

India's New Agricultural Development

The case of a conflict between agricultural growth and social equity

PETER VON BLANCKENBURG

Introduction

It is a difficult task to get a true picture of the recent overall agricultural development in India and of its political and social implications. Quite often it is overlooked in European countries that India is an immensely large country with a land area twelve times as large as that of the Federal Republic of Germany, with a population nine times as large as that of the Federal Republic (namely 547 mill. in 1971), and with the greatest imaginable variety of agro-ecological conditions. The multiplicity of cultural, social, economic, and political conditions renders a judgement on past performance and on chances of future development difficult. Very rarely do individual achievements or special problems, as significant they may be as such, have a major impact on the whole or even on the greater part, of the country.

This is also true for what has happened on the Indian agricultural scene during the past ten years. Very important new developments have started, but they concern only a part of agricultural production and have so far affected only a minority of the regions and their populations. Therefore, if success is measured in terms of its effect on the total nation or by an international comparison, the result may not be too convincing. However, taking into account the existing structural differences, the effects of the new agricultural development are remarkable and, apparently, they have initiated a learning process among agricultural scientists, administrators, and economic development planners which should be of use to other subsectors of the Indian economy, too.

Successful new wheat technology

The start of the recent phase of Indian agricultural development can be assumed with the import of 18,000 tons of seed of Lerma Rojo 64 A and Sonora 64 from Mexico in 1966, two dwarf wheat varieties which had been bred in the International Maize and Wheat Improvement Center (CIMMYT) in Mexico. Rapid testing and selection of high yielding strains, performed in the Indian Agricultural Research Institute, Delhi, and in other research institutes, led to the release of new high yielding varieties (HYV) of wheat like Sonalika, Kalyan Sona or Sharbati Sona from 1967 onwards. Packed into a bundle of supporting actions and inputs, they became surprisingly successful, measured in terms of quick adoption by the farmers and

increase in total yield. Swaminathan¹ described this process as follows: "High yields, stability of performance resulting in low risks, good market demand and price, coupled with the availability of an agronomic technology capable of decentralized adoption, led to the new fertilizer-responsive strains which found immediate acceptance by the illiterate peasantry over wide areas in India and Pakistan. Technology was matched by appropriate political and administrative action and farmers, extension workers, scientists, administrators, and political leaders functioned for the first time in total synchrony. The result was a doubling of wheat production within a span of five years."

However, as the cultivation of the HYV-wheat is tied to irrigation facilities and ecological locations suitable for wheat production, only a minor part of the farming community was affected by the HYV programme. It succeeded mainly in the northern states of the Punjab, Haryana and in Western Uttar Pradesh. However, even in regions which had known only little wheat production till then, e.g. West Bengal, Mysore or Andhra Pradesh, cultivation increased quickly due to the relative economic advantage and the unproblematic innovation characteristics of the new varieties. In West Bengal, wheat production rose from 70,000 tons in 1967/68 to 1 mill. tons in 1971/72. In 1970/71, 5.9 mill. ha (33 per cent of the total Indian wheat area) were cultivated with HYV.

Modest progress of other crops

No other crop has achieved similar success in India. New high yielding rice varieties had been bred in the International Rice Research Institute (IRRI) at Los Baños, Philippines. Their extension was confined by the fact that they were greatly inferior with respect to yield, technological characteristics and economic position to the new wheat varieties. Their requirements for water supply (amount and timeliness) and plant protection are considerable. Moreover, their acceptability to the consumer leaves much to be desired. Cooking properties and taste do not suit consumer habits too well. This is all the more important as a high proportion of the paddy cultivation takes place in small farm units which produce more for subsistence than for the market. Here, it is mainly the varieties people like to consume which are planted. Some new varieties supplied by IRRI have a higher disease resistance and acceptability than the first HYV and may be better adopted. For the rest, the HYV of paddy have to compete with the so-called improved varieties which were bred in India and based on local varieties. The improved varieties have an intermediate position in yield between old local and new high yielding varieties and have been adopted by many paddy cultivators. In 1970/71, about 5.5 mill. ha (15 per cent of the paddy area) were grown with HYV².

