aim of policy to introduce this method in every veterinary institution and every cattle farm so that village folk may get speedily acquainted with the beneficial effects of the process. Once this method has become popular, the touring billets may also be utilized for the purpose, and at every place where a stud bull is maintained, facility may be provided for its practice. In actual experience it has been seen that artificial insemination increases the effective service of stud bulls at least ten-fold. It should therefore be recognized as a responsibility of the Department of Animal Husbandry to provide the needed personnel and instruments at every place where stud bulls are maintained. Even in private cattle farms trained personnel and appropriate equipment should be made available by the Department for employment and utilization.

In addition to the maintenance of stud bulls, cattle improvement schemes include also the issue of male stock to private breeders, the grant of subsidy to heifer-calves, financial assistance to cattle breeders and the formation of cattle breeding and livestock improvement associations. To accelerate the progress of this work, propaganda should be conducted with redoubled vigour and more Government cattle farms where pedigree animals are bred, should be established. At present there are only seven cattle farms maintained by the Department, at Hosur, at Lam in Guntur, at Visakapatnam, at Pudukottah, in Malabar and in S. Kanara recently established, and at Kurukuppi. More cattle farms in other districts are contemplated and should be soon inaugurated. It should be the aim of the Department to maintain a cattle farm or a cattle cum sheep farm in every district of the State, so that all may be served equally well in this respect. In every district a cattle improvement association should be organized with branch associations in every taluk. A five year period would be long enough for the attainment of these targets.

Pari passu with this development there should be an increase in veterinary institutions, such as hospitals and dispensaries, and a greater increase in touring billets. Every taluk should have a veterinary dispensary and every revenue sub-division a veterinary hospital. At present the veterinary institutions in existence number only 147, exclusive of three institutions maintained by the Corporation of Madras and two maintained by zamindari estates. Touring billets in existence number only 178. Approximately the number of hospitals should increase to 85, the number of dispensaries to 224 and the number of touring billets to 448.

The mortality from contagious diseases, such as rinderpest, food and mouth disease, haemorrhagic septicaemia, black quarter and anthrax, all of which have prevailed in the State, was in 1951-52 only 18,874, which can never be considered to be an alarming number. The preventive and curative measures adopted by the Department have been quite effective. Still the Department cannot rest content till all these diseases are eradicated from the State, for once they are permitted to exist in incipient form, there is no knowing when there would be a virulent outbreak of them. This would necessitate an increase in the number of touring billets and the provision of minor dispensaries at the headquarters of these billets. It is therefore gratifying to note that the Government have already approved the proposal for starting such minor dispensaries.

All these measures of expansion would involve the employment of increased trained personnel in the Department of Animal Husbandry and the expenditure of larger funds on the Department. At the present time the normal expenditure on the department is of the order of Rs. 60 lakhs a year, and the technical staff employed number 467 (1951-52). In a five year period such expansion of the Department should be contemplated as would increase the expenditure to four times the present amount and increase the staff also four-fold. The average expenditure on the Department in each of the five years may be roughly placed at Rs. 2 crores, inclusive of subsidies and other financial help given to private breeders. For the training of the needed personnel, veterinary education facilities would have to be increased. At the Veterinary College in Madras at present B.V.Sc. course and the G.M.V.C. Diploma course are conducted and at the Livestock Research Station at Hosur a two-years' Livestock Inspector's course is conducted. The Diploma course has become rather unpopular and annual admissions are few, while into the Degree course numbers ranging from 80 to 100 are annually admitted and into the Livestock Inspector's course

about 75. These numbers have to be increased considerably if the needed trained personnel is to be annually made available. Another veterinary college to be located in the Andhra area with provision for the admission of 200 students annually, and the expansion of the college at Madras so as to provide for an equal number, and the opening of the Livestock Inspector's course at three more centres will perhaps meet the need. Two of these latter centres may be located in the Andhra area. The college in the Andhra area and the centres in that area for the shorter course of inspectors can function as institutions of the Andhra State when it is separated from the State of Madras. For the diminished State of Madras the remaining institutions will be sufficient.

In the matter of research, advancement should advisedly take the form of intensifying research in the existing institutes at Ranipet and Hosur and the employment of increased personnel for its conduct. These institutes are now engaged in the study of cattle diseases and the preparation of vaccines and serums, and this work should naturally proceed on an increased scale to keep pace with the expansion of activity in other directions. Other kinds of research activity, such as, breeding experiments and fodder research, may also be undertaken in these institutes as well as in the cattle farms maintained by the Department.

In these ways the Department of Animal Husbandry can play a role in the planned programme consistent with the enhanced role of the other Departments of Government.

Department of Co-operation: The co-operative movement's part in planning will not be confined to the rural credit field only, but will extend and should be extended to other fields of activity too. Its possible role in joint farming and the reorganization of agriculture as well as in land colonization and reclamation has already been indicated in the chapters dealing with those problems. But with its many sided activity and the aptness of its constitution and ideals to the furthering of social objectives, its capacity for service should be fully utilized in the setting up of an appropriate social structure and the implementation of planned programmes. There is doubtless much truth in the complaint made in co-operative congresses in India that the Planning Commission in drawing up the draft Five Year Plan had failed to give the right place to the co-operative movement. This was partly due to the overemphasis placed on developmental activity in the public sector in the plan and partly also to the manifest weakness of the co-operative move-

ment in the non-credit field and the non-realization of its great potency for guiding and shaping concerted action in a democratic setting. This failure has been to a certain extent rectified in the Final Five Year Plan where the view is expressed that the Co-operative Movement should be utilized to the utmost extent in the execution of the plan. Taking the over-all picture of the co-operative movement in India, it is undoubtedly weak and uninspiring, but in certain regions, such as Bombay and Madras and possibly West Bengal, the movement has made greater strides than in other areas. In Madras, especially, the types of non-credit societies which have been started are numerous, and if each type is multiplied and worked efficiently, they will function as effective aids to the conduct of planned agriculture. The number of points at which co-operation can touch farming operations are many and, while some of these may be covered by the activities of a multipurpose society, others may require specialized societies to render the particular kind of service required.

From the point of view of agricultural production or marketing, the special service which a co-operative of any kind renders is to beat down the cost of the process, and in a planned economy no less than in an unplanned one, this objective should be pursued without abatement. This should be the aim of the individual producer as well as of the planning authority, for both individual and social interests are in harmony here in minimizing the expenditure of resources. Every kind of co-operative society which has this general effect is, therefore, an effective aid to production, and encouragement should be given to its formation. In addition, because of the particular ideology at the back of every society, co-operation can make a signal contribution to collective endeavour which few other types of organization can do. So the new emphasis placed by the Planning Commission in their final report on the appropriateness of the co-operative organization is a welcome change from their earlier position.

The main types of societies needed in a planned organization, besides the ones already indicated, are marketing societies, irrigation societies, consolidation societies, agricultural improvement societies, agricultural demonstration societies, milk supply societies, cattle breeding societies and societies for the salvage of dry cows. Other types also, such as consumers societies, rural housing societies and better living societies may be required for safeguarding the standard of living and welfare of rural folk, but they are not of direct importance to the conduct of planned agriculture. These types of societies also must be multiplied wherever possible.

Most of these types already exist in this State in various degrees of development, and some have a considerable measure of achievement to their credit. Marketing societies and marketing federations for the principal crops exist in different localities, and by 30th June 1952 their number was 291, exclusive of the federations which numbered 4 and the Provincial Marketing Society. Likewise the milk supply societies were 722 and milk supply unions 41 in number. Agricultural Improvement Societies were 58 in number, Agricultural Demonstration Societies 7, Irrigation Societies 22, Cattle Breeding Societies 35, and Societies for the Salvage of dry cows and buffaloes 2. It is not possible to say off hand, on the basis of available data, by how many these different types should be increased. The number required for efficient work would depend on the production programme on the one hand and the need that exists and the facilities obtaining in the different localities for starting and working these societies on the other. In a general way one can say there is need for multiplying them so that such societies may be spread as widely as possible.

Marketing societies are specially needed for the marketing of commercial crops in areas where they will be grown on a large scale, as also in delta regions where the marketable surplus in grain production will be of large dimension. In other areas the marketing function will be efficiently discharged by the multipurpose society. The multipurpose societies too can market the commodities assembled by them through marketing societies, if the quantities are large enough to make that proceeding worthwhile. The formation of these marketing societies, with godowns attached, will, on the one hand, solve the problem of storage, which at present is in a bad way in the State as a whole, and, on the other, facilitate the grant of credits to the producers by the rural credit agencies set up, not to speak of the direct benefit they will derive through a reduction of marketing costs and the higher price they can secure for their produce. The Co-operative Planning Committee, 1946, recommended the setting up of a marketing society for every 200 villages. At this rate the number required for the State will be only about 180 societies, while there are already in existence 291 societies. But some localities in the State are ill served in this matter and there new societies may have to be set up.

Agricultural Improvement Societies as well as Agricultural Demonstration Societies generally help in raising the standard of cultivation by popularizing improved methods, and their efficacy in aiding the planned effort is almost self-evident. It should be the

aim of policy to ultimately set up these societies in every firka, but pending that consummation, at least a few of them, say two or three, should be set up in each taluk.

Irrigation societies can be started only in areas where there are facilities for the joint irrigation of the fields from natural sources of water, such as rivers or streams, and where the State's efforts have to be supplemented by the efforts of the villages themselves. Such societies have, however, an important role to play in the provision of irrigation facilities, on which, as has been already seen, a great part of the planned programme depends. So wherever possible they should be started.

Likewise, milk supply societies, cattle breeding societies and societies for the salvage of dry cattle would be needed in suburban as well as rural areas, to better organize milk production and sale and the care and breeding of cattle. The co-operative organization for milk production and sale has revealed its excellence in many parts of the world, and in this country too, where this branch of agriculture is the most ill-organized, progress has to be sought in that direction. In cattle breeding governmental effort has to be ably supplemented by the joint effort of the villagers themselves in the immediate initiation of those measures which in course of time will effect an upgrading of the cattle of the land. The co-operative organization here also will be found to be most suitable and efficacious.

The Co-operative Department has, doubtless, to assume responsibility for the formation of these societies, and to that end the Department itself should be expanded. In forming and supervising the requisite number of multi-purpose societies, rural banks and land mortgage banks and in organizing co-operative farming and colonization and reclamation societies, heavy drafts will be made on the personnel of the department, and if to those functions these too are added, a considerable expansion of the department will be called for. In 1951-52, the latest year for which figures are available, the personnel of the department, including the staff for amelioration work connected with Prohibition, numbered 3,119, and the total expenditure on the department amounted to Rs. 79.23 lakhs, inclusive of grants-in-aid amounting to Rs. 12.36 lakhs. The personnel will have to be greatly increased, involving a concurrent increase in the expenditure of the department too, and if the Government should continue their present policy of giving financial aid to certain types of societies and for certain special purposes,

such grants may have to be made on a much more liberal scale than hitherto. The budget for 1953-54 contemplates an expenditure during the year of Rs. 77 lakhs. This may have to be more than doubled, even trebled, on the rough assumption that the staff of the department will have to be doubled and grants-in-aid increased to four-fold. The calculation of what would be needed by way of grants-in-aid is a very difficult process without fuller details as to the grants given now and the requirements in the future, but the Government will be compelled, in any case, to limit their grants to their financial capacity, and so the aforesaid figure can be accepted tentatively. On the whole, the expenditure on the Co-operative Department may be placed round about Rs. 2 crores.

