

# THE AGRARIAN PROSPECTS IN INDIA\*

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Indian agriculture has made impressive progress since independence. Both food production and agricultural production in general have grown at a trend rate faster than population. The country is now self-sufficient in food as well as most other agricultural products but with the important exception of vegetable oils. We have over the years evolved a viable system of food security in the shape of a sizeable buffer stock of foodgrains and a reasonable public distribution network which can help to mitigate the impact of a possible drought on both the availability of food and the general price level. As a result, droughts now have a much less disruptive effect on orderly implementation of our development plans than was the case until only a decade ago.

2. These are no doubt substantial achievements, even though the long term growth rate of agriculture has fallen short of Plan targets. Great credit is due to India's sturdy and hard working farmers who, belying all prophecies of gloom, have responded magnificently to the challenge of modernising a traditional agriculture. By their readiness to adopt new technologies, whenever they were shown to be more productive and more profitable, our farmers have shown that our culture and value system are not a barrier to imparting a scientific temper to our agriculture. In this process, they have been ably assisted by our agricultural scientists who, by developing new technologies which extended considerably the production frontier in agriculture, have made a truly outstanding contribution to the national development effort.

*NB:* The views expressed in this lecture are the personal views of the author and should not be attributed to the Reserve Bank of India. I am grateful to Shri V.B. Kadam, Executive Director, Reserve Bank of India, who made some valuable comments on an earlier draft.

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3. The role of our agricultural statisticians and other social scientists, such as agricultural economists, has also been of great significance. Through their sustained research work, they have contributed a great deal to a realistic understanding of the working of our agricultural economy, its potentialities and constraints on its growth. Their work has been of great assistance to national planners in the formulation of strategies and programmes to overcome the various obstacles to progress. In this context, the nation owes a great debt of gratitude to our statisticians, notably, Professor P.C. Mahalanobis, Professor P.V. Sukhatme and Dr. V.G. Panse, who made pioneering contributions to the establishment of solid statistical system as an indispensable aid in the formulation of national agricultural development strategies, plans and programmes. I am happy that the Indian Society of Agricultural Statistics has undertaken to commemorate the memory of Dr. Panse by instituting a memorial lecture in his honour. I am very grateful to the Society for inviting me to deliver the memorial lecture this year, as it gives me an opportunity to pay my homage to a great scholar of our country who contributed so much to the development of agricultural statistics as a major discipline for advanced study and research and also as an effective aid in policy planning.

4. By now, there is a consensus in the country that a rapidly expanding dynamic agriculture must constitute a basic foundation of a progressive, equitable and self-reliant economy in India. It does not require much analysis to show that, without continued self-sufficiency in food and other basic agricultural commodities at steadily rising levels of per capita consumption, the development process in India will experience great strains in terms of our ability to control inflation, ensure orderly management of our balance of payments and prevent accentuation of disparities in income.

5. In view of the critical importance of agriculture in sustaining the growth process, I have chosen "THE AGRARIAN PROSPECTS IN INDIA" as the theme of my lecture. I hope that as I develop this theme I shall be able to identify the scope for accelerating the pace of agricultural growth in years to come as well as draw attention to areas of concern which require priority attention if the growth potential is to be fully realised. I am, of course, not an expert in agriculture and it is most likely that what I have to say on the subject may not appear to be new or very profound. Yet, I believe that the issues that I propose to discuss today are of considerable

practical importance and a satisfactory resolution of these issues will have a vital bearing on our ability to meet the challenge of faster growing and more equitable agricultural economy in the coming decade.

### Recent agrarian trends

6. The discussion on India's agrarian prospects in the last three decades has often been characterised by moods of pessimism and optimism alternating with each other. This is inevitable in a situation where periods of a significant increase in production have been followed by sluggish growth or stagnation. Thus, until a few months ago, the rather unsatisfactory progress of foodgrains output from 1978-79 to 1982-83 revived once again the old fears about stagnation or a plateau having been reached in food production, notwithstanding continuing increases in the use of inputs such as irrigation, high yielding varieties of seeds and chemical fertilisers.

7. Careful researches by a group of distinguished agricultural economists have led to the conclusion that the deceleration of growth or stagnation hypotheses does not stand the test of serious scrutiny and that the available data do not suggest any sharp deviation in recent years from the long term trend rate of growth of slightly less than 3 per cent per annum.

8. Fortunately, there was a sharp increase in production of foodgrains in 1983-84, establishing a new peak of over 150 million tonnes. Judging by the present behaviour of the South-West monsoon, 1984-85 also promises to be a good agricultural year. On present reckoning, the production of foodgrains in 1984-85 may well reach the upper limit of the original Sixth Plan target of 149 to 154 million tonnes. The Sixth Plan, thus, promises to be the first Plan in which the original Plan target of foodgrains production will be met. As is well known, the Sixth Plan had as its target an annual growth rate of 3.9 per cent on the assumed base for 1979-80 of 128 million tonnes. This assumed base level was the trend level of production for that year derived on the basis of data from 1967-68 to 1978-79, and was, therefore, much higher than the actual production of 109 million tonnes in 1979-80. Viewed against this background, the realisation of the planned growth rate of 3.9 per cent in foodgrains in the Sixth Plan would represent a significant departure from the observed long-term growth rate of less than 3 per cent per annum. This would be a matter for considerable satisfaction.

