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## BOOK REVIEWS

*Rural Transformation in a Developing Economy*, Kanta Ahuja and Vidya Sagar, Kumar & Co., Jaipur, 1986. Pp. xii + 231.

The book presents the results of a study conducted by the authors as a part of the ICSSR project entitled Dynamics of Rural Transformation. It provides a consolidated view of the changes in the rural economy of Rajasthan with emphasis on the distributive aspects of change across regions and rural social groups. The period covered is generally 1955 to 1979 and secondary data have been used.

There are ten chapters in the book. After introducing the study in the first chapter, the authors have given a profile of the economic structure of Rajasthan in the second chapter. It has been concluded that the macro structure of the economy has remained unchanged for almost three decades. They did not find any indication of a significant increase either in the number of rural labour households or a decrease in their average level of income or consumption. Unlike the all-India trend of increase in the unemployment rate, Rajasthan recorded a decline between the 27th and 32nd Rounds of the National Sample Survey (NSS). Chapters 3 and 4 provide the evidences on distribution of land and other assets which are quite revealing.

Distribution of land is found to be skewed but there is no indication of increasing disparities. They observe that the access of the small and marginal farmers to canal irrigation is relatively poor. Twenty per cent of wells are out of use and one-third of the wells not in use are on the marginal farms. The small and marginal farmers improved their share in the area and irrigation but their relative position in the case of cattle ownership deteriorated. The wealthiest category in the rural areas are those households who are engaged in non-farm business. Over time, there does not appear to be an increase in the real value of assets. The average value of assets in south Rajasthan is about half of the State average.

The analysis of livestock economy is presented in Chapter 5. The contribution of livestock sector can probably explain the better poverty and distribution profile in rural Rajasthan relative to other parts of the country. Over the years, the buffalo population has increased in the State. On p. 80, the authors have observed that 62.6 per cent of the households are without draught animals. How is the energy requirement for farming met on these farms has not been explained. The composition of cattle is undergoing change in favour of female cattle. Goats are not necessarily the poor man's assets; they are maintained by all categories of farmers. But the number of sheep per household has declined with the increase in the farm size except in western Rajasthan. The relationship between the size of herd and the size of holdings is

weak. They found support for the hypothesis that dairying/livestock farming is an equalising factor in the rural economy of Rajasthan.

In Chapter 6, the authors have analysed the changes in the cropping pattern in different regions, growth in output, trends in productivity growth and distributive aspects of technological changes in agriculture. They conclude that the cropping pattern has shifted in favour of wheat, guar and maize. They attribute the change in favour of wheat to expansion in irrigation and that in favour of guar to commercial reasons. The regions which have gained the maximum from the new technology are canal irrigated regions of south-east Rajasthan and Ganganagar. The ratio of *rabi* foodgrains to *kharif* production has gradually improved from 0.5 to 2.0. The *kharif* production has become more unstable while *rabi* food production has become more stable. The phenomenon of declining trends in pulse production observed elsewhere in India has not occurred in Rajasthan due to the increase in gram production. Based on their macro analysis, they conclude that the distribution of technology gains in irrigated cultivation shows mixed trends. It favours small classes of farmers with respect to irrigation ratio and the use of HYV but the use of fertilisers is more on higher sized categories.

Agricultural and rural wage labour forms the scope of Chapter 7. They found that the sixties and the early seventies did not record any improvement in the condition of the labourers. In Chapter 8, the authors have presented an analysis of the trends in the distribution of expenditure and levels of living. A tentative conclusion derived by them is that inter-expenditure class differences in protein food expenditure are increasing over time. The share of expenditure on milk has gone up and the share on clothing has declined. The increased share of milk does not necessarily reflect an increase in the level of expenditure.

Chapter 9 on poverty profile has been contributed by Sushma Sagar based on her Ph.D. thesis. She has argued that out of the three approaches for measuring poverty and its trend, expenditure corresponding to a calorie point for each year is the most suitable approach. She reports that not only is the average calorie consumption in the State relatively higher than the all-India average but also that the distribution is less unequal. As a result, the State has a relatively low poverty percentage.

Summing up the study in Chapter X, the authors have concluded that there is no evidence of the deepening regional and inter-class disparities in agricultural production. The explanation for the paradox of a better poverty profile with a low level of income is found in terms of (a) an economic system which has been integrated with the eco-system and (b) a favourable land-man ratio. Both these factors appear to have become weak as reflected in an increase in the poverty ratio in Rajasthan from 33.5 to 36.5 between 1977-78 and 1983-84 as compared to a decline in this ratio at the all-India level from 51.2 to 40.4

Overall, the study is an excellent piece of contribution to the literature on two counts, viz., (a) the Rajasthan economy is comparatively

under-researched; and (b) the Rajasthan experience is sometimes dismissed as very specific because of the ecological factors. The present study amply justifies that the Rajasthan case of rural transformation deserves to be taken seriously and not dismissed as unique. The other merit of the book is its precise and clear presentation.

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*Identification and Economic Analysis of Small Farmers, Biswa Nath Banerjee, Mittal Publications, Delhi-35, 1986. Pp. viii+127. Rs. 80.00.*

The book is basically a reproduction of the Ph.D. thesis of the author. Although the author has added some material to give it a book-like look, it still retains the features of a research report. The book which is spread over twelve chapters mainly outlines the framework and findings of the research study. The main objective of the study is mentioned as to define and determine the minimum size of holding of the small farmers (p. 4) in terms of farm business income, ultimately converting this income into acreages through regression analysis. It provides only a critical level at which a farmer is able to earn a farm business income just adequate to meet the subsistence level of expenditure plus the cost of maintenance of a pair of bullocks. It, in no way, provides any clear-cut definition of the small farmer which the author claims to discuss in the book. On p. 5, it is stated: "An individual who fails to earn that much income which may be sufficient to buy him bare means of subsistence may be termed as small farmer." According to this definition, all the farmers below the critical level of farm size mentioned above (which varied from 5.62 to 7.6 acres in different situations considered in the study) should be regarded as small farmers. But in his own sample, the size of holdings of some of the small farmers exceeded ten acres. Thus the author could not adopt a more convenient and scientific criterion for identifying the small farmers as compared to the existing criterion of land holding of one to two hectares.

The small farmers have been categorised into two groups, *viz.*, viable small farmers and non-viable farmers on the basis of critical size of farm business income or related farm size, but there is no mention of the lower and upper limits of these variables to define the small farmers. Even if some range of farm business income is worked out for this purpose, it will not be practical to compute the incomes of all the farmers to identify whether a particular farmer is small or not. Further, the author claims to use 'minimum requirement approach' to determine the critical size of farm holdings (p. 34). But the computation of critical level of expenditure has been made on the basis of average expenditures of the sample farmers. Thus it becomes an average requirement approach rather than a minimum requirement approach. Moreover, the concept of minimum subsistence level is also ambiguous and varies in different situations and at different times.

In the linear programming model used in the study (p.20), Z has been defined as total net returns to fixed resources, but giving further details of the objective function on p. 22, it is mentioned that gross returns (not the net return) are maximised. Thus there is inconsistency in definition of the variables.

The optimal resource use plans developed in the study for different situations suggest dropping of existing cows and including increased number of buffaloes in almost all the cases. But the author has not suggested as to where these cows will go if all the farmers replaced their cows by buffaloes. Moreover, the option of improving the quality of the existing cows has not been considered.

Since the author has mainly intended to compare the farm business income under different situations with the subsistence level expenditure, the presentation and interpretation of increased income through optimal planning in terms of percentage increase do not seem to be proper as it does not indicate the deviation of actual/expected incomes from the critical level. The increase in absolute terms would have been a better choice, because a higher percentage of increase in income on non-viable farms may actually represent a lower absolute increase on these farms as compared to a low percentage increase on viable farms due to difference in bases for computing percentages.

In a nutshell, the study provides an evidence that the small farmers (viable as well as non-viable) may enhance their incomes through optimal resource allocation, particularly if they are provided adequate credit facilities and they replace their cows with appropriate number of buffaloes. The critical farm size for viability has also been worked out for four situations under study. But the author has failed to provide a satisfactory definition of small farmers for their identification through the proposed approach of farm business income.

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*Industry, Agriculture and Rural Development, Brojendra Nath Banerjee,  
B.R. Publishing Corporation, Delhi-52, 1987. Pp. xii + 244. Rs. 125.00.*

Rural development is a subject that lends itself to a variety of interpretations. The book under review attempts to explore the potential for utilising the interlinkages between agriculture and industry to promote rural development in India.

In the first chapter entitled 'Indian Agriculture and the Rural Poor' the author deals mainly with inter-State disparities in the gross return per hectare for various crops. The analysis is, however, not extended to include vital

issues such as labour absorption and the potential for employment in various States. Even the gross returns per hectare that are painstakingly presented for each crop needs to be used with care as the details regarding the methodology used for computing the same are not clearly spelt out.

The second chapter is concerned with rural development and the author stresses the importance of agro-based industries, particularly food processing industries, as a means to achieve this. The failure of industry to develop rapidly and the problems of the existence of pockets of affluence in the midst of widespread poverty is discussed briefly. The influence of agriculture on economic development is sought to be estimated with the help of regression analysis. However, the results of the analysis are not presented and the reader has to rest content with the author's assurance that "the 'fit' was very good,.... The elasticity coefficients are of proper sign with low standard errors" (p. 102).

The issues pertaining to the new technology and infrastructure are discussed in the third chapter. The discussion on recent developments in the field of plant genetics and its implications for agricultural development is interesting. It is surprising that the next chapter which deals with the interrelationship between agriculture and industry and forms the crux of the book is given perfunctory treatment by the author. The fifth and final chapter is on agricultural exports and is more in the nature of a survey. It points out the commoditywise and countrywise potential for increasing India's agricultural exports.

A concluding chapter which integrates the various ideas put forward by the author would have been most welcome. In its absence, the author's suggested strategy for rural development is not clear.

It is unfortunate that despite several merits, the book may appeal neither to the general reader nor to the expert in agricultural economics. While the former may find the mass of data tedious to go through, the latter may find it wanting in terms of rigour and precision which are normally associated with scholarly writing.

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*The State and Rural Economic Transformation: The Case of Punjab, 1950-85,*  
G.K. Chadha, Sage Publications India Pvt. Ltd., New Delhi-48, 1986.  
Pp. 369. Rs. 195.00.

*Transformation of Punjab Agriculture.* Inder Sain, B.R. Publishing Corporation, Delhi-52, 1987. Pp. xviii+191. Rs. 125.00.

These two books are the latest additions to the growing literature on rural development in Punjab. Chadha's book is the most comprehensive work on

the dynamics of rural transformation in Punjab during the period 1950-85. The study has two major objectives, namely, (a) analysis of the process of rural transformation and (b) assessment of the impact of agricultural development on different sections of rural society. The study is based on the available data and research studies and covers almost all aspects of rural development except a few issues left out by the author (*viz.*, generation and utilisation of surpluses from Punjab agriculture, the magnitude of foreign remittances to Punjab and the the discussion on 'capitalism or otherwise' in Punjab agriculture). The eight core chapters of the study are devoted to the detailed analysis of major issues, namely, (a) economic structure of rural Punjab, (b) infrastructure for agricultural development, (c) production structure of Punjab agriculture, (d) production performance of Punjab agriculture, (e) market surpluses, prices and terms of trade, (f) agrarian structure and asset distribution, (g) the landless and the poor and (h) consumption patterns in rural Punjab. In addition to its wide coverage, the book contains a lot of data on rural Punjab. The author has done a commendable job. The study is undoubtedly a major contribution to the literature on the rural economy of Punjab.

The rapid growth of Punjab agriculture is attributed to three sets of factors. First, on the eve of Independence, Punjab had a strong agricultural infrastructure, specially irrigation and a relatively more favourable agrarian structure. Second, the State Government gave top priority to agriculture and played a crucial role in bringing about institutional changes (land reforms, land consolidation, etc.) and in creating a huge agricultural infrastructure (irrigation, power, rural credit, research and extension). Third, the Punjab peasants had the necessary skills and motivation to avail the increasing opportunities for development. According to the author, the active role of the State Government "is the most striking feature of the Punjab model." The role of the State Government appears to be over-emphasised when we consider the crucial role of the Central Government by way of large financial assistance for agricultural development of Punjab, sizable research support, favourable price and procurement policies and the development of infrastructure for modern farm inputs (fertilisers, pesticides, farm equipment, etc.). Further, he has not given adequate attention to the negative aspect of agricultural development like the real economic costs of energy-intensive and high cost technology.

As regards the issue of equity, the study shows that the higher agricultural productivity and additional farm employment have greatly benefited the rural poor (marginal farmers and landless households). Therefore, the rural poverty has declined. However, the reduction in the incidence of rural poverty has been 'extremely slow' and proportionately much less than the increase in agricultural output. Further, in relative terms the landless are worse-off than before. The author believes that agricultural growth by itself will not eliminate poverty and, therefore, the task of poverty removal can be hastened only through radical land reforms and by reducing the dependence on agriculture.