Department of Rural Welfare: In addition to the three departments of Government already dealt with, there is yet another department of Government recently started, engaged in the social and economic uplift of rural folk. This is the Rural Welfare Department. Unlike the other three departments which have field staffs covering the entire State and activities spread over the whole area, this department's work is confined to selected firkas where an intensive development is aimed at. Started in the year 1947, it has now completed six years of work, and according to the Report of the Agricultural Department for 1951-52, work was carried on in that year in 84 firkas. The idea obviously is that in course of time more firkas should be brought within the scope of the department's activity and as new areas are annexed, the centre of gravity should shift from the old to the new firkas and organize reconstruction and development work there. Progress has been slow, and is bound to be slow, in so far as the aim is to engineer, in the selected firka, a many-sided intensive development. Activity normally centres round drinking water supply, village communications, education, medical aid and public health, spread of nutritional knowledge, leprosy relief, agriculture, irrigation, electrical development, livestock improvement, co-operation, housing, development of village industries, etc. The rural welfare officers prepare closely integrated schemes of development in the different fields and get them executed with the wholehearted co-operation of the villagers and the other agencies of Government working in the field.

Emphasis is naturally placed on whipping up the enthusiasm of the villagers and enlisting their co-operation to the fullest extent, in order, first, to engender the feeling among them that much of what is being done under governmental auspices is within their

own capacity to do, if they apply themselves to it, thus inculcating in them a sense of self-help and self-reliance, and, secondly, to safeguard the satisfactory execution of the follow-up programme for which the villagers themselves must assume responsibility. The degree in which this co-operative endeavour is enlisted is a truer measure of the success of the scheme than the several items of practical achievement, such as wells dug, roads constructed, schools opened, dispensaries started, etc. These items of practical achievement too, when statistically computed, give a good showing for the short period of the department's existence, though they form a very small percentage, when related to the work yet to be done. Taking account of the uphill task involved in all work of social amelioration in the Indian countryside and the ubiquitous lethargy, indifference and scepticism of rural folk, the achievements already registered are commendable.

This work must proceed at an accelerated rate under planning and should find incorporation in an overall plan, for most of the items of the scheme impinge on economic activity and will contribute to the development of the physical and material resources as well as the more important factor in village life and activity, the human element. It is quite clearly realized now that agricultural development should be integrated with rural development as a whole for results to be maximized and sustained, and it is with this end in view that the Planning Commission, in their report, have chalked out a machinery for rural development. All the same, in depicting the salient features of an agricultural plan, it would not be strictly germane to sally forth into the details of the other aspects of rural development. It would suffice to realize this interrelation and keep it steadily in view when formulating an agricultural plan.

Community Development Projects: Of the same kind as firka development, but conceived in fairly gigantic proportions and having a much wider range and scope are the Community Development Projects recently inaugurated. There is an all-India Administration set up for it, with branch administrations in the States, and this can be considered to be yet another Governmental agency for inaugurating and supervising developmental work. These projects have the objective of developing as intensively as possible the resources of an area, wide enough to yield enduring results and serve as a model for subsequent development of other areas. The central object of each project is to increase production, primarily agricultural, and as ancillary steps to it, as also as aids to the

raising of living standards, there are the subsidiary aims of imparting social education, improvement of health and the introduction of new skills and occupations. One part of the development programme is under the supervision of the Community Projects Administration set up by the Central Government with financial assistance from the Indo-American Technical Co-operation Fund. This part formed one of the items of development in the Indo-U.S. Technical Co-operation Agreement signed on January 5, 1952. The other part of the projects programme is under the control of the Central Ministry of Food and Agriculture and is sponsored by the Ford Foundation.

The two parts of the programme, though separate and carried out separately, are yet closely integrated, covering in some respects common ground and liaison is effected between the two through locating training centres near community projects. Projects under the Indo-U.S. Technical Co-operation Agreement fall into three main types, viz. (1) basic community development projects, (2) composite development projects and (3) training centres for instructing village workers. A basic community development project covers about 300 villages, with a population of approximately 200,000 and a land area of 500 square miles containing about 150,000 acres of cultivated land. Emphasis in the development programme is placed on increasing agricultural production, but some work is undertaken in such spheres as public health, education and road construction. These are projects without urban centres in them, and so the work involved is mainly of the rural kind. Each project area is divided into three blocks, each block covering 100 villages. Work in each project area is expected to be completed in three years, and the total cost is estimated at Rs.65 lakhs.²

In a Composite Development Project which in all likelihood will include an urban centre, the aim is to develop simultaneously agricultural production and small industries. The model for industrial development is provided by Nilokheri and Faridabad, two townships recently constructed for refugee settlement. The rural areas comprised in the project will be developed on the same lines as in the basic projects, but attention will be paid to the development of small industries as well. The cost here is estimated at Rs. 111 lakhs.

2. The Central Committee has recently decided to reduce the cost to Rs. 45 lakhs. The size of the unit and the population comprehended will be correspondingly reduced.

The training centres are intended for the training of the village workers, the Gram Sevakars, artisans, agriculturists, extension assistants, supervisors, health workers, executive officers and managerial personnel, and these are run on almost identical lines as the training centres under the Ford Foundation. These centres are usually located near the projects.

The projects under the Indo-U. S. Technical Co-operation Agreement are managed by a Central Committee which consists of members of the Planning Commission and Secretaries of some of the Central Ministries and officers of the Government of India. Under the general supervision of this Committee works the Community Projects Administrator, who is in executive charge of the administration. The programme of development is only partly executed under the direct supervision of the Community Projects Administration, the other part being supervised by the State Governments through the State Administrations set up for the purpose.

The funds provided for the purpose are partly contributed by the U. S. Government in dollars and partly by the Government of India in rupees out of the Special Development Fund created out of the sale proceeds of the Wheat Loan. Operational agreements have to be signed in respect of these schemes by both parties before work on the projects can be started. Such agreements, about 11 in all, have already been signed and the funds needed for them allotted by both parties. These funds are administered jointly by both countries, and are used for making grants or giving loans or a mixture of both. A large part of the funds will, however, be given as long-term loans, repayable in equated instalments with a nominal interest. Any supplementary finance required will have to be provided by the Government of India or the Governments of the States where the projects are located.

The projects under the Ford Foundation are conceived on a smaller scale and were already under way before the other projects were contemplated. Development Projects here cover only 100 villages and training centres provide training for only 50 at a time. The schemes fall into three kinds, development projects, training-cum-development projects and training centres. The funds provided by the Ford Foundation are administered by the Trustees of the Ford Foundation, and they make grants for the schemes after approval. The grants will cover the full expenditure in the 3rd and 4th years. The Government of India have to start

meeting expenditure from the 3rd year onwards, and will have to bear the full financial liability from the 5th year onwards.

Programmes already drawn up under the two schemes cover 17500 villages and 12 million people. Under the Indo-U.S. Technical Co-operation Agreement, 45 community projects and 25 development blocks are to be inaugurated and under the Ford Foundation, 10 development projects, 5 training-cum-development projects and 25 training centres are to be opened. Of these projects 6 are located in Madras State, spread over Andhradesa, Tamilnad, Rayalaseema and the West Coast.^{2a} The Government of Madras have already set up a State Administration for the Projects with a member of the Indian Civil Service as the Administrator-in-charge. The officers to be in charge of each project too have been appointed and have been given specialized training in the work. The 55 development projects contemplated for the Indian Union are estimated to cost about \$50 million to U.S.A. and about Rs. 41 crores to India. Besides, the Ford Foundation has sanctioned grants amounting to \$2.87 million for the village development centres and training centres.

The aim of a Community Project, as the Government of India's Draft outline on it states, is to revitalize rural life and to ensure to the men, women and children covered by the project area the "Right to Live". Food and agriculture, therefore, receive top priority and agricultural expansion is sought to be effected through reclamation of land, provision of irrigational facilities, quality seed, veterinary aid, improved implements, adequate manures, better marketing and credit facilities and the practice of improved technique. In this behalf plans of work are drawn up for each block, comprising minor irrigation schemes, inauguration of nurseries and demonstration plots, digging of compost pits, distribution of fertilizers and seed, holding of exhibitions and crop competitions, opening of co-operative societies and certain other activities which would whip up the enthusiasm of the cultivator and help him to increase the yield. Since however the object is to effect a multi-point development which alone can sustain an expanded agriculture and provide to rural folk the amenities of a full life, other lines of development too are to be pursued concurrently. They are development of communications, education of children and of adults,

2a. In addition 50 blocks have been selected in this State for training for National Extension Service. 22 of these blocks will be located in Andhradesa.

maintenance of public health and the provision of medical relief, encouragement of cottage and small-scale industries, improvement of housing, provision of sports, entertainments and other types of recreation, organization of co-operation and other kinds of self-help movements, training of workers of all kinds and the safeguarding of full employment to all.

The programme is formidable and extremely costly, and no government, least of all the Government of India, with its meagre financial resources, can undertake this task on the stupendous scale which the country would require. So the projects are pre-eminently designed as pilots in the generation of the spirit of self-reliance and confidence in village folk and the inculcation of the understanding among them that their improvement lies in their own hands, that for their salvation they themselves have to gird their loins and work incessantly in individual and group activity and that they alone through the voluntary contributions they make in money, in work, in co-operation and in enthusiasm, can carry out the plans formulated by governmental agencies. The Government's role is essentially the planning of the project and the rendering of such aid and assistance as are clearly within their capacity.

Emphasis is placed on the adoption of such techniques of production, in agriculture and in industry, as will utilize to the full the human personnel available and sustain the gradual improvement effected in both fields, as also on the need to integrate the many-sided progress into a unified whole, the different aspects sustaining and furthering one another.

There can be no doubt that this is the kind of intensive and many-sided developmental programme that will suit the Indian countryside. An extensive propagation of new ideas and the spreading out of governmental effort over a wide area give, as the experience of the past has shown, poor returns, and though there may be in some cases some worthwhile immediate return, the results of the effort do not abide, the ryots tending to revert to the old methods and their old ways when faced with adverse circumstances and the removal of the new incentives provided. No government can be expected to be in the field all the time, helping, aiding, encouraging and otherwise supporting those efforts of the cultivators initiated under governmental auspices, but bereft of the spontaneous urge to sustain them, once the pressure is removed. And it is just because this was the kind of governmental activity carried on so far in this country that results have been so incom-

mensurate with the effort expended. The new programme introduces the much needed change, and, having in view the peculiar characteristics of the villagers in India, promises more enduring results. The abundant man power available in rural areas will find a new utilization in the project areas, and the long period of enforced idleness, extending in many cases to six or eight months during the year, will be profitably spent on the common schemes of social amelioration. Above all, the metamorphosis that will be effected on the villagers' outlook on life by the humming activity of the area, for a considerable period of time, will kindle in them a new spirit and a new purpose in life, the value of which in the moulding of a regenerated India cannot be overrated.

