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Book Reviews

Agricultural Price Policy and Production in India, 1956-1990, Sitesh Bhatia, Konark Publishers Pvt. Ltd., Delhi-92, 1991. Pp. ix+221. Rs. 150.00.

Price level of a commodity is an important factor in influencing the resource allocation decision of farmers. But in subsistence agriculture and in areas characterised by poor infrastructural facilities and under climatic uncertainties, farmers may not respond to price stimuli. Removal of these constraints would help to motivate farmers to respond to price changes. These issues have been investigated by several researchers.

The book under review is an extended version of the author's doctoral dissertation in Economics submitted to the Jamia Milia Islamia, New Delhi. The subject matter of the study is the role of agricultural pricing in India since 1956 in the production of agricultural produce. Based on the empirical evidence of the farmer's supply response, a critical evaluation has been made of the impact of price policy changes on production in respect of five important crops, namely, wheat, rice, cotton, jute and sugarcane.

The book, which covers the twists and turns of the agricultural price policy in the country over the last 35 years, is divided into eight chapters. Chapter I, besides presenting a good review of the past studies, discusses in a comprehensive manner the role of price policy, objectives of price policy, instruments of price regulation, etc. Chapter II deals with a general survey of food and price policy and policy alternatives. The chapter also explains the background that led to the setting up of the Agricultural Prices Commission and the Food Corporation of India in 1965. The Commission, which has since been re-designated as the Commission for Agricultural Costs and Prices, is required to advise the government on the price policy of important agricultural commodities on a continuing basis with a view to evolving a balanced and integrated price structure in the perspective of the overall needs of the economy. The Food Corporation of India, a public sector agency, was made responsible for implementing government price policy through market intervention and public distribution operations. The Cotton Corporation of India and Jute Corporation of India which were later set up were made responsible for providing price support to cotton and raw jute respectively and also for stabilising their prices. Chapters III to V deal with the issues and methodology of analysis relating to farmers' supply response of foodgrains and commercial crops. Chapters VI and VII dealing with the agricultural price policy in retrospect cover the foodgrain crops and commercial crops respectively. In Chapter VIII, the author presents the conclusions of the study.

At the outset, this reviewer has no comments on the methodology used in the empirical analysis. However, we do not agree with the conclusion arrived at in the case of wheat that extension of irrigation and new technology are the more important factors in determining the area and output of the crop than the price. It may be mentioned in this context that together with the upgrading of technology and delivery of inputs and services, it is equally important to maintain a favourable price climate through fixation of minimum support price. This minimum support price is perceived by the farmer as a guarantee from the government and is meant to enable the producer to pursue his production efforts with the assurance that the price of his produce would not be allowed to fall below the level fixed by the government. Such a minimum support price is fixed at a level to induce the farmer to make capital investment for the improvement of his farm and for expanding the use of modern inputs to

step up his production and thereby his net income. While remunerative prices stimulate investment for increasing output, the availability of factors like high-yielding varieties of seeds, assured and controlled supply of water, etc., has greater impact on productivity.

While presenting the conclusions of the study, the author advocates that the terms of trade need to be improved in favour of the farm sector by allowing agricultural prices to rise in proportion to the rise in the prices of the commodities purchased from the non-farm sector. There can not be any objection to the suggestion that the terms of trade be improved in favour of the agricultural sector, but so long as there is no control on the level of prices of inputs purchased by the farm sector, an increase in the prices of agricultural commodities by itself may not achieve the desired parity between agricultural and non-agricultural sectors. However, it must be stressed that the concept of terms of trade cannot be mechanically applied for the purpose of price fixation. In an agricultural economy, susceptible to vagaries of rainfall, fluctuations in production are too frequent and sometimes too severe to permit a stable link between prices of agricultural and non-agricultural commodities. In fact, the stability of terms of trade is a medium-term concept which cannot be applied to year to year fluctuations. It is only when the terms of trade remain adverse for any sector for a number of years in succession that a corrective action may be called for. The terms of trade can also undergo change because of differential rate of productivity growth in the two sectors. The impact of adverse movement in terms of trade can be mitigated by increasing productivity in the agricultural sector. Therefore, for accelerating the growth in the productivity of agricultural commodities, what is more important is to maintain a favourable price climate for motivating the farmers to make larger investments in yield raising infrastructure, such as irrigation and use of modern inputs. Hence, the complementary investment by the public sector along with the provision of a favourable price climate will help the farmers to generate enough investable surplus, thus making private investment in farming more profitable in comparison with its opportunity cost. On the whole, the book is well written and will be welcomed by agricultural economists. In particular it should prove useful for researchers in agricultural price policy.

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Poverty, Inequality and Prices in Rural India, Nikhilesh Bhattacharya, Dipankor Coondoo, Pradip Maiti and Robin Mukherjee, Sage Publications India Pvt. Ltd., New Delhi, 1991. Pp. 236. Rs. 195.00.

This book, authored by four economists from the Indian Statistical Institute, Calcutta, some of them are also very distinguished econometricians, is a remarkable analytical study on poverty and inequality in rural India. It provides a careful and perceptive analysis of inter-temporal changes in poverty and income distribution in India. On the back drop of a very lively debate presented in the earlier studies in this area by some distinguished scholars, a comprehensive study of this type is long awaited.

In an inter-temporal study like this, the analysis of relative price changes in India should be in the forefront as it is rightly attempted in this study. Given the positive rate of inflation

during the period under study, changes in the relative commodity prices and prices at which essential commodities are available to poorer sections of population can have effect on the standard of living of people in low income groups in rural India. An important contribution of this book in this context is an attempt to build decile groupwise price indices for 'food' and for all commodities (decile groups have been formed by arranging the sample households in the National Sample Survey enquiries in ascending order of per capita total consumption expenditure) using data available from different sources. Estimates of these price indices show an appropriate five-fold increase in food prices with the upper decile groups experiencing a relatively larger rise than the lower ones during the period 1954-55 and 1973-74. However, in the case of 'all commodity' index, it had risen more sharply for the poorer sections than for the richer ones. It is also found that in the case of rise in the prices of cereals, people in the lower decile groups were affected more adversely than the richer people. This pattern of changes in prices can have repercussions on the living standards of poor in India and, therefore, the estimates of price indices obtained, as expected, form important inputs for the analysis of inter-temporal changes in the poverty and inequality in India in the succeeding chapters of the book.

Analysis of trends in the levels of living of the Indian rural population attempted in the book provides evidences for the indictment of Indian government for the failure of its policies to improve the living standards of poor in India. Estimates of poverty indices like Head Count Ratio (HCR) and Sen's index for the period covering the early fifties and the early eighties show that there is neither a substantial improvement nor a significant deterioration in the standard of living of the poor people in India. The Head Count Ratio never fell below 40 per cent during this period.

Another very useful contribution of this book is the analysis of regional disparities in the incidence of poverty in rural India. The interesting finding of this analysis is that the patterns of inter-temporal movements in the incidence of rural poverty at the all-India level are broadly similar to the patterns observed in the individual states. This finding lends support to the all-India level studies on the incidence of rural poverty and the design of public policy relying on such studies. Differences in the incidence of rural poverty across the states can be attributable to a certain extent to differences in the commodity prices in general and food items in particular. It is found in this book that trends in the general price level varied somewhat across the states. The food price index is generally higher than the general price index for all the states. The calculated price indices for cereals and cereal substitutes are broadly similar to the price indices for food and the general price index. However, there are inter-state variations in the indices which are more pronounced during the late sixties and the early seventies.