Inder Sain's book is based on his Ph.D. thesis and, therefore, its scope is limited to the analysis of changes in Punjab agriculture during the decade 1971-72 to 1980-81. The analysis is based on the farm level data of the cost of cultivation scheme in Punjab for the two years (1971-72 and 1980-81). The issues examined include growth performance of agriculture, shifts in resource structure, resource use and productivity and contribution of the technical change to output. These issues have been analysed in detail with the help of econometric tools (*viz.*, Cobb-Douglas and Trans-log production function, factor analysis and decomposition model). The author has made considerable efforts in estimating and analysing the growth rates of productivity, the contribution of different factors to the growth of output, production elasticities and related coefficients for both the years. These estimates have been worked out at three levels, namely State, three agro-climatic regions and three size-groups of farms. The author has made a useful contribution to the subject.

The study brings out both the positive and negative aspects of agricultural growth in Punjab. The major findings are : significant increase in crop intensity, crop yield and productivity; pronounced shifts in crop pattern in favour of wheat-paddy rotation at the cost of pulses; an increase in the use of hired labour followed by a reduction in family labour use; high investment in machinery and significant inefficiencies in resource use. The author notes with concern the over-capitalisation in agriculture as well as the imbalances in crop pattern which have 'exposed the economy to the hazards of over-specialisation'. Moreover, there were significant inefficiencies in resource use in both the reference years of the study. The productivity of biochemical inputs was higher than their costs in both the years. On the other hand, the productivity of machinery and human labour was lower than their corresponding costs in both the years.

The inefficient use of machinery is attributed to excess capacity whereas the excessive use of human labour is explained by 'its relative abundance'. However, few would agree with the author's conclusion that reduction in machinery and labour use 'could lead to increase in farm income'. Evidently, the author gets overwhelmed by the statistical coefficients. Likewise, while drawing conclusions, the author has ignored the problem of the comparability of 1971-72 and 1980-81 sample data. For instance, a mere one per cent increase in average farm size in 1980-81 over 1971-72 is considered by the author as a reflection of the "gradual process of proletarianisation of the peasantry in the wake of growth of capitalistic agriculture." Similarly, the reduction in the use of family labour on the small farms is attributed to the "development of preference for leisure over time in the wake of new farm technology."

*Underdevelopment and Choices in Agriculture: The Indian Perspective*,  
Rajendra M. Chakrabarti, Heritage Publishers, New Delhi-2, 1986.  
Pp. xv + 322. Rs. 180.00.

An under-developed agrarian economy with surplus labour generally faces two major questions regarding development planning. One, should it emphasise agriculture or industry? And another, what should be the policy of development within agriculture? Answers to these questions, particularly to the second question are not unique. For, a decision in favour of industrialisation circumscribes the feasible development alternatives in agriculture. In that case agriculture is willy-nilly so oriented as to generate surplus resources to step up the rate of investment for industrial growth; agriculture is made to serve industrialisation. This is the framework, though not shared by all Indian economists during the 1950s, within which the author has examined the relative efficiency of alternative economic policies for agricultural development in the country.

"The ideal sequence of technological changes in a labour surplus developing economy", to the author, seems to be "construction of agricultural infrastructure through utilisation of surplus labour; development of biological-chemical technology with emphasis on land-augmenting, labour-using inputs; a gradual shift towards mechanisation and labour-saving techniques as labour shortage emerges" (p. 295). Since the author believes that "the key to successful economic development lies in a change in the distributive shares in favour of the capitalists" (291), his policy prescription is the land-augmenting technical progress at a rate that raises agricultural productivity so high that the terms of trade move against agriculture and the emerging surplus is thereby made available to the industrial sector. The author's logic of development is: provide incentives to capitalists in agriculture, develop agriculture through land-augmenting technology, allow the terms of trade to go against agriculture, keep real wages low for industrial workers and let the capitalists share of income rise.

Apart from the view that this pro-industry process of agricultural development is not an ideal framework for specifying the development policy for agriculture, the process of agricultural development suggested by the author has serious limitations. There are at least three major limitations of this strategy. First, it fails to expand the domestic market sufficiently enough to absorb the consequent growth of industrial output. This constraint has become serious after thirty years of development in India, where the trend rate of growth of industrial sector has been *modest* at 6 per cent per year. Secondly, it fails to absorb the surplus labour, which is an important objective of development. Thirdly, it increases income disparity between persons and regions to exacerbate social tensions.

It is now increasingly recognised even by those who favoured the strategy of a big push industrialisation twenty years ago, that relegating agriculture to the secondary place and relying on technical change have seriously restrained

the expansion of domestic market for industrial goods. By neglecting agriculture and avoiding institutional reforms, the country has indeed lost an initial breakthrough in productive energy in the rural areas and missed a gigantic wave of expansion. The examples of China, Japan or Korea are not relevant as their environments cannot be replicated in India. But it is generally recognised that in those countries not only agriculture was duly emphasised, but wide ranging land reforms were also implemented during the initial stages of development. India is a case of imported capitalism from above, where economic development is aborted for obvious reasons.

The author's analysis can be considered as an exercise in second best alternative for agricultural development. But even in this context, he has not examined the relevance of several institutional changes that can aid economic development. His discussion on co-operative farming, where institutional factors are considered, is too brief to throw light on the development potential of co-operativisation.

The author has nevertheless covered a lot of ground, including the discussion on economic aspects of tenancy, big and small farms, etc. But he has ignored the role of cropping pattern, irrigation and infrastructural development in agriculture. His over-riding concern for the appropriate strategy for industrial development rather than for agricultural development, perhaps, prevented him to focus on the appropriate pattern of agricultural development.

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*Multi-Level Planning in India*, P.N. Chopra, Intellectual Publishing House, New Delhi-2, 1986. Pp. xii + 148. Rs. 80.00.

The monograph embodies five chapters and is based on the author's doctoral research and master's dissertations he has supervised over half a decade. The first two chapters review the central policy for industrial development of backward areas in particular and the Indian planning process in general, highlight their weaknesses and emphasise the need for a switch over to the multi-level planning system in which the Centre, the State, and the grass-root agencies formulate area specific projects employing UNIDO procedures. The third chapter identifies Hoshiarpur district of the Punjab State as the operational area of the researcher's investigation and, *inter alia*, discusses the industrial and agricultural development programmes undertaken by the Government for its development. It argues that since the study area has only agricultural resources, its development strategy should be evolved through the systems analysis of its agriculture with a view to

maximise and stabilise income and employment on individual farms within the constraints imposed by irrigation water resource.

The methodological approach has been laid out in Chapter 4. It suggests that the study concentrated on three purposively selected contiguous blocks (Hoshiarpur—I, Bajwara and Mahilpur) of Hoshiarpur district and that the study sample comprising 13 large, 26 medium and 39 small farms was selected by adopting the two-stage random sampling technique. The analysis involved the development of optimum production plans for small, medium and large synthetic farm situations using the linear programming profit maximising model which provided for capital borrowing, labour hiring and purchase of irrigation water from public tubewells. The results point out that (i) whereas irrigation water from shallow tubewells is surplus on the small farms, the medium and large farms purchase it for 75 and 194 hours respectively for paddy during *khariif*, (ii) both income and employment increase with the expansion of irrigation facilities on all farms, (iii) the demand for irrigation water is not sensitive to water rates, and (iv) the dairy enterprise is not profitable at the existing input-output prices.

The investigation of the economic rationale of public tubewells installed by the Irrigation Department and the Punjab State Tubewell Corporation for drought-proofing of maize and wheat crops indicated that while the former did not meet the Irrigation Commission (1972) requirement of a benefit-cost ratio of 1.5 the latter satisfied this criterion. But there is no provision for a preferential treatment to the small and marginal farmers under these schemes.

Chapter 5 conceives an integrated irrigation project for the setting up of public tubewells in the study area and examines its technical adequacy, financial viability and social optimality, and proposes a system for levying water charges on the users.

The overall review brings out that in the beginning, the book emphasises industrial development but subsequently concentrates on the formulation of a development strategy only for agriculture ignoring the fact that a focal point for industrial development was established at Hoshiarpur during the Fourth Plan period. Even within the agricultural sector, the development possibilities for horticulture, poultry, input-output market system, veterinary care and the like have not been explored. Further, there is lack of reference to rural industries and artisans. Again, the analysis of the proposed irrigation scheme in the last chapter does not compute internal rate of return for its financial appraisal and economic rate of return for its economic appraisal and the cost-benefit ratios have been estimated assuming as low a discount rate as 6 per cent per annum for the former and 10 per cent per annum for the latter analysis while the secondary benefits have not at all been identified. Moreover, the evaluation remains incomplete in the absence of a scrutiny of alternative projects for meeting the same objective. Hoshiarpur district, for instance, is well-known for schemes relating to the construction of a network of small water storage tanks and small dams on local watersheds besides canalisation of *choes* for providing irrigation water to the farmers. The examination of the

economic rationale of these water harvesting techniques vis-a-vis public tubewells would have, perhaps, rendered the study more meaningful.

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*Economic Development, Social Structure and Population Growth*, Victor S. D'Souza, Sage Publications India Pvt. Ltd., New Delhi-24, 1985. Pp. 138. Rs. 85.00.

It was a very satisfying experience to read this book. It is at once complex in its design and lucid in its presentation. The central argument of the author is that the economic decision-making model of the relationship between economic development and population growth is false. Economic development is not negatively related to population growth when one analyses the data at the disaggregated level of individual villages which have experienced different types of economic growth though they have all experienced remarkable growth in their agriculture. "Family sizes in all the three villages are not at all related with the variables of income and occupational prestige. This, therefore, disconfirms the hypothesis derived from the economic decision-making model, which posits a negative correlation between family size on the one hand and income and family status on the other" (p. 128).

One might object saying that the trends revealed at levels of large aggregates need not hold at lower levels of disaggregation. But that is precisely the point that the author would like to make. He seems to feel that focusing on large scale data relating to countries and regions leads us to explanations which tend to make us lose sight of the important role that social structural factors play in influencing human fertility behaviour. The economic decision model would have us believe that married couples in developed economies tend to have fewer children because children have a lower marginal utility in their cases. The author shows with the help of his data that it is precisely individuals who have experienced downward socio-economic mobility that tend to have smaller families. His explanation is that parents do not look upon their children only as instruments of their security but are also concerned about what life-chances they can offer to their children.

The whole study, of course, is much more complex. It examines, the relationships between caste, occupational status, occupational mobility, use of family planning methods, desired family size and actual family size at two generation levels—and all this in the context of the type of economic development characteristic of the particular village. The author's analysis shows how in India the caste structure plays a very important role not only in distributing the new opportunity channels between different segments of society, but how as a result the behaviour of the different castes in relation to family size may also differ in the same general economic environment. In the

process, the author uses some of the social indices he had developed earlier and develops new ones. The relationships are examined singly first and then in different combinations. The thesis is argued closely and with considerable technical ingenuity and skill.

But one also cannot help feeling that what D'Souza considers the special merit of his study, *viz.*, that it is conducted at the micro level, is also its point of weakness. The number of cases in each cell in a table becomes smaller with every additional attribute added to the cross-table. In many tables there are only one or two cases which represent particular combinations of characteristics, and percentages and correlations calculated on the basis of such data must necessarily seem less than convincing. The author is aware of this limitation and makes no statements which would seem exaggerated in their claim.

Despite the limitation of numbers, D'Souza's study must be considered unique in the manner it seeks to interweave theoretical reasoning and empirical research. His use of deviant case analysis to support his argument as on p. 94 where he argues that the non-conformity of the trading castes in Ugala and Ghagga and of the brahmins in Ghudani Kalan with the general hypothesis helps in fact to refine the hypothesis. His use of family size at two generation levels to examine the relationship between family size and inter-generation mobility in two ways, once as cause and once as effect, introduces the readers to different methodological devices available in data analysis.

He succeeds in showing that economic development has no direct influence on family size. It is the subjective experience and evaluation of opportunity structures by individuals that influence family size. Thus those who are upward mobile in fact go in for larger families and those who are downward mobile seem to restrict family size.

This again is related, probably, to the level of development of the economy and education. At another, higher level of development, may be, even upward mobile individuals may consider themselves not so successful—or may have still higher ambitions—which compel them to adopt a small family norm.

The author is justified in asserting that parents do not look at children from an instrumental perspective and that they are concerned about the happiness of their children as well. But it is also possible that parents wish to limit children to reduce the financial burden of looking after them.

**An important question that occurs while reading D'Souza is whether and to what extent is having children the result of a simple deliberate choice on the part of parents. Whether one takes the economic decision model or D'Souza's model of decision-making based on an individual's perception of life-chances of children, fertility is treated as a result of behaviour based on a simple conscious choice. How far is this the case? One would imagine that education, individuation of personality, increased pre-occupation with one's own life-goals, increased communication between husband and wife, the tech-**

nology available for family planning, the social values prevalent at a time have all a role to play, at different levels of social development, in bringing about the demographic transition.