Due to the regional concentration of production, the proportion of farmers who have changed to HYV cultivation may be much higher in a certain area. This was shown e.g. in an empirical study, carried out by the author in 1971/72, on the role which

¹ Swaminathan, M. S., *The Plant Population Explosion*. In: CERES, *FAO Review on Development*, March–April 1973, pp. 11 ff.

² FAO, *The State of Food and Agriculture 1972*. Rome 1972, p. 89.

progressive farmers play in Indian agricultural development. The sample consisted of 184 farmers from 12 villages in the two northern districts of Jullundur and Ludhiana in the Punjab and of another 187 farmers from 12 villages in the districts of Kolar and Mandya in Mysore in the South of India³. The almost complete adoption of HYV wheat in the highly developed Punjab research areas is demonstrated by the fact that 177 out of 184 farmers (96 per cent) were growing HYV wheat. In the Mysore research areas, paddy plays a role similar to that of wheat in the Punjab research areas. However, only 41 farmers (22 per cent of the 187) had changed to HYV paddy cultivation, and many of these were growing other paddy varieties apart from the HYV.

The other food grains have as yet benefited less from technological progress. However, some Jowar (Sorghum), Bajra (Pennisetum) and Maize high yielding hybrid varieties have been propagated successfully in many parts of India. Well accepted improved varieties are available for Jowar, Bajra and Ragi (Eleusine). The relative losers in the competition for land and productivity are the pulses which are cultivated mainly on rainfed lands, and some other crops like cotton. Neither the yields nor the cultivated area of pulses such as gram (Cicer, chick pea) have risen over the past years; this is regrettable as they are an important staple food for the poorer sections of the population⁴. Least progress has been achieved in animal production, a problem which has recently been given more attention by government agencies and by scientists.

The rise in food grain production

Table 1:

Development of area, yield and total production of the most important food grains in India between 1961/65 and 1971

	Cultivated area			Yield			Total production		
	Mill. ha 61/65	1971	% change 1971 over 61/65	100 kg per ha 61/65	per ha 1971	% change 1971 over 61/65	Mill. tons 61/65	1971	% change 1971 over 61/65
Rice	35.6	38.8	+ 9	14.8	17.1	+ 16	72.7	66.5	+ 25
Millet and Sorghum	36.5	38.0	+ 4	9.1	10.3	+ 13	16.5	19.8	+ 20
Wheat	13.4	17.9	+33	8.4	13.0	+55	11.2	23.2	+108
Maize	4.6	5.8	+26	9.9	12.0	+21	4.6	7.9	+ 53

Source: FAO Production Yearbook 1971.

³ For details of methodology and results, cf. von Blanckenburg, P., Who Leads Agricultural Modernization? A Study of Some Progressive Farmers in Mysore and Punjab. In: Economic and Political Weekly (Bombay), Vol. 7, No. 40, Review of Agriculture, Sept. 30, 1972.

⁴ We cannot discuss in detail the reasons for the varying degrees of success of different crops. In general, several factors such as technological properties, innovation characteristics, relative economic advantage of the crop and the kind and intensity of governmental measures have contributed to this. A major and sometimes underrated role was played by the price policy which has favoured wheat production more than most other products.

As Table 1 shows, the increase in production is not only an outcome of better yields per ha, but also of the utilization of larger areas for the respective crop. But here, unmistakably, a change is taking place. Whereas formerly, i.e. up to the beginning of the sixties, the increase in total production was, above all, due to such a rise in the area cultivated, now the productivity of land has become more decisive. During the past years, the yield per ha of the most important food grains has increased more than the land cultivated (with the exception of maize). This, however, is a phenomenon which does not apply to the majority of other crops and, therefore, shows the selectivity of the productivity development. As pointed out, progress is greatest in wheat production which has reached an index of 208 in 1971 (average in production 1961/65 = 100). Due to this achievement, the index of grain production for 1971 was 136, whereas food production and total agricultural production both reached only the index of 122⁵.

In 1970/71, food grain production reached a record level of 108 mill. tons and a continuation of this rise was expected. Mainly due to the vagaries of the monsoon, there was a setback in the following years: In 1971/72, 104 mill. tons were harvested and the result for 1972/73 is only 96 mill. tons. The harvest expectations for 1973/74 are better again — in the range of that of 1970/71. Although apparently in both years of depression the decrease was largely caused by the regional shortage of water — the crops suffered from lack of rain and the insufficient capacity of hydro-electric power for pump irrigation — major doubts have arisen with respect to the stability of the agricultural growth process. Therefore, a closer look at the background and the implications of the recent development is indicated.