Changes in the levels of living are examined in terms of real per capita consumption expenditure (PCE), per capita real expenditure on food and on cereals and cereal substitutes and Engel ratios at current and constant prices. The PCE at current prices has shown different rates of growth for different states and also for various ordinal groups of population considered. An interesting result is that in most of the states, the rise in PCE at current prices was faster for the poorer sections than for the richer sections. However, there was no clear trend observed for either the real PCE or real per capita food expenditure over the period 1957-58 to 1983 for any population group in many states, except perhaps for the bottom decile groups in Punjab and Haryana. Also, the declining time trend found in Engel ratios

associated with an absence of trend in the real PCE for all the population groups in different states runs counter to Engel law.

A model presented in Chapter 5 of this book for identifying the determinants of rural poverty and its empirical verification for India has established an inverse relationship between the incidence poverty in rural India and the growth of foodgrain production (especially that of cereals) and the procurement of cereals for public distribution. This study is a logical extension of some of the earlier studies on this subject (to a disaggregated level) which have found an inverse relationship between the over time movements in the incidence of rural poverty and per capita real agricultural income both for India as a whole and for some selected states. Since one can expect that the growth in real agricultural income is positively related to the growth in grain production, the inverse relationship found in this book between the incidence of poverty and the growth in cereal production lends support to some of the earlier studies. The identification of significant inverse relationship between the cereal production alone and the incidence of rural poverty at the all-India level is an important finding for pinpointing the determinants of rural poverty at a disaggregated level. However, this reviewer fails to understand why the authors of this book did not attempt this analysis for certain selected states. The presence of public distribution system in India may result in a significant inverse relationship between the incidence of rural poverty and the availability or supply of cereals in a state even though a weaker relationship is found between the incidence of poverty and the production of cereals in the state. An empirical establishment of such a result may provide support to the public distribution policy in India.

Finally, it may be useful to provide a brief account (at the cost of over-simplification) of the analytical model of determinants of poverty presented in this book, before offering some comments on the same. As is normally considered, the incidence of poverty measured in terms of head count ratio is defined as a function of per capita consumer expenditure (Y) and the Lorenz ratio of consumer expenditure (LR):

$$\text{POV} = F(\bar{Y}, \text{LR}), \quad \frac{\delta F}{\delta Y} < 0 \text{ and } \frac{\delta F}{\delta \text{LR}} < 0.$$

Estimation of a linear equation using Indian data shows that the coefficient of LR is significant when it is introduced with \bar{Y} . However, in the subsequent development of the model, the authors prefer to drop LR.

Supported by the evidence that cereals constitute 60 per cent of consumption of the bottom half of the population and 40 per cent of the rural population, it is set out to develop a model to establish a relationship between poverty and cereal consumption. Demand functions for cereals are considered for four groups of population, viz., cultivators, agricultural labourers, non-agricultural workers and urban population.

$$C_i = C_i(Y_i, p), \quad i = 1, 2, \dots, 4$$

where C_i , Y_i , p represent respectively cereal consumption and income for the i -th group of population and the relative price of cereals. Incomes of cultivators and agricultural labourers, Y_1 and Y_2 are defined as functions of cereal production (q):

$$Y_1 = Y_1(q)$$

$$Y_2 = w.e$$

where w is the average real wage rate and e is the average number of days of employment of an agricultural labourer in a year. It is further assumed that

$$w = w(p, q, q_{-1})$$

$$e = e(q, q_{-1})$$

where q_{-1} represents production of cereals with one year lag. As a result, we have

$$Y_2 = Y_2(p, q, q_{-1})$$

Finally, rural demand for cereals is estimated as

$$C_r = C_r(p, Y_1, Y_2, Y_3)$$

$$= C_1(p, q, q_{-1}, Y_3)$$

Therefore, poverty is given as

$$POV = \psi(p, q, q_{-1}, Y_3)$$

Assuming that the marketable surplus of cereals in the rural sector is catered to meet the urban demand for cereals which in turn depends upon urban income, Y_4 , an inverse relationship between urban income and rural poverty is hypothesised.

$$POV = \phi(q, q_{-1}, p_{-1}, Y_3, Y_4)$$

where p_{-1} is the relative price of cereals with one year lag. Finally, the model is extended to identify the effect of public distribution of cereals on rural poverty in India to get

$$POV = \pi(q, q_{-1}, p_{-1}, Y_n, l_{-1})$$

where l_{-1} is the quantity of cereals procured with one year lag and Y_n is the average of Y_3 and Y_4 . Empirical verification of this model for rural India has unequivocally established that POV is inversely related to cereal production, procurement of cereals for public distribution and directly related to the relative price of cereals and non-agricultural income.

The main limitations of this model, to my mind, are as follows: (i) unintuitive positive relationship between the rural poverty and non-agricultural income or urban income. Increase in urban incomes beyond certain levels may not necessarily lead to increased demand for cereals in the urban sector; (ii) lack of convincing reasons to drop Lorenz ratio in the poverty estimation even after it is found in the first instance that its effect on poverty is significant along with the per capita consumer expenditure; and (iii) intuitively one can expect a negative relationship between poverty and cereal consumption in rural India as

established in this study. However, inclusion of supplies of other foodgrains like pulses, oilseeds, etc., in the model might have yielded the same relationship between poverty and foodgrain supply in general.

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Agricultural Development, Price Policy and Marketed Surplus in India (Study of Green Revolution Region), Ramesh Chand, Concept Publishing Company, New Delhi, 1991. Pp. 128. Rs. 100.00.

The book is a revised version of the author's doctoral dissertation. The major task accomplished in the book is estimation of output supply and factor price elasticities for four major crops in Punjab. Besides, the study estimates the elasticities of marketed surplus. Since the book is based on the dissertation, its scope is also narrowed to estimation of price elasticities and interpretation of these estimations; and it does not have much to offer on the agricultural development issues in a broader perspective; nor does it address the other key problems facing Punjab agriculture. But looking to the title of the book, one expects much more on agricultural developmental and price policy issues in Punjab.

Nevertheless, the author deserves appreciation for his efforts in estimating several econometric equations under the profit function framework. In Chapter 2, the author has done a good job of critically reviewing the concepts, methods and models used in estimating the supply and factor demand functions. Like many other authors, the present author also upholds the superiority of profit function approach with his justification for preferring the Normalised Quadratic Profit Function because of its theoretical niceties and overcoming the econometric problem of simultaneous equation bias. Overall, it is a good piece of work which will be particularly useful for postgraduate students of agricultural economics, the researchers and teachers working in the subject area of agricultural price analysis. The elasticities estimated enhance further our understanding of the farmers' responses to factor and product price changes.

The profit function approach assumes the profit maximising behaviour of farmers which is fundamental for going in for this framework. In the present study, the output price variable is the current year's realised price of farmers which may not truly reflect the farmer's expected price which is a crucial variable for any of the supply response studies. This is where the Nerlovian model scores over the other models in estimating supply elasticities. For example, the expected price may be one year lagged price or any other, as has been formulated in many other earlier studies. Further, the variation in prices in a price variable in a cross-section data is little, that too in a state where the monopoly procurement is in operation. This is one reason for the lower magnitude of estimates of price elasticities of supply in the present study which may, in our view, lead to only partially right conclusions. For example, the author concludes that "a weak relationship between output and prices exists in Indian agriculture for any given level of technology". One should be more cautious in agreeing to this conclusion as the elasticity estimates are highly sensitive to the definition of variables and approach to estimations.

It is theoretically shown that the elasticity of output with respect to price is the sum of

the elasticity of acreage and elasticity of yield (Askari and Cummings, 1977; Ramasamy, 1979). Hence estimating acreage and yield elasticities through Nerlovian method will give a more realistic magnitude of output response to price changes. The 'F' statistics (p.73) reveals that the hypothesis that farmers are profit maximising agents in the process of crop production was rejected. This conclusion, basically, saps the very foundation on which profit function approach is preferred to estimate supply elasticities.