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*Policy and Performance: Agricultural and Rural Development in Post-Independence India*, P.R. Dubhashi, Sage Publications India Pvt. Ltd., New Delhi-48, 1986. Pp. 320. Rs. 185.00.

The present study is a critical appraisal of India's policy in the field of agriculture and rural development for the past 35 years. One interesting point of the study is that it is done by an administrator who has a varied experience with various rural development programmes starting with community development programme, co-operation, Panchayati Raj institutions to the present set of programmes, and who has been associated with various committees and commissions set up by the Government of India on various aspects of agriculture and rural development.

The author starts with the premise that in a country like India, the agricultural sector has an important role to play in the growth process and therefore 'development means rural development' and 'rural development means agricultural development'. The author shows that in the initial stages, the agricultural policy aimed at institutional changes in the rural sector. Community development programme, Panchayati Raj institutions, co-operative movement, land reforms, etc., were some of the tools formulated for this purpose. In 1959, the Ford Foundation Team, however, suggested a shift from a community approach to entrepreneurial and technological approach to resolve the food crisis in the country. The policy recommended by the Team was based on selecting good districts and concentrating efforts in these districts to increase food production. This technological-cum-entrepreneurial approach was re-inforced by a number of committees thereafter also and by the New Agricultural Strategy in 1967. A number of programmes were introduced based on this new strategy. In the seventies, however, the policy was given a new orientation as it was felt that there was a need for directing resources towards the poor. The emergence of anti-poverty programmes was an important development in this context.

The evolution in the agricultural policy in the last three decades shows that there are three major components of agricultural policy, namely, technology policy, economic policy and institutional policy. The relative weightage of these components, however, has been changing over time. It appears that technology policy and economic policy were given the highest priority and the institutional policy (based on community approach) was neglected. Consequently, though the policy (a) has been able to remove the stagnation of agriculture in India and (b) it has created institutional devices

and instruments of action which are impressive (Indian Council of Agricultural Research, Food Corporation of India, National Seeds Corporation, Agricultural Prices Commission, Agricultural Refinance and Development Corporation and National Bank for Agriculture and Rural Development), it has had a number of negative impacts: Firstly, it has not achieved the potential of agriculture in an adequate fashion; secondly, it has strengthened regional disparities; thirdly, it has a clear bias towards big farmers and it tends to neglect the distributional aspect; fourthly, it is a fragmented policy consisting of components which are not integrated well; and lastly, it has neglected local popular organisations like co-operatives, Panchayati Raj institutions and also land reforms.

The author therefore recommends a total strategy which aims at (a) production of adequate quantities of goods and services to support a rising standard of life and (b) generation of income and employment for the masses. Such a strategy will combine growth with equity in a holistic fashion and will see that imbalances created in policy formulation are removed. A major conclusion of this study is that we need a more balanced and integrated approach which pays attention to the distributional and growth aspects and thereby pays attention to the needs of the consumers and provides incentives to the producers. The study has thus brought out the weaknesses of the agricultural policy in the country and has clearly shown that growth at the cost of distributional justice cannot really deliver the goods.

There is one important question, however, which remains unanswered by the study: What were the factors which led to the neglect of the distributive aspect?; and how and who will now re-introduce these aspects in the policy? This question essentially deals with the political economy of the country and it definitely deserves an answer.

The value of the book would have considerably enhanced if the author had, while dealing with rural development policies, discussed the neglect of rural artisans and industries, which is also perhaps a consequence of the biased policy of the Government. However, the book essentially deals with agricultural policy and therefore one cannot expect too much.

It must be mentioned in the end that this is an excellent study on agricultural policy which will be a useful addition to the literature.

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*Rural Development : Growth and Equity*, Edited by Bruce L. Greenshields and Margot A. Bellamy, I.A.A.E. Occasional Paper No. 3, The International Association of Agricultural Economists; Gower Publishing Co. Ltd., Hampshire, England, 1983. Pp. viii +132.

This book under review is the third in the International Association of Agricultural Economists Occasional Papers Series, consisting of 42 research



papers relating to Rural Development Programmes based on advanced econometric models, together with the summary of major discussions and conclusions, which were presented by eminent agricultural economists, academicians, socialists and research fellows from different universities and research organisations at the 18th International Conference of Agricultural Economists held in Jakarta, Indonesia, from August 24 to September 2, 1982. Broadly, it is divided into nine parts and discusses various aspects of rural development under different heads, *i.e.*, growth and equity; disciplinary considerations; economic growth and agricultural development; equity in agricultural development; role of women in agricultural development; agricultural policy; energy; agricultural research; international trade and development; and natural resources.

In the first part of the book, the contributors from different countries stress the significance of the concept of growth and equity from different angles. Five of the eight papers in this part review the major findings of research studies in connection with agricultural development programmes and their impact, which were conducted in the countries like Kenya, Taiwan, Indonesia, Nepal and Canada. The second part presents papers dealing with the growth rate of agricultural productivity in Indonesia, the relationship between institutional framework and adoption of new seed and fertiliser technology in India, the prospects for growth of domestic grain production in a severely over-populated country like China, the prospects and problems of forest fallow farming system in Malaysia, the impact of cultivation of new varieties of wheat on socio-economic conditions of small farmers with experiments from countries like Mexico (the Yagui Valley), India (Punjab) and Pakistan (Punjab) and mechanising small scale rice production in the Philippines, Indonesia and Thailand. And finally a paper evaluates the Funtua Agricultural Development Project (FADP) in Kaduna State in Nigeria.

The effects of investment in research and extension on total agricultural production and on production of individual crops along with distributional effects are discussed by the contributors in the third part of the book. The second paper in this part highlights the problems faced by the small rubber holders and the possibilities for re-organisation, processing and marketing of small holders under the project study of developing small holder rubber in North Sumatra. The third paper presents a case study of how rural agencies and local farmers have responded to the complexities of implementing mutually consistent policies for achieving the objectives of growth, equity, and resource conservation in a regional watershed project area in an erosion zone in Cauca, Colombia. In the fourth paper, it is precisely seen that rural financial markets have a powerful impact on the distribution of wealth and income in many low income countries. The role of the market in effecting a more equitable distribution of land in South Africa after 1961 is briefly narrated in the fifth paper. The analysis in the last paper focuses on equity implications of current food policies for the rural population in Egypt and determines the distribution pattern of food subsidies and food distribution.

The purpose of fourth part is three-fold : to provide a methodology that incorporates gender differences in the farm household into development project planning; to examine women's productivity in the agricultural system and to assess women's labour allocation in irrigated rice production in North Cameroon. This part attempts a quantitative comparison between a development project using a conventional planning methodology based on the aggregate farm household and a planning methodology in which project impacts are disaggregated by sex.

The first two papers in the fifth part deal with the crop insurance scheme and its importance for agricultural development. These papers analyse the operation and performance of existing crop insurance programmes in selected developed as well as developing countries. Again, growth and equity aspects of twelve alternative credit policies for the small holder coconut programme in Indonesia and the impact of the credit policies at the farm level and social benefits of these policies are all reviewed in another paper.

In the sixth part of the book, some of the distinguished contributors discuss the relationship between energy and agricultural development, the impact of rising energy cost on agricultural production and regional economy.

The seventh part stresses on the allocation and determination of agricultural research resources and the impact of research on agricultural productivity.

The eighth part presents major issues concerning agricultural production, distribution, access, trade and assistance based on the agricultural study conducted by the Food and Agriculture Organization (FAO) of the United Nations: Agriculture, Toward 2000, together with the summary of results and identification of salient aspects of the strategies for agricultural development.

The book, on the whole, is a good addition to the literature on rural development with extensive use of econometric models. It is hoped that the major findings of various empirical studies brought out by multi-disciplinary scholars in the book would be useful for policy makers in the evolution of suitable rural development strategy. The book is a commendable attempt made by several ideological pluralists with available information on the rural development subject in an intelligent manner.

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*The Agrarian System of Eastern Rajasthan (c.1650-c.1750), Satya Prakash  
Gupta, Manohar Publications, Delhi-2, 1986. Pp. xvi + 352.*

The current agrarian structure of Rajasthan rests on the feudal history of its erstwhile Princely States. Barring a few, almost all these States had

adopted the Moghul system of land administration. Thus the pleasure of 'Durbar' was the sole, necessary and sufficient condition for deciding the duration of award, tenurial status and pattern of revenue collection of the 'Jagirdar' who, in turn, applied the same principle for allocation of land among his ryot. The agrarian structure in pre-Independence eastern Rajasthan was marked by the concentration of land ownership in the hands of a class not involved in production *per se*. The peasants were largely deprived of the land ownership and thus were only perpetuating the stagnation in agricultural production. While it was unexpedient and even contrary to social norms for the 'Jagirdar' to till the land, a large number of the have-nots vied with each other to get a piece of land on lease for cultivation.

The present book recapitulates the essential elements in a century of the agrarian system of eastern Rajasthan (1650-1750) during the Moghul rule in India. The elements of agrarian system, in the present context, include the long-term analysis of agricultural production, prices, trade practices, structure of land rights, emergence of social class structure, land revenue administration, system and quantum of rural taxation and evolution of the 'Jagir' system in the Amber (later Jaipur) principality. The author has derived most of the inferences from the village and pargana records, pargana market intelligence reports, revenue letters and documents, administrative manuals and royal correspondence. Despite limited availability of data, one comprehends an increase in the area under cultivation in the principality mainly through breaking of waste lands (Mapi system) without a corresponding increase in productivity. The observations pertaining to the structure of land rights and the agrarian society reveal an elaborately graded social structure of *Raiyat* and *Taluka* village, wherein 'Patels' (big peasants) and 'Raiyats' (small tenants) co-existed. The third category constituted 'Pahis' who toiled to bring the wastelands under the plough. In lieu thereof, 'Pahis' were fully exempted of taxes and their inputs were also subsidised. The author has deftly dealt in fine details about the controls exercised by superior rural classes including *Bhomias*, *Mahajans*, and Bohras on the village economy.

Grain was sold by the peasantry to the local village markets constituting *Bania*, *Mahajans*, *Teli* and *Raiyat*, who further sold it to other traders and middlemen for meeting the urban demands. The Beoparis played an important role in the stabilisation of prices by regulating the flow of agricultural production. In times of distress, they were enjoined upon even by the 'Durbar' to sell their stocks at regulated prices. Spatial price variations in the principality tended to be of smaller amplitudes where transportation costs were not material determinants. However, a detailed analysis of the agrarian price structure could not be attended by the author.

The revenue was predominantly collected in cash. Besides revenue, agricultural production was rather heavily taxed. The administration levied about 14 major taxes and cesses based on marketing and spatial movements of agricultural produce. It has been estimated by the author that the peasantry

in Amber principality was taxed to the extent of 50 per cent of the value of agricultural production.

Conditional evidence of Izardari which eventually led to evolution of Jagirdari system has also been presented in sufficient details. The results reveal that with the weakening of the Moghuls, the Izardars of Amber principality were awarded permanent Jagirs by the 'Durbar' to exercise administrative control.

Throughout the text, the author laboriously brings out the rather obvious conclusion that the agrarian system of the erstwhile Jaipur during the period 1650-1750 was an adoption of Moghul agrarian system. Under the existing politico-economic situations and spatial proximity with the Moghul Empire of Delhi, Amber principality in eastern Rajasthan could but have no other system. One fails to comprehend the need of testing this hypothesis with the data available from the same precincts. It would have perhaps been more fruitful and rewarding to examine the similarities and dissimilarities in agrarian systems of the States separated by political, economic, and spatial conditions from the Moghul Empire. Thus the comparative studies pertaining to the impact of Moghul agrarian system on the agrarian systems prevalent in the erstwhile Matsya State in the east, Marwar, Bikaner, and Jaisalmer in the west or Mewar in the south Rajasthan would have given very interesting insights.

The book is nicely written but one is put off by the preponderant acts of 'printer's devil'. It would be a useful reference material for any student of history of agrarian system. Yet the indirect claim of the author to create another 'Vigat' *a'la* Nainsi Mutha for eastern Rajasthan is a trifle too far-fetched and self-laudatory.

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*Crop Insurance for Agricultural Development: Issues and Experience,*  
Edited by Peter Hazell, Carlos Pomareda and Alberto Valdes, The Johns  
Hopkins University Press, Baltimore, Maryland, U.S.A., 1986.  
Pp. xviii + 322. \$ 35.75.

The book under review deals with the role of crop insurance in offsetting risk and its experience in some of the countries where it is being practised. But at the same time the book raises quite a few interesting analytical issues. It is spread over three sections. The first section deals with the demand for crop insurance by the farmers and by the financial institutions supplying the farm credit. Public policy and welfare ramifications of crop insurance have been discussed in the second section. The third section presents the experience and perspective of crop insurance practices in Brazil, Japan and the United States. The last two chapters of the book examine the financial viability of the

insurance scheme and certain theoretical issues emerging out of the discussion. The book has considerable importance in the policy perspective in the Indian context especially when we are at the cross-roads to decide about the strategy for drought alleviation. The book is a neatly organised volume rarely found in the literature.