No major trend change in production

The new agricultural development in India and in other countries with similar development traits has been called a "Green Revolution". Although this term has been widely accepted, we have to discuss whether it characterizes the recent process correctly or not. The word revolution usually stands for a radical, i.e. fundamental, complete and rapid change. Using this definition it is questionable whether the term "Green Revolution" is appropriate.

While studying in how far India's new agricultural development has led to a breakthrough in production, economists and statisticians are puzzled by the fact that a macro-level analysis over the last decade does not show a marked trend change. In the report on a seminar which was held in Delhi under the auspices of the Centre for the Study of Social Change in 1972⁶ reference is made to a statement of K. Mukherjee "that in terms of the basic aggregative time series data on Indian agriculture it was impossible to distinguish any structural break corresponding to the Green Revolution. Whether one took aggregate output, fertilizer consumption, the level of investment or anything else, the trend that fitted the pre-1967 data

⁵ FAO Production Yearbook 1971; FAO, The State of Food and Agriculture 1972. Rome 1972.

⁶ Das, A., Understanding the Green Revolution. In: Economic and Political Weekly, Vol. 7, Nos. 46 & 47, Nov. 18, 1972.

equally fitted the post-1967 data"⁷. The statement is followed by the question of the rapporteur: "Was, then, the Green Revolution a non-event?"

The finding must be taken seriously as it confirms that so far the new development is not so epoch-making as some enthusiasts maintain. On the other hand, there is sufficient evidence, particularly from studies on the micro-level, that in India a new phase of agricultural development has started which differs structurally from the foregoing period. The dynamics of this process, however, vary considerably. As pointed out before, the development has been rather selective. Therefore, only a disaggregation of the national data will reveal its character.

The selective character of the development

The crop-specific variations have been discussed already. Table 1 shows clearly that only in wheat production had a break-through been reached by 1971. The development is also water supply-specific. The new technology consists of a package usage of new seeds, fertilizers, insecticides, pesticides, and cultivation techniques, and this mainly on irrigated land. This means that irrigated agriculture has gained almost exclusively from the efforts. The unirrigated rain-fed lands which form 80 per cent of India's cultivated area have had very little direct benefit. Thirdly, there are region-specific variations. The core of the new agricultural development is in the main wheat producing northern states of the Punjab, Haryana and in Western Uttar Pradesh. There are pockets with a dynamic agricultural growth in many other states, too, almost regularly in districts with a good production potential and rich irrigation facilities. Finally, a farm size-specific participation in the new development has been observed and widely discussed. We will come back to this question.

This short review has confirmed that the recent change in Indian agriculture has certainly not been a complete one. But, then, was it radical with respect at least to the directly participating groups? If one looks at the character of the technological change as such, some doubts are justified. In our study in four districts of India we tried to have a closer look at this problem, too⁸. It turned out that in the two Punjab districts technological development has been more dynamic than in the two Mysore districts. This is particularly true for the mechanization process. The only machine found almost universally on our Mysore farms is the electric or Diesel motor pump for irrigation. Otherwise, the only modern equipment frequently found in the Mysore villages are sprayers and dusters, used mainly in paddy cultivation. But, essentially, farming in the Mysore areas is still in the bullock-hand labour-stage.

The difference in mechanization to that of the Punjab areas is clearly shown in the degree of tractorization. In 1971, only 2 out of 187 Mysore farmers owned a tractor

⁷ Similar observations had been made by other scientists before. Cf. e.g. the paper of T. N. Srinivasan at an International Seminar organized by the Indian Society of Agricultural Economics on "Comparative Experience of Agricultural Development in Developing Countries Since World War II". New Delhi, Oct. 1971 (proceedings to be published).

⁸ von Blanckenburg, P., op. cit., pp. A-101 ff.

and 1 a two wheeled power tiller, whereas 38 of our 184 Punjab farmers (21 per cent) possessed a tractor and 16 (9 per cent) a power tiller. The other machines most frequently found on the Punjab farms are sugar cane crushers, maize shellers, harvesters threshers, seed drills, and intercultivators. Such aids as seed drills, harvesters and threshers have a labour replacing effect, whereas mechanical pumps or tractors lead, in the present stage of farm organization, rather to an intensification, and this means to more employment of labour, than to a displacement of farm labour.