But the programme, as at present contemplated in this State, covers only 2 per cent of the total population and a slightly larger per cent of the rural population. This is all too weak an attack on the problem to be tackled, but financial difficulties and lack of proper personnel and adequate supplies obviously stand in the way. But if these could be removed, as they should be under deliberate planning, more of such projects can be inaugurated. Within a five-year period of a plan the projects now initiated can be completed and a few others started, and if the new ones are started in the third year of older schemes, two sets of schemes may be completed within the period of the plan. That is to say, that in a five year period the aim of the State in Madras should be to complete 12 development projects. The basic projects cost about Rs. 65 lakhs each,³ and on that basis, the 12 projects will cost about Rs. 780 lakhs or roughly Rs. 156 lakhs a year. To the extent that foreign aid comes to finance these, either from the U. S. Government or the Ford Foundation, the burden on the State Government will be reduced. Tentatively, therefore, State expenditure here may be placed at Rs. 1 crore a year. The recurring cost of a project after the third year is estimated at Rs. 3 lakhs per year.⁴

3. Or Rs. 45 lakhs if reduced. The 12 projects will then cost Rs. 540 lakhs or Rs. 108 lakhs a year.

4. The First Five Year Plan, p. 230.

CHAPTER X

THE QUESTION OF CONTROLS

A planned economy and a system of economic controls are *prima facie* closely and intimately connected. This stems from the nature of a planned economy itself, for obviously and inevitably it has to be controlled in order that it may work to a pre-determined plan. All individual plans, if permitted at all, will have to be curtailed, modified and otherwise controlled so as to fit them into the over-all design and objectives of the social plan, and at every stage in the implementation of the plan, the individual producers as well as all those engaged in productive and distributive activities will have to be persuaded, cajoled or coerced into helping in the execution of it. Planning and control inevitably go together.

But the kind of control germane to planning depends on the scope of the plan and the nature of the methods and devices adopted to ensure compliance on the part of individuals. If, for instance, the plan confines itself to the field of production and leaves distribution uninterfered with, some of the controls usually associated with planning will become superfluous. It would not then be necessary to control incomes from the point of view of distribution, and the devices adopted to contain wages and salaries as well as profits of enterprises within approved levels may all be avoided. So also, if coercive processes are adopted to ensure compliance on the part of producers in preference to the provision of adequate incentives, some of the key factors in the economy, such as, prices and rates of interest, may be left unfettered, though even these from certain other points of view may require control of a sort. The types of control needed and the manner in which and the objectives with which they should be operated are matters pertaining to the detailed implementation of a plan, and can be worked out only in relation to those details. But when viewing the plan as a whole, certain essential lines of control will emerge from the nature of the plan itself, apart from the over-all control which planning of any kind entails.

There will, doubtless, be the need for an over-all control of the economy with the specific object of suppressing all individual deviations from planned activity; that is to say, a physical control of production has to be associated with a planned programme of

production. But whether in addition to this there should be other types of control also will depend on the programme of production. Usually planned economies are characterized by heavy investment programmes, with their concomitant of scarcity of consumers' goods and an excess of money income over the level of aggregate real income. These by themselves are capable of disturbing the planned programme if control measures are not given effect to. The *raison d'être* of control in such situations is the equitable distribution of the scarce goods, the proper allocation of the requisites of production, the repression of the incipient inflationary pressure and the certain procurement of the finance needed for investment. The earlier five-year plan of the U.S.S.R. and the four-year plans of Hitlerite Germany had these characteristics, and so a recourse had to be had to a system of controls. The plans inaugurated in the post-war period, in France and other European countries, had, in addition, the complication introduced by war damage and the transitional problem. If, however, a different type of plan is visualized, not involving such heavy investment, the frictions which controls are intended to eliminate, though not non-existent, will be of a more moderate kind and may be capable of resolution without the aid of a ramified system of controls. So the need for controls turns on the nature of the plan itself and the ways and means adopted to implement it.

For an equitable and planned distribution of the scarce goods (capital goods and consumers' goods), a system of rationing would be needed, in addition to the control of their prices, and for containing the inflationary pressure within the permitted limit, there should be either a complete mopping up of excess purchasing power with the aid of fiscal and financial measures or a rigid maintenance of prices coupled with schemes of strict rationing. Supplementary to these or as alternatives to them, in some cases, wage and salary regulation and profit and dividend restriction may have to be inaugurated. And it goes without saying that international disturbances have to be warded off through systems of export and import control.

These are the patterns of control necessitated by the planning of the economy as a whole, and without giving effect to some of these controls, even a sectional plan may get frustrated in implementation. However enthusiastic and favourably disposed the people as a whole may be with reference to the plan, opportunities for indulging in individual whim and recalcitrance will be many, and will have to be smothered by deliberate measures in that be-

half. It is this consideration which has obviously compelled the Planning Commission to affirm with much force the inevitable need for controls in opposition to the tendency seen in the Government of India to progressively relax existing controls.

In an agricultural plan which confines itself to the production and distribution of agricultural commodities, it may appear, at first blush, that the need for controls is not so imperative as in an over-all plan. But that this is not really so will be realized as soon as it is stated that a sectional plan can hardly exist by itself, but will have to be integrated with the over-all economy, and the interaction of the different parts or sectors of the economy can and will alter the shape and form and relative importance of each sector. So in this matter any treatment of the agricultural economy in a segregated manner would be both impracticable and unrealistic and bereft of any great degree of utility, if attempted at all. Even so, it may be necessary, in the interests of planned production in agriculture itself, to consider the need for some of those controls which have a direct impact on agriculture, keeping in view at the same time the inter-connections with the other parts of the over-all economy.

According to the plan developed in the earlier chapters, emphasis is placed on adequate food production, and priority is assigned to it. This means that as far as foodgrains are concerned, the need for a controlled distribution of these grains within the State will steadily dwindle as the plan develops, and the fulfilment of the plan should see the complete elimination of any need for control of food, except the restriction or prohibition of exportation. During the currency of the plan, however, especially in the earlier years, annual production may be inadequate to meet normal effective demand. But even then, if the deficiencies are made good by importation, the need for controlled distribution will be obviated. For sometime now food has actually been decontrolled in the State, the Government confining its activity to the distribution of imported and procured food through fair price shops, and yet even under inadequate domestic production, the fear that prices will soar up has not materialized. So under the proposed plan, there does not appear to be any need for the reimposition of food control. This statement has to be understood as reserving control of prices on grounds other than the equitable distribution of food supplies.

The Planning Commission in their Final Report have recommended the continuance of food control for the country as a whole

during the currency of the plan, and that recommendation obviously goes against the suggestion made above. But the situation visualized by the Commission is very different from the one contemplated here. The target for additional food production set in the All-India Plan is quite moderate and is not expected to bring in self-sufficiency even on the basis of a minimum ration per adult per day. They expect scarcity conditions to prevail, and so their recommendation is in keeping with the problem they have had to assail. But here self-sufficiency on the basis of probable effective demand is the target fixed, and the conditions prevalent in the State now are such that an altogether different state of affairs will prevail here.

While food control of the kind which has prevailed in the State till recently may not be essential in the context of the plan, certain other types of measures may be required to provide the proper setting for food production as well as for the production, in adequate quantities, of the other agricultural commodities. These measures will obviously take the form of the control of prices, for prices are the crucial forces in the economy. Such control may cover the prices of agricultural commodities and the prices of the requisites of production which determine agricultural costs. To what extent these are needed should be examined.

Agricultural production, being primary production, is not so dependent on other sectors of the economy as industrial production. Only a few of the materials it uses, such as, implements and machines and fertilizers, are the products of industry, and only the last of these would require constant replacement. Price changes in these materials will not have such significant effects on agriculture. Normally agriculture makes the needed adjustment to such changes, and if under planning the changes are of the normal degree, much difficulty will not be experienced in carrying on production according to plan. Costs in agriculture may fluctuate in response to these price changes, but those fluctuations are unlikely to be more than moderate. But the living standards of the agriculturists are dependent on the other sectors of the economy to a greater extent, and price changes in the commodities which they habitually consume may influence those standards, but changes here can have little direct effect on the costs of agriculture. Small fluctuations in living standards can always be expected in a dynamic world, and as long as they continue to be small, no special measures to arrest them will be called for.

It turns out then that the control of the prices of the requisites of agricultural production in order to eliminate fluctuations in those prices is not so essential as their adequate supply through co-operative or governmental agencies. Some of these requisites under the Grow More Food Campaign have been supplied to cultivators at subsidized prices, and if the system continues and the Government sees to it, under the over-all plan, that they are produced in sufficient quantities, the case for the control of their prices from the point of view of agricultural production will completely fail.

But the control of the prices of agricultural commodities stands on a different footing and has to be viewed from a different angle altogether. Here the question of incentive to production as well as the necessity to maintain a parity relation among agricultural prices and between them and industrial prices enters. Agricultural prices determine incomes for most agricultural producers, and in order that a parity for its own sake may be attained here, as well as to serve as an adequate incentive to production, a certain regulation of these prices is needed. The principle of parity of incomes is unexceptionable and ensures equal income to similar work. The acceptance of this principle in the regulation of planned agriculture will be only doing justice to a sector of the community which is normally in a depressed state, being denied its fair share of the community's wealth. As between the producers of different agricultural commodities too, there should be a parity of incomes so as to equalize their attractiveness and ensure the production of adequate quantities of each.

The requisite measure here is the fixing of minimum prices, taking into account cost of cultivation and rural cost of living and the general level of industrial prices. These minima should be so fixed as to make relative prices neutral in their effects on the choice of crops, so that the criterion of choice may be shifted from the price factor to social need, as expressed in the plan. The minimum prices so fixed should be declared to be guaranteed prices, the State giving an undertaking to step in and pay those prices for unlimited quantities, if the market should sag below those levels.

The equalization process may be a little difficult at the present time in as much as foodgrains prices are far below the levels attained by the commercial crops, owing to the long period of controls over the former. To re-establish parity it may be necessary to raise food prices or to lower the prices of commercial crops. Neither proceeding would be easy; for, in the first case, the general cost of living would be raised and the incomes of the large majority

of the agricultural producers increased, that an inflationary spiral would be set up; and, in the second case, the domestic prices of those crops will get out of harmony with their world prices. It may not be legitimate to infer, as may superficially appear to be proper, that it will not be necessary to raise food prices by very much as they have not risen greatly under decontrol. Such an inference ignores the important fact that free market prices have been damped down by the Government's sale of grain at fair prices and that the marginal cost of cultivation has not been raised by attempts to increase production. Under planning increased production through all devices will be the rule, and with the lapse of food control, the Government's responsibility to subsidize sales will also be given up. The probability, therefore, is that food prices will rise to re-establish parity with other agricultural prices.