9. Admittedly, favourable weather conditions in 1983-84 and 1984-85 have played an important role in the realisation of Plan targets for the production of foodgrains. To that extent, it would not be wise to treat this welcome performance as a firm indication of a new higher growth path which can be taken for granted in the future. There is, however, ground for cautious optimism that, given sustained efforts, it is now possible to achieve a higher growth rate of about 4 per cent in agriculture. I base my assessment of the feasibility of a higher growth rate on several factors.

10. First of all, since the mid-seventies, the irrigation potential has been expanding at an annual average rate of over two million hectares, which is nearly twice the observed growth rate of irrigation potential in the previous ten years. This is a development of far reaching importance.

11. Secondly, notwithstanding the steep increase in fertiliser prices in the wake of the two massive hikes in oil prices in 1973 and 1979, fertiliser consumption in India has on the whole continued to grow at an impressive rate even though these steep increases in prices were followed initially by substantial immediate deceleration in growth of fertiliser consumption. Now that India has discovered vast reserves of natural gas, the Indian fertiliser production can be expected to increase rapidly in years to come. The reduced dependence on imports will, therefore, greatly facilitate a more orderly expansion of fertiliser consumption in years to come.

12. Thirdly, we have now a substantially expanded base of research and extension effort which can lead to more speedy discovery and dissemination of superior disease resistant varieties of seeds suited to varied agro-climatic conditions of a country of India's size. With a more broad based research infrastructure, greater attention can now be given to solving chronic problems of low productivity of crops like oilseeds and pulses where a significant breakthrough in yield is still to be achieved. With a stronger extension service, it is now possible to establish closer links between the laboratory and the farm.

13. Fourthly, with the rapid expansion of the net work of rural branches of commercial banks and the Regional Rural Banks, the availability of farm credit at reasonable rates of interest has increased substantially, strengthening the ability of our farmers, particularly small farmers, to take advantage of new agricultural

technologies to a greater degree than in the past. The infrastructure of rural credit is set for a substantial expansion in years to come. The financial constraints to the adoption of new technologies will, therefore, be decidedly less onerous than in the past.

14. Fifthly, problems of dry land agriculture are now beginning to receive greater attention than ever before. Although doubts continue to be expressed about the availability and the effectiveness of net technologies for increasing crop yields under conditions of dry land agriculture, thanks to the work of the International Crop Research Institute in Semi-Arid Tropics, the Indian Council of Agricultural Research and other research agencies, there is a basis for cautious optimism that, given adequate inputs and extension support, it is possible to sustain at least a moderate increase in yields even for this type of agriculture. Considering that rain-fed farming accounts for 70 per cent of the area under cultivation, even a modest increase in output in these areas will make a substantial contribution to the growth of national agricultural output, particularly in the case of coarse grains, pulses, oilseeds and raw cotton which are predominantly grown under conditions of rain-fed farming.

15. These hopeful developments are indicative of the substantially increased potential for agricultural growth which is now on the horizon. However, one must not underestimate the enormity of the task that awaits us if we are to convert this potential into realised higher rates of growth of output. In this context, one must not forget that in the past the observed growth rates have been favourably influenced by a highly impressive growth in the production of wheat in Punjab, Haryana and Western Uttar Pradesh. The growth of output of rice, which is India's principal food crop, has been modest; but even in this case, the contribution of non-traditional areas of Punjab, Haryana and Western Uttar Pradesh has been much larger than that of the traditional rice growing areas. But for the performance of Punjab, Haryana and Western Uttar Pradesh, the national growth rate of production of rice would have been still more modest. Although there is no basis for the conclusion that the potential for a further increase in the output of wheat and rice in States like Punjab, Haryana and Western Uttar Pradesh has been exhausted, an acceleration in the national growth rate clearly depends to a much higher degree than ever before on a substantial improvement in the performance of traditional rice growing areas, particularly Eastern India.

16. Inter-State variations and inter-district variation in agricultural production even under similar agro-climatic conditions are indicative of the important role of sound management practices in promoting faster agricultural growth. But the national movement for increased agricultural productivity must be based on a careful disaggregated area specific analysis of various physical, social and economic factors which influence the farmer's ability and incentive to raise productivity. For example, in planning for increased productivity of rice, one must not lose sight of the many obstacles on the road to a higher growth path. Unlike wheat which is largely grown under conditions of controlled water, assured and clear weather conditions of the rabi season, rice is a kharif crop grown under conditions of uncontrolled water injection and is more susceptible to pests and diseases, besides the incidence of floods. Under these agro-climatic conditions, returns from high yielding varieties of paddy tend to be uncertain, thereby affecting the farmer's incentive to adopt the package of new technology, particularly if it involves the purchase of costly inputs such as fertilisers. Moreover, under agro-climatic conditions of Eastern India, the returns from irrigation also tend to be much less than in States like Punjab and Haryana. These States are deficient in rainfall even for their kharif crops and have, therefore, to use irrigation to raise yields both for the kharif and the rabi crops. By contrast, in traditional rice growing areas, in a normal rainfall year, farmers do not need to use irrigation during kharif and if its use is confined only to the rabi season, the returns are often not sufficiently remunerative. Furthermore, the higher proportion of the area under small and fragmented holdings in the Eastern States also adversely affects the ability and the incentive of farmers to invest in minor irrigation works such as tubewells. There are also problems about the deficiency of rural infrastructures such as all-weather roads linking villages to the marketing centres and the unsatisfactory progress of rural electrification, which limit the rate of exploitation of the ground water potential. Moreover, the fact that a substantial proportion of the area under cultivation is operated under conditions of unrecognised tenancy and share cropping system also constitutes an obstacle to the adoption of new technology.