Although our Punjab farming communities belong to those areas of India which have made the most technical progress mechanization does not yet have a central function. In both the Punjab and Mysore areas the main force leading to an economic differentiation after the adoption of the new varieties is the intensity of fertilizer application. On the whole, the actual development in all research areas is conditioned far more by gradual improvements than by innovations leading to qualitatively new systems. The analysis has shown that even in the most advanced areas agriculture is moving ahead only by minor steps in one or two farming activities, and the total process of technological change which we have observed could certainly not be called revolutionary.

The question as to the degree of radicality of the change may be more easily answered in the affirmative if the attitudes of the participants are observed. The results of a number of micro-studies and other observations hint at the fact that the rise in average yields (cf. Table 1) is not only the result of the availability of new varieties and application of more inputs. The increase in productivity must be seen in the context of long-term work in education and extension, of the community development efforts, and of special programmes such as the Intensive Agricultural District Programme. Moreover, the recent change of the agriculture price policy which has led to higher procurement prices for some products has proved an incentive for the farmers and skilfully supported the technological and extension efforts. Although major disadvantages are also clearly observable, such as an increase in retail prices and the exclusion of subsistence farmers from the benefits, the price policy was, on the whole, efficient within the frame of the means-target complex.

In any case, this package of long- and short-term efforts had led to an acceleration of the agricultural development processes. Not only farmers in the main success areas, but apparently also those who have been affected only by part of the programmes are more ready now to produce for the market, to intensify farming and to use new techniques. In short, a basic change in the economic behaviour of large portions of the farming community seems to be taking place. This is the best precondition for a further rise in agricultural productivity.

Direct and indirect consequences of the new development

An evaluation of the overall agricultural situation and of its impact on national development shows that there is reason neither for particular enthusiasm nor for pessimism. Some unmistakable improvements have been made, old difficulties have

been aggravated and some new difficulties have arisen. Certainly, the national food and nutrition situation has been eased by the increased domestic supply of grains. The 8 mill. tons of grain in the government stores at the end of 1971, however, have largely been consumed over the period 1972/73 due to the crop failure in 1972, and the government has had to plan for grain purchases of nearly 4 mill. tons on the world market in 1973. Even if the food supply grows faster than the population in the coming years the nutritional situation of many millions of Indians will still not improve correspondingly due to their extremely low purchasing power⁹. A diminution of the undernourishment in the lower strata of the Indian population will depend at least as much on the success on the employment front as on the food production increase — a problem which we cannot discuss further.

It has sometimes been maintained that the new agricultural development has led to a deterioration in the rural labour situation as hand labour has been replaced by machines. So far there is not much empirical data available which proves this. Mechanization of farming is increasing particularly in the north-western wheat growing areas of India. As has been pointed out, only part of it brings about a displacement of labour. On the other hand, the intensification of farming, which takes place in connection with the adoption of the new technology, leads to a growing demand not only for capital but also for labour. Moreover, a secondary employment effect is beginning to show up in those areas where the rural wealth has increased markedly. As some studies have demonstrated¹⁰, the demand for consumer goods and services by the successful wheat farmers in Punjab and Uttar Pradesh has increased greatly. If this goes on, it will have some effect on the employment in the secondary and tertiary sector. So far, however, these changes are too small to have a perceptible impact on the overall rural employment situation.

A problem which has been given far too little attention by the public is the danger of over-exploitation of the natural resources. Salination and alkalization of the soil are growing in many areas. There are estimates that 17 mill. ha (one tenth of agricultural area of India) are suffering from this "cancer of the land"¹¹. 6 mill. ha of salinated soil are located in the wheat growing areas of the Punjab, Haryana and Western Uttar Pradesh. The phenomenon is largely due to the intensification of farming, to poor irrigation, and lack of drainage. There is no data at hand on soil erosion which is without doubt growing too or on the exhaustion of water stocks which takes place particularly in areas relying on underground irrigation. Here government control measures and better information of the farmers are strongly indicated.