A way out of this dilemma would be to keep food prices as they are and try to reduce the net incomes of the producers of commercial crops through taxation of such production. This would, while equalizing the gains of cultivation everywhere, keep down the cost of living and let international forces govern the prices of money crops. A beginning has already been made in this direction through the proposed levy of a graded surcharge on land revenue in the case of these commercial crops, but the levy, as contemplated, is not well calculated to serve this particular objective, and was obviously not intended for it. The proper kind of tax for this purpose is an excise per acre based on the standard yield for each of these crops. The collection of this levy will be facilitated under planning, for full knowledge about the acreage devoted to each crop in each village every year will be available. The rate of levy may be made to slide up and down with prices.

If this scheme is adopted it would not be necessary to fix minimum prices for commercial crops as long as their prices rule high. The needed adjustments will be made in the rates of levy when fluctuations occur.

Another question pertaining to the control of prices is whether maximum or ceiling prices should be fixed for these commodities. This is usually done to safeguard the interests of consumers or users of the products. As far as foodgrains are concerned, it has been argued above that there will be very little danger of food prices rising high even in the earlier years of the plan, if the State should cover the deficit through importation. In their case therefore there would hardly be any need for fixing maximum prices.

In fact the *raison d'être* of the plan is to make food available in adequate quantities, and if this purpose is fully implemented in the plan, the fear of a price rise due to short supply will hardly be realistic.

As regards the other commodities, self-sufficiency has not been accepted as the aim, though the direction of activity is to be towards increased production. Here short supplies may occur through the demand being higher than available supplies. The demand for these commodities comes from the industrial sector and from foreign countries, and over those sectors the agricultural plan itself will have no control. But what will actually happen will depend on the character of all-India production and the nature of the over-all plan. The decision to fix maximum prices will have, therefore, to be taken with reference to those factors.

While rises in the prices of particular commodities may be caused by the demand supply relation, an inflationary rise of all prices may proceed, under expanded production, from a general rise of incomes. In planning for an expansion of the economy this is a real danger, and even in the event of the plan being confined to agricultural production, this effect of it may be manifest over the whole economy. The circumstances which give rise to such an inflationary movement are now well known and comprise deficit financing and the saving-investment relation. If total savings equal total investment and deficit financing by the Government is wholly avoided, an inflationary movement will not be initiated merely because of an expansionist movement. Even deficit financing may be permissible, without the fear of its invoking untoward effects, if surplus resources exist in the economy awaiting employment. In an under-developed country such resources are bound to exist and can be brought into utilization through the formulation of appropriate plans. So the proposition that an inflationary spiral is inevitable and to ward it off prices have to be kept under rigid control does not receive an *a priori* sanction. This is, however, a matter which has to be viewed against the over-all perspective. What may be done in the agricultural plan itself is to so adjust the financing of it as to keep within the limits of legitimate finance. In the chapter on the *Financing of the Plan* this matter will receive further attention.

To the same category would belong wage ceilings imposed to limit the rise of incomes. Under appropriate financial methods such ceilings will not be required, and in the particular context which

is likely to prevail in this State under the plan, the fear of wages rising beyond permissible levels is altogether unrealistic. If the suggested land reforms and organizational improvements are effected, some unemployment of the rural population will result, and against that background the dominant tendency will be for wages to fall rather than rise. So the need would be for propping up wages rather than keeping them down. This requirement stems also from the fact that agricultural wages in this country, even at the higher levels prevalent now, are out of proportion with urban or industrial wages. The kind of action necessary under the circumstances is the enforcement of the Minimum Wages Act in the agricultural industry and the fixing of the minimum at such a point as will enable the agricultural labourers to receive as good a rate of remuneration as the urban worker in comparable activity. The Act itself lays down the procedure to be adopted in fixing such wages, and no change in it seems called for. In the case of urban workers certain other security schemes also have been inaugurated, as for example, the Provident Fund Scheme and the Employee's State Insurance Scheme. It may be impracticable to apply these schemes to all agricultural workers, but those among them who are permanent farm servants in the larger farms or the co-operative farms may be with ease brought within their purview. The possibilities in the matter should be thoroughly explored.

Thus it would appear that, as far as the agricultural plan is concerned, the control system will have a limited role to play. Its primary need is for ensuring fair wages to the workers and fair prices to the agriculturist producers, and if this is satisfactorily discharged, all that would be needed by way of specific controls would be done. The inflationary pressure that may conceivably be generated is preferably contained by the adoption of the appropriate fiscal and financial measures rather than by control of prices or profits.

Controlling Unemployment: Closely allied to the question of controls is the question of controlling or eliminating unemployment. That some degree of unemployment will be generated in the economy under agricultural re-organization cannot be gainsaid. But since this re-organization is to be accompanied by a concurrent expansion of agricultural activity and the inauguration of much developmental activity, there will be scope for absorbing some of the labourers rendered workless by such re-organization. Under intensive scientific culture there will be more work for labour on

each acre cultivated, and if after re-organization each farm adopts this technique, some part of the labour which otherwise would be displaced or under-employed would be absorbed in the new technique. This factor, however, will not reduce total net unemployment, its effect being probably seen in a reduction of under-employment for those occupied in agriculture. At any rate, the evil of under-employment will not thereafter go to aggravate the evil of unemployment.¹

There will be provision for new employment in the irrigational development schemes undertaken as well as in the land reclamation work started. Irrigation schemes themselves, if they comprise the construction of large reservoirs, may displace considerable numbers. The Krishna-Pennar Project is estimated by the Kosla Committee to displace about 150,000 persons, and other big schemes also may cause some displacement. But they are likely to be absorbed in the new areas irrigated and brought freshly under cultivation. To man the irrigation works, while under construction, large numbers will be required, and landless labourers in agriculture may be easily enlisted for that kind of work. It is stated that nearly 10,000 workers are employed daily in the Lower Bhavani Project. The total expenditure on that project is estimated at Rs. 9 crores and the time required for completion, 5 years. Annual expenditure on the scheme is about Rs. 1.8 crores, and with that scale of expenditure employment is provided for 10,000 people. At this rate, an annual expenditure of Rs. 26.4 crores (provided for irrigation) should give work to about 1.5 lakhs people.² This will just cover the number which will be displaced by the Krishna-Pennar Project alone. From this we may not legitimately draw the inference that employment provided by the irrigational works will only compensate the employment destroyed by them and that they will hardly contribute to new employment. The displacement of labour will take place only in the last year of the irrigational work, while in the earlier years there will be a net addition to employment.

But in land reclamation work all the employment created will be new employment, and that employment will rise in magnitude as reclaimed land begins to be cultivated. The target fixed for land

1. See Final Report of the Planning Commission, p. 654.

2. The Planning Commission has calculated the employment which will be created on the assumption that 20% of the total expenditure will be the wages bill and Rs. 750 the average wage per worker per year. This gives a lower figure.

reclamation is about 3 million acres, and if all that acreage is reclaimed, there is likely to be employment, on a rough calculation, for about 18 to 20 lakhs of people. But while the reclamation work is proceeding only a fraction of this figure can find employment.

So also when unirrigated culture is replaced by irrigated culture, there will be more work for labour, but here again the net result may be a reduction in under-employment rather than the creation of employment for new people.

Finally, therefore, it may be stated that as far as agriculture itself is expected to absorb the displaced personnel, its fulfilment will depend on the rapidity with which the extension of cultivation into uncultivated land takes place. Even so, a displacement higher than 20% of the existing occupied population will hardly be absorbed in expanding agriculture. According to the estimate made by the Madras Land Revenue Reforms Committee, adverted to already in the chapter on *The Basic Structure of Agriculture*, the reconstitution of all uneconomic farms into economic farms of 10 acres wet or 15 to 20 acres dry will cause 75% displacement, and reconstitution into farms of 5 acres wet or 10 acres dry will cause 50% displacement. If this be the scale of unemployment created, the agricultural industry, expanded, though it be, by itself will hardly be able to cope with it.

Other avenues of new employment for the displaced personnel will be organized industries in urban areas, rural industries, road construction and repair, and tertiary employment. To what extent these will be able to absorb the unemployed in agriculture will depend on the over-all plan of development and the facility provided for giving the needed training to the unemployed. There will doubtless be a concurrent development of rural industries and organized industries in the over-all plan and much provision of new tertiary employment, but since those matters fall outside the scope of this work, an assessment of the scope of such employment cannot be made here. All that can be said here is that a displacement of over 20% must find absorption in other avenues of life. Under the over-all plan there will, doubtless, be scope for an increased employment of personnel in all productive activity, but some previous training would be necessary in order to fit displaced agriculturists for new occupations. Apart from unskilled work in urban areas, the occupation which offers great scope for absorption is any rural industry for which the needed training can be quickly given. The part that the development of rural indus-

tries should play in rural planning and the provision of subsidiary employment to under-employed agriculturists is bound, in a country like India, to be very significant, and its importance in this context can hardly be over-emphasized. For much of the new employment, the displaced agriculturists will have to depend on these industries. The Planning Commission fully cognizant of this have given a high priority to these industries, and in this connection specifically mention khadi, gur manufacture, village oil industry, production of neem oil, manufacture of hand-made paper, woollen blankets and matches and hand-pounding of rice. These alone, with certain others which may be thought of, such as, bee-keeping, coir manufacture, etc., offer comparatively easy scope for development and should be capable of being organized and stabilized under an integrated plan of industrial development. But the detailed plan of industrial development has not been worked out by the Commission, and so it is not possible to say to what extent the development of rural industries will absorb the men displaced by agricultural re-organization. Both agricultural re-organization and development of rural industries will be spread over time, and if these two processes are synchronized in the way that is practicable, much of the dislocation which unemployment will create may be avoided. It is futile, however, to imagine that the problem will be automatically solved and the spectre of unemployment under agricultural planning may be finally laid, for from all past experience the truth that emerges is that unemployment when created is likely to be recalcitrant and not easily solved. Some unemployment may, therefore, have to be considered inevitable, being the price that society has to pay for an advance in productive technique and organization.

MACHINERY FOR PLANNING

Planning requires an adequate and efficient machinery. This is inevitable from the nature of planning, and since planning in agriculture is a novel experiment in the country, its success is bound to depend on the efficacy of the machinery set up. To superimpose planning on a hitherto unplanned economy elaborate steps will have to be taken so that the conversion to a planned economy is really effected.

Planning involves formulation of a plan for each sector of the economy and for each region and local area in detail and a thorough execution of it with meticulous care according to schedule. Both formulation and execution are equally important and both would require appropriate machinery for the conduct of the tasks assigned. Since, however, the tasks are inherently so different from each other, quite different principles should apply to their conduct and to the machinery set up for the purpose. For formulation the main principles to be observed are that the plan should be practicable, that it should have the needed appeal to the producers and that it should be based on the widest measure of agreement in respect of the social objectives it subserves. Quite different from these are the principles to be observed in the execution of the plan. They are that execution should take place without a hitch, that all the materials and requisites needed for production are adequately supplied and that every one is made to conform to the requirements of the plan.

For a proper implementation of these principles it will be necessary to set up appropriate machinery, for especially in agriculture where individualism has been so strong and associated endeavour so scarce, a new attitude and a new spirit of co-operation have to be developed. The illiteracy and ignorance of the cultivators and their spirit of stubborn resistance to all innovations, born out of centuries-old traditions, will stand in the way of any quick or easy conformity with the plan. They may have to be coaxed or cajoled or coerced into compliance with the directives of the plan, and the machinery set up for the purpose will have to be suited to face all the problems which will arise in these respects.