17. We have to find effective solution to these and other related problems, if the higher growth rate is to be achieved. I therefore, now turn to a discussion on some of these issues.

#### **An expanding production frontier**

18. The growth of high yielding varieties has been a major factor in extending the production frontier, particularly in the case

of wheat and rice. We have today an impressive net work of research institutions engaged in evolving superior varieties of seeds. The Indian Council of Agricultural Research, Agricultural Universities, the National Seeds Corporation and State Seed Farm Corporations constitute the important links in the national effort to evolve progressively superior varieties of seeds, taking into account the varied agro-climatic conditions of our country. However, high yielding varieties are still not available for several crops. Considerable research effort is required to bring about a greater measure of stability in yield and to devise more effective technologies for the control of pests and diseases and post-harvest problems.

19. Given the size of our country and diversity of agro-climatic conditions, the requisite agricultural research effort has to be more broad-based and decentralised, even though centrally co-ordinated. This is of particular relevance in dealing with conditions of dry land agriculture where generalised non-location specific solutions will not be an effective instrument of securing increased production. In each State, and indeed in each district, we need superior technologies both for irrigated and rain-fed farming. Moreover, it appears that currently the research and extension support for programmes such as animal husbandry, fisheries, horticulture, forestry and for the development of new rural energy systems is not commensurate with the requirements of agricultural situation in India. These gaps in our existing structure of agricultural research, education and extension will have to be filled on a priority basis.

20. A major objective of agricultural research, education and extension must be to pay increasing attention to the problems faced by small and marginal farmers. Although the new high yielding varieties are scale neutral as to the size of the farm, their applicability assumes availability of sizeable financial resources, which small farmers lack. They are also often not able to assume the very considerable risks associated with use of new technology under conditions of uncertain rainfall. To make new technologies increasingly accessible to small farmers, they have to be made resource neutral as well. This requires an expanded research support system designed to develop varieties with multiple resistance to pests and diseases, and improved yield response to application of fertilisers.

21. Agricultural Universities, together with the Indian Council of Agricultural Research and its various institutions, have been assigned a major responsibility in agricultural research and education.

However, it has to be recognised that the University system in our country shows visible signs of strain and Agricultural Universities, with a few exceptions, are not immune to this malaise. In particular, some of the Agricultural Universities in those States which offer substantial scope for increased yields are not in particularly good shape. There is need to revamp the intellectual and financial resources of these Universities so that they can play their due role in the process of modernising our agriculture. I believe the time has come when there should be a thorough appraisal of the working of Agricultural Universities so as to re-equip them adequately for performing their allotted role in the next phase of India's agricultural development.

22. Despite a considerable increase in the production of quality seeds, we are still not in a position to meet fully the existing demand. Therefore, the present arrangements for the production and marketing of quality seeds deserve a fresh look so as to ensure that the National Seeds Corporation, the State Farm Corporations, Agricultural farms of Agricultural Universities, State-level seed Corporations and private seed growers provide a nationally effective system for the supply of high quality seeds.

23. Similarly, in several States, the quality of extension services needs upgrading. There are complaints that with the introduction of several new anti-poverty programmes, the block development administration is overworked and cannot pay adequate attention to agricultural extension work as traditionally understood. Some years ago, several States had introduced the Training and Visit system of extension in the hope that it will help to upgrade the quality of extension services and strengthen the two-way links between the laboratory and the farmer. A time has come to review the working of this system, so that the observed deficiencies can be made good.

### **Irrigation.**

24. In our agricultural strategy, irrigation has been rightly assigned the key role in increasing production and for reducing the amplitude of fluctuations in output in face of unfavourable weather conditions. According to the mid-term appraisal of the Sixth Plan, there will be an addition of about 12 million hectares to the irrigation potential over the Plan period. This is a creditable achievement, even though it falls short of the original Plan target of 13.7 million



hectares. In view of the critical importance of assured water supply in promoting multiple cropping, in reducing risks associated with the purchase of costly modern inputs like fertilisers and thereby increasing the inducement to the use of new technology in agriculture, it is absolutely essential that the area under irrigation should continue to expand at an annual rate of 2.5 to 3.0 million hectares until we are able to fully utilise the estimated ultimate potential of 1.13 million hectares.