Further, the author does not attempt to explain the possible reasons for certain phenomena emerging out of the analysis. For example, it is revealed that the negative employment effect of fertiliser price in *rabi* crops indicated the existence of complementarity between human labour and fertiliser, but in *kharif* crops, the fertiliser emerged as a substitute of labour. Why? It may be due to some agronomic and environmental factors. This kind of contradictions in the results need explanations which could be based on the researcher's local knowledge or by interacting with the other agricultural researchers of the region. After all, science aims to understand the existing phenomena.

The author is of the view that the asset fixity contributes to weak relationship between output and prices. The statement is not tenable for it may be true for perennial crops or such enterprises as large dairy units and not for crops having a growing period of four months such as wheat or rice. The author compares the responsiveness of marketed surplus and output supply to prices. It may not be of much relevance because the two estimates were obtained under two different frameworks or analytical methods. Expanding output supply is conditioned by many more factors than marketed supply. Further, if the farmers part with more of what is produced, when prices increase, what do they do for their own consumption and seed requirements? How do they manage in such situations?

To conclude, the book is a good one given the condition of the revision of a dissertation. The author deserves all appreciation for approaching the study using the profit function approach, a departure from the earlier supply response studies. The study certainly adds another dimension to the subject area of agricultural price analysis.

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Production and Marketing of Oilseeds and Pulses, A.K. Dey and B.N. Banerjee, Mittal Publications, New Delhi, 1991. Pp. 132. Rs. 195.00.

The book under review which has grown out of a Ph.D. dissertation provides a valuable insight into the operational problems of the oilseeds and pulses sectors of our economy. The inadequacy of the growth of production of oilseeds and pulses to meet the growing demand and the consequent instability and the highly sensitive and speculative nature of markets are the major concerns which affect both the producers and the consumers in the country. The limitations of the earlier studies to investigate the factors that affect the behaviour of supply, demand price, price variation prompted the authors to undertake the study.

The book is spread over eight chapters. Chapter 1, which is introductory, presents the objectives and organisation of the study. Chapter 2 provides a somewhat detailed overview of the literature. Chapter 3 explains the nature of the area of study, and the methodology

used for the investigation. Chapter 4 deals with the growth pattern of area, yield and production of these crops. Another chapter examines the role of different factors in the allocation of area for these crops. The next chapter examines the role of various agents in the ultimate marketing of these products. In fact, the basic objectives of the study are to decipher the factors that affect the production of oilseeds/pulses and also to project the shortcomings of the present marketing infrastructure as operating in this area. The last chapter summarises the findings and brings out the policy implications of this study.

In fact, West Bengal does not occupy any significant place in terms of acreage and yield of these crops. An analysis of the trends in respect of production, yield and acreage in India, West Bengal and Burdwan indicated that oilseeds and pulses did not establish any convincing breakthrough. A strong declining trend for pulses in most of the districts of West Bengal was also exhibited, accompanied by wide fluctuations. Even though there has been a sharp rise in the prices of oilseeds and pulses, as compared to prices of other competing crops over the years, the prices failed to influence production on a satisfactory scale. This may be due to the fact that people's rational expectations and perfect predictability power about future prices might be blurred by sharp fluctuations in prices, and so, rise in prices would be of no help in influencing production.

Another revealing aspect of the study is that different agents play dominant roles in the marketing of these crops. The present structure of marketing of these crops is found to be controlled by oil-millers and traders and it is not found to be conducive to the interests of the farmers and consumers. This is because both oilseeds and pulses require elaborate processing, unlike wheat and rice; and marketing of these crops is smaller in terms of quantity of transaction.

The study should have suggested that irrigation, marketing and credit factors - instrument variables - ought to be properly utilised in conjunction with appropriate extension policies to further augment both area and yield rate of these crops. The situation in marketing obviously highlights the need for marketing reforms through government intervention.

The book has a long list of tables supported by graphical presentation that makes the reading interesting. It provides an exhaustive list of reading materials. However, the title of the book is somewhat misleading as it attempts to explain the problem of production and marketing of crops in Burdwan district. Even the whole of Burdwan district has not been covered, so the work is limited in its impact and does not deal with the problem in the country as a whole. The authors might have developed a recursive or other rigorous dynamic econometric model to estimate the parameters of the various relations such as acreage response model based on Nerlovian adjustment lag model in order to capture the different features of these sectors. Proper editing has not been done; the text is replete with grammatical and spelling mistakes which could have been avoided. The mechanical presentation of the results and the lack of conceptual clarity disappoint the readers. The price of the book seems to be high.

All said and done, this monograph, on the whole, is a welcome addition to the literature of agricultural economics. It will be useful to the students, researchers and the policy makers.

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Rural Development in the Third World, C.J. Dixon, Routledge, London and New York, 1990. Pp. viii+123. £ 7.99.

This short slim but solid book on Introduction to Rural Development would serve the purpose of a textbook at the undergraduate level. It is written with great conceptual clarity and explains each and every basic or "Key Ideas" associated with the subject of rural development. Adequate and appropriate use of the tables, graphs, figures and even photographs not only enhances the utility of this small well printed book but also helps a lot to convey the complex argument behind the specific point in rural development. Despite the limits of space, case studies in boxed frames are also presented. However, the most notable aspect of the book is comprehensive coverage in a compact form without sacrificing the content as well as the quality of the argument.

The book is divided into seven chapters. The first three chapters are devoted to explain the characteristics of rural sector, its technical production system and the rapid rural changes faced by the traditional rural system. In view of the significance of the problem, a complete chapter is devoted to the central problem of rural economy, *i.e.*, "Rural Poverty". The next two chapters are devoted to the discussion of various aspects of rural resources, redistribution of resources and productivity and modern agricultural technology, *i.e.*, green revolution. The last chapter is an attempt to assess the rural development performance and alternative approaches to rural development in the context of the third world.

Though the book is addressed to rural economy, most of the discussion has revolved round the *agricultural sector*. The non-agricultural sector is completely ignored. Some other vital determinants of rural development which are now obvious in developing countries such as the role of non-governmental organisations and banking sector also do not appear anywhere and thus the book provides inadequate introduction to the readers. Those who are introduced to the subject of rural development could have been benefited more by a brief historical account of development experience of the world and the third world prior to the advent of the rural development through the World Bank. The concept of rural development based on the World Bank status paper is not adequate, some other useful concepts also could have been stated to complete the discussion. Some of the data presented in support of the analysis and facts are rather old and outdated. The statement, "Even in India during 1990's more than 20% of the increase in cereal production resulted from expansion of the area planted", seems to be doubtful. Finally, it is true that there are fundamental differences between China and the rest of the third world; however, despite these, there are some approaches and style fixing priorities which could still be adoptable by even the non-communist countries and therefore to ignore the Chinese rural development totally detracts from the value of the book.

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Operation Flood and the Voluntary Sector: A Study of Tribal Dairy Co-operatives in South Gujarat, F. Franco and P.G. Vijaya Sherry Chand, Indian Social Institute, New Delhi, 1991. Pp. x+238. Rs. 100.00.

There is no exception to Operation Flood (OF) project as well as its credentials in creating almost a revolution at grassroot levels through dairy development programmes in the country. Nonetheless, claims and counter-claims of the agencies and by various others are only helpful to see a greater reality on the ground. Here is another book that has provided some evidence to highlight the limitations of a project at a grassroot level in the context of a region and a community. At the same time, the book has provided an account of sound and rigorous analysis and action for a development programme, which is, of course, a rarity.