⁹ The Planning Commission of India has estimated in 1972 that 40 per cent of the Indian population (220 mill.) live near the "poverty line" (Planning Commission, *Towards an Approach to the Fifth Plan*. Mimeo, 1972). See also: Dandekar, V. M. and Rath, N., *Poverty in India*. In: *Economic and Political Weekly* Vol. 6, Nos. 1 & 2, 1971.

¹⁰ See e.g.: U. P. Agricultural University, *Problems and Prospects of Small Farmers in Two Regions of Uttar Pradesh in 1969-70*. Agro-Economic Regional Survey No. 2, Pantnagar, U. P., Dec. 1971 (mimeo).

¹¹ Dantwala, M. L., *Preface to Volume of Background Papers*. International Seminar on Comparative Experience of Agricultural Development in Developing Countries Since World War II. Mimeo 1971.

The income disparities

One of the most controversial issues in the discussion on the consequences of the recent agricultural progress centres on the question as to who its main beneficiaries are. The most striking phenomenon is that the mass of the more than 50 mill. landless labourers and their family members have largely remained outside the development. Their wages, due to the large rural underemployment, have hardly risen and their costs of living have increased in connection with the ongoing inflation.

With respect to the farmers, it is very often maintained that large farmers have improved their economic situation much more than small farmers. "The income of the big farmers has increased considerably because of their disproportionately larger share in the total marketable surplus of agriculture and rising terms of trade for agriculture in recent years. On the other hand, resource constraints have prevented the small farmers from taking advantage of the new farm technology"¹². It is alleged in this connection that the small farmers are much more risk-endangered, that they have less access to credit and fertilizer purchase, and that many holdings are far too small to reach economic viability¹³.

However, neither theoretically nor in the empirical findings is the situation quite clear. The new technology, as used in India so far, is largely neutral to scale. Small farms do not have higher comparative costs when applying improved techniques such as cultivation of high yielding crop varieties, application of fertilizer, pesticides and insecticides. Extension advice is, on principle, available to them as to the larger farmers. In some respects the small farmers are even in a favoured position. The new technology is labour intensive and requires better timing of operations and more care for the crops than does traditional farming. As there is, in general, more family labour available on small rather than on large holdings, the small farmers can take advantage of this fact. Their main bottlenecks are restrictions on access to inputs, particularly to an extended use of water for irrigation and of fertilizer, and the objectively and subjectively higher menace by risks. If, and this is certainly a big if, these are overcome by better guidance from extension agencies and by well tailored credit programmes, there is no basic reason why small farmers should not do as well as large ones.

The majority of the empirical findings in India show that the large farmers have benefited more from the new development than the small ones¹⁴. Several other

¹² Singh, M. L., Ceiling on Land Holding. In: *Eastern Economist*, Vol. 58, 1972, No. 20, pp. 969–972.

¹³ Cf. e.g. Frankel, F., *India's Green Revolution. Economic Gains and Political Costs*. Princeton Univ. Press and Bombay Univ. Press 1971.

¹⁴ Although the thesis of the superior economic and technological position of the large farmers or of a one-sided distribution of gains is found very frequently in the literature, there is not too much reliable evidence from empirical studies for it. See e.g. Frankel, F., *op. cit.*; Ladejinski, W., *Ironies of India's Green Revolution*. In: *Foreign Affairs*, Vol. 48, No. 4, 1970; —, *Green Revolution in Bihar*. In: *Economic and Political Weekly*, Vol. 4, *Review of Agriculture*, Sept. 1969; —, *The Green Revolution in Punjab*. In: *Economic and Political Weekly*, Vol. 4, No. 26, *Review of Agriculture*, June 1969; Parthasarathy, G., *Agricultural Development and Small Farmers. A Study of Andhra Pradesh*. Vikas, Delhi 1971.

authors¹⁵ have arrived at more differentiated results which show that small farmers have achieved remarkable success, too, and that the economic gains are not solely with the large farmers.

Our own study in the Punjab and Mysore has also led to some insight into this problem. All the farmers in the sample were classified according to their progressiveness, i.e. the degree of adoption of new farming practices and the efficiency of utilization of farming resources¹⁶. The three categories of progressive, improved and average farmers stand largely for different grades in the adoption of the new technology and, indirectly, for variations in farm income. Table 2 shows in how far small, medium and large farmers¹⁷ have participated in the new development.