25. However, in the emerging context of increased scarcity of financial resources, there is a danger that in the absence of some re-ordering of priorities and procedures in irrigation planning, the growth of area under irrigation may slow down. Unless existing projects are adequately funded, there is a greater measure of selectivity in the choice of new projects, and the temptation to spread scare resources much too thinly is more firmly resisted, costs and time over-runs in irrigation projects will multiply, thereby slowing down the growth of area under irrigation. Moreover, a situations in which water rates do not cover even the operational costs (consisting of maintenance expenditure and the interest on capital) acts as a disincentive to the expansion of irrigation facilities. Despite obvious practical difficulties, greater realism in the fixation of water rates is necessary to ensure faster growth of the area under irrigation and also to reduce wasteful use of available irrigation facilities.

26. Despite initial expectations at the time of the construction phase of irrigation projects, realised gains in productivity under irrigated conditions have often turned out to be much lower. Thus, whereas the yield of foodgrains from the irrigated fields under demonstration farms can be as high as 4.5 quintals per hectare, the actual average yield is only about 1.7 quintals per hectare. Considering the escalating costs of major and medium irrigation works, we can ill-afford not to utilise fully the benefits of available irrigation facilities. It was for this purpose that command area development authorities were established in important project areas. However, the results have not been impressive.

27. Part of the difficulty arises on account of the fact that command area development authorities do not enjoy the requisite authority to take all effective measures for fuller utilisation of irrigation potential. Nor have they been equipped with the requisite high quality inter-disciplinary staff to be able to plan the complex operations associated with optimal use of available water resources.

Experience shows that unless command area development becomes an integral part of the planning of an irrigation system from its very inception, it will be difficult to ensure early effective utilisation of scarce water resources. Past experience also suggests that in order to derive better returns from irrigation works, there must be greater realism in estimating the effective command area of an irrigation project and the temptation to over extend the command area to be covered has to be resisted.

28. In any future planning, interests of small and marginal farmers and of farmers at the tail end must also receive greater attention, if irrigation is not to become an instrument of widening disparities of income and wealth in rural areas. Thus, more systematic attention has to be paid to the equitable sharing of water. Equitable allocation of scarce water resources among competing crops and among all the farmers in the command areas is not an easy task. But these problems have to be faced squarely.

29. By now, it is nationally agreed that a conjunctive use of ground and surface water is essential for optimal use of available water resources. Yet, in practice, such conjunctive use is not reflected in planning of irrigation works, and in particular, ground water development is taken up in an adhoc manner to deal with problems like water logging or other defects in the system. Lack of integration of surface and ground water results in low productivity in the use of a scarce resource as water.

30. It has often been observed that farmers who own tubewells or dug well have greater incentive to use modern inputs because they have greater control over the supply of water than is associated with the use of canal water. In recent years, however, the degree of certainty enjoyed by the tubewell owners has been considerably affected by the erratic supply of electric power and thus, many farmers still prefer to use diesel pumps even though they are far more expensive to operate than electric power. The functioning of State Electricity Boards is far from satisfactory in many States, particularly in Eastern India, where there is a vast scope for utilisation of ground water resources. Uncertainty of power supply is today a major obstacle to full utilisation of installed capacities both in agriculture and in industry. In order to avoid the crippling effect of power shortages in the economy, it is essential that power planning in our country should take into account more fully the power requirements of agriculture than has been the case in the past.

31. Farmers all over India complain about the harassment by grass-root level officials of the irrigation Department and of the State Electricity Board. In conditions of continued scarcity of water and power, it is not probably possible to eliminate such complaints. However, it should still be possible to reduce their scope. I have a feeling that assigning local *Panchayats* a role in the assessment of the work of such officials may make them more responsive to the felt needs of farmers. Besides, the association of farmers' representatives in an advisory capacity in the operation of irrigation projects and in the management of electricity systems may help to tone up the efficiency and also minimise scope for petty corruption and harassment at the grass-root level.

32. In addition to the expansion of irrigation potential, special attention needs to be paid to the modernisation of existing works since it may be possible to increase reliability and stability of water use at the farm gate with small additional expenses. Maintenance practices relating to irrigation works leave much to be desired and the concerned local level officials often do not show sufficient interest in proper maintenance of existing assets. Here too, the association of people's representatives may help in the adoption of timely and adequate maintenance efforts.

33. Expansion of irrigation facilities under conditions of extremely small and fragmented holdings, such as in Eastern India, will require greater experimentation with State-owned or co-operatively owned tubewells. Past experience in this matter is not encouraging, but results might be more favourable if officials at the grass-root level operating these systems are made responsible to the local *Panchayats*. Consideration should also be given to entrusting the management and operation of public tubewells to some reputed firms of management experts, if bureaucratic management cannot ensure optimum use of capacity. In other cases, private enterprise and hiring of water may provide a partial answer and these practices should not be looked down upon.

34. Available data do not permit a meaningful analysis of the effectiveness of irrigation or of its influence on productivity. It is, therefore, important that in presenting State and district data on land use and crop production, separate data ought to be given for irrigated and unirrigated areas. Moreover, figures relating to both irrigation potential created and the actual area irrigated need a fresh look in order to assess their accuracy. There is also need for

more data on water actually used and supplied at various points of the system.\*

### Fertiliser use

35. The present agricultural technology was evolved in the background of readily available cheap supply of fossil fuels like petroleum. With the steep increase in oil prices since 1973 and uncertain prospects for imported oil, we have to think, in the longer run, in terms of greater use of renewable sources of energy such as biologically fixed nitrogen. However, as of now, this is only a distant possibility.