The special features of the book are: (a) A clear and well articulated development framework through which the study has been carried out. (b) The innovations adapted with greater clarity of purpose and its implementation by the non-governmental organisation (NGO). (c) Utilisation of the existing development infrastructure for implementation. (d) The account of harsh realities of a community, their living conditions and the socio-economic environment. (e) Conclusions drawn from research and action.

The study has also come to the conclusion that OF's claim that it is a beneficial development programme (at least in the context of a given tribal economy) has not been totally validated. In coming to this conclusion, the researchers have not only shown skills and understanding to explain the process of development in a tribal economy but also tested the claims of OF through a well developed framework. The innovation of this study, however, is its methodological clarity of evolving a matrix of significant variables and developing an action plan to help support the development project and of course the people. But then it was realised that even the NGO's efforts could be of help upto a certain limit. The degree of investment on education and animal health project (AHP) by the NGO had, of course, its desired effect on the project.

"Dairy farming does not really affect poorest sections of the tribal community" bears out to be singularly an important conclusion of this study. But it has also pointed out "a painful transition period in which the community both adapts and preserves its mores and norms. Here the NGO's have a crucial role to play". In this sense, OF has much more contributions to make than otherwise and the authors have rightly concluded: "The failure of OF is more painful because of its potential in a situation where other development alternatives are hardly available." Thus the responsibility of the designers of such programmes appeared to be more critical.

All said and done, OF is a well articulated and streamlined programme with a strong organisational and marketing network, with its stress on technology and with great support of an apex organisation like the National Dairy Development Board that many development programmes lack. Probably, what is required is the support of NGOs and other developmental organisations in areas where co-operatives may not directly benefit the people.

The book will serve a great purpose for those who are development minded, and those who have concerns for both research and action will find this book useful for its precision as well as its concerns. Some of the following features of the book are noteworthy: (a) a careful analysis of socio-economic context with a delineation of factors; (b) a conceptualisation on the basis of field research and the action contemplated to influence the course of

development; (c) juxtaposition of development orientation of a project with measures to test its validity; (d) a candid expression of concerns but with a realistic outlook of development; (e) a scholarly and orderly treatment of the subject.

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D. Nagabrahmam

Measurement of the Impact of Agricultural Output on the Market for Manufacture,
A. Ghosh, Anusree Sinha, Debesh Chakraborty and Sudhir Bhattacharyya, Himalaya
Publishing House, Bombay, 1991. Pp. 302. Rs. 275.00.

The interrelationship between agriculture and industry has much exercised the minds of development economists all over the world. Given that the issue is not without historical importance, having figured so prominently in the Soviet industrial debates centering on the personalities of Bukharin and Preobrazhensky, a certain amount of polemics has inevitably characterised much of the literature in this area. However, hard facts and empirically verifiable hypotheses have not been easily forthcoming, and even where they have, are usually pushed into the background by the political rhetoric or worse still, are selectively dressed up to support specific points of view. The present study marks a refreshing departure from this established trend. Written by a group which has strong credentials in input-output methodology, the book appeals extensively to this methodology in order to obtain analytical insights into the agriculture-industry nexus.

As the title itself suggests, the focus of the study is on the impact of agricultural output on the markets for manufactures. Three models are deployed for the purpose, each being a blend of the two 'pure' types originally suggested by Leontief - the 'open' model and the 'closed' model. The three models represent a hierarchy of increasing sophistication with the 'income distribution' model at its apex. The income distribution model is certainly a methodological innovation and enables the isolation of the differential impact of agricultural income growth on manufacturing output. Several results emerge as a consequence of the model simulations. Generally speaking and not unexpectedly, agro-based industries evidence the strongest response to agricultural incomes in terms of high agricultural income multipliers. Typically high multipliers accrue to sugar and gur (1.41), jute textiles (1.33), animal husbandry (1.29), cotton textiles (1.12) and so on. By contrast, urban-based industries register low multipliers - electricity (0.35), organic heavy chemicals (0.50), rubber products (0.77), manmade fibres (0.79), etc., and these low values are not difficult to explain either. The high multipliers obtained in the case of office and domestic equipment (0.89), watches and clocks (0.87) and motor vehicles (0.87), however, are somewhat controversial and admit no facile explanation. The results stated above are based on the authors' Models I and II, which did not incorporate distributional implications.

The really interesting results of this exercise are those reported in Chapters 4 and 5, where the rural income distribution figures as an active parameter. Three income groups are identified - a low income group (possessing land between 0 and 2.49 acres), a middle income group (possessing land between 2.5 and 10 acres) and a higher income group (possessing land in excess of 10 acres). The three income groups exhibit varied impacts on the industrial sector, with the low income group strongly linked to "other food products".

sector, the middle income group to the "animal husbandry" and "vegetable oil" sector and, as expected, the high income group to the more expensive manufactures of consumer durables. The real impacts of the rural income distribution pattern are in Chapter 5, juxtaposed against contra-factual simulations of altered income distribution patterns. Such simulations assume particular significance in the development context where income distribution patterns are continuously evolving under the joint stimuli of endogenous and policy-induced factors. Thus the study highlights an important methodological dimension to the planning exercise, which has received little attention upto now.

The main limitations of the study spring from the severe shortcomings of the input-output method itself. As is well-known, this assumes fixed coefficients, ignores scale effects and can be sensitive to the sectoral classification employed. In addition, a substantial time lag is often involved in the compilation of such tables - a fact which can be especially critical in an economy undergoing structural transformation. The current study employs an Input-Output Table based on 1979-80 data - perhaps some updating of coefficients might have been attempted but there is no reference to this fact. This is likely to impair the cutting edge of several conclusions of this study, which would otherwise be of great interest.

Some categories of readers are also likely to be disappointed at the absence of references to the historical aspects of the terms of trade debate, which charge can perhaps be countered on the authors' behalf by noting that the historical dimensions have already been extensively discussed in the received literature.

Notwithstanding some of these limitations, in the reviewer's opinion, the book offers a fresh methodological perspective and useful empirical information on a topic of abiding interest to development economists.

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Food, Health and Survival in India and Developing Countries, Stuart Gillespie and Geraldine McNeill, Oxford University Press, Bombay, 1992. Pp. xiii+216. Rs. 290.00.

The rapid population growth observed in the less developed countries in recent decades is mainly attributed to the sharp fall in the levels of mortality and slower decline in fertility. Increased longevity certainly is an indication of relatively better living standards today than in the past. But wider disparities observed in the death rates by rural-urban residential status, among the poor, non-poor and by gender are not only persisting, some even argue are widening further. One of the contributory factors to this outcome has been the increasing number of the poor and declining nutrition among them. Nutritional deficiencies - not only protein-energy-malnutrition (PEM) but also deficient intake of micro-nutrients (vitamins and minerals) - are rooted in the levels of living of the families and cultural factors that determine dietary habits and food distribution within the family. In most of these countries only two to four staple foodgrains provide about 60-80 per cent of food calories and their availability and the price generally determine the type and extent of malnutrition. The

incidence of PEM depends upon the access to these foodgrains throughout the year. Pre-harvest season, for example, is associated with higher prevalence of PEM and diarrhoea while it is not observed in post-harvest season when the poor have access to better diets. The authors have tried to explore the intricate interrelations in food, health and survival in a rural setting in South India in the book under review.

The authors have based their analysis and inferences on the data collected in two surveys: one in a village in North Arcot in Tamil Nadu that focused on 400 men and women and another survey conducted in a village in Warrangal district in Andhra Pradesh, covering a sample of 112 children under five year age drawn from 67 households were studied to understand the process leading to under-nutrition.