The experience of every country where attempts at planning have been made, shows that graver difficulties beset implementation than formulation. In the rural areas of this country these difficulties will be increased ten or a hundred fold by the inherent nature of rural folk and the peculiar organization under which the agricultural occupation has been pursued hitherto.

In evolving a machinery for planning its suitability for the conditions prevalent in rural areas and the general and specific objectives of the plan should always be kept in view. Some of these conditions are well known and need not be repeated here, but emphasis must be placed on such features as the great hold of tradition on rural folk, the lack of any settled tradition of common action or associated endeavour, the inefficiency of the panchayat or the co-operative society where they exist, the low standard of enlightenment, the conspicuous lack of leadership, the all-pervasive, nonetheless, fearful influence of the revenue administration and the slender and, for the most part, ineffective contact established by the development departments of Government. As for the objectives of planning, the general statement that can be made about them is that they are an increase of production along directed lines, an improvement in technique and organization and the maintenance of standards.

The feasibility of a common machinery for the formulation of the plan and the execution of it from the village level upward is a matter which should be explored thoroughly before any machinery is prescribed. As a matter of principle as well as a matter of expediency it may be laid down that, consistent with efficiency, the minimum of machinery alone should be set up, and that the personnel absorbed in the work of administration should be reduced to the irreducible minimum in order that adequate numbers may be available for the conduct of the more positive parts of the plan. This requirement will be met if a common machinery is set up for the two purposes, but whether that would be possible would depend upon the manner in which, it is desired, that the regions and the local areas, down to the village unit, is associated with the work of formulating the plan. Strictly speaking, once the overall target in any line of production is tentatively fixed by the supreme planning body, its confirmation and its distribution over the regions and local areas should be the result of consultations with those areas, in which even the village units should have the opportunity to participate. In this way the plan may be said to grow from below, and even when it is formulated, it will secure the res-

ponse needed for its subsequent execution. It is a fine democratic principle and one, which in actual experience has been seen to work excellently, that the closer the people are associated with the decisions pertaining to the plan, the readier their willingness to co-operate and make a success of the plan. It will be well, therefore, if the Soviet practice is adopted in this country and all the areas involved are given the opportunity to make proposals or express their views on the proposals received from above.

In that case some of the organs set up for the execution of the plan may be used also for the purpose of formulation and a link established between the two processes of planning. The official Committees and Councils set up as well as some of the non-official organs may be common to both, though the administrative officers will have to be confined to the work of execution. In evolving a machinery, therefore, this need also should be kept in view.

The National Planning Commission in their Draft Five Year Plan, and subsequently in the Final Plan, have delineated in detail a planning machinery for rural areas. This machinery is adapted to the plan itself as proposed by them, and so may have to be varied if the draft plan is converted into a full-fledged production plan. Its essential features, however, will remain unaltered, and so can be made the basis of the study of the machinery needed. Proposals made in this behalf by other authoritative bodies also may simultaneously be considered.

In the Commission's view agricultural development is a part of the wider process of rural development, and, accordingly, the machinery suggested is for rural development as a whole, and not specifically for agricultural planning. The intimate relation between the district administration and the work of the development departments is the principle on which their suggestions are based, and in consonance with that, they stress the need for the integration of the work of the various departments and for a co-ordinated approach to the cultivator. The five aspects involved in the problem of integration are, according to them, (1) integration of the field work of the various departments and the co-ordination of development activity with district administration, (2) setting up of a village organization charged with the responsibility of increasing production, (3) utilization of the co-operative movement as the effective channel through which Government assistance in finance and supplies is given to the cultivator, (4) co-ordination at higher levels of administration and (5) establishment of non-official agen-

cies at each level, acting in close co-operation with the official machinery.

For the integration of the work of the development departments the proposal made is that the field staff of the Agricultural, Co-operative and Animal Husbandry departments should be pooled for work falling between the village and the development block of 50 or 60 villages. The local areas demarcated by them from the point of view of development are the village, a group of about 10 villages with a population of about 5,000, a development block of 50 or 60 villages with a population of 25,000 to 30,000, the district and the State. For each of these areas an appropriate organization is suggested; for the village, a Village Production Council, for the development block, an Extension Officer and a Co-operative Supply Centre, for the district, a District Development Officer and a District Development Board to assist the Collector, and for the State, a Development Commissioner and a State Rural Development Board. While this is the official machinery recommended, the Commission want that people's representatives should be associated with the machinery at all levels to evoke popular enthusiasm and ready response. For a group of ten villages and for a development block of 50 or 60 villages, popular organizations are suggested corresponding to the village production council. In the Final Plan the idea of a separate Village Council is given up in favour of the Panchayat being entrusted with the work.

The development block is adopted as the unit of planning, and every block is expected to have a development plan, comprising in it all aspects of rural life, such as, agriculture, co-operation, animal husbandry, education, health, social welfare, etc. The execution of the plan is to be the responsibility of the Extension Officer, the common agent for all the development departments. He is to be assisted in this work by 5 or 6 officers, each in charge of a group of 10 villages. The Extension Officer and the officers under him are to work under the direction of the District Collector and the District Development Officer. They should however receive technical advice and guidance from the technical officers of the development departments.

The detailed proposals regarding the formation and constitution of the popular organ at the development block level have not been made, but it is indicated that it should correspond to the village production council. The underlying idea may be that the Collector and the District Development Officer should have a free hand

in its formation. Nevertheless to ensure uniformity in the principles governing their constitution, from block to block and from district to district, it would have been well if the general lines of their constitution had been indicated. Each block is to have a Co-operative Supply Centre from which the villages, comprised in the block, will draw all the supplies needed for the work of production.

At the district level the Collector and the District Development Officer are to be advised and assisted by the District Development Board, consisting of the Chairman of the District Board, a representative of the District Co-operative Bank, a representative of the District Supply Centre, leading non-officials and social workers and possibly the district officers of the development departments. For the State as a whole there is to be a Development Commissioner in charge of development work. He is to act also as Secretary of the State Rural Development Board, presided over by the Chief Minister of the State and having on it the heads of the development departments and certain non-officials. The function of the State board is to lay down policy and review progress.

Though the development block is conceived as the planning unit, the village will remain as the production unit, and it is to ensure production according to plan there that the village production council or its alternative, as suggested in the Final Plan, is recommended. The Village Production Council's constitution is not delineated in detail, but it is suggested that every village should have one, and that in those villages where panchayats exist, the Council may be a committee of the panchayat with the office-bearers of the multipurpose society and some of the best farmers co-opted to it. In the Final Plan the suggestion made is that the whole Panchayat with some additions should form this body. The functions of this council are worked out in more detail, and, as stated by the Commission, they are (1) framing a programme of production for each harvest, (2) framing budgets of requirements for supplies and finance to fulfill programmes, (3) assess results at each harvest, (4) act as the channel through which Government assistance is given to the cultivators, (5) bring uncultivated land under cultivation, (6) arrange for the cultivation of land not cultivated or managed by the owner, (7) assist in maintaining minimum standards of tillage in the village, (8) stimulate production through the provision of various incentives, (9) promote cultivation of high yielding food crops, (10) organize voluntary labour for community works, (11) provide the requirements of local raw

materials for village artisans and (12) assist in the procurement and sale of surplus foodgrains. These functions are of an onerous and responsible kind and will require a fairly enlightened and efficient body and one which will command the confidence of the producers to discharge them. This Council forms the essential link between the planning machinery and the actual producer and on its efficiency would depend, for the most part, the execution of production as planned. It is imperative, therefore, that it should be manned by the right kind of people. From the powers and functions vested in it, it is clear that it has great potency for good or evil, and can further or frustrate the plan according as it is well or ill-managed. The question of who should be put on the Council and how they should be selected assumes then great importance. The suggestion that in villages where panchayats exist, a Committee of the panchayat should form the nucleus of the Council with certain others co-opted is doubtless calculated to bring together in the Council the more influential people of the village, but that they will have adequate influence over productive activity cannot be stated with any definiteness. The panchayats, as they are constituted at present, are judicial and administrative bodies, hardly fitted to discharge economic functions, still some of the members, being men of affluence and influence in the village, are bound to have, as individuals, economic experience of the kind needed. But whether such men or the village demagogues will get into the Council will depend on the method of selection adopted. That method would also decide whether the right type of men will be selected, even if the Council is formed directly from amongst the producers. A direct selection from amongst the producers will have the advantage that the choice will be from a wider circle, and those able men who are outside the panchayat will have an equal chance of being selected with those who are on it. Whether the men are drawn from a wide or a narrow circle, it is, however, the method of selection adopted that is going to be decisive in determining who will get it. Apart from the particular method suggested by the Commission themselves, there are two others readily available, viz. direct election of the needed number by the village producers themselves or nomination of the number by the District Collector on the advice of the District Development Officer or the Extension Officer of the Development Block. In these days of democracy, election will have greater appeal than nomination; nonetheless, ensuring that able and desirable men get into the Council is more important than paying lip service to the democratic principle.

In the selection of members for the Country Agricultural Executive Committees in Britain, nomination plays a very important part, and that example may with profit be made the basis of selection here too. Of the 12 members constituting the Committee, 5 are appointed by the Minister of Agriculture and the remaining 7 are appointed from panels nominated by different interests; three farmers, two workers and two landlords. Following this arrangement, different interests in the villages may be asked to submit panels, out of which the Collector or the Development Commissioner or the Minister of Agriculture or of Planning may select the most desirable men. There should also be provision for associating the office-bearers of the co-operative societies of the village with this Council, to effect which a representation may be given to co-operative institutions. Power must also be reserved for the appropriate officer or organ for directly nominating a few leading men of the village. The number of the Council may be determined with due regard to the interests to be represented, and any lack of uniformity as between village and village in respect of the strength of the Council need not be considered a drawback. The only relevant consideration here is that it should be large enough to command respect and influence and not too large for effective, expeditious work.

The question has been raised whether such a Council should be formed for each village, or for the group of villages constituting a firka. The Planning Commission's recommendation is that each village should have a Council, but some of the villages are too small and will hardly contain men of capacity to man such a Council. Furthermore, in the planning machinery suggested by them there is not to be any officer in the village, but only one for a group of 10 villages, to see to the execution of the plan. Consistent with this arrangement, a larger area than a village, about the size of a firka may be thought of as the unit for group organizations also. There are however certain advantages to be gained in having a village Council. The village has necessarily to be the production unit. Each village will have a production plan in the formulation and execution of which responsibility should be undertaken by a village body. Even if a production council of the kind delineated earlier is not constituted for each village, but only for each firka, some other organization of a kindred character with less powers and functions vested in it may be seen to be necessary for each village. But for the kind of production council contemplated by the Planning Commission, the village appears to be hardly appro-

priate as the unit. Capable men may not be forthcoming and co-operative organizations also may not exist in many of them.