The experience of drought over the years has also made the vulnerable farmers more risk-efficient and they have developed a neat procedure to deal with the situation. Selling of assets, using earlier stocks and stocking for bad years, savings of different forms, migration to urban places, reduction of area under cultivation and even changing the consumption habits are some of the traditional ways developed by the farming community to adjust with the disaster. T.S. Walker and N.S. Jodha discuss these mechanisms in the context of small farmers in India. The effectiveness of such risk adjusting devices is questionable and it varies especially with the intensity and the spread of drought. Moreover, these mechanisms have regional variations and have been evolved after taking into consideration the regional characteristics. The reviewer had a chance to observe that in a drought-prone area like Bijapur almost every household has at least one migrant labour who sent remittances back home after migrating to distant places like Bombay, Poona or even Punjab.

A model for evaluating the farmers' demand for insurance is discussed in detail by Peter Hazell *et al.* They have drawn empirical support from the Mexican and Panamanian crop insurance schemes. The model they have tried, attempts to evaluate crop insurance scheme within the 'whole farm' plan and its capability to take into account the covariances between activity returns in determining the variability of income. Their emphasis is on the process of decision-making for crop diversification and the cost that the farmer pays in terms of income loss due to such decision. There is, however, a need to evaluate the crop insurance scheme simultaneously with other decisions of the farmers under varying constraints.

Demand for insurance by financial institutions emerges particularly when the farmers (who have borrowed crop loans) are faced with the risk of losing crops and/or when their net income is quite low under conditions which are out of their control. In such cases, it is unlikely that they will pay for the credit they have borrowed. The problem worsens when rural banks are asked to bring a deliberate bias towards the small farmers who are unable to repay back their dues in times of droughts or natural calamities. Hans P. Binswanger has argued that under such conditions the major source of demand for crop insurance would come from the financial institutions. This is mainly so because if the farmers do not repay the borrowed funds, then its circulation for development would get throttled. This was the main plank on which the crop insurance scheme in India was linked with the farm credit. The fifth chapter concludes that credit bottlenecks are mainly due to the inherent weaknesses of the credit institutions. It raises a fundamental question about the capability of crop credit insurance addressing the risks in agricultural

lending and especially when these institutions are not able to diversify their loan portfolios. Pomareda analyses the impact of insurance in improving the loan recovery and returns. He also found that similar results could be obtained by increasing the interest rate but then the bank would be addressing to a different clientele. The analysis is quite interesting and derives support from the empirical analysis of the experience of agricultural development banks of Panama.

Public policy and crop insurance is discussed in the second section spread over five chapters. The analysis by Ammar Siamwalla and Alberto Valdes deals in detail with the public intervention for a crop insurance programme in terms of subsidy. The subsidies are justified in the initial phases of the crop insurance but would have long-term adverse effect if continued. The justification of public subsidy for crop insurance stems out of the proposition that if the farmers are less risk-averse, they would expand their production programme and this in turn would not only increase the total production but will add substantially to the social gains. In Indian conditions, however, one has to work on a broader canvass and the variables are totally different. Chapters 8 and 9 deal with the measurement of such social gains through mathematical models taking empirical evidence from Japan, Mexico and Australia. In the Indian context, public subsidy for crop insurance came under attack mainly because of the linkages and administrative overheads. However, barring a few exceptions, the impact of crop insurance across different size classes of farmers, agricultural labourers and agricultural credit have gone totally unanalysed.

The third section deals with the experience of crop insurance in the United States, Japan and Brazil. The experience in the U.S. appears to have encouraged crop production in marginal areas but the changes are not substantial. Brazilian experience is somewhat similar to the Indian experience where the premium rates charged were quite low and at an alarming cost of administration. But since the programme was voluntary, it had only a few takers.

In Chapter 15, William M. Gudger and Luis Avalos discuss the planning for efficient operation of a crop credit insurance scheme. Such analyses in the Indian context would go a long way in diagnosing the problems of the crop insurance programme in India. Lessons can also be drawn from Pomareda's analysis of the financial management of insurance scheme.

Overall, the book offers an excellent reading for not only the researchers but also for the policy makers who would like to rework the existing programmes in order to increase its efficiency and impact. Apart from the in-depth analysis of the issues presented in the book, it also raises certain interesting questions that are more applicable in the Indian context, *e.g.*, what is the impact of the crop insurance programme in different agro-climatic settings, who are the beneficiaries, what is the portion of risk covered by the

present programme? Hence the book offers a good opportunity for the researchers working in the area. It is a welcome addition to the literature on this subject.

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*Wage Employment Programmes in Rural Development: A Study of NREP in Gujarat*, Indira Hirway, Oxford & IBH Publishing Co. Pvt. Ltd., New Delhi 1986. Pp. vii+112. Rs. 60.00

The book under review evaluates wage employment programme called National Rural Employment Programme (NREP) implemented in Gujarat. The book contains six chapters. In Chapter I, an economic framework essentially of the Nursian type is elaborated as a background. Chapter II critically examines the NREP as a wage employment programme and points out, on the basis of other evaluation studies, the shortcomings in such programmes as these are formulated at the national level. The different types of wage employment programmes which were evolved and implemented after Independence and even somewhat earlier are referred to and their shortcomings are indicated. Particularly, the author has pinpointed the weak planning and lack of focus as two gaps. Chapter III is a preliminary analysis of NREP in Gujarat. It examines the districtwise allocation of funds and generation of employment. The allocation of funds and generation of employment down below the district level are also examined. The author has examined the performance of NREP by sectors, *i.e.*, the types of projects which are undertaken as a part of NREP programme, etc. The author has argued that the performance of NREP in Gujarat both in terms of allocation of funds and generation of man-days of employment has been satisfactory in so far as district level planning is concerned. However, below district level, there have been distortions in respect of the allocation of funds and the selection of project, which have denied the benefits of NREP to some of the more deserving areas. The manipulation by the elected representatives of people at the district level has also been pointed out as a factor contributing to such distortions.

Chapter IV dwells on planning for NREP in Gujarat. The author lays emphasis on the co-ordination of various functionaries at the district and taluka levels and among the functionaries of different programmes either at the block level or district level for effective results. The allocation of say ten per cent of funds for social forestry and another ten per cent for scheduled castes (SC) and scheduled tribes (ST) population, etc., cannot be tried across the board. She argues that such allocation criteria should be the population of the SC, ST, agricultural labourers and small and marginal farmers. She further points out that even within the Government, different departments

implementing NREP programme were paying different wages and in most cases these wages were below the minimum wage. The wages paid by non-governmental agencies involved in implementing NREP, particularly the Co-operatives of Workers were even lower.

In reviewing the historical context of wage employment programmes earlier, the author has highlighted the reasons for poor performances in earlier programmes like rural works programme, the cash scheme for rural employment, the food for work programme, the employment guarantee scheme of Maharashtra, etc., on poor planning and unsatisfactory implementation. She is of the view that the implementation of NREP programme did suffer from the same defects in Gujarat.

The book under review is a useful addition to the subject of wage employment programme in rural development. It can be helpful to those who are planning such programmes and also to those who are implementing these programmes. In addition, it can be used as a research reference book.

The book, however, is an evaluation report and it is clear that the objectives of NREP have to be evaluated only in such specific context. If a wage employment programme is used as an anti-poverty measure, then the types of projects which are undertaken, the locations which have been chosen, etc., are not always a topmost priority. However, if these programmes are undertaken with an objective of strengthening the productive potential of the economy by works of capital formation so that ultimately they lead to the creation of regular employment opportunities through the availability of more assets, then the selection of the projects, their economic viability, their locations, etc., are likely to acquire special importance. Thus in evaluating a wage employment programme, it is essential to keep the focus on the decided priorities of the programme. Otherwise, it is well-known that certain conflicting objectives cannot be fulfilled and evaluation one way can be biased. Moreover, funds being limited, it is not always possible to judge the impact of such spending on many related issues like the impact on general wage level in the area, etc. Thus at some points, the book seems to mix these varieties of objectives which in theory can be thought of in planning for wage employment. However, a specific wage employment programme may not be able to fulfil all these objectives. While evaluating NREP in Gujarat, this distinction seems to have been missed by the author.

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*Institutional Aspects of Agricultural Development: India from Asian Perspective*, P.C. Joshi, Perspectives on Asian and African Development No. 5, Allied Publishers Pvt. Ltd., New Delhi-2, 1987. Pp. xviii + 335. Rs. 125.00.

This book constitutes a collection of twelve papers published from 1961 (mostly from 1976) to 1986. There is also a brief but critical Foreword by



Prof. M.L. Dantwala who graciously invited the author to react and so the book also contains an Epilogue by Joshi purporting to refute Prof. Dantwala's criticisms.

Most papers bear, directly or indirectly, on a central theme which can be presented in summary as follows :

For labour abundant and land scarce countries (like India) the appropriate agrarian structure is that of 'peasant' farms and not that of capitalist (large) farms. Joshi feels that the dynamic potentialities of small peasant farms have not been properly appreciated and that capitalist farming is being encouraged irrespective of its unsuitability and undesirability. In the modern context, the peasant sector is no more static or inefficient because of the new 'size-neutral' technology. Nor is there any need now for the peasant to undertake the functions of innovation, risk-bearing or accumulation since these can be, and in many instances are, performed by public bodies. The contemplated reorganisation of the agrarian structure on the basis of peasant farms will also serve the end of equity along with that of growth. By making room for greater absorption of labour in the work processes, it will increase employment and reduce inequality and poverty.

The present agrarian structure in India is 'dualistic' in the sense of containing, in an uneasy equilibrium, both the capitalistic and peasant elements. However, the capitalist sector causes unemployment, is 'predatory, wasteful and oppressive' (p. 278), results in under-utilisation of resources, leads to disintegration of peasantry and its marginalisation, fosters tensions and class conflicts which in turn impede growth and divert surpluses into conspicuous consumption or non-farm investment.

From Joshi's tone it would also appear that the capitalist sector is already dangerously large and growing in a threatening manner.

His reform recommendations are two. One, in order to universalise the regime of peasant farms, a ceiling must be placed on large holdings and surplus land redistributed. (In the first round of land reforms the attack was on feudal and semi-feudal forms of land holdings and that, too, was half-hearted. In the second phase ceilings were imposed but the results were poor and the task yet remains unfinished.) Two, it is no use merely redistributing land and creating a large number of peasant farms; they must be organised on a 'community principle'.

At the risk of being labelled a social scientist "sensitive to the influence of economically dominant groups" (p. 61)—a risk which is almost a professional hazard for economists not having the aura of 'progressivism' about them—a few brief comments must be made.

Is the new technology size-neutral under all circumstances? Seed, fertiliser and pesticides are infinitely divisible but what about water when it cannot be bought in required quantities but has to be obtained through first creating a source, such as a well, which would demand a minimum size? Assuming that *small farms* use the new technology and increase their productivity, does that automatically make the *small farmers* cross the

subsistence threshold so that they become 'bankable propositions'? Joshi, almost without exception, lumps together *all* peasant farms without caring for distinctions like medium, semi-medium, small and marginal and gives the (unwarranted) impression that every peasant, be his piece of even a minuscule size, can, thanks to the new technology, stand on his own feet. He talks vaguely of 'native ingenuity', 'skills' and 'traditional' and 'local' resources without any elaboration. It is also difficult to understand his position on the HYV technology. Actually his case for the peasant sector rests, as shown above, on the supposed size-neutrality of this technology and yet in one place (p. 174) mentions its 'high cost' and suggests that it is unsuited to the present stage of agricultural development.

It may be argued that we are making much ado about the problems of small farms when what Joshi is proposing is not merely the creation of a large number of small farms but also their organisation around the 'community principle'. But, surprisingly, nowhere does he enlighten us on what precisely this community principle of his conception is. He is very hesitant on this issue. He is of the view that the feudal system, in spite of its other drawbacks did contain this principle, but it has to be 're-activated and re-interpreted' (p. 183). However, he does not indicate the lines along which this is to be done. On the one hand, he finds the Chinese and Vietnamese patterns of co-operativisation of some 'relevance' (p. 99) and commends Prof. Mahalanobis for espousing joint cultivation (p. 121); on the other hand, he raises doubts about the practicability of the Chinese and Vietnamese models (pp. 59 and 179). He says that India must throw up its own variant of communitarianism' (p. 155). In fact, 'different regions' have to evolve their own patterns (*ibid*). In the chapter in which he seems to devote most space to this question, after extolling the community principle, the only thing that he does is to refer the reader to another publication for its 'fuller exposition' (p. 282). The reader must be pardoned if he concludes that the author has not really made up his mind in respect of a subject which is so vital to his case.