36. Fortunately, as I have already mentioned, the medium term outlook for the supply of chemical fertilisers in India is fairly comfortable. A major task ahead of research and extension is to improve the return from increased fertiliser use so as to promote its balanced application. There is undoubtedly considerable scope for increased use of fertilisers even though it has to be recognised that its use under conditions of uncontrolled water supply will remain limited. With increased availability of high yielding varieties of seeds, the expansion of irrigation and improvement in its quality associated with assurance and timeliness of water delivery, farmers, will have an added incentive to use fertiliser.

37. A major policy issue that will have to be considered sooner or later relates to the massive fertiliser subsidy which has currently to be provided to the Indian fertiliser industry to enable it to earn an economic rate of return. Food and fertiliser subsidies are today a major source of strain on the fiscal system. Although several complex issues arise in the analysis of the effects of these subsidies, in the longer run, they must be contained so as to maintain the health of our fiscal system. In view of the great importance of fertilisers in increasing agricultural production, one has to weigh very carefully the effects of any upward adjustment in fertiliser prices on agricultural output, even though the available statistical evidence in this matter is not conclusive. To begin with, there has to be a careful analysis of factors which make fertiliser prices in India much higher than international prices. As part of this exercise, there

\*Various issues relating to the management of irrigation are well brought out in a collection of essays entitled "*Productivity and Equity in Irrigation Systems*", edited by Niranjana Pant, 1984, Ashish Publishing House, New Delhi.

should be a closer look at the cost of production to find out if the technology adopted is economic, capital outlays are not excessive and prices and taxation of inputs are reasonable.

38. With more plentiful supply of fertilisers and the disappearance of a climate of scarcity, greater attention will need to be paid to efficient marketing of fertilisers. The relative role of co-operatives, State organisations and of distributors appointed by manufactures will need to be carefully examined to provide an adequate measure of competition in supply, so that farmers are able to get reliable quality of fertilisers in time for various operations.

39. Further, for a more meaningful study of the impact of fertilisers on crop production, we need reliable data on fertiliser use crop-wise. Such data do not exist at present and analysts have to be content with rule of thumb sort of assumptions about relative use of fertiliser crop-wise.

### **Dry land agriculture**

40. Considering that dry land agriculture accounts for nearly 70 per cent of the cultivated area and nearly 40 per cent of foodgrains production, progress in this sector can have an important bearing on the outlook for both growth and equity in rural areas. Until the Sixth Plan, problems of dry land agriculture were sought to be tackled on a selective basis in the framework of Drought-Prone Areas Programme adopted since the Fifth Plan. However, due to both the absence of improved technologies and the inadequate supply of organisational and financial inputs, this Programme has made only a very limited impact. Fortunately, the prospects now seem to have improved. The work of the International Crop Research Institute in Semi-Arid Tropics for developing technologies for deep black soils under conditions of dependable rainfall and of the Indian Council of Agricultural Research in relation to lighter red soils and drier regions offers a basis for optimism. At the same time, in our planning processes, there is now an increased awareness of the problems of dry land agriculture. This is reflected both in the Sixth Plan and in the New Twenty-Point Programme. Government have adopted both an extensive and intensive approach to the development of dry land agriculture in the Sixth Plan. Under the former, the emphasis is to use on-going programmes to yield improved results. Under the latter, nearly 4,000 micro water sheds have been identified covering an area of 2.7 million hectares for intensive development.

41. Considering the great uncertainty of weather conditions in these areas, the extreme poverty of farmers and infrastructural constraints in the timely availability of inputs and credit, progress in the spread of improved technology is bound to be slow. Even then, even moderate increases in output will have a major impact on national growth rates. A corollary of the vastness of area under dry land agriculture and the great diversity of soil and agro-climatic conditions prevailing in these areas is that no generalised nation-wide solutions will be applicable to all these areas. To be effective, solutions must be found after a careful analysis of local needs, resources and potential for development.

42. Thus, the research and extension input requirements of dry land agriculture are bound to be high. These factors must be clearly recognised if a visible impact is to be made on poverty and underdevelopment in these areas. Clear-cut priorities must be laid down setting out specific time bound tasks so as to ensure greater accountability. For example, pulses and oilseeds being particularly vulnerable to insect pests, providing farmers technical and financial assistance to take up pest control measures may prove to be more effective in increasing production than more complicated processes.

43. Furthermore, successful implementation of water-shed management approach assumes effective co-ordination of interdisciplinary skills of several varieties. Judging by the experience of command area development authorities, such co-ordination has proved to be difficult even under more favourable conditions prevailing in the irrigated areas. All this suggests that in addition to measures designed to improve productivity of dry land agriculture, specific anti-poverty and employment creating programmes such as the national rural employment programme will need to be pursued with much greater intensity in these areas.