Another criticism levelled against these Village Production Councils is that they will not be found competent, even if constituted, for the functions to be vested in them, and that those functions would be better discharged through the existing or re-formed co-operative institutions. In the All-India Co-operative Congress held in Bombay in 1952 this view was expressed by many prominent co-operators. In this view, one cannot help thinking, there is inherent a certain narrow mindedness and a partisan desire to accord a disproportionate importance to co-operative institutions. The co-operative organization entrusted with the work must draw the required personnel from the same local area as the production council, and if that is possible, a production council can do likewise and carry on the work with equal efficiency. Doubtless, the co-operative institutions will derive help and guidance from the superior co-operative organizations and the officers of the Government department, and so also, in much the same way, the production council will be aided by the superior links in the planning machinery. One consideration advanced in favour of the co-operative institution is that it is already formed and has had some experience in village work, and if the full-fledged multi-purpose society is formed, a greater integration of all the activities of the village will be effected. As against this it may be urged that to saddle the multi-purpose society with all the functions associated with the production council will be too much responsibility for the society, and not having been formed and oriented for this express purpose and not so broadbased as the Council, the organization may turn out to be a little unsuitable for the kind of work to be done. Considering all relevant points, therefore, it seems clear that a production council separate from the co-operative society is the more desirable organization.

The functions to be vested in the Council, as adumbrated by the Planning Commission, partly pertain to the work of formulating the plan and partly to the work of execution. The planning part consists of planning production for each harvest and making an inventory of the requisites of production needed. This part may, with profit, be enlarged so as to include making proposals regarding production for the village or the selected local area for the full period of the plan and estimating requirements on the basis of those proposals. These proposals will doubtless be tentative, but will nevertheless form the basis for the framing of the production plan

by the supreme body. As has been explained earlier, this kind of association of the village council with the formulation of the plan will create the most favourable atmosphere for its subsequent execution. Some of the other functions vested in it will necessitate the council embarking upon production and sale, and here the power of direction will have to be delegated to some officer or office-bearer. The Chairman or the Secretary will be the most suitable directive agent here, but if the farms which are to be operated under the council's direct management are many, other members of the committee or some of the members selected by the Committee will have to be charged with the responsibility. The question of remuneration will naturally arise and will have to be solved through the grant of a percentage of net receipts as an honorarium.

Superior oversight over the operations of these village councils will vest, according to the machinery suggested by the Planning Commission, in the Extension Officer of the Development Block, the District Development Officer and the District Collector. Such oversight is needed for the purpose of finding out to what extent the plan, as finally formulated, is being executed. The Extension Officer alone will not be sufficient for the purpose, for his concern will more properly be with the developmental activity of the development departments and not directly with the entire productive activity. That would be the direct function of the District Development Officer too over the district. The District Collector therefore should come largely into the picture, for the responsibility for the execution of the planned programme is to devolve on him, and he can discharge it, with the aid of the District Development Committee, only through exercising an effective supervision over the activities of the village or firka councils. This supervision will doubtless be closely associated with revenue administration and the subordinate officers responsible for it, for that is the only way in which an integration can be effected between developmental and productive activity on the one hand and revenue administration on the other. In this work the Collector should have some special assistance given to him, mainly from the point of view of the productive activity of the district; else this aspect of his supervision may be neglected. In relation to the plan as finalised, this aspect is of overriding importance, and cannot therefore be satisfactorily assailed by saddling this function on the subordinate officers of the district as an appendage to their main functions. It would be advisable, therefore, to have a District Production Officer for the dis-

trict to assist and advise the Collector on this aspect of the plan. His function will solely be to check up, through the subordinate revenue officers, the productive activity of the villages and supervise the operations of the village or firka production councils. The actual execution of the plan on the production side has to be effected in the villages, and if at the village level satisfactory execution is ensured, the programme of production would be fulfilled according to plan.

For the State as a whole oversight over productive activity will be exercised by the Development Commissioner and the State Rural Development Board. The Development Commissioner may be expected to have sufficient time to devote to this work, as the purely developmental functions will be supervised by the Heads of the Development Departments.

Developmental work is as much part of planning as actual production, for expanding production depends on the successful conduct of developmental activity, as also the rise in living standards and social welfare, accepted as ultimate objectives of planning. The Planning Commission have placed much emphasis on this work, and if one point of criticism levelled against the plan as formulated by them is right, their plan is just a plan of developmental activity. The planning machinery as suggested by them is really designed to implement that plan, and so, barring the Village Production Council, the whole of that machinery will be concerned with developmental work. One important problem which troubled them here was the integration of the work of the different development departments, and that they have tried to solve by proposing the pooling of the field staffs of the different departments. It is not, however, clearly stated how this pooling should be effected and at what level. The Extension Officer proposed by them to be in charge of a Development Block is to be drawn out of the pooled staff, and so it is perhaps implied that pooling should start at that level. The subordinate officers working under him in charge of groups of ten villages too will likewise be drawn from pooled staffs. The question here is whether for all these local areas staffs of the departments would be available for pooling. The taluk, the firka and the village are well-known administrative units and some of the areas suggested under the plan will synchronize with them, but it is unlikely that the development block and the taluk will synchronize. To make staffs available for pooling purposes, then, an expansion of the departments should take place in areas of the size of development blocks.

In the development block developmental activity is to be under the control of the Extension Officer. He may be an officer of any of the development departments, and therefore would require some kind of special training to fit him to control activities pertaining to other departments. This training is sought to be given under the scheme of the Planning Commission, but details about the training have not been stated.¹ Such training, but on a higher standard and in a more intensified degree, is now being given under the Community Project Administration, and so it would not be difficult to adapt it to suit the needs of areas of less intensive development too. While general training in co-ordinated development may be easily had, the requisite technical knowledge will not be so easily imbibed, and in situations where such technical knowledge is required, the Extension Officer by himself will not be able to manage. He must either receive help or detailed directions from the technical officers of the departments concerned.

Much the same remarks will apply to officers appointed to groups of 10 villages from the common pool. But this deficiency in the knowledge and ability of the officers concerned would not very much matter if developmental activity is of the normal routine character. But where there are some special activities, such as, a major irrigational project or an agricultural research station or a breeding centre or the like carried on under the auspices of any development department, some specialist officers in respect of those projects would need to be associated with the Extension Officer. The Extension Officer is really intended to be in charge of the co-ordinated general programme of development, and his position and responsibility will in no way be prejudiced by the functioning of specialist officers in charge of special schemes. The relationship between these specialist officers and the Extension Officer will have to be established on a cordial basis, and that may be done by putting both on the group organization set up in the block and providing for certain administrative links between these functionaries.

So far the official machinery needed for the execution of the planned programme in the village, the firka and the development block has been delineated. If this machinery works smoothly and satisfactorily, little difficulty will be felt in the execution of the plan, for it is really in these local areas that the actual work of execution will be effected. The higher officers and organs are there

1. The proposals under the National Extension Service in the Final Report deal with this matter.

to control and supervise and not really to engineer execution, though they may have considerable responsibility in the matter of giving advice and guidance. But the smooth working of the executive machinery depends, to a greater extent in the productive field than in the development field, on the ready response of the individual producers. This is clearly so in production activity and is also so in those developmental activities which are intimately connected with production, such as, use of improved seed, improved implements, deep tractor ploughing, etc. To ensure this response, the suggestion made by the Planning Commission is that the people's representatives should be associated with the village production councils and that similar organs should be formed for the larger units. In the constitution suggested earlier in this chapter for the village production council such representation will be given. Even so, that arrangement alone will be inadequate for whipping up the needed enthusiasm for the plan among the villagers. For this purpose farmers' organizations and workers' organizations may be formed so as to enable the production council to deal with them collectively too in addition to giving them individual directions. Such organizations may be asked also to submit the panels out of which the appointing authority will select the members to represent their interests on the production council. The existence of such organizations will not only render the process of selecting the members of the council easy and fair and satisfactory to the people concerned, but will also facilitate the formation of unofficial opinion in the village in favour of the plan and create an atmosphere favourable for ready compliance with the directions issued by the council. If these organizations are well established and comprehend all the individual producers, dealings with these organizations may, with profit, be substituted for dealings with individuals.

Federations of such organizations in the larger areas, figuring under the plan, may be made to play the same role in the formation of the higher councils and in their dealings with producers. The higher councils will then become not mere federations of village councils, which would be one way of constituting them, but bodies constituted independently and charged with the function of aiding the execution of developmental plans. The unofficial organizations will then exist in three grades, as it were, in the village, in the firka or group of ten villages and in the development block. Alongside of the official machinery these will exist for helping and aiding and, in certain respects, guiding it in the formulation and execution of the plan.

While these arrangements will bring into existence an official planning machinery and the unofficial organizations to be associated with it for the development block and the local areas below it, the manner in which they will actually work will depend upon local leadership and enthusiasm. The State may provide the money needed and also the requisite instructional propaganda, but much will depend upon village leadership. The absence of this in many villages will act as the most serious hindrance to the timely fulfilment of the plan or to the invoking of the right degree of response in the producers. The Post-war Reconstruction Committee of Council in their second Report suggested that the village school-master, the panchayatdars, the office-bearers of co-operative societies and ex-soldiers should be utilized for raising the leadership required in villages, and in much the same strain other authoritative bodies also which have investigated the problem, have made similar suggestions. In fact these elements in the village population exhaust the sources of leadership.

Even if these leaders are forthcoming in every village, in order to fit them for the kind of work in hand, some preliminary training may have to be given to them. This responsibility should devolve on the Extension Officer of the block and his subordinates in the firkas. These officers themselves in their own training should undergo a course in the training up of such leaders.

For the district, the machinery proposed is the District Collector, the District Development Officer, the District Production Officer and the District Development Committee. The District Collector as the head of the district administration has a special responsibility in integrating planned activity with district administration; but in addition has the further function of assuming responsibility for the execution of the whole plan in the district. In discharging this latter responsibility he should be helped and advised by the District Development Officer and the District Production Officer. In fact this responsibility should really devolve on these two officers, and the Collector's work will be to closely supervise their work. Now that the Collectors have been relieved of their magisterial functions, they may find sufficient time to devote to this work, and even in the event of their being heavily worked, relief should be given to them in their purely revenue functions, so that this work may secure all the attention it deserves.

While the responsibility for the execution of the plan will naturally devolve on him as head of the district administration, he will also be partially responsible in the same capacity for the ten-

tative formulation of a district rural development and production plan. Proposals sent forward from the village, the firka and the development block should get adapted, modified and co-ordinated at the district level, and for this work the District Development Committee consisting of the District Officers of the Development Departments, District Development Officer, District Production Officer, representatives of co-operative institutions, representatives of development blocks comprised in the district and some prominent non-officials representing diverse rural interests, presided over by the Collector, should assume responsibility. In the execution of the plan the work of the district planning machinery will be largely one of giving advice and checking up and inspecting the work turned out in the subordinate local areas, but in the formulation of the plan its responsibility will be much greater and will consist of taking the initiative in bringing forward proposals and giving a practical shape and form to the district plan. In fact the foundation for the State plan has really to be laid in the district plans. In the preparation of these plans, therefore, the Collectors should be in close touch with the State planning body and should be aware of the policies laid down by it.