The village in Tamil Nadu can be considered as relatively a better-off village in India which was exporting vegetables, fruits, milk and milk products to nearby cities. A majority in the village maintained goats and poultry. But the village diet consisted mainly of parboiled rice-'rasam' and 'sambar' which occasionally contained some vegetables and meat-milk products were rarely consumed. Based on the anthropometric data collected, the authors reported that women and men in the village had considerably lower weight, height and body-mass-index (BMI) than the better nourished Indians or Western subjects. Based on FAO/WHO suggested BMI values, 71 per cent of men and 48 per cent of women in the village were found under-nourished.

Though the data on weight and height of children under five year age suggest no severe malnutrition having risk of functional impairment, the authors reported chronic growth retardation among them - attributed to the process of adaptation to the available nutrition during childhood. Children suffered from skin and ear infections, colds-coughs, fever, conjunctivitis, and most frequently diarrhoea. Gender differentials were marked - of the eight severely malnourished, seven were girls and disease incidence among girls far exceeded that for boys (93 per cent and 64 per cent respectively).

The study has come out with certain findings that need serious attention. It reports significant higher under-nutrition among men as compared to women which goes against the findings of several other Indian studies. It also reports that the severely malnourished children came from households having high maternal labour participation that affected maternal time allocation to child care and feeding which are important to maintain nutritional levels of children during the early periods of growth.

A further decline in mortality in India in the coming decades would depend first and foremost on nutrition and several associated factors like safe drinking water, environmental hygiene, sanitation and primary health care. Producing enough food, increasing the incomes of the poor to enable them to buy adequate food, and nutrition education for all are the ways to combat nutritional deficiencies. Village studies, though often face the problem of small samples in analysis, do provide deeper insights needed for effective policy interventions. The authors of the present study deserve compliments for placing 'nutrition' in the wider context of village economy and culture and discussing their findings with several other studies.

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Management of Marketing Co-operatives, B.B. Goel, Deep & Deep Publications Pvt. Ltd., New Delhi, 1991. Pp. xii+660. Rs. 525.00.

The formation of co-operative societies has long been recognised as a potentially effective instrument of bringing about technical, social and economic development, particularly in the framework of objectives set for rural development. However, the co-operatives have all too often lacked the vitality and dynamism so essential in a member-oriented, people-centred movement. They have often been reduced to agencies performing functions dependent only on government sponsored programmes in respect of distribution of essential consumer goods or the procurement of agricultural commodities based on price support programmes, etc., but fall short of effective performance as institutional infrastructures of the people, which the members could use for finding solutions to their socio-economic problems.

The book is an attempt to present a critical review of the role and functions of marketing co-operatives, examine the role of the state in key areas of co-operative development and analyse the perceptions of members, non-members and citizens towards co-operative marketing societies. Based on the above analysis, the study then suggests some measures for consolidation, promotion and strengthening of integrated development of the co-operative movement. The study is based on an analysis of official records and other publications supplemented by primary data collected from sampled respondents. While the time frame for the secondary data is 1981-82 to 1983-84, the field work relates to the period 1986-89. The study analyses these issues in four selected states, namely, Haryana, Uttar Pradesh, Himachal Pradesh and Jammu and Kashmir.

The book is divided into seven chapters. The statewise analysis, presented in the last four chapters of the book, gives a detailed appraisal on the management, functioning and role of the apex federation and selected primary societies based on official records. This is followed by detailed account of the perceptions of members, non-members and public representatives about these societies based on interviews conducted with the respondents.

The elaborate analysis presented in the book enables the reader to get a fairly good idea of the structure and the status of working of co-operative marketing in the selected states. The analysis presented, however, does not enable one to get concrete answers to some of the important issues being debated and discussed in the context of development and more efficient functioning of the co-operatives in a developing society. To what extent co-operatives have been able to provide competition to private traders and to what extent have they helped the farmers in receiving remunerative prices for crop output? How do the marketing costs of co-operatives compare with those of private traders? Have the co-operatives been able to provide the required farm inputs to the farmers at a time when these are required by them? How can these societies be made economically viable? The study also does not attempt to identify the key factors limiting the efficient functioning of co-operatives and what systematic efforts are required to remove these impediments.

It has often been argued that while on the one hand the governments often tend to manage, control and direct co-operatives with little involvement and participation of members, on the other hand there are examples where the co-operatives have languished for want of support from the government. In this context, one would have liked the author to examine not only the role the government is currently playing but also suggest the kind of role the government should play in enhancing the capability of co-operatives and where the line

between government action support and member's initiatives needs to be drawn. What possible changes could be brought about in the organisational structure of co-operatives at different levels and how the activities of co-operatives at different levels can be integrated with a view to building a cohesive co-operative sector and enhancing their capability for enlarging their share in the national development?

Notwithstanding the above observations, one would like to commend the author for his painstaking efforts in collecting huge amount of data and providing useful information about the functioning of co-operatives. To that extent, the book is a useful addition to the existing literature on the functioning of co-operatives. The volume of the book could possibly have been reduced somewhat by a more systematic presentation of the data.

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R.P.S. Malik

Economic Development in South Asia, A.E. Granovsky, Agricole Publishing Academy, New Delhi, 1992. Pp. x+276. Rs. 300.00.

This book written in Russian language and translated by Sandhya Gupta in English is the first comparative study of economic development in South Asia specially covering five countries - India, Pakistan, Bangladesh, Nepal and Sri Lanka. It covers an extensive period of post-colonial transformation in these countries from the forties to the eighties. The book is divided into two parts. Part I deals with the theoretical approach along with the long-term and the medium-term mechanism of economic growth. Part II is concerned with the national models of reproduction of social product followed in these countries.

The author has very intelligently explained the subject and method of analysis applied. In the polarised economies of these countries, he distinguishes two socio-economic sectors, *i.e.*, modern capitalist sector and pre-capitalist sector. The simulation model comprising 42 linear equations to describe the identities of production, consumption, accumulation and use of manpower and 14 linear-logarithmic equations characterising elasticity of various coefficients has been applied. The role of factors affecting growth and their influence and direction ranging from the short period to the long period have been elaborated. The polarisation of the socio-economic forces and the changing political scenario over time played a significant role in the determination of the mode of development during the post-colonial era in the South Asian countries. The public sector investment in India during the Second Plan which ignored agriculture led to unbalanced development favouring heavy industries. The terms of trade favourable to industry, by and large, promoted the interest of those who were dominating in the political structure. The lack of political stability and the socio-economic change in Pakistan played a crucial role in its economic development which was, by and large, connected with the survival of political power in the hands of the military regime. The spontaneous industrialisation during the 1940-50, acceleration of industrial growth in the sixties, crisis of enclave development and the economic growth oriented to external sources since the mid-seventies were the important features of economic development in Pakistan. The big bourgeoisie were favoured through liberalisation with the hope of political survival at the cost of the small farmers and entrepreneurs pauperising them more and more over time. The analysis of interaction of economic and socio-political forces leading to the formation of Bangladesh has clearly brought out that the Mujibur Rahman

government whose very basis were the small farmers and entrepreneurs could not provide the direction of development consistent with their fundamental urge - the simple reason being the dominance of Bengali bourgeoisie in the political power mainly interested in their enclave development. The co-sharers in the political power forced the government in favour of liberalisation influencing the mode of industrial development in Bangladesh. The abolition of ceiling on private capital, expansion of foreign private capital, transfer of property of non-Bengalis, legalising black money, exemption of industry from licences, etc., were the factors determining the structure of reproduction in the interest of the Bengali bourgeoisie in Bangladesh over time. The role of landlords in the case of Nepal under the rule of the monarch was instrumental in influencing the mode of development over time. The commercial farming in the Terai area and the social division of labour along with the foreign aid could not promote the interest of common man in framing the economic policy which, by and large, favoured commercial farming and private traders. The liberal economic policy tilted towards capitalists was detrimental to the mode of development in respect of the duntrodden. The mode of economic development in Sri Lanka quite changed with the change in political power. At the time of independence, the colonial pattern of development continued in the hands of local conservative bourgeoisie with the main focus on trade benefits. The liberal imports of consumer goods and the food subsidy caused the stagnation in industry and agriculture. The victory of the United People Front (UPF) in the election led to nationalisation of bus transport and sea port. The foreign exchange crisis led to the crash of the colonial mode of production having interest in plantation and shifted the emphasis to agricultural development. Another political change in Sri Lanka favouring UNF government placed emphasis on the heavy industry and essential consumer goods under the control of the State Government. The Sri Lankan bourgeoisie tried to find a way out of the crisis by means of massive reliance on external financial resources.