Table 2:

Relation between size of holding and progressiveness for 371 Punjab and Mysore farmers (1971/72)

Size group	Progressive farmers		Improved farmers		Average farmers		All farmers	
	No.	%	No.	%	No.	%	No.	%
Small holding	13	10.4	24	19.2	88	70.4	125	100
Medium holding	45	28.1	44	27.5	71	44.4	160	100
Large holding	43	50.0	23	26.7	20	23.3	86	100
Total	101	27.2	91	24.5	179	48.3	371	100

Source: own research.

As the table shows, there is a clear association between size of holding and progressiveness: from small to medium and large holdings, the proportion of progressive farmers increases and that of average farmers decreases. This result is found in a similar form both in the Mysore and the Punjab research areas. 50 per cent of the large farmers, 28 per cent of the medium, and 10 per cent of the small farmers are in the category of progressive farmers. But it should also be noted that a considerable part of the large farmers (almost one quarter) are average farmers. Among the progressive as well as the improved farmers, the medium size farmers have the same considerable share (28 per cent). Nor can the contribution of the small farmers be overlooked; every tenth small farmer is progressive and every fifth improved.

We can conclude, therefore, that, on the one hand, there is a positive relation between the size of holding and progressiveness. On the other hand, a further

¹⁵ Mukherjee, P. K., The HYV Programme — Variables that Matter. In: Economic and Political Weekly, Vol. 5, No. 13, March 28, 1970; Muthiah, C., The Green Revolution — Participation by Small versus Large Farmers. In: Indian Journal of Agricultural Economics, Vol. 26, No. 1, Jan.-March 1971; Schluter, M. and Mellor, J. W., New Seed Varieties and the Small Farm. In: Economic and Political Weekly, Vol. 7, No. 13, March 25, 1972; U. P. Agricultural University, op. cit.

¹⁶ For details on the operationalization, see von Blanckenburg, op. cit., pp. A-95 ff.

¹⁷ Size of holding groups were classified according to the acreage of the operational holding. As farms in Mysore are in average smaller than in Punjab, a different classification system was used for both sub-samples. Cf. von Blanckenburg, op. cit., p. A-96.

finding is that it is not only the large farmers who participate in the agricultural development. Especially the medium, but also the small farmers share in it, too. No doubt, a process of differentiation within each size group takes place which brings about a qualitative gradation.

These findings have confirmed an impression which we gained from the analysis of the aforementioned studies on the participation in the new development. The argument has been too much dichotomized on large versus small farmers. Not enough attention is paid to the medium size farmers who may play a very important role, too. Moreover, there is a tendency to consider both categories, large and small farmers, too much as homogeneous groups, and too much stress has been laid upon the question as to which one has done better. Our own study and some of the others show, on the other hand, that within each size category some farmers are participating more and others less. This process, however, has affected the small farmers far less than the large and medium size farmers, and in this respect, special consideration of their case is indicated.

Agrarian unrest as a consequence of the new agricultural development?

In recent literature on the consequences of the new agricultural development it has frequently been maintained that the accentuation of economic disparities has led, or will lead, to growing agrarian unrest in India. "The new technology and strategy having been geared to goals of production, with secondary regard to social implications, have brought about a situation in which elements of disparity, instability and unrest are becoming conspicuous with the possibility of increase in tensions", it is stated in a report of the Ministry of Home Affairs of 1970¹⁸, which has gained some attention in India. However, a critical review of the literature available shows that there is very little empirical evidence for a growth of rural tensions as an outcome of the new agricultural development. Political unrest has occurred in a number of places in rural India, but mainly in areas which have not been affected so much by the new agricultural development (e. g. West Bengal, parts of Andhra Pradesh, tribal areas). The main areas of the new agricultural development have remained fairly peaceful since 1966.

Our study in the Punjab and Mysore has shown that a large proportion of the farmers questioned understand the situation in their villages as one of growing economic disparities. A majority has expressed the feeling that much has to be done to reach greater equality. But in spite of the awareness of an unequal improvement in the economic status of the villagers, no growth in social tensions due to the recent agricultural development could be discovered in the villages under observation¹⁹. Certainly, this finding cannot be generalized, and it is worthwhile doing more research into this important matter. Without more empirical data, however, it would seem to be problematic to speak of growing agrarian unrest in India in this connection.