For the State as a whole, the planning body recommended by the Planning Commission is the State Rural Development Board consisting of the Development Commissioner, the Heads of the Development Departments, non-official representatives and the Chief Minister of the State as Chairman. This body is suggested for chalking out a programme of development work which normally comes under the purview of the development departments but does not include production activity to which a State plan must give equal attention. For the two-fold work, it is very doubtful whether the suggested constitution would be satisfactory. As it is, no representation is given to the districts, as such, where the main plans of production have really to be hatched. Nor is the constitution broadbased enough to bring together in this body representative opinion of the State. This Board stands midway between the district machinery and the all-India machinery for planning and has really the function of finalising the State plan and reviewing progress in the execution of it. Its constitution, therefore, has to be modified to suit the purpose in view. The best way to do that is to nominate to the Board, in addition to the personnel indicated, some of the other ministers, such as, the Finance Minister, the Minister for Agriculture, the Minister for Revenue and the Minister for Rural Welfare and some officials and non-officials capable of bestowing expert knowledge on the work to be done. If the sugges-

tion made by the Planning Commission that Commissioners should be appointed for regions should materialize, those Commissioners too may be nominated to the Board. The Development Commissioner should act as the Secretary of the Board, as suggested by the Planning Commission, and should in addition, as Commissioner, co-ordinate the activities of the Development Departments and issue directions to the district Collectors on matters pertaining to the execution of the district programmes. The Commissioner should be given the status of a Member of the Board of Revenue.

At the State level there is very great need for the conduct of propaganda on behalf of the plan, and this will be one of the major concerns of the Rural Development Board and the Development Commissioner. All the major policies formulated, as also the criteria adopted in arriving at strategic decisions, should be as fully explained as circumstances permit, and the whole planning machinery made to speak with one voice at it were. Reasons for alterations in the plan effected from time to time, as also the reasons for the non-attainment of targets fixed, must also be fully explained to those concerned.

While propaganda and persuasion will figure as the mainstay of the plan for whipping up the needed enthusiasm for it and effecting the required compliance, the State should have in reserve the power to compel compliance on the part of those who are specially recalcitrant. This power should be vested in the Government through appropriate legislative enactments. The Act which approves the National Plan may be sufficient for the purpose, if provisions are introduced in it for vesting the Government with coercive powers for implementing the plan and delegating those powers to the State Governments and Officers of Government. In certain special cases, however, and in certain special areas, such as, for instance, empowering the Village Production Councils to take over private lands for cultivation, separate legislation may be needed for enforcing compliance. These are matters of detail which can be decided upon only when face to face with real situations.

What legislative measures are needed, how governmental coercion may be exercised, what penalties should be prescribed, etc., should be decided upon by the State Rural Development Board in consultation with the National Development Board so that a uniform policy all over the country may be enforced.

However it should be recognized as a general policy that the most important weapon for implementing the plan is persuasion and

voluntary compliance, and that compulsion will be resorted to only under extreme necessity. As the Planning Commission have stated, "Democratic planning will not succeed unless the sanction of an awakened public opinion operates powerfully and the force of public action in pursuit of constructive ends continually grows. A democracy working for social ends has to base itself on the willing assent of the people and not the coercive power of the State."² Nevertheless where the necessity should arise to exercise compulsion, there should be no hesitation in resorting to coercive processes of law. The formation of non-official associations of producers in villages, firkas and development blocks and possibly in larger areas, the establishment of community centres in rural areas, the starting of Young Farmers' Clubs, as has been done in Britain, the spread of education and the conduct of propaganda by all those entrusted with the work of executing the plan should, however, in large measure obviate the necessity for having recourse to coercion.

Even under a system of voluntary compliance, a specific mechanism would be needed for getting the individual producers or groups of them to assume responsibility for their share of planned production.

Propaganda, practical demonstration, persuasive education, the provision of adequate inducements, all these must prepare the way for getting the producers to sign up or enter into definite agreements with the Village Production Council, as was done in the U. S. A. under the Agricultural Adjustment Administration, to grow specified crops and devote definite acreages to each. Without the provision of such a mechanism the needed link between the actual producers and the planning machinery will not be established. The absence of any indication of such a mechanism in the proposals of the Planning Commission is a serious lacuna there, and would, if allowed to exist so, prevent the planning machinery from working on the assumption of any definiteness in the result.

The mechanism established should provide for the conclusion of agreements, under which the producers would contract for specific action in the matter of production, while the Production Council on their part would vouchsafe the supply of the requisite materials and finance and the giving of technical advice and help. The mechanism should also specify the time at which the agreements should be concluded, the formalities to be gone through, the penal-

2. *Draft Five Year Plan*, p. 235

ties for non-compliance and the general conditions as regards prices and costs under which production may be undertaken. If stable conditions of production are vouchsafed to them and they are made aware in time of the guaranteed prices of the different crops and the level of the costs they would have to incur, the producers may be induced, on a voluntary basis, to enter into definite commitments. If necessary, the power to refuse supply of materials and finance and other aids to production to non-contracting producers may be vested in the Production Council. This would operate as the needed sanction behind the invitation to conclude agreements.

CHAPTER XII

FINANCING OF THE PLANNED PROGRAMME

The execution of the programme of production and expansion as planned will depend on the availability of the requisite finance. Though in real terms it is the material as well as the human requisites which have to be supplied in adequate quantities, they have their counterpart in finance, and just as a planned supply of these material requisites has to be made, so there should be the planning of the financial programme. In fact it is essential that the financial plan should be perfectly co-ordinated with the production plan, else, through lack of adequate and timely finance, the fulfilment of the production programme will be frustrated.

The view that finance can be somehow found and, if need be, resort may be had to deficit financing is too easy a solution to be really proper, and goes against the experience of every country which has attempted planning of any kind. In actual fact finance has been found to be one of the thorniest problems in planning, and when face to face with reality, the grandiose plans on paper have had to be severely pruned to make them conform to the availability of finance.

Deficit financing can be successful and devoid of harmful effects on the economy only in a context of unemployed resources existing. In theory as well as in actual experience this thesis has been so well established that it is almost unquestionable today. Since, however, in every country, even in economically developed countries, some such resources will exist, deficit financing for expansion becomes possible upto a limit. The facility for this in underdeveloped countries is greater, but even there the limits, wide as they may be, once reached will operate as severe restrictions on such procedure. The mere existence of unemployed or surplus labour, as in agriculture, will not make deficit financing an innocuous proceeding, for as Mr. Maurice Dobb in *Some Aspects of Economic Development*¹ has shown, the employment of surplus

1. pp. 44-46.

labour in capital formation will be devoid of inflationary consequences only if a sufficient marketable surplus is generated in agriculture to feed the new employees in capital construction.

It is therefore essential that much of the finance needed for the plan should be raised from the community in traditional ways, and deficit financing, if inevitable, reduced to the minimum. In fact even under deficit financing the community is not freed from the necessity of saving the finance needed, for, in final analysis, it will be seen that deficit financing, when used in appropriate contexts, is just a ways and means device and not a substitute for the act of saving. The traditional and time-honoured way of raising finance is through taxation and borrowing, and under both methods private citizens will be submitted to a reduction of their expendable incomes. This is the real cost of investment, and whatever method of finance is adopted, this cost will have to be borne.

The question of finance, however, is one which pertains to the over-all plan and should be conceived as an indivisible whole in relation to it. The slice of the National Income which may be utilized for investment purposes would depend on the character of the national economy and the nature of the over-all plan, and the division of the source of finance as between taxation and borrowing would have to be decided from the over-all point of view. In a sectional plan all that would be possible to do, under the question of finance, will be the calculation of the expenditure involved in the plan and to indicate broadly, with many reservations, the ways in which the required finance may be raised.

The total expenditure entailed by the programme, sketched in outline in the preceding chapters, may be roughly placed at Rs. 210 crores for a five-year period, or an annual expenditure of Rs. 42 crores. For a seven-year period which is the period required for the completion of some of the major irrigational works included, the expenditure will be of the order of Rs. 294 crores. The division of this expenditure as between the years in the five year or the seven year period will not be equal, depending, as it will, upon the time schedule of the plan. It has not, however, been possible, with the data available, to work out such a schedule. However, on the basis of calculations made, it may be said that an even expenditure of about Rs. 42 crores a year will see the programme completed within the stipulated period, if nothing untoward happens and the price

level remains constant. The details of this expenditure will be as under:

Irrigation	Rs. 26.50	crores
Land Reclamation	Rs. 2.00	"
Intensive Measures	Rs. 1.65	"
Agricultural Department	Rs. 3.80	"
Department of Animal Husbandry	Rs. 2.00	"
Department of Co-operation	Rs. 2.00	"
Community Projects	Rs. 1.00	"
Planning Machinery	Rs. 1.00	"
Land Reform	Rs. 1.00	"
Organizational Improvement	Rs. 1.00	"

Full explanation relating to these items have already been given in the chapters relating to them that there is no need for repetition here. Some of these items will naturally fall under the head of Capital Expenditure in normal budgetting, for they can be met only out of borrowings and are of a non-recurring kind. Thus irrigation and land reclamation broadly, community projects, land reform and organizational improvements will fall into this category. The other items of a recurring character and normally met out of revenues are intensive measures, the departments of government and planning machinery. However this distinction between Capital and Revenue expenditure made in normal budgets will get blurred in a planning budget, as it would be difficult to thus earmark sources of finance for specific expenditure. In fact under planning there would be the need to secure as much surplus over normal expenditure as possible from tax revenue in order that the surplus may be utilized for investment purposes. This surplus is a legitimate source of planning finance, and to engineer it, increased taxation would become necessary as well as permissible.

The scheme of expenditure adumbrated above will absorb the usual budget provision for developmental schemes, and therefore only that amount which is in excess of that will have to be specially provided for. A normal expenditure of about Rs. 6.31 crores is budgetted for under the heads of the development departments of government and road transport schemes and a capital expenditure of about Rs. 11.60 crores for irrigation, road transport, state trading schemes, loans to agriculturists and compensation to zamindars. In the aggregate the normal expenditure comes to about Rs. 17.91 crores or roughly Rs. 18 crores, and if this sum is deducted from the total annual expenditure on planning, the remainder for which money has to be found will be only about Rs. 24 crores. This is

the amount for which additional provision has to be made in order to carry out the planned programme.

Almost the whole of it is expenditure in the public sector for which the State has to assume responsibility. The question of this finance, therefore, resolves itself into the question of determining the ways and means by which the State may raise the finance. Some part of the finance needed for the execution of the plan may have to be raised in the private sector too, as for instance, in the implementation of the intensive measures, in carrying out of land purchase by the tenantry, in effecting organizational improvements and the like, but the bulk of this expenditure will be of the specifically productive kind, the increased productivity resulting providing the funds needed for the repayment of all loans raised for the purpose. A broad estimate of these has already been made in the chapter on Rural Credit.

The expenditure in the public sector is mostly of the developmental kind, directed to the building up of material capital or the rendering of such service to the agricultural community as will raise the standard of cultivation, and so no specific return commensurate with the scale of expenditure can be postulated for it. Nevertheless, the increase in agricultural production generally which will follow these developments will form a reliable source of future finance. But during the period when these developments are in being the general source of funds available in the State will have to be tapped to provide the required finance.