Thus the author has nicely demonstrated that Asian countries having certain socio-economic similarities used a great diversity of the ways and means of economic development both within the limits of capitalist path and the path of socialist orientation. Primary conditions were responsible for determining the models of reproduction. The major determinants of numerous variants of economic growth were the runway of capitalist evolution, qualitative differences in the character of colonial capitalism and the primary natural resource production potential. Socio-class forces through their internal arrangement played a dominant role in arousing the initial impulse of forming capitalist system despite the role of external sources of accumulation. Development of local bourgeoisie and the weak interest of international capital in the South Asian countries on account of low per capita income, lacking world standard strategic resources, saturation of local market, etc., played their role in the direction of economic growth in these countries. Thus the author has very intelligently integrated the role of socio-economic forces in the form of new enclave development under the changing political scenario affecting the mode of development. The value of the book lies in providing useful insights into the complex system of economic development. It is very useful for the administrators and policy makers for understanding how the socio-political changes affect the mode of economic development in developing countries. Apart from this, the book could be a useful reference guide for the researchers interested in the history of economic development of the South Asian countries.

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Risk in Agriculture: Proceedings of the Tenth Agriculture Sector Symposium, Edited by Dennis Holden, Peter Hazell and Anthony Pritchard, The World Bank, Washington, D.C., U.S.A., 1991. Pp. v+159.

This report presents the proceedings of the Tenth Agricultural Sector Symposium on Risk in Agriculture organised by the World Bank. The risk management in agriculture has been examined in the light of the key issue facing the Bank as to how to raise productivity and bring greater equity in this sector. This report contains several valuable contributions on risk in agriculture from different perspectives and in different regional settings.

John W. Mellor has analysed risk in agriculture from macro economic and low income consumer perspective. He has argued that while the success of agriculture-led development strategy greatly reduces the risk of population falling below an absolute poverty line, the risk inherent in the strategy itself reduces the probability of its acceptance. However, Mellor's position about the risk increasing nature of agriculture-led strategy is untenable as new farm technology need not necessarily be risk increasing. Rather it can be risk reducing as shown by A.J. Singh and D. Byerlee, in their study on "Relative Variability in Wheat Yields Across Countries and Over Time" (*Journal of Agricultural Economics*, Vol. 41, No. 1, January 1990). However, one must agree with Mellor that agriculture-led growth reduces the risk of population falling below poverty line and that foreign assistance can greatly reduce risks in feeding population with well thought out projects for development of agriculture.

J.R. Anderson has discussed some aspects of agricultural research as aids in risk management. Attention is focused on plant breeding for resistance to pests and diseases and to stresses arising from soils and climates. For small scale resource poor farmers the immediate emphasis has to be on low input technologies for improving productivity and stability of production. Animal breeding and agronomic interventions are also considered for their potential roles in dealing with risk. He approvingly refers to the trade-off between adaptation and production in livestock breeding analogous to the trade-off between stability and productivity in crop germ plasm long recognised by plant breeders. It is also suggested that some inputs are overtly risk reducing in their effects such as fungicides and pesticides. If such inputs are used wisely and in timely manner, production will usually be less risky than it would be otherwise. If timeliness of application is not ideal or there is misuse of agricultural chemicals particularly at very high rates resulting in accelerated adaptation of organism in developing resistance to pesticides, the effect on riskiness of production may be obscured. Thus no clear and simple conclusion can be reached regarding the effect of inputs on the riskiness and the variability of crop and livestock production, the possible exceptions being low cost inputs such as vaccines for animal diseases and some crop protection inputs.

P.J. Matlon has examined farmer risk management strategies at ex-ante, interactive and ex-post levels, and indicated that ex-ante diversification of crops can be of only limited effectiveness in the most marginal agro-climatic zones. So ex-ante methods at plot and farm levels are relatively inefficient components in the risk strategies of farmers in the riskiest cropping environments. At the beginning of each cropping season, farmers have subjective expectations developed from past experience concerning probable onset, amount, distribution and duration of rains, and as the season progresses, these expectations are revised

and farmers sequentially adjust their cropping patterns and cultivation practices to correspond to the occurrence of exogenous shocks. So reducing pre-determined commitment and maintaining a high degree of flexibility during this period such that cropping patterns can be subsequently adjusted as conditions dictate is crucial for the success of sequential adaptation methods. When crop failure occurs despite the application of ex-ante and interactive risk management practices, farmers have to resort to several ex-post methods to obtain income to protect household consumption. These include agricultural wage income, inter-household transfers in cash or kind, local non-farm income, sales of fixed and moveable assets, non-local off-farm income and official food aid. The success of these components in protecting consumption against major production shortfalls depends on the degree to which their respective income streams are covariant with local cropping outcomes. Income earning activities that depend upon incomes generated through input, output or demand linkages to local cropping patterns are not effective means of stabilising aggregate income by offsetting poor crop yields. For this reason, farm wage employment, receipts of gifts from other farming households and local demand are relatively ineffective insurance elements when general production shocks occur. At the other extreme, official food relief if properly targeted can prove more effective. But the author has not cared even to refer to crop insurance or natural calamities relief programmes already in vogue in some countries.

J.I. Stewart has developed an illustrative example of response farming for managing risk and noted that the crux of the management problem with variable rainfall is to adapt soil fertility and plant populations to actual rainfall conditions in the season at hand. Fortunately, farmers can delay final decisions on these questions until about 30 days after germination. The actual rainfall to that point is adequate to provide low risk guidance on whether to add additional fertiliser for high rain conditions or to thin and reduce the plant population for low rain conditions. The example given by Stewart indicated that in 19 out of 20 years, agricultural production could be correctly managed. It is, therefore, rightly argued that rainfall studies to improve risk management procedures should receive strong financial and policy support.

P.J.M. Cooper and Elizabeth Bailey discuss the role of livestock in Mediterranean farming systems as a traditional buffer against uncertainty. It has been argued that due to rapidly increasing population and rising standard of living there is a dramatic increase in demand for livestock products. This has resulted in a three-fold increase in the national sheep flock and an equivalent increase in the demand for livestock feed.

The study has noted that in order to increase the production of barley, the principal feed supply, the Government should concentrate on increasing production in better endowed areas through adoption of improved technology to meet the feed requirements in 75 per cent of years and at the same time increase stability of production. However, this approach is likely to slow down the development of marginal regions and thus aggravate inter-regional disparities in agricultural growth.

R. Duncan has examined the limitations of price stabilisation schemes and shows how some new financial innovations can be used by developing countries to manage their commodity price risk more effectively. In this connection, he has suggested commodity linked financing as a hybrid instrument which is both a risk management as well as a financial management strategy. Commodity linked bonds include an option feature that has a market value, the coupon rate is generally lower than it would have been for a conventional bond.