¹⁸ Government of India, Ministry of Home Affairs, Research and Policy Division, *The Causes and Nature of Current Agrarian Tensions. A Summary* (mimeo).

¹⁹ von Blanckenburg, *op. cit.*, pp. A-105 ff.

It is true that there are social tensions in most villages. But, as it seems, they are based more on other factors than on the fact that small farmers and landless labourers are economically underprivileged. The reason given most frequently by our sample farmers for the existence of village tensions was dissent about party politics. As far as dissatisfaction exists, it is of a more general character and directed towards the government. Increased information and education and the promises of the government have led to a rising level of expectations, the fulfilment of which is doubted by many farmers. The farmers' innovativeness has increased, but they do not see adequate chances for participating in the economic development and the political process.

Goal conflicts in development policy

The Indian agricultural development policy has to aim in future at two objectives which, at least partly, are conflicting: to sustain a high agricultural growth rate and to diminish the imbalances in the development process. A further increase in output is imperative in view of the function which the agricultural sector in general has to fulfil in the socio-economic development, and particularly in view of the food and nutrition situation of the country. In so far the government policy of the first years of the new agricultural phase: to strengthen the high potential areas, to encourage the entrepreneurial element in the farming population, and to go slow in the land reform, is, in our view, understandable. The government cannot run the risk of a lower rate of production increase in agriculture and must encourage those groups which make the best use of the scarce development resources.

On the other hand, it has become clear that this is not sufficient. The disparities in the agricultural development must be decreased not only in the context of the proclaimed fight against poverty and for more social justice but also for economic reasons. Both the regional imbalances and the social disparity have become major issues of the Indian policy.

The inter-area inequalities have gained far less attention, particularly abroad, than the inter-class inequalities, although, in the middle and long run, they may be the more serious problems. Only recently have concentrated efforts been started in biological research to improve the productivity of the underprivileged rainfed farming areas. It may take a long time before results in crop breeding and husbandry, in soil management and plant nutrition, and in the development of new farming systems will be available which would bring benefits to the ecologically disadvantaged communities comparable to those already enjoyed by the irrigated communities.

In order to decrease social inequality in the rural areas, it is above all small farmers and landless labourers who have to be assisted. Certainly, it is not possible to take the new agricultural technology to each small farmer. A strong element of selectivity will remain in the government's promotional efforts. These efforts have to aim, more than in the first years of the new agricultural development, at the progressive elements among medium and small farmers. Our impression is that in many states of India a process of redirection of governmental policy along this line has started, and that some success is beginning to show. The activity of the

extension and credit services, the new schemes for small farmers as for marginal farmers and labourers, which have become operational during the past three years, may still be too ineffective, but they can be expected to have some positive effect in future.

There is only a small chance of assisting effectively the poorest of the rural poor, namely the growing corps of landless labourers. Land redistribution, even in a radical form, would help only a small part of them. It would, on the other hand, increase the number of those small holdings which, in the long run, cannot be economically viable — a problem which is already one of the most difficult for the agricultural policy makers²⁰. Large scale rural work programmes are hard to manage, as the last years' experience has shown, and can have only a minor lasting employment impact. Some effect can be expected from the agricultural development policy if it aims more at the diffusion of biological-chemical innovations rather than of mechanical ones, and more at labour intensive than labour saving technologies.

Much can be achieved within the agricultural sector. But it would be futile to expect the new agricultural development alone to provide a lasting solution to the problems of rural poverty and social equality. Whether the situation can be radically improved will also depend on an adequate institutional reform. Such a reform is, in our opinion, badly needed, but will, as things stand in India, be the more successful the more gradually it is carried out. Here, efforts have to be made in various fields. Land reform should focus on the redistribution of the very large holdings and on increased security for tenants. Rural administration and the extension services must improve their efficiency and pay more attention to assisting the poor. Moreover, success in industrialization and services' expansion, which are labour intensive and highly productive as well, is by all means necessary for an alleviation of the rural development problems.

²⁰ Cf. Dandekar and Rath, *op. cit.*