The expenditure on the Five Year Plan for the State as finalized by the Planning Commission is only Rs. 141 crores for the five years, which works to about Rs. 28 crores per year. Of this amount Rs. 85 crores will be for irrigation and power development and the remaining Rs. 56 crores for other developmental and social service schemes. Against this scale of expenditure, an annual expenditure of about Rs. 42 crores for agricultural development alone may look big and beyond the capacity of the State, but it should be realized that the development contemplated under the Five Year Plan is of a very modest kind and hardly satisfactory from the point of view of the new effort which the circumstances of the case require. The usual criticism levelled against the Planning Commission's plan as a whole is that it falls far short of expectations and is hardly calculated to evoke any enthusiasm. For the State of Madras the increase in agricultural production visualized is 890,000 tons of foodgrains, 100,000 tons of oilseeds, 180,000 bales

of cotton and 80,000 tons of sugar (gur). Only 13 fully worked out irrigational schemes, involving a cost of Rs. 44.24 crores, have been included, and the new irrigated acreage as the result of the schemes is placed at 6.1 lakhs acres. The unsatisfactory nature of this plan is self-evident, and on this scale of improvement it will take many five year plans to attain self-sufficiency in foodgrains. The urgency in the matter is great and a more magnificent effort at planning is certainly called for.

The question awaiting examination is, however, the one relating to the capacity of the State to bear the increased scale of expenditure per year. The time required for the execution of the planned programme will really turn on this, and to introduce realism into that programme financial capacity should be made a prime consideration here.

Increased tax revenue expected to accrue to the State as a result of recent changes in the tax structure and altered fiscal arrangements with the Centre may be estimated at Rs. 4.81 crores, of which Rs. 42 lakhs will represent the increased share in Income-tax, Rs. 100 lakhs the proceeds of the re-imposed Sales Tax on Tobacco, Rs. 289 lakhs the State's share in Export Duties and Rs. 50 lakhs the increase in Court Fees. As against this increase, a reduction of Rs. 2 crores is expected in the receipts from the General Sales Tax. The net increase, therefore, will be of the order of Rs. 2.81 crores. This does not take account of the readjustment of the Sales Tax of which the Planning Commission have spoken, for it has not been made clear how the readjustment will be effected and to what extent this State will experience increased revenue from it. In addition, tax revenue will increase through the levy of the surcharge on land revenue in the case of commercial crops, under contemplation, through the State's share of the Estate Duty to be levied by the Centre, through increased land revenue from the zamindari areas after ryotwari settlement there and such other taxes as may be levied afresh. There is a strong case for the levy of an agricultural income tax in addition to the land revenue all over the State and a betterment levy in those areas to which irrigation will be extended. Most of these taxes, if levied, will be paid by the agricultural community, and though that may not be sufficient justification for spending the tax proceeds solely on agricultural development, there would still be sufficient ground for utilizing the greater part of it for such a purpose. Two of these levies will take time to mature, the ryot-

wari revenue in zamindari areas and the betterment levy, but they too will be available within a period of three to four years. The betterment levy when imposed may be expected to bring in a large revenue, for according to estimates made under the Krishna Pennar Project, an area of 3.7 million acres irrigated is expected to yield a revenue of Rs. 42 crores, a third of the expenditure involved in the project. If such a levy is imposed on all newly irrigated areas, a total amount of Rs. 62 crores may be raised in seven years, or 9 crores per year. It should however be remembered that payment of the levy will reduce the capacity of the agriculturists to subscribe to loans.

All these taxes together may be roughly estimated to bring in a revenue of about Rs. 5 crores. In the last two years this figure may be doubled. In the nature of the case only a rough estimate is possible, for the incoming revenue depends on the rates of taxation and nothing can be definitely stated about them. If a target for the revenue is determined, the rates can be adjusted accordingly, for it is within the power of the State to vary the rates according to need.

Part of the finance needed may thus be found through an increase in tax revenue, and it is imperative that this source should be tapped to the limit as the State does not at present possess any Revenue Reserve which may be raided for the purpose. The Revenue Reserve of Rs. 44 crores built up during the war period has all been already utilized, and the opening cash balance of the State according to the budget for 1953-54 is a minus figure.

The only other source available to the State is borrowing, either from the Central Government or directly from the public. In 1952-53 a 4 crore loan was issued to the public with very satisfactory result and in 1953-54 also an 11 crore loan has been issued. Barring these two cases, all borrowing is usually from the Central Government, and the loans thus raised for different purposes normally amount to about Rs. 10 crores, excluding the short term advance of about Rs. 1 crore received for granting loans to agriculturists. With these loans the normal development expenditure of the State has been met. For meeting the needs of the planned programme, therefore, loans in excess of these are required, for the amount of Rs. 24 crores calculated is the excess over the normal development expenditure of the State. The Central Government can doubtless assume responsibility for lending on a large scale under planning, for it is expected to have,

according to the Five Year Plan, a surplus on revenue account of the order of Rs. 32 crores a year and a total borrowing, longterm and short-term included, of about Rs. 396 crores over the five year period. Under the State's Five Year Plan, included in the National Plan, provision is made for a borrowing from the Centre of about Rs. 30 crores during the five year period for irrigation and power development. This works out to an amount of Rs. 6 crores per year. Under the scheme of irrigational development suggested in this book earlier, an expenditure of about Rs. 150 crores during a seven year period is required for the execution of the major and mid-term projects. It would be well if the Central Government assumes responsibility for the finance required for them and gives loans of the amount of about Rs. 21 crores per year for the purpose. This would mean an increase of about Rs. 11 crores over the normal allotment, for in the usual capital budget, Government of India loans for irrigation come to about Rs. 10 crores. This amount of Rs. 11 crores will include American aid and contribution from the Ford Foundation in respect of Community Development Projects. Some part of this amount the Central Government may be able to secure as a loan from the International Bank for Reconstruction and Development, as they have done in the case of the Damodar Valley Project and another part as aid under the Colombo Plan and Point Four or Mutual Security Aid from U.S.A.

Thus from increased tax sources and Government of India loans a sum of about Rs. 16 crores may be found, and so the remainder to be covered will only be about Rs. 8 crores. This amount should be raised as voluntary or compulsory loans from the community, in addition to the 5 crore loan which the State has programmed to raise normally. It may not be very difficult for the agricultural community of the State to make this amount available to the Government by way of loans, in view of the very low ratio it will bear to the net agricultural income of the State of about Rs. 354 crores (at 1947-48 prices). Even if the increased tax income of Rs. 5 crores be added to this, the ratio which the total will bear to net agricultural income will be only less than 5%.

It is not, however, suggested here that the agricultural community itself should provide the funds needed for agricultural development. In the matter of attaining self-sufficiency in food, the entire community of the State should be interested and should be prepared to bear the burdens imposed; yet in a predominantly agricultural state most of the funds must inevitably come out of

agricultural income, and it is advantageous to know what percentage these funds bear to the aggregate of that income. The annual total expenditure of Rs. 42 crores calculated for the implementation of the planned programme, sketched in this book, will bear a percentage of a little over 11 to net agricultural income. After deducting from this the normal development expenditure, the percentage will be about $6\frac{1}{2}$. This measures the scale of special effort required of the community to implement the plan.

In the absence of voluntary loans forthcoming in adequate amounts, some scheme of compulsory savings will have to be imposed on the community. This will advisedly take the form of refundable interest-bearing surcharges on some of the direct taxes levied by the State. Land Revenue readily suggests itself, and the agricultural community can be reached through a surcharge on it, but to reach the urban community it will be necessary to impose a State surcharge either on income-tax levied by the Centre or on the property tax or profession tax levied by local bodies. Some part of the amount needed may be raised through voluntary loans and so it will be only the remainder, perhaps half the amount, which will have to be raised by the compulsory or forced loan.

It is, however, imperative that the required finance is meticulously raised either by taxation or by borrowing and that the full expenditure of the plan completely covered by the funds raised for the purpose. Setting apart the Central Government aid of Rs. 11 crores, the amount that the State will have to find is only Rs. 13 crores, of which nearly Rs. 3 crores are already made available in tax revenue through the fiscal adjustments already given effect to. So the total sum which has to be raised afresh is only Rs. 10 crores through taxation and borrowing. This cannot be held to be beyond the capacity of the State to bear. Distributed over the 35,800 villages of the State, it works out to about Rs. 2,500 per village.

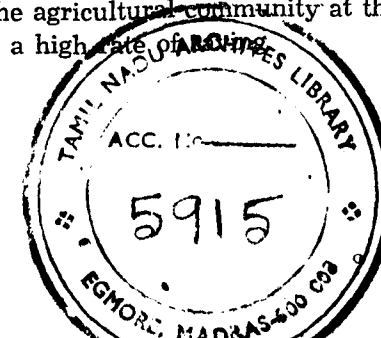
This scheme of raising finance has not, however, taken account of the expenditure the State may have to incur in the non-agricultural sections of the economy under an over-all plan, and to that extent the scheme will remain tentative, subject to adjustment in relation to other needs. Still it may be asserted that in this State agricultural development should receive first priority and the funds at the disposal of the State should be primarily used for this purpose. In the draft Five Year Plan of the State, provision is made for an expenditure on social service schemes of Rs. 56 crores for

the five year period, and this will work out to about Rs. 11 crores per year. If this plan is adhered to, as far as the non-agricultural sectors are concerned, the new finance to be raised will rise to Rs. 20 crores. If some part of this is also borne by the Central Government, the State's responsibility will to that extent be reduced. Even if we fix the total new finance to be raised by the State at Rs. 15 crores a year, it cannot be said that that is a figure beyond the capacity of the State. An all-out effort should without much difficulty bring in this amount.

In the private sector the new savings needed to meet the new demands under planning will be, as has been calculated in the chapter on Rural Credit, of the order of Rs. 55 crores annually. This does not include the finance required for land purchase by the tenants or the expenditure involved in such organizational improvements as may be effected by the holders themselves. But compensation to the dispossessed large owners will be paid by the State, as is done at present in zamindari abolition, and the new owners will have to pay for their lands in instalments spread over a long period of time. This annual payment can easily come out of the erstwhile rents the tenants have been paying, supplemented, if need be, by some part of the net income in agriculture. If the period fixed for repayment is made sufficiently long, say thirty years, this payment can be made as little burdensome as possible.

The expenditure on organizational improvements too is not likely to be heavy on the individual farmers, for a farm which is already economic in character will not need much by way of re-organization, and the uneconomic farms which will be compulsorily formed into co-operative farms will have a great part of its initial expenditure met by the State. In respect of these two items, therefore, a provision of Rs. 2 crores per year will be found to be liberal.

The total new finance required in the private sector may then be placed at Rs. 57 crores or Rs. 16,000 per village. With the amount required in the public sector included, this will rise to Rs. 18,500 per village. This amount has to be raised out of an average net agricultural income per village of about Rs. 1 lakh. This is a high rate of saving, no doubt, but the unaccustomed prosperity of the agricultural community at the present time is a factor facilitating a high rate of saving.



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