The advantage to the issuer is thus the fact of making lower interest payments with the trade-off being an undertaking to share the benefits of any appreciation in the price of the commodity by writing a call option on the commodity. This innovative technique deserves to be tested.

Michael Gudger has highlighted that public sector all risk insurance has proven to be a costly failure. In contrast, he has pointed to the small but rapidly growing private sector insurance industry that is providing a specific risk alternative to the all risk state run schemes. The products are characterised by a responsiveness to the risk management needs of the farmers and a pricing structure that farmers find competitive and reasonable. In view of the continuing drain due to public sector involvement in crop insurance or relief operations, the involvement of the private sector in this area undoubtedly represents a silver lining.

On the whole, this book covers elegantly different aspects of risk management in agriculture and is a welcome addition to the scarce literature on this subject. It will undoubtedly prove useful to the researchers, planners and policy makers in devising and streamlining risk management strategies in agriculture.

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Social Forestry, Lalit Kumar Jha and P.P. Sen, Himalaya Publishing House, Bombay, 1991.
Pp. 199. Rs. 195.00.

The theory of induced innovation propounded by Yujiro Hayami and others suggests that people would search for the options which would help them save the scarce resources. A normative content of this theory has been that the scientists, researchers and policy makers would invest time and effort to evolve technologies and institutions which save the scarce resources. For example, deterioration of environment, forest and other natural resources has alarmed the policy makers and researchers and at present, considerable emphasis is being placed on issues related to forestry, water quality, pollution, environment and on the overall sustainability of developmental efforts. These efforts have improved our understanding about nature and its interaction with human beings. Donor agencies and policy makers are perhaps disposed more favourably on these issues now than they were in the past. As a result, both good and bad outcomes are seen. The book under review, unfortunately, falls under the second category, possibly due to lack of attention on editing and the issues that are discussed.

The book consists of 20 chapters, each covering topics such as Why Social Forestry, Social Forestry for the Poor, National Forest Policy 1988 and Jawahar Rojgar Yojna (JRY), Women and Social Forestry Programme, Cottage Industry and Social Forestry, Extension Staff and Social Forestry, Co-operatives and Social Forestry, Tribals and Social Forestry, and Role of Social Forestry in Soil Conservation.

The main contention of the authors is that the social forestry as envisaged in the Plan documents (implicit) are suitable for women, small landless labourers and tribals as its produce could be used by them for cottage and village industries. Besides, it would also increase the supply of fuelwood and fodder. Social forestry, according to the authors, would

increase employment opportunities and improve the status of the rural poor. Clearly, the authors have relied more on official documents than on actual field observations. For, had they visited some villages and asked the people, the actual content of the social forestry programme and its real impact on people would have been better known. Very often the authors have failed to distinguish between the results obtained at an experiment station and from the actual field conditions. Consequently, the projected profits from tree plantation appear to be over-estimated. Further, many topics discussed in the book are dealt at superficial level.

Imperfect editing and a superficial treatment of the subject leave little or no impact on a reader's mind. Consequently, some important and radical suggestions, such as allotment of degraded and denuded forest land to the landless, marginal poor farmers and to the tribals may not create its desired effects. On the editing side, the language is poor, at times, sentences are left incomplete and many references cited in the text do not find place in the bibliography. On the whole, the book explains social forestry as it is understood in the government and official circles rather than presenting a critical point of view. What is perhaps missing in the book is people's perspective and their opinion about the social forestry programme in India.

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Transfer of Agricultural Technology: Structural and Functional Linkages: A Study of Improved Rice Varieties, O. Abdul Rahiman Kunju, Concept Publishing Company, New Delhi, 1992. Pp. 192. Rs. 150.00.

For researchers who are seriously interested in transfer of technology in Indian agriculture, a system's approach to analyse the problem brings a mixed feeling of elegance as well as ignominy; elegance for the way the interplay of various complex and interacting sub-systems may have been captured, and ignominy for the very fact that there is no room for unified field theory in Social Sciences. When the study is focused on high-yielding varieties (HYVs) of rice in Kerala, it raises expectations also because adoption of modern rice varieties in the state is confined only to one-fourth of the cultivated area under the crop and if one can understand the cause of this failure, with suitable changes with respect to land and economic institutions, the insights may add to our knowledge on transfer of rice technology in other parts of the country as well.

After going through the volume, some of the hopes are partially fulfilled, some fears vindicated, and some expectations belied.

The author justifies a system's approach for analysing the problem of low HYV spread by observing that (a) transfer of technology is a complex and complicated task involving four sub-systems: research, extension, farmers and input; (b) the impact of the technology will depend upon the efficiency of the prevailing functional relationship for purposive interaction between these sub-systems; (c) the low spread of new rice technology could be due to weak functional linkages that exist between and among these sub-systems. He collects opinions from the participants of the four sub-systems, scales these and using non-parametric analysis of variance and factor analysis draws his conclusions.

So far so good; but what insights are unfolded on transfer of rice technology through

understanding functional relationship between and among sub-systems. For a case, let us study what the author concludes for the Research Sub-systems. His findings on this sub-system can be categorised into two main groups - the strength of functional relationship between and among other participants of the system and the causes of these linkages. He concludes that research scientists believe that their relationships are significantly established with farmers and extension sub-system. But both farmer and extension workers do not subscribe to this view. The linkages need to be strengthened through purposive interrelations. On the other hand, research and input sub-system linkages are significantly weak. Secondly, the two-way interaction between (a) researchers and extension workers is established mainly through consultancy services and training, guiding field level extension activities, supervising trials and demonstrations, providing information on package of practices, and suggesting new area of research; (b) between research scientists and farmers is mainly through organising farmer's group discussions and training, print media, farmers' days, visits to farm trials and understanding farmers' problems.

The author seriously believes that if problems of inadequate linkages between scientists and extension network, on the one hand and between scientists and farmers, on the other, are replaced by package of practices workshops, adoption of new rice technology would substantially improve. What does this amount to? Naught almost, for one would also have expected a rigorous analysis indicating the nature of the rice technology in relation with its competing crops at (i) experiment level and (ii) farm level. The nature of technology in simplistic terms may be defined as (a) hierarchy of size and certainty of net returns of various crops, (b) risks associated with adoption and diffusion of fertiliser use on rice varieties and (c) sensitivity of new rice varieties to factor market constraints.

Economists are trained to see transfer of technology mainly through the window of profitability; that labour saving biases across different regions and across different farms may have resulted in variations in accepting a capital intensive crop instead of labour intensive rice. The profitability of new rice varieties as compared with its competing crops including plantation crops as observed by farmers over the years and across farms may have made them aware of risk associated with adopting HYVs of rice. That having decided for HYV rice, the choice of variety and level of input use are governed by the trade-off between risk and returns associated with such decisions. These are some important questions for which the author has no room. The hypothesis that rice revolution in Kerala has died a slow death under the burden of totalitarian economic institutions may be agreeable to many; the author has certainly failed to even consider it as an alternative approach for explaining what he has set to explain. But neither the alternative approach has explained transfer of technology at micro level in any decisive way elsewhere. A combination of these two approaches would have been the best for explaining transfer of rice technology and its adoption by Kerala farmers.

To be fair to the author, we must give him the benefit of doubt. The system he understands the best, the extension system, must have been analysed by him with an appropriate framework. Let men of extension decide this. Nonetheless, social scientists may be disappointed by the very fact that the author has tried to put evidences of a group of sub-systems together which would have been handled best one at a time, separately but rigorously.

Agricultural Development of India, A.R. Padoshi, Himalaya Publishing House, Bombay, 1991. Pp. 138. Rs. 150.00.