On the other side of the capitalist-peasant divide, Joshi does not make necessary distinctions between large farmers and capitalist farmers but places them all in one blanket category. Indeed he does not even attempt any definitions of either 'peasant' or 'capitalistic' farming. Prof. Dantwala draws our attention in the Foreword to the fact that most 'large farms' are to be found in the arid tracts. Joshi by-passes this point. He argues that large farms are under-utilised on a 'vast' or 'tremendous' scale (pp. 298-299) and that they adopt an 'inferior technology' (pp. 299-300). If they are doing that they are surely practising a strange kind of capitalism. To the extent, and wherever, there is under-utilisation, one must look for causes and it is possible that they may be found in relatively less irrigated and more inferior lands under the large farms. (In fact, this is what, in all probability, kept them large in the first place by making them less prone to fission.) Prof. Dantwala also shows that even small farms producing special crops can be quite rich. But Joshi ignores such niceties as perhaps unworthy of consideration.

Is the large farm sector really expanding? Again Prof. Dantwala shows that the opposite is true. The agricultural census data show a growing deconcentration. They also reveal an alarming extent of subdivision, a fast decrease in the size of the average holding and increase in the area under small and marginal farms—a picture nearer perhaps to Joshi's 'heart's desire' than otherwise. Do the capitalistically run farms invariably reduce employment? Or do they at least in some situations increase it through multiple cropping facilitated by short duration varieties? To the extent they reduce the employment potential, is it not owing to subsidised mechanisation, as Joshi himself notes, rather than to capitalism as such? Is not mechanisation indicated in situations of absolute shortages of labour in between two successive crops?

It is the author's presumption that the capitalist and peasant sectors cannot co-exist; the former will drive out the latter. This was Marx's view also and it was belied by events on the continent even during Marx's life-time. There seems no reason why at least the upper layer of peasant farms should not hold their own against the capitalist farms. This is because family farms have certain advantages over capitalist farms in certain situations. The author himself tells us that capitalist methods are not suited to rice growing. Which means that they could be suitable to some other crops. This should really suggest the unwisdom of prescribing any single pattern as valid under all circumstances. A further question is in order: Even if you remove capitalism from agriculture, will the peasant sector remain hermetically sealed from capitalist influences when winds of capitalism in the non-farm sector blow about it on all sides? Is 'Dualism' *within* agriculture alone to be condemned?

Even otherwise, an important point to be noticed is that capitalism in the agricultural *production* sphere is not as great a horror as capitalism in industry where it tends to manifest itself in oligopoly or monopoly.

Now about the question of inequality and poverty which, Joshi thinks, will be removed or reduced by ceilings and redistribution. A certain degree of equality *within* the rural sector will certainly be achieved through this programme but it is difficult to believe that it will make much dent on poverty. Careful exercises regarding the availability of surplus land with varying ceilings and varying numbers of claimants were made by Dandekar and Rath in their study on Poverty in India and they pointed out the futility of such a measure in the context of poverty eradication. What was futile around 1970 would be much more so now. However, the author would deride such exercise as 'arithmetic of land availability' (p. 299) and hark back to the 'tremendous under-utilisation' which remains unexplained. However, there seems to be a deeper reason why Joshi takes this stand. He disapproves the current focus on poverty which, he bemoans, 'bypasses' the issue of inequality (p. 288). But are these goals mutually exclusive? Can it not in fact be said that, contrary to what Joshi thinks, abolition of poverty (in the sense of leaving nobody below the poverty-line) if properly financed, would mean a more comprehensive (country-wide) application of the principle of equality? Joshi's programme,

let us note, would transfer to the poor only the land resources in the rural areas whereas an anti-poverty programme which does not rely on land reform alone would draw on the resources of the entire country.

As a final comment it must be said that Joshi's way of building up his case shows his preference for the general and the abstract rather than the specific and the concrete. Notwithstanding his own advocacy of the 'field view' rather than the 'book view' (p. 69), he is not prepared to soil his hands with the now available voluminous data on our agricultural economy which reveal several complexities and nuances of the situation and makes us wary of suggesting cut-and-dried solutions. Prof. Dantwala congratulates the author on avoiding 'mathematical equations'. But surely, an analytical appraisal based on quantitative information should not be taboo? Reading Joshi on the peasant sector which essentially consists of small farms, one would wonder whether such a thing as the Farm Management Surveys and the extensive and often exciting debates on it had ever taken place!

The book is relatively stronger in those parts which cover evolution of thought on land reform and agrarian experiences of some other countries. Such chapters supply a useful perspective. It may also be said to present the so-called 'institutionalist' case in its wholeness whatever its strength. That seems to be its chief merit.

*Bombay.*

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*Apples: Production Technology and Economics*, S.M. Kanwar, Tata McGraw-Hill Publishing Co. Ltd., New Delhi-2, 1987. Pp. xxv+899. Rs. 387.00.

There has been a long felt need for a comprehensive book on temperate fruits dealing with production technology and its economics under Indian conditions. The available literature on fruit production in India is generally biased in favour of tropical and sub-tropical fruits and provide only passing reference to temperate fruits. Thus the attempt to write a detailed and illustrated book on apples production technology and economics is commendable by the author who in the formal sense happens to be a law graduate.

The book under review is divided into eight sections. The first section deals with planning and planting of an orchard. This section describes the morphology of apple tree, concept of compact apple tree, varietal description, site selection, root stocks for different soils and propagation technique. There is a detailed discussion on various systems of lay-outs with related merits and demerits.

The second section of the book deals with fruit set, pruning and training. The author has given a detailed description of fruit bud formation, pollination and fruit set process. The role of honey bees in pollination has been described in a lucid way. The productivity of orchard depends on proper pruning and training of trees in the early stages of plantation. The author has discussed

this part at a greater length. This part of the book is very useful from the orchardists' point of view.

The role of macro and micro nutrients, growth regulants and thinning of crop has been dealt in the third section of the book. It deals with the role of macro and micro nutrients in orchard management, deficiency symptoms and their remedies. The role of chemicals in retardation of growth, fruit setting, fruit thinning and other physiological process of fruit production are also well documented.

Various methods of rejuvenation and renovation of old trees to have extended fruit bearing period is dealt in the fourth section. The author has given a good account of the fundamental aspects of replantation problems and how to overcome soil sickness so as to re-establish an old and uneconomic orchard.

The fifth section devotes itself to disease and pest management of apple orchards. This section is exhaustive and supported by diagrams. The information documented in it is of immense value to the orchardists and extension workers. Integrated pest management along with biological control technique has been discussed in common man's language.

How can the apple orchards be managed under adverse climatic conditions like drought, hail storm, etc.? An answer to this query has been provided in Section VI. Post-harvest management, storage, marketing problems and their solution have been described in Section VII. Various ways of increasing the shelf life of fruits in order to regulate market supply with a view to obtain remunerative prices are discussed in this chapter.

The last section of the book is a valuable contribution to the field of horticultural economics. The author has given a detailed account of financial analysis of plantation crops. Various methods of valuation of fruit trees along with their merits and demerits have been discussed with suitable examples from the field of apple production. The information provided in this section will be of great importance to the policy makers, land acquisition agencies and enterprising farmers. The role of computers in orchard management, though an elementary treatment of the subject, gives an idea of the author's foresightedness.

The book covers all essential aspects of apple production. The author will do a great service to the practising orchardists if sections on pruning and training, orchard management, pest control are translated and published in regional language. Also, it would be of immense value if the apple marketing aspect is elaborated further in the revised edition.

Overall, this book will help not only the apple growers but also the teachers and the scientists engaged in the field of temperate fruit cultivation.

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*Cereal Substitutes in a Developing Economy: A Study of Tapioca (Kerala State)*, K.N. Ninan, Concept Publishing Co., New Delhi-15, 1986. Pp. xviii + 252. Rs. 125.00.

Tapioca, an important cereal substitute in Kerala, has played a major role in meeting the food requirements of the State, especially among those people belonging to low income categories, for more than a century. The area under tapioca in Kerala (about 2.5 lakh hectares) accounts for about three-fourths of the area under tapioca in India and the tapioca production (around 4 million tonnes) in the State accounts for about two-thirds of the all-India production. In addition to its use for home consumption, tapioca is used as a raw material for starch industry and it has a good potential as an ingredient in the manufacture of compound cattlefeed. Despite its importance, very few studies are available on the economics of production and marketing of tapioca. In this context, Ninan's book under review, which is a revised version of his dissertation submitted to the Mysore University for the award of Ph.D. degree, makes an important contribution.

The contents of the book are organised in nine chapters and it has a Foreword by Professor V.K.R.V. Rao. The first chapter introduces the production characteristics and the utilisation pattern of tapioca in a global context. Information presented in this chapter include data on area, production and productivity of tapioca in the major producing countries. A review of existing literature on tapioca indicated that most of the general or micro level studies were confined to only selected issues such as growth behaviour of tapioca. The first chapter also specifies the general objective of the study as making a temporal and spatial analysis of the tapioca economy in Kerala.

The second chapter contains a micro view of the agricultural economy of Kerala with special reference to tapioca and rice. In the growth of tapioca and rice in Kerala, two phases were identified for the period from 1963-64 to 1974-75 and from 1975-76 to 1981-82. During the first phase there had been a significant increase in area, production and productivity of both tapioca and rice, but in the second period tapioca production declined and rice production remained stagnant on account of a significant decline in the area under both crops. The analysis of production characteristics indicated that while tapioca was cultivated by the farmers belonging to all land size categories, it figures more prominently on marginal and small holdings. On the consumption side, the analysis indicated that tapioca was mostly consumed by the poor people because it was relatively inexpensive compared to rice.

The third chapter gives a brief account of the sampling design, villages selected for the survey and some characteristics of the 140 sample farm households. The sample households had dissimilar socio-economic backgrounds, especially in relation to the distribution of productive resources.

The land utilisation pattern of the sample households is analysed in Chapter 4. The traditional measure of cropping intensity index indicated that the large farmers had a higher cropping intensity as compared to the small farmers. However, taking into account the dominant role of annual and perennial crops in the cropping pattern in Kerala, it was inferred that the small farmers cultivated land more intensively than the large farmers. The small farmers practised crop diversification on a larger scale as compared to the large farmers. While food crops dominated the cropping pattern in all farm size-groups, the small farmers with less than one acre had a dominant share of the land put under tapioca cultivation. It was also pointed out that institutional factors such as the nature of access to different types of land and ownership status had influenced crop choices.

An analysis of productivity differentials and factors explaining the observed differences forms the subject-matter of the fifth chapter. The results indicated a positive relationship between tapioca productivity and size of holdings, but there was no consistent relationship for paddy. Unequal access to resources and markets for different groups of farmers was identified as the major factor influencing the range and intensity of input use.

The sixth chapter analyses the cost structure and income from tapioca cultivation in comparison to paddy and total crop production. The analysis indicated a dominance of owned inputs in the input structure of the small farmers while the big farmers had depended greatly on purchased inputs. In general, tapioca cultivation was profitable, but the small farmers with holdings upto 0.5 acre each reported losses when the imputed value of family labour at market wage rate was considered. There was a positive correlation between farm size and profit from tapioca cultivation. When imputed costs were accounted, paddy cultivation turned out to be non-profitable for all size-groups. The input structure of paddy and tapioca indicated a higher degree of purchased inputs for paddy as compared to tapioca.

An analysis of the labour use pattern of tapioca cultivation in relation to other crops is available in Chapter 7. Labour requirement for tapioca cultivation is much smaller than its requirement for paddy. While an acre of paddy cultivation required 81 man-days, tapioca cultivation, which occupied land for more than double the period of paddy cultivation, required only 47 man days. The employment elasticity of tapioca and paddy with respect to output was 0.69 and 0.88 respectively. However, the need for labour with special skills or inadequate labour to meet peak season demand for paddy cultivation is absent in the case of labour requirements for tapioca cultivation. Human labour requirements for tapioca cultivation was dominated by male labourers, but in paddy cultivation a number of activities such as planting, weeding, interculture and harvesting involved substantial female labour participation. The study observed that average labour productivity of tapioca and paddy increased with an increase in the farm size.

Chapter 8 contains an analysis of marketing, consumption and processing aspects of tapioca. While the small farmers cultivated tapioca for their own consumption, the medium and large farmers cultivated it primarily for sale. The marketed surplus of paddy was concentrated among the big farmers. There was no indication of any particular price advantage for tapioca in any size-group. The cultivators preferred to sell raw tapioca tubers instead of converting it to tapioca chips. The consumption of tapioca initially increased with an increase in the farm size and then declined for the middle and higher income groups. Tapioca was the main source of calories for the farmers belonging to the low income households.

The last chapter provides a summary of the findings and lists a few conclusions from the study. It is concluded that the future of tapioca in Kerala depends on expanding the market by utilising it for purposes other than its traditional role as a cereal substitute. The perishable nature of the crop together with its bulky nature impedes the marketability and large scale industrial utilisation of the crop. In the context of possible reductions in tapioca consumption with increased availability of cereals, the scope for expanding the market for tapioca is only from its industrial use, especially for compound cattlefeed production. But in order to make tapioca to be competitive in the cattlefeed manufacture, it may be necessary to lower the unit cost of production through improved use of technology in tapioca.