#### **Agricultural credit system**

44. It is well known that the new agricultural technology is not resource neutral. It requires sizeable financial resources both for current inputs such as fertilisers and for investment in fixed assets such as tubewells. In the absence of a viable system of rural credit, farmers, particularly small and marginal farmers, are unlikely to generate initially surpluses for investment in these inputs. In the framework of multi-agency approach to rural credit, both co-operative and commercial banks have been assigned an important role in meeting the credit needs of farmers. However, the agricultural credit system—both co-operative and commercial banks—is today faced

with problems of mounting overdues. If not reversed this trend will greatly affect the ability of the credit system to recycle scarce resources in the service of an increasing number of farmers.

45. Part of the problem arises on account of inadequate project appraisal and ineffective post-disbursal follow-up. Since we are moving away from security oriented lending to project oriented lending, proper project appraisal and effective post-disbursal supervision, including timely provision of technical and other assistance if the original parameters turn out to be incorrect, are essential requirements of a well functioning system of rural credit. Yet both co-operative and commercial banks, including Regional Rural Banks, often lack the requisite organisational strength to deal with these tasks.

46. In actual practice, lending in rural areas requires greater professional skills, a higher sense of judgment as well as a spirit of dedication and commitment on the part of bankers to the goal of rural development. And yet it has often been assumed that rural banking need not be expensive. That is why very often we find rural branches being manned by a single person whose capability to be an effective agent of rural credit delivery system is rather weak particularly when account is taken both of the geographical area within which his branch must operate and the number of agricultural activities it must finance. The time has come to review the strength and weaknesses of our system of rural credit at the grass-root level. Urgent steps are needed to strengthen rural credit delivery systems particularly in Eastern India where both co-operative and commercial banks have not proved equal to the task.

47. Thus far, our banking system has very limited experience of meeting the credit requirements of dry land farming. With increased emphasis on the development of this segment of our agriculture, the banking system will be called upon to devise effective credit delivery systems to realise the productive potential of dry land agriculture. Parameters, norms and risks associated with agricultural lending in dry land areas are vastly different from those in irrigated areas. These factors will have to be taken into account in developing an innovative supporting structure of rural credit for these areas.

#### **Price policy of agriculture**

48. The success of an agricultural strategy, which relies heavily on the use of costly purchased inputs for increasing farm yields,

greatly depends on provision of adequately remunerative prices for farm produce. The relationship of input and output prices is now recognised as having a major impact on the farmers' incentive to adopt new technology. The old conventional wisdom of development economics of financing the industrialisation process by turning the terms of trade against agriculture has been found to be a misleading guide to policy in most developing countries. However, it has also to be recognised that in the absence of technical progress, there are limits to the use of price policy in overcoming agricultural backwardness. Moreover, in a country in which the bulk of consumers are very poor and expenditure on food accounts for a large part of total consumer spending, it is only proper that gains of productivity in agriculture are equitably shared between producers and consumers.

49. In India, provision of remunerative prices and the introduction of an effective procurement system through the Food Corporation of India have played a major role in creating a climate conducive to the adoption of new technology in foodgrains. The Government now announce support of procurement prices for many major agricultural crops. However, effective procurement is confined only to wheat, rice, raw cotton and raw jute. Considering the great importance of increasing the production of oilseeds and pulses, it is necessary to examine the role of more effective procurement policies as an aid to increased production of these commodities.

50. In case of raw cotton, procurement by the Cotton Corporation of India and the Maharashtra Government under their monopoly procurement scheme taken together account for nearly 25 to 30 per cent of total output and can, therefore, exert a powerful stabilising influence on prices which are both fair to producers and consumers. However, in the absence of effective co-ordination of the operations of two agencies, the stabilising impact on prices and output has tendered to be rather weak. It is, therefore, necessary to review the mechanism for procurement of raw cotton by the public sector agencies so as to bring about a greater measure of stability in production and prices.

51. In the case of sugarcane, the adoption of dual price mechanism for sugar has the potential of exercising a significant stabilising influence, reducing fluctuations in output and prices. However, the super-imposition of the mechanism of variable and unco-ordinated State advised prices payable by sugar mills to cane



growers greatly reduces the stabilising influence of dual pricing system in sugar. As a result, significant fluctuations in output and prices are still very much a part of contemporary Indian sugar economy. Some reform of the present system is long overdue.

### Structural reforms

52. In recent years, techno-economic factors have been regarded as a major determinant of agricultural growth. The importance of new technology as a major influence on crop yields is evident from inter-district variations in levels of productivity with similar environmental conditions but differences in use of irrigation, new seeds and fertilisers. Up to a point, the new technology is scale neutral so that even small farmers can take advantage of it provided they are helped by a viable credit delivery system which enables them to purchase modern inputs even when they have no initial surplus resources of their own. However, it would be wrong to assume that structural factors, including land tenure system and the size of holdings, have no influence on the adoption of new technologies.