As mentioned earlier, this book provides a useful addition to the very limited reference material on tapioca in India. Within the limitations of converting a Ph.D. dissertation to a book, it has a fairly comprehensive coverage and the treatment of the subject-matter is rather exhaustive. Though there is a possibility of shortening the discussion in some chapters without substantially reducing the rigour of analysis, on the whole, the book offers interesting reading. Some sections of the book are relevant not only for those interested in tapioca, but also for those interested in carrying out an analysis of agricultural commodity systems.

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*Rural Development through Irrigation*, D. Vasudeva Rao, Ashish Publishing House, New Delhi-26, 1987. Pp. 153. Rs. 130.00

*Rural Development: An Overview*, Edited by D. Vasudeva Rao, Sri Satguru Publications, Delhi-7, 1986. Pp. ix + 137. Rs. 100.00

Irrigation studies in India are confined to relatively narrow issues in production economics. It is obvious that viewed as an input in rural development—not merely agricultural production—irrigation has other points of contact with development economics as irrigation in Indian rural economy begins to move from the wings towards the centre of the stage. The first book makes an attempt to assess the impact of canal irrigation system on land utilisation pattern, educational status, income and employment opportunities and living conditions of farm families in Dharwar district of



Karnataka State. The data for 307 households (209 from the irrigated villages and 98 from the unirrigated or dry villages) pertaining to the agricultural year 1980-81 were collected by the survey method. For macro level comparison, data and information related to the present investigation were collected through government published documents pertaining to the agricultural years 1973-74 and 1980-81. 'With' and 'without' approach was used to compare the contribution of irrigation on various aspects of rural development in the studied area.

As expected, both investment and returns are found to be much higher on the irrigated farms than on the unirrigated or dry farms. The same is the case in regard to resource productivity and other infrastructural gains. The differences between the two locations (irrigated and dry) and also at the two points of time (before and after the introduction of irrigation) are attributed mainly to irrigation alone. The study on decomposition of the contribution of irrigation along with other associated factors would have made the present study more sensitive and effective. The study, however, leads to the conclusion that irrigation has played the role successfully in transforming the once dry villages to prosperity. More so, optimum utilisation of canal irrigation will further help in achieving self-sufficiency and overall rural development.

The second edited book under review consists of thirteen papers with an introductory note by its editor. The contributions made by distinguished authors relating to various aspects of rural development are grouped under five sections, namely, Agriculture, Industry, People's Participation, Health and Nutrition and Rural Energy. The first paper in the Agriculture section discusses the relative importance of filter points as a source of minor irrigation to usher in agricultural development in Andhra Pradesh. The second paper examines the problems and prospects of institutional finance in the rural countryside. The paper under the Rural Industry section deals with the cause of vulnerable groups (women labour) and it gives some suggestions for improving their working conditions. The other two papers in this section throw light on the socio-economic conditions of handloom weavers in Karnataka State and the incentives provided for industrialisation in the backward and rural areas. The section on People's Participation includes four papers dealing with the experience of people's participatory activities in rural development through water management for irrigation, voluntary action, local government and people's power and participation proneness in rural development activities respectively. In the section on Health and Nutrition, three papers evaluate respectively the national rural employment programme, nutritional status of rural children and changes in socio-economic conditions and their impact on dietary intake and nutritional status of rural families based on a case study in Andhra Pradesh. The paper in the last section makes an attempt to discuss the alternative sources of rural energy.

Rural development has special significance in the context of national development over the last three decades. The policy, strategies and programmes of rural development have undergone transformation over the

years borne out of experience and national priorities. It is a long felt need that studies on socio-economic aspects or indicators are not just sufficient but the people's participation in rural development and the results of the programmes such as better health and nutrition of the beneficiaries are equally important.

The contents of both the books are mostly descriptive and lack qualitative analysis of the nature and problems of rural development in a developing country like India. However, both the books are useful mainly to persons associated with the various rural development programmes.

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*Tea Plantation Workers in the Eastern Himalayas—A Study on Wages, Employment and Living Standards*, Edited by R.L. Sarkar and Mahendra P. Lama, Atma Ram & Sons, Delhi-6, 1986. Pp. xxxi+255. Rs. 130.00.

The book, which is essentially a treatise on the Darjeeling tea industry with a focus on labour and employment issues, is the outcome of research work by the Indian Institute of Hill Economy, Darjeeling. It is organised into ten chapters—which in turn are a collection of short essays—that range widely (perhaps a little too much so) and analyse various aspects of the tea economy of the region including its history and the marketing problems. The individually authored essays vary in depth and quality, some are good reading, and many of these raise important questions relating to labour and employment. However, in several places (such as in Chapters 4, 5 and 8 that deal with wages and social security benefits), the reader will have to rummage for information directly relevant to the Darjeeling tea industry and will find few regional data bearing on the questions raised. And perhaps consistent with the attempt of the authors to reach a relatively broad audience of non-academics, methodological sophistication is eschewed, although in a number of instances this should be regarded as being somewhat unfortunate. For instance, costs of production, profitability and sickness of the Darjeeling tea industry are important issues, but their treatment is rather too sketchy and abstract; an analysis of sickness of tea industry in Chapter 2 merely in terms of a single criterion of recurring cash losses is hardly impressive. So is the study of the relation between labour productivity and costs on the one hand and sickness of the industry of the region on the other. Labour productivity per hectare in the Darjeeling tea gardens has dropped in recent years whereas for the tea industry in the country as a whole it has improved, and the fact remains that labour productivity in the area is very low compared to the all-India level. True, through proper motivation, supervision and

incentives, as well as improvement of skill with the help of training, it should be possible to raise labour productivity materially in Darjeeling tea gardens, but one fails to see how labour productivity can be dissociated altogether from the sickness of the industry there. An apparent shortcoming of the volume is that the papers draw very heavily on a few secondary sources of information and existing studies (mainly by the National Council of Applied Economic Research and the Tea Manufacturing and Marketing Consultants, both of which are dated), although it is claimed at the outset that primary data were collected from 42 out of 85 gardens in the hills. Accordingly, many of the essays reach conclusions that were for the most part already known to specialists in the field, and certain policies are advocated without the benefit of rigorous and recent empirical support, let alone econometric evidence or even any serious analysis. (It must be admitted however that a few of the findings are illuminating such as those regarding the correlation between ownership and yield patterns in Chapter 9.) Above all, it conspicuously lacks an integrated approach linking labour and employment issues with productivity, costs of production, sales, prices, profitability and capital formation in the tea industry of the region. It would be admittedly fruitful, nay essential, in a study like this for the editors to have come up with an overview bringing apace the major issues and findings of the study.

Altogether, the volume should prove interesting and useful to a broad spectrum of general readership and non-economists, as well as "workers—teachers in their plant-level workers' education classes"—one of the two stated objectives of the volume, but one wonders if with its rather weak empirical and analytical content, as also the disjointed lay-out, it will fulfil its other purpose of 'filling a research gap' and have any persuasive appeal to economists and specialists in the area.

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*Weapons of the Weak: Everyday Forms of Peasant Resistance*, James C. Scott, Yale University Press, New Haven and London, 1985. Pp. xxii+389. \$ 25.00.

Conventionally, movements and mobilisations were studied by historians and given their sources of data, only those about which documents were available could have been analysed. And documents in the form of journalistic accounts or administrative reports invariably related to violent confrontations which were wrongly referred to as 'movements'. Latterly, sociologists and political scientists started analysing *ongoing* 'movements'. But they also invariably concentrated on those events with nuisance value for the state and the ruling elite. These studies were partial in several

respects: based on available records and reports usually of specific violent events which were perceived as threats to the ruling elite and invariably a view from above.

Recently, the perspective on movement analysis has changed substantially. Subaltern studies have gained considerable popularity and consequently, the orientation to historiography too underwent substantial changes. Increasingly, the emphasis is on the victims, the view from below and oral history assumed greater significance. Despite this change in orientation, studies still concentrate on major events—revolutions, rebellions, outbreaks, strikes—that is, organised collective actions, often forgetting that these are but the end products and specific manifestations of collective discontent which is present and articulated in day-to-day life. Therefore, a movement should be viewed as the sum total of the chain of events and one should observe and record what happens in between the major events. In fact, these are the authentic and more or less autonomous people's actions usually not initiated by outside structures such as political parties or intimidated by larger processes such as national liberation movements. And yet, it is precisely those events and processes which are left out in most studies. Scott deserves our praise for undertaking a study which mainly concentrates on the recurring, drab, prosaic, everyday resistance which is not only not fashionable but not even recognised in academic circles.

Given the theme of his study, the style of enquiry that the author undertakes is that of the conventional anthropologist—intense, one-village investigation, through participant observation—although he is a political scientist by training. But the substantive theme he focuses on, everyday resistance, is unconventional both to the social anthropologist and political scientist. Scott spent two years (1978-80) in Sedaka, the pseudonym for the 70-household rice growing village in Malaysia, closely observing the class relations in action. He did not confine the analysis of class struggles to contentions over property rights, work, grain and cash but extended it to “.... a struggle over the appropriation of symbols, a struggle over how the past and present shall be understood and labelled, a struggle to identify causes and assess blame, a contentious effort to give partisan meaning to local history” (p. xvii), thereby giving a new understanding to class relations, class consciousness and class hegemony. The author aptly remarks: “Neither peasants nor proletarians cause their identities directly or solely from the mode of production, and sooner we attend to the concrete experience of class as it is lived, the sooner we will appreciate both the obstacles to, and the possibilities for, class formation” (p. 43).

The strategy of analysis that the author pursues too is novel. He does not begin with a description of Sedaka; does not even attempt a direct analysis of the social structure but picks up events and happenings to understand the social structure, process and values. In so doing, he effectively enmeshes the general and the specific processes, the macro and micro perspectives. Not only that the familiar story of green revolution common to most of the third

world countries is recounted but also its specificities in Sedaka are highlighted. In so doing, the author unfolds what he calls the two subjective class histories of green revolution; histories according to winners and losers. This in turn vividly unfolds the basic rupture that exists in rural social structure.

Given the theme of the book—everyday resistance—the focus has to be often on inter-personal interactions with their myriad subtleties. The author presses into service the ethno-methodological orientation which enriches his analysis with brilliant insights. Consequently, the presentation of ‘truth’ in everyday life, the vocabulary of exploitation and the rationalisation of exploitation in the village could be captured raw and portrayed naked. Everyday resistance inevitably leads to routine repression which is also ably analysed. This, however, does not mean that organised collective action is ignored; they too are reported and analysed.

Contemporary social science, notwithstanding R.K. Merton’s bemoaning four decades ago, is still lost between the empty verbiage of grand theories and the crudity of raw empiricism. Rarely does one come across a diligent effort to weave theory and data into a unified whole because it is a very challenging task. Scott deserves our unqualified appreciation for attempting precisely this. And when this task is successfully accomplished, imposing theories look less majestic and revolutionary hopes less glittering. Small wonder, Scott concludes: “If revolution were a rare event before the creation of such states, it now seems all but foreclosed. All the more the reason, then, to respect, if not celebrate, the weapons of the weak” (p. 350).

This is a descriptively lengthy and analytically rich book; it deserves a long review. Due to limitations of space, this reviewer cannot attempt it here. While I admire most of what is found in the book, I am afraid there is a serious omission. The women of Sedaka, who should constitute around 50 per cent of its population, are scarcely visible in the 350 pages. And they should be the prime victims of cumulative oppression as elsewhere and hence ought to be the most adept at routine resistance. The fact that the field data presented in the book was collected in the late 1970s and it is published in the mid-1980s make this omission all the more glaring because we were made aware of this conventional neglect both by women activists and scholars.

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*Improving Delivery Systems for Rural Development*, M. Shiviah, M.L. Santhanam, N.Y. Naidu and A.C. Jena, National Institute of Rural Development, Hyderabad-30, 1985. Pp. xiii + 391. Rs. 100.00.

The success of any policy or programme to a great extent depends upon the timely supply of inputs in adequate quantity and stipulated quality through multiplicity of agencies. This is more so in the case of rural development programmes, where the problems to be tackled are much more complex and the area to be covered is far wide. The book under review is very relevant in this context. The book is an outcome of the study undertaken by the National Institute of Rural Development at the instance of the Planning Commission in 1980. The study covers nearly 1,600 respondents spread over in four States, viz., Gujarat, Uttar Pradesh, West Bengal and Tamil Nadu.

The main objective of this study is to analyse the relevant issues and problems connected with the delivery systems of rural development at the grass-root level with a view to suggest improvements in the operational efficiency. Here rural development refers to four major activities, viz., Agriculture, Related Activities, Rural Industries and Social Services. Under each one of these activities, the delivery systems of various inputs such as credit, extension, marketing, etc., have been covered. Further, each of these delivery systems has been studied against the organisational matrix or framework (four types) as well as delivery mechanisms (four dimensions).