53. In Punjab, Haryana and Western Uttar Pradesh, the predominance of owner-cultivated farms, relatively larger size of the average holding and successful condition of holdings in Punjab and Haryana before the onset of Green Revolution greatly facilitated the rapid adoption of new technology when its profitability was established. The experience of Punjab, Haryana and Western Uttar Pradesh does not, therefore, warrant the conclusion that techno-economic factors, regardless of underlying structural conditions, can by themselves usher in an agrarian revolution. This point is of particular relevance in considering the extension of new technology to Eastern India. The existence of unrecognised tenancy and share cropping arrangements on a large scale creates a situation whereby the actual tiller of the soil is insecure and has neither the incentive to invest in agricultural improvements nor by virtue of his status can he get the benefit of credit or subsidies made available by the Government. Besides, given the small size of the holding and widespread fragmentation and absence of consolidation, small farmers cannot make effective use of innovations such as installation of a tube-well.

54. In Eastern India, the agricultural marketing system is also very defective and the number of regulated markets is very small. The links of villages with the marketing centres are also rather weak

because of inadequate net work of all-weather rural roads. Levels of literacy are also not very high and this, combined with the rigidities of the social structure, can affect farmers' aspiration level as well as their capacity to adopt modern technologies. The re-appearance of diseases such as Malaria also affects productivity as it can interfere with timely completion of sowing and harvesting operations. Programmes such as rural roads and rural electrification appear as part of the Minimum Needs Programme but progress has fallen short of Plan targets in several States.

55. In this background, deficiencies of both institutional system and rural infrastructure combine to limit the farmer's ability and incentive to adopt new technologies. These obstacles must be overcome if the vast latent potential of growth in Eastern India is to be fully exploited. Policies relating to imposition of land ceilings, tenancy reforms, registration of land rights and consolidation of holdings have broad national support and there is no dearth of legislation in these matters. And yet in several parts of our country, the loopholes in land reform legislation, and the extremely costly and time-consuming nature of judicial processes have combined to deny to the underprivileged among our rural masses even the benefits of moderate land reforms measures adopted in the last two decades after the abolition of Zamindari in the Fifties.

56. The Sixth Plan had called for time-bound measures for the compilation of accurate land records (to be completed by 1985), consolidation of land holdings (to be completed in ten years, with priority to be given to command areas of irrigation projects where it was to be completed in three to five years), protection of tenants and conferment of ownership rights on all tenants except for specified exempted categories (the needed legislative measures to be adopted by 1981-82), taking possession and distribution of ceiling surplus land (to be completed by 1982-83) and provision of house sites to the landless (to be completed in five years). However, it appears that adequate progress has not been made in fulfilling these tasks.

57. The enactment of progressive land reform legislation, which is not effectively implemented, no doubt hurts the cause of equity, but it also gives rise to uncertainty which hampers the growth of productivity as well. In recent years, there have been complaints that in some parts of the country, the fear of land ceilings has prevented farmers to take advantage of the newly created irrigation facilities. It is time that, in the interest of both faster growth and

greater equity, uncertainty about the implementation of nationally approved land reform legislation is brought to an end. In a situation where employment opportunities outside agriculture are not expanding fast enough, increased agricultural production, particularly on small and marginal farms, is essential to sustain the growth process and to minimise social discontent. Even if radical land redistribution is to be ruled out, and radical land reforms do not take place in a political vacuum, there is no reason to delay any further the adoption of such moderately progressive measures which seek to give official recognition and protection to the actual tillers of the soil operating land as unrecognised tenants and share croppers. The task of sound policy formulation will be easier if we have more accurate data on the extent of tenancy and share cropping arrangements. We also need more information as to who leases in and who leases out land, since policy prescriptions will be different if leasing in is resorted to by larger landowners to supplement their own resources of land, rather than by the landless or very small landowners. Thus, social scientists and agricultural statisticians have a role to play in bringing about an improvement in the design of public policies in this important area.

#### **Anti-poverty programmes**

58. If we can raise the agricultural growth rate to about four per cent and if in the process of modernisation we pay priority attention to the needs of small and marginal farmers, there is bound to be a favourable impact on the extent of poverty in rural areas. However, since employment opportunities outside rural areas are not expanding fast enough and the rate of growth of labour force in the next fifteen years is already predetermined, there is undoubtedly need for direct supplementary beneficiary oriented measures to reduce the rigour of poverty in rural areas. The Minimum Needs Programme as well as programmes such as the NREP and IRDP have, therefore, a positive role to play in our quest for greater social justice in the growth process.

59. There is a vast scope for improving rural infrastructure and, given well prepared project profiles, programmes like the NREP could play an important role in improving the living conditions of the landless and in strengthening their bargaining power for securing better wage deals from land owners. Given proper project planning for the development of local infrastructure, the NREP can also make a positive contribution to increasing agricultural productivity and

improving the quality of rural living. The quality of technical staff now available to the project authorities is often not equal to the task and needs to be greatly strengthened. In addition, greater local participation in the planning and execution of these works can also lead to improved effectiveness of the programme. Sharing by the local communities in the cost of rural works also requires careful consideration as it can help to improve public interest and accountability and also enlarge the pool of resources available for the programme as a whole.