The whole study has been presented in 14 chapters grouped into six parts. The study provides the conceptual framework for the delivery system and explains the scope of rural development. Subsequently, the delivery systems connected with various inputs of rural development have been analysed. At the end, perspectives and insights related to the delivery of inputs have been presented. The important finding of this study is that the environmental forces impinge upon the effective delivery of inputs, particularly to the poor. The existing power structure and the available infrastructure constitute the two such most important environmental constraints. The power base of the traditional land owning class and the traditional ways of the petty bureaucracy prevent the poor from availing the facilities available with the various agencies.

This fact has been clearly demonstrated by the authors with the help of co-operative credit, extension services and other infrastructural facilities. To reverse this trend, the authors have advocated the involvement of Panchayati Raj, co-operative and other institutions in the delivery of various inputs. In fact, there is no second opinion about this argument, which is very much in line with the current thinking. In other words, the rural poor, with their numerical strength can articulate their demands effectively through these institutions, provided there are regular elections.

The important drawback of this study is its scope. The wide canvass (1,600 respondents in four States covering numerous inputs under four activities of rural development delivered through four types of organisations

with four managerial dimensions) provided for this study not only misses the focus but also discourages the reader to go through it. The authors are well aware of this problem. However, they were forced to adopt a holistic approach under systems perspective to understand the complex character of rural development. This approach, according to the authors, has a special relevance in the context of many government policies and programmes for the benefit of the rural poor. Most of these are inter-related and would have wider implications on the quality of life.

The same logic has been extended to the inputs also. According to the authors, no amount of credit, even at the most reasonable rates, can guarantee higher productivity or income among the rural poor. Success in this respect depends on many factors, including the availability of complementary inputs and services such as credit, extension, other related inputs, etc. In the same manner, the study has gone beyond the scope of public delivery system, as a number of inputs are delivered through non-governmental organisations.

Whatever may be the rationality behind the arguments, the scope of the present study could have been narrowed down. This would have helped to appreciate the issues and problems with much more clarity to work out an appropriate organisational structure with minute operational details for improving the efficiency in the delivery systems of rural development. Nevertheless, the present study gives an opportunity to the social scientists, policy makers, administrators to understand the conceptual framework for the delivery system and to articulate perspectives and insights from this empirical data as well.

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*Financing of Kapas-Cloth System*, Gurdev Singh and S.P. Seetharaman,  
Indian Institute of Management, Ahmedabad; Oxford & I.B.H. Publishing  
Co. Pvt. Ltd., New Delhi, 1987. Pp. xi + 59. Rs. 36.00.

The Reserve Bank of India thought it necessary to formulate its overall policy for the supply of finance for the kapas-cloth system in the country. The study under review was commissioned with a view to meeting its requirement. It is based on information culled by the authors through their personal contacts with persons (numbers not known) engaged in the field of kapas-cloth system in Maharashtra, Gujarat, Punjab and Haryana States.

The first chapter outlines the focus of the study. The aspects of cotton production and consumption in India are discussed in the second chapter. The authors have made an important contribution to the study by way of estimating the share of institutional credit in the cost of cotton cultivation

(i.e., 40 to 50 per cent of variable cost). However, the quality of such estimates would have been more scientific had the authors based their assumption on some empirical studies.

The third chapter highlights the role of farmers, village and taluka traders, city lint traders, mills, co-operative societies, Maharashtra (Cotton) Monopoly Schemes (MMP) and Cotton Corporation of India (CCI) in the kapas lint sub-system. The study points out that although the share of private agencies in the cotton trade is 60 per cent only, city and taluka lint traders obtain institutional finance to the extent of 50 per cent of their working capital. The authors point out that the Selective Credit Control for this commodity has little relevance, whereas a large part of working capital of CCI and MMP comes from institutional source. Further, the authors maintain that the co-operatives are unable to utilise bank finance owing to the restrictions on lending to cotton. Therefore, they have proposed more flexibility in marketing credit to co-operatives to protect the interest of farmers.

The cotton processing sub-system (consisting of spinning and weaving) is discussed in Chapter 4. There is no problem of institutional finance for the mills. The only sufferers are the wholesale and the retail yarn traders. The decentralised powerloom and handloom sector (working outside the co-operative and handloom corporations) is also denied institutional finance. In the distribution sub-system (Chapter 5) institutional credit is not available to three types of intermediaries (wholesale, semi-wholesale and retail) engaged in the cloth trade. In the final chapter (policy issues), the authors conclude that there is a need to have an in-depth study of the entire kapas-cloth system to evolve a sound financial policy for the commodity under study.

There are a few minor errors in the book (on pages 4, 26, 30, 32 and 36). They could have been avoided through careful scrutiny of the book.

On the whole, this well-written slim book broadly educates a reader about the kapas-cloth system and the way in which the system is financed. However, the work could have been made more useful for the policy planners if the authors could have carried out a sample survey of cotton producers and traders in the major cotton growing States.

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*Farm Production in Rainfed Sub-Mountainous Punjab.* Rachhpal Singh, B.R. Publishing Corporation, New Delhi-52, 1987. Pp. vii + 349. Rs. 160.00.

The book attempts to examine farm production pattern and resource use, estimate the element of risk associated with individual farm enterprises, and evolve risk efficient production strategy for the farmers located in sub-mountainous region of Punjab where the unirrigated area accounted for



more than 55 per cent of the cultivated area. The analyses are based on both primary data collected from a sample of 165 farmers drawn from two less developed and two developed blocks of Hoshiarpur and Roopnagar districts for the year 1982-83 and secondary data collected from the Department of Agriculture for the period 1973-74 through 1982-83 for the existing level of technology and from Research Stations of Punjab Agricultural University for the improved level of technology. The analytical tools used in the study are coefficient of variation for calculating the degree of instability in gross margins (value of output minus variable cost) of various farm enterprises, the analysis of variance for examining the difference in the enterprise-mix and resource use due to farm size and block categories and parametric risk programming technique using MOTAD model for evaluating the performance of the alternative production strategies on each synthetic farm organisation by evolving risk efficient production plans for both the existing and improved levels of technology.

The analysis of variance indicates that certain farming characteristics, such as the percentage of cropped area allocated to some important crops, the number of cows (local) and goat (local) maintained per hectare, use of bullocks and working capital per hectare and intensity of cropping do not differ significantly in the three farm sizes and the two categories of blocks. On the other hand, it was observed that the small farms keep larger herds of buffaloes (local), earn higher level of gross margins and use higher level of human labour per hectare than the medium and large farms. The farmers of developed blocks obtained larger amount of gross margin per hectare and used resources more intensively than those of the less developed block.

The coefficients of variation of gross margins of various farm enterprises indicate that in the *rabi* season S 308/Kalyan Sona is the least risky crop in both the categories of blocks while gram (local) in the less developed blocks and barley (local) in the developed blocks are the most risky crops. Among the crops grown in the *kharif* season, sugarcane (Co 1148) in the less developed and *arhar* (local) in the developed blocks are the most risky enterprises while *mash* (local) in the former and sesamum (local) in the latter category of blocks are the most stable crops. Among the livestock enterprises, the income from buffaloes (local) is the most unstable while that from the goats (local) is the most stable in both the categories of blocks. At the aggregate level, instability in livestock enterprises was lower than the crop enterprises in both the types of blocks. Further, the income from the farming business as a whole was relatively more stable in the developed blocks than in the less developed blocks.

Among different alternative farming systems considered, the most stable production policy choice was found to be the crop-cum-cattle-cum-goat farming for the risk averters and the crop-cum-cattle farming alternative for the risk lovers for all the farm sizes in both the categories of blocks operating at the existing level of technology. On the other hand, the least risky choice for the improved level of technology was found to be crop-cum-cattle-cum-goat-cum-poultry farming system for the risk averters and crop-cum-cattle-

cum-poultry farming policy alternative for the risk lovers on all the farm sizes in both the categories of blocks.

The analysis in the book remains largely mechanical. However, the book demonstrates the possibility of increasing farm income in a sub-mountainous region, which has hitherto received scant attention from agricultural economists and planners. From this angle, it is an important contribution.

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*Rural Middlemen: Network of Patronage*, H.C. Srivastava and M.K. Chaturvedi, Ashish Publishing House, New Delhi-26, 1986. Pp. vii+136. Rs. 100.00.

The emergence of middlemen in the rural scene is relatively a new phenomenon which has come up in the post-Independence era following developmental planning. The peculiarity of the process is that it is not a process in which the local population is participant but the whole scheme has been conceived as something coming from above to bestow benefits to the people below. In such a highly centralised system of rural development and planning, the bureaucracy obviously gets the upper hand as they are to execute the schemes and dole out money so far as the welfare activities of the state are concerned. The vast illiterate and poor population is neither in the knowledge of what is being done, and more importantly, has no link with or approach to the bureaucracy for they have been alienated in the whole process. Thus in order to get something done or to be favoured with some benefit they need contact-men who could approach the bureaucrats and other people connected with developmental and welfare activities. These contact-men get things done for their clients and naturally they charge a price for it and are willingly paid by the clients. They are sought for because things can be got done only through them as they know the officials and have influence over them. They also have links with political parties and often join one or the other to carry greater influence. The political parties in turn need them as vote mobilisers and patronise them. The bureaucracy which, by and large, is self-seeking and is not committed, finds in the middlemen a more convenient instrument to get their palms greased. The bureaucrats are saved from making any direct demand from beneficiaries as it may be without grace and may also subject them to some trouble if the beneficiary reports about it to the higher authorities. Thus to get their cut money through the intermediaries is not only safe but it makes the operation smooth. The bureaucrat will patronise such middlemen, and those who do not come through them stand no chance of getting the favour. Thus there is a vicious circle and the two reinforce each other. It could have been broken only if there

is planning from below with active community participation and popular control which have been precluded from the very beginning.

Based on an in-depth study of 200 middlemen and their clients in four blocks of Varanasi district in Uttar Pradesh, the study offers deep insight into the working of the phenomenon in its various ramifications. The authors have also given detailed case studies of 14 middlemen connected with different activities like those who are go-between in the Integrated Rural Development Programme or those who help in securing loans from credit institutions or help in getting land revenue records in favour of their clients and so on. These case studies provide a vivid and graphic account of what is happening at the grass-root level and enhance our understanding of the rural reality.

The authors have done a commendable job in exploring a hitherto unexplored area and bringing to light the limitations of a developmental process in which the people below have been made redundant and the bureaucrats and middlemen rule the roost.

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*Voluntary Agencies and Rural Development.* I.S. Sundaram. B.R. Publishing Corporation, Delhi-52. 1986. Pp. xi + 311. Rs. 160.00.

The jacket and the Preface to the book under review spell out the theme, namely, that voluntary agencies do a better job than government departments in the sphere of rural development. The treatment, as it were, is said to be a panoramic view of the pros and cons of various rural development approaches. It is in this sense that the title of the book appears misleading. Nonetheless, the Contents' page clears the misnomer. The book is organised into eight chapters and the core appeared to be the second and third that deal with the voluntary agencies. A perusal of the book confirmed this impression since both the chapters conclude that rural development administration is far from satisfactory and, therefore, the role of voluntary agencies has greatly increased.

The concept and scope of voluntarism has attained added importance with a change in the Plan priorities. Subsequently, different types of voluntary agencies have emerged on the scene. According to their approaches and functions, the voluntary agencies can be of three types, namely, welfare oriented, relief and rehabilitation, and activist agencies. The book could have been richer had it provided a deeper insight into this theme. The concept needed a deeper analysis and perhaps Paulo Freire's Pedagogy of the Oppressed could have provided a suitable backdrop.

The Committee on Administrative Arrangements for Rural Development (CAARD) while suggesting an administrative set-up for rural development in the country visualised a key role for voluntary agencies in ensuring the

people's participation for developmental activities. The point that needs to be stressed indeed in a book on voluntary agencies, is the process of people's participation. Questions like *why* or *why don't* people participate need to be examined afresh. Further, questions such as *how* have certain voluntary agencies ensured people's participation; *what* are the pitfalls such voluntary agencies are likely to encounter, etc., are bound to be raised and the book could have easily provided a lead towards finding an answer. A fruitful discussion on the role of non-governmental organisations (NGOs) vis-a-vis voluntary agencies seems to have been inadvertently left out of the book.

The conscientisation problem apart, the most significant hurdle encountered by any voluntary agency is that of financial constraints. This problem is given insignificant commentary in the book. Financial resource mobilisation and their effective management are important enough to be discussed in a separate chapter.

Yet another shortcoming, especially in Chapters 2 and 7, in terms of the dynamic role of voluntary agencies is the absence of a discussion on the 'withdrawal syndrome'. The discussion on nearly half a dozen voluntary agencies could have also incorporated their experiences in this respect. Such a discussion would have enriched the ongoing debate on voluntary agencies.

The above-mentioned narration would have then perfectly blended with a discussion on the Bhagavatula Charitable Trust (BCT) in the seventh chapter. The discussion on BCT, though engrossing, lacks depth. An analysis of the socio-economic background of the Yellamanchili block and the process of planning would perhaps have given the needed bearing in this direction. It appears from the basic philosophy of the BCT that a bottom-up approach to planning is being attempted with three outstanding characteristics, namely, local leadership, close and complete attachment of a team of technical personnel and a motivated population. The Planning Commission document entitled Towards Improved Local Level Planning for Rural Development—Lessons from Some Experiences (1986) could have provided sufficient background material to develop this theme. A wider dissemination of the BCT's experience, as the Planning Commission rightly claimed, would have been useful to voluntary agencies, NGOs and others engaged in rural development activities.

Some of the questions that frequently emerge in the book are, *how* is it that voluntary agencies are superior to other forms of administration?; *are* voluntary agencies providing a parallel or an alternative administrative set-up for development work?; *how* do (if at all) voluntary agencies maintain a close vertical and horizontal integration in the administrative set-up?; *what* would be the future of voluntary agencies, given a realistic time frame of development objectives?; *does* a sustained growth of voluntary agencies imply that under-development must continue?; or *is* it that the development task is stupendous and therefore there is a growing need for voluntary agencies?; *are* voluntary agencies mainly concerned with rural development

administration alone? Unfortunately, the chapters in the book fail to examine these questions in any detail despite a wealth of information contained between the covers.

The outstanding feature of the book is that about 20 per cent of the print space is occupied by notes alone for clarification and further readings. The frequency of notes and quotations, on the other hand, is so high (35 notes and quotations on pp. 1-10) that it has made the reading of an otherwise topical issue very disruptive. It also becomes difficult to follow the argument of the author and/or establish an interface between two arguments supposedly being made by the author. The fall-out of such an excessive use of quotations, as opposed to a selective use, is reflected in unsubstantiated and repetitive arguments (pp. 33-42; 59-63; 85-88; 90-95 and Chapters 4, 5 and 6). Subsequently, it becomes a task in itself to identify the author's own contribution to the book.

The book, on the whole, could be seen as an attempt to document the role of various voluntary agencies in rural development, while it fails to provide the much needed conceptual framework for such an analysis. It would have been a more interesting and readable book if internal inconsistencies (pp. viii and ix), inadequate discussion, typographical errors and profuse use of quotations and notes had been avoided.

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*Distribution and Consumption of Diesel Oil in Agriculture*, P.K. Upadhyaya,  
Mittal Publications, Delhi-35, 1985. pp. xii+15. Rs. 85.00.

The book attempts to provide a comprehensive analysis of distribution and consumption of diesel oil in agriculture with an assessment of its demand at farm, block and district levels as well as relative costs involved in diesel oil, electricity, gohar gas and wind power in lift irrigation. It is divided into six chapters. The first chapter sets out the problem, sampling method, schedules, and method of information collection. The importance of distribution of diesel is reviewed emphasising the close relationship between the demand and supply as well as black marketing.

The second chapter focuses on the problem of diesel oil distribution. This chapter classifies the distribution system into three types, namely, (i) free market, (ii) controlled market, and (iii) a combination of free and controlled market. Further, the author discusses the distribution under the rationing system, supply of diesel oil in relation to its demand, price elasticity of demand for diesel oil, control over supply and the allocation system theoretically. A brief sketch of rationing system in Gonda and Gorakhpur districts of Uttar Pradesh is also given in this chapter. Practically, the authors have further elaborated on ration quota, time wasted in the purchase of oil, quantity and time interval of supply, the network of distribution system and

thus evaluating the rationing system with the theoretical model of free marketing system and a system of dual pricing.

Chapter 3 presents the methodology of the study for assessing the demand for diesel oil at the farm level in which different concepts, method of analysis and practical applications have been demonstrated. Different concepts, such as gross cultivated area by a crop, the number of irrigations to a crop, gross irrigated area per household, etc., are explained with practical examples. Furthermore, three models, namely, (i) norm method, (ii) regression model A and (iii) regression model B are discussed and the demand for diesel oil by these three models has been estimated step by step. However, the requirement of diesel oil for tractor is calculated separately.

In Chapter 4, the demand for diesel oil is estimated at the block and district levels, assuming certain growth rate. Chapter 5 contains a comparison of the relative costs of diesel oil, electricity, gobar gas and wind power in lift irrigation. The merits and demerits of each source of irrigation are also discussed.

The last chapter summarises the results of the study. The bibliography given at the end is indicative of the fact that the author has drawn heavily on data from various published and unpublished sources including the survey conducted by him. The summary and conclusions at the end highlight the lesson from past experiences and present the guidelines for the future. The authors have made a number of suggestions for giving a proper orientation to the subject under consideration.

However, there are a few observations made by the author that merit a critical comment. The author is of the view that if the price of the diesel oil was fixed very high, the farmers would select those crops which require little water. This may not be so as the irrigation cost is a small component of the total cost spectrum and the farmers do not bother unless the price hike is manifold. The shift in area under a crop takes place due to its relative net margin and not due to an increase in the price of an input. Price elasticity of demand for diesel oil is practically inelastic. Further, the concept of price elasticity of demand is not appropriate in black market. It is useful when the forces of demand and supply are allowed to interact freely.

In many tables, standard deviations have been worked out. Neither this statistical tool was needed nor any conclusion has been drawn from their values. Further, the comparison should be based on per crop hectare instead of villagewise or housewise. The author has coined some new terms which are not common in economic literature, such as gross cultivated area, farming intensity, gross irrigated area under a crop, correlation matrix instead of gross cropped area, intensity of irrigation, zero-order correlation matrix, etc.

Another suggestion relates to the growing of vegetables and seasonal pulses to increase the intensity of cropping but their marketing and profitability aspects have been ignored. The methodology chapter is quite informative from the engineering point of view. No doubt, the author has estimated the coefficients from the models, but has not explained their

signs and the values which are not in line with the economic theory. Besides, there are many calculation errors. There is some repetition also. The book could have been written in a rather concise form.

These comments, however, are no reflection on the quality of the work. The book is quite interesting and is useful for the researchers who are interested in the estimation of energy demand which is a burning topic of the day. It should be of great value to the students in the disciplines of economics, engineering, social sciences and energy.

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*Impact of Agro-Based Industries on Rural Economy (A Case Study)*, V. Venkaiah, Himalaya Publishing House, Bombay-4, 1987. Pp. xxi+348. Rs. 175.00.

Strategies for overall economic development determine the role of agriculture during various phases of national development. And the same is applicable to agro-industries. During the independence days, following the Nilokheri township experiment, a model for rural development was envisaged to stop the one way flow of labour, materials, skills and culture from villages to town. The scheme envisaged a nucleus township, around an agro-industry, linked with the surrounding villages forming an economic as well as administrative unit and providing various social welfare and recreational facilities. Pandit Nehru at one stage observed: "I want 9999 Nilokheries to implement the message of Nilokheri" and appointed a committee (Shri Narialwala as chairman and S.K. Dey and Douglas Ensminger as members) to study the Nilokheri project and examine the possibility of its duplication. The committee strongly recommended adoption of agro-industrial economy for the development of rural areas (Government of India, 1973; Ensminger, 1972). Somehow this model did not fit into the overall strategies then formulated (see Gaikwad, 1985). Instead a low cost, non-industry oriented community development programme designed by the then American Ambassador, Chester Bowles (1954) and financed by the U.S. Government was adopted. At that stage reasonable self-sufficiency in food and other necessities of life to the extent possible without affecting the development of basic industry infrastructure was the role assigned to agriculture. Pre-determined level of food production, storage and distribution of land resources were the priority areas. Certain commodity based agro-industrial co-operatives as for milk and sugar were no doubt encouraged. Traditional agro-processing for paddy,

cotton, jute, etc., continued. However, there were no major policy directives and strategies for accelerating growth and development of farm-industry linkages.

All these years, following government policy, social science research was primarily concentrated on issues related to foodgrain production and land reforms and distribution. Little attention was paid to the farm-industry linkage concept which is now becoming increasingly relevant.

Recently, Dr. Alagh mentioned that following the Prime Minister's directives, the Planning Commission has formulated a scheme under which, among other things, higher investment and policy priority will be given to agro-processing (Alagh, 1988). The World Bank has also launched a number of studies on the subject. The National Bank for Agriculture and Rural Development, which was so far refinancing only village and cottage industries, has now introduced a scheme for refinancing agro-industries upto Rs. 3 crore. Some of the concerns expressed by Alagh and also by others about agro-processing industries are: the extent to which agro-processing industries (i) are linked with the farming operations; (ii) increase the net income of primary producers; (iii) generate local employment; (iv) contribute to development of dynamic rural institutions; (v) reduce rural-urban migration; (vi) operate as a dynamic engine for development of the region; and (vii) contribute to the growth of entrepreneurship in the rural areas.

The importance of the book under review is that it covers most of these areas through a case study done in Andhra Pradesh some ten years back. This is an intensive study of four selected villages covered by four different types of agro-based industries, namely, sugar factory, rice mills, tobacco processing and khandsari sugar factory. The author has studied systematically the changing patterns of employment, occupations, wages, incomes, migration, etc., in the rural areas, because of the setting up of these industries. While the first eight chapters provide the basic data and analysis on each of these topics, Chapter 9 gives a consolidated picture of the role of agro-based industries in rural development. Some of the findings of this study are worth reporting.

Capital (investment) employed in the four sample industries (in 1978) varied considerably: sugar factory about Rs. 454 lakhs, rice mills Rs. 49.8 lakhs; tobacco processing Rs. 10 lakhs; and khandsari sugar factory Rs. 15 lakhs. The number of man-days of direct employment (permanent and seasonal) generated by these industries was 1,03,920, 2,51,241, 1,37,964 and 36,490 respectively. The employment pattern differed depending upon the nature of agro-based industry. While some industries provided larger permanent employment (*i.e.*, rice mills and sugar industry), others created more seasonal employment (*i.e.*, tobacco processing and khandsari sugar industry). While the rice mills and khandsari employed the largest number of unskilled workers (about 80 per cent), in the tobacco industry almost all workers (98.94 per cent) were skilled workers.

The author has also looked into indirect employment (secondary and tertiary sectors). The changes in the cropping pattern consequent upon the setting up of agro-industries resulted in the creation of substantial additional



employment in the farm sector. Sugarcane created more additional employment opportunities followed by tobacco. However, in khandsari sugar factory village there was a substantial decrease in employment (20.34 per cent) when sugarcane replaced guava orchards. The latter required a larger number of man-days of labour (960 man-days) than the former (265 man-days). The total employment created in the tertiary sector in the four villages was 215 man-days. It was highest in sugar factory village (112) followed by the village having rice mills (74), tobacco village (23) and khandsari village (6).

These industries created significant changes in the occupational pattern. The impact was most pronounced on the occupational position of agricultural workers and the least in the case of agriculturists. This was because of the entrepreneurship of agro-based units (especially rice mills and khandsari) by rich agriculturists and because of employment of agricultural workers in unskilled jobs in all the four industries. The occupational status of women workers improved perceptibly in the tobacco industry since the employment opportunities provided by the tobacco industry were availed of only by women workers.

These industries substantially increased the wage rates for different agricultural operations. The increase was more pronounced in the case of women and child labourers than in the case of men. The wage differentials were reduced among casual labourers—men, women and children—to a large extent. However, the wage differentials cropped up between agricultural workers and agro-based industrial workers. These were highest (83.75 per cent) where the rice mills were established and the least (42.29 per cent) where tobacco processing was established.

The impact of these industries was significant on the income levels of all categories of rural population. The increase in income was more spectacular in the households of agricultural workers and workers employed in these industries.

The impact of these industries on migration was also very significant. The author has very systematically classified and analysed migration under rural-rural, rural-urban and urban-rural, and under white-collar, skilled and unskilled workers categories. In addition, he has covered migration of workers for employment in these units, in associated agricultural sector and in tertiary sector, as well as migration of entrepreneurs for the establishment of these units. More than three-fourths of the workers employed hailed from the same district in which the units were located. The majority was from the same village or town in which the units were located. The percentage of workers hailing from the rural areas in rice mills, tobacco unit, khandsari unit and sugar factory was 70, 66, 98 and 46 respectively.

The author has also provided an idea of the overall impact of these industries at the micro level (especially on the tertiary sector, *viz.*, banking, transport, communication, hotel business, construction, recreation, education, etc.) as well as at the macro level.

All these findings will be very useful for agricultural and rural development planners and policy makers. Since the impact of agro-based industries vary according to the nature, size and location of the industry, the country needs many more studies of this kind covering other agricultural commodity processing industries. In addition to what the author has covered, these studies should pay a little more attention to financial issues such as sources of funds, working capital requirements, distribution of profits, value addition to raw material, percentage of costs (raw material, labour, capital and management) in the total cost of product, potential for associate and by-product processing, and its likely impact, and extension, credit and marketing linkages between industry and farm.

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