60. Programmes like the IRDP also offer considerable attractiveness provided the beneficiary has some land of his own. In the case of the landless, the programme has some what limited potential, except in areas in which rapid agricultural growth itself offers increasing scope for promotion of self-employment ventures in providing agro-services. It is well known that even a programme of dairy development specially meant for the landless has high risk of failure if the beneficiary does not have land to cultivate fodder for the animals. Programmes like the IRDP can, no doubt, help to raise productivity and income of rural artisans, but then it must be recognised that, with the exception of handlooms, because of their low productivity and increasing competition from similar products produced by the modern manufacturing sector, most other village and cottage industries do not offer exciting opportunities for increased employment. Besides, one must recognise that the poorest of the poor often lack entrepreneurial skills and risk-taking capacity to establish themselves in self-employment ventures even when these activities offer scope for productive employment. There is, thus bound to be a high risk of failure in the initial stages.

61. All this should not be considered as an argument for abandoning a programme like the IRDP. What I wish to convey is that the beneficiaries of the IRDP require technical assistance and input and marketing support of a much higher order than is currently available to them. In the longer run, timely supply of these services are inputs is far more important for the success of these programmes than the provision of capital and interest subsidies. In any case, excessive emphasis on proliferation of subsidies is likely to effect both the speed of expansion of these programmes and the quality of their implementations, as it would intensify extraneous pressures for misallocation of available scarce resources. Neglect of these aspects in planning antipoverty programmes in the Seventh Plan may saddle the banking system with a high proportion of low quality asset portfolio.

### Revamping of agricultural administration

62. Over the years, the number of personnel dealing with various aspects of agricultural administration has greatly expanded. The expansion of facilities for agricultural research and extension, the massive expansion of irrigation facilities, the rapid growth of rural electrification, the existence of a vast net work of co-operative credit societies numbering nearly 94,000, the rapid expansion of commercial banking in the rural areas, the establishment of several new agencies to deal with the problems of Scheduled Castes and Scheduled Tribes—add up to an impressive number of persons charged with the responsibility to promote social and economic change in rural areas. If properly trained and motivated, their energies can be canalised to mount a frontal attack on problems of rural underdevelopment.

63. On the whole, agricultural administration in post-independence of our country has lived up to its new responsibilities but there are also visible gaps which need to be filled in the interest of greater effectiveness. First and foremost, frequent transfers of key officials often under political pressures of one sort or another, affect their morale and hamper growth of knowledge and expertise in dealing with massive problems of social change. Secondly, training programmes for agricultural administrators have to take adequate note of the growing knowledge and skill intensity of modern agricultural processes. Moreover, integrated development requires a great variety of skills belonging to different disciplines. We have to find effective co-ordinating mechanisms for harnessing these skills for a balanced programme of agricultural growth.

64. Given the great diversity of agro-climatic and other conditions in Indian agriculture, meaningful solutions to the problems of modernisation of agriculture can be found only by paying adequate attention to the specific constraints, resource endowments and potentialities of each administrative zone. This means that at the district and block level, planning has to be taken far more seriously than in the past. District and block level planning agencies must have adequate degree of freedom to adapt nationally and State level approved schemes to suit the local conditions.

65. Moreover, management of rural change cannot be reduced merely to a bureaucratic process. The active involvement of people through the revitalisation of the *Panchayati Raj* institutions is essential to secure their voluntary and willing support for programmes of

rural reconstruction. These institutions have several defects and often tend to be dominated by higher castes and upper income groups. And yet, purely bureaucratic management of rural change is not the proper answer. There are reasons to believe that the onward march of the democratic process and the increasing assertion of their democratic rights by the rural poor will in due course of time reduce the hold of landed aristocracy on decision making processes of these institutions. Thus, given adequate powers and backed up by adequate technical support, these institutions have the potential to use India's vast reserves of surplus man-power for accelerated development.

### Concluding remarks

66. It is now time for me to sum up my main conclusions. I have argued that it is feasible to plan in terms of an agricultural growth rate of about four per cent per annum provided agricultural programmes are funded adequately and the requisite research, extension and administrative support can be mobilised. There being no effective alternative to continued reliance on irrigation, chemical fertilisers and rural electrification, substantial resources will have to be devoted to agricultural infrastructure in years to come. In addition, expansion of production in Eastern India and the problems of dry land agriculture by their very nature will require substantial expansion of the facilities for research, extension and education. Besides, direct beneficiary oriented anti-poverty programmes will have to be enlarged, even though the scope of some of these programmes will need to be modified in the interest of greater effectiveness. The credit system and price support mechanism will require an expanded coverage. In order to achieve higher growth rate in agriculture in the framework of greater equity in the growth process, public policies, including those involving technical support and financial assistance, will have to acquire a conscious bias in favour of increasing the productivity of smaller farmers.

67. All this means that agricultural growth cannot be brought cheaply. Considering the acute scarcity of resources and a sharp deterioration in the climate for external assistance, difficult questions will arise in determining priorities in resource use. To the extent that we can improve productivity in the use of such scarce and expensive inputs as water and fertiliser, the resource problem will become more manageable. In this sense, productivity growth involving

more effective use of all scarce inputs is of great importance both in agriculture and in industry. At the same time, greater vigour and drive in the removal of some of the long standing structural and institutional barriers to agricultural change can also help to release return latent creative human faculties, which will, in turn, lead to a higher use of modern technology and may thereby also help to save on scarce resources.