The developing countries of the world face a great dearth of adequate information on the various sectors and sub-sectors of their economies. Efforts at the governmental as well as private levels are made to fill the information gap. In this case, quite obviously, preference is given to culling the macro level data in view of its urgency for framing national policies of development. Micro level researches are either very limited in number or are taken up at a late stage. Such researches do have their significance for micro level planning as also for understanding divergence between the national situation and the regional situation. The book under review meets the requirement of micro level study of the picture of agriculture of a district like a small state of Goa in the Indian Union. The title of the book, however, does not reveal this. A misleading impression is created that the book is concerned with the entire country. Very often books involving case studies are titled in a rather generalistic way. Both the authors and publishers of the books should refrain themselves from such practices.

The book presents a review of Goan agriculture during the span of 17 years from 1970-71 to 1986-87. However, the author uses discrete data as are available from the government reports and the Agricultural Censuses of 1970-71, 1976-77 and 1980-81. For later period, he has generated data from sample survey for the year 1986-87. While analysing the data for the specific points of time as indicated by these reports, the book concentrates on the agrarian relations, structure of land holdings, pattern of land use, cropping pattern, the advent of green revolution, supply of draught power to agriculture and the overall economic condition of cultivators in Goa. It is observed that agriculture does not form the mainstay of the Goan economy as hardly one-third of its labour force is involved in this occupation. As elsewhere in the country, small farms dominate the scene with larger concentration of cultivated area in the hands of bigger farmers. Over the years under reference, land under cultivation has exhibited a declining trend and there has been a tendency for the agriculturists to come out of agriculture due to better earning opportunities outside agriculture. The result is that, unlike in many other regions of the country, Goan agriculture is confronted with shortage of labour. The situation is very much conducive to mechanisation in farming, but the skewed distribution pattern of land holdings prevents its adoption on a wide scale. The agrarian economy is thus caught in a dilemma.

It is further noticed that the cropping pattern has all the while remained dominated by paddy cultivation supported by growing of coconut and cashewnuts. Much of the cultivation of paddy and coconut is meant for family consumption by most of the farmers, small or big. Cashew cultivation is favoured more by large farmers. As such, the agrarian economy exhibits the traits of subsistence farming. Adoption of high-yielding varieties (HYVs) in paddy crop has remained limited to large farmers, due to resource constraints faced by small farmers. Moreover, whatever limited use of HYVs has been made, had only a marginal impact on output, and, therefore, the state is still far away from the revolutionary impact of the HYV in paddy cultivation. Further, by and large, Goan agriculture has a single crop system, the farmers are still using traditional implements like wooden plough and animal labour is common. In brief, the agricultural economy is declining and is dominated not only by small and uneconomic farms but by small and poor farmers too.

The author has gleaned whatever authentic data on the subject were available. However, while consolidating and comparing the same, at places, enough attention has not been paid to appropriate presentations. For example, while analysing Table 2 (p. 17), the author is content with comparing the annual variations in the net domestic product of the state and the agricultural sector. A better course would have been use of growth rates for either the entire period or, say, two sub-periods equally divided. Similarly, the statement "a food crop dominated cropping pattern indicates a low degree of modernisation of the agricultural sector" (p. 61) cannot be accepted in a blanket manner; it needs to be qualified. The statement may hold good in the case of subsistence farming. But in the case of commercial farming of food crops, as is experienced in Punjab and Haryana, there is not only extensive modernisation of agriculture, but also strong linkage with the non-agricultural sector. Table 19 (p. 68) drives the author to conclude that "relatively large holders are leaving a considerable portion of their land uncultivated" (p. 80). The inference is rather surprising. The reader would like to know the why of the phenomenon, but the book is silent on the point. It is an important issue in the context of land reforms programmes to be pursued in the state. For reducing the uneconomic holdings, creation of large-sized farms through land consolidations and shift of small farmers to non-agricultural vocations are often advocated as panacea. In Goa's case, if such measures are adopted and large-sized farms are created, there appears a risk of some land remaining unutilised so that the treatment may turn out to be worse than the ailment.

While interpreting the data of Table 25 (p. 90), the author should have better used compound growth rates as his tool instead of annual percentage variations. If he takes 1985-86 as his terminal year, instead of 1986-87, his inference would show a better picture. In the case of time-series data, it is always appropriate to use compound growth rates for drawing meaningful conclusions. In the second line from below on p. 91, "more than 400 per cent growth in the area" is not correct; it should be 300. Finally, for estimating the total manpower used in the cultivation of paddy, the principal crop, to overcome the problem of non-availability of segregated data, the author has chosen the course of assuming equality of proportions of paddy land in the total cultivated land and the horse power of human labour utilised. This method seems to be too arbitrary. Farmers do not have paddy cultivation exclusively. A portion of land is devoted to other crops. Since modes of agricultural operations differ cropwise, land allotment to paddy cannot form a correct index of apportionment of horse power of labour. Actually, through his own field survey, the author could have got details about land apportionments and work apportionments by his sample farmers. That would have provided him more realistic index for his estimations.

Lapses and loose ends notwithstanding, the book brings out to the readers the framework of Goan agriculture. It should reveal to the policy makers that the treatment to be given for betterment of this economy does not fit fully into the designed macro level policy framework for the country as a whole. It calls for a region-specific policy mix.

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Wage Labour and Unfreedom in Agriculture: An Indian Case Study, V.K. Ramachandran, Oxford University Press, Bombay, 1990. Pp. xvii+321. Rs. 375.00.

This book is written in the tradition of village studies; a tradition that uses both economic and anthropological methods. The study aims to examine the concepts of free and bonded labour in the context of a South Asian village society. This is done through identifying the place of labouring households, in the economy, social hierarchies, labour time disposition and earnings pattern in a village.

The principal sources of information are a survey of 650 households conducted for the year 1976-77, a case study, other observational data collected through 1977-1986, and a sample study of 43 landless households pertaining to the year 1985-86. In this regard, the study is among the few which have gone in for a resurvey and continuous observation, after the initial survey. The surveys were conducted in the Gokilapuram village of Madurai district, Tamil Nadu, India.

The principal theme of the book is to discuss the notion of free and unfree labour, as the author argues that there is much more to this concept than what is proposed in the conventionally accepted definitions. These definitions are limiting in contrast to the variations observed in the field. It appears that there is a freedom-unfreedom scale on which individual labourers can be placed and moved along to different positions, over time and seasons. The author says that forms of bondage can arise, not due to the system of feudalism alone, but owing to poverty and unemployment, too.

The study finds that there is only one bonded labourer in the village. As many as 58 per cent of the agricultural labour households stated that they had the freedom to choose their employers. But these figures, says the author, only present a partial picture since in real life it is not easy to keep apart freedom and unfreedom in the daily lives of workers and to separate the impact of different factors on these. Workers offering labour services to employers do not *sell* their labour power; they give it away, almost free. Further, there is a *personal* dependence of workers on employers. While there is no direct coercion of the workers by the employers, the workers are compelled by poverty and unemployment to ensure employment whenever it is available, and subsistence at times when employment is not available. The employers, on their part, in their decision to provide work, are influenced by a range of factors that include the caste and gender of the workers, traditional relationships of loyalty, illiteracy, indebtedness and traditional village based division of labour. The author says that unfreedom is perpetuated because workers cannot just opt out to look for work elsewhere.

The author provides details on seasonality of labour use, aspects related to living conditions of labourers, wages, poverty and productivity of the crops; all of which support the arguments made in relation to freedom and unfreedom of workers. In this regard the study has few rivals in the extent of detailed information collected.

The longitudinal analysis shows that while agricultural growth has occurred, labour absorption has been slower than that evidenced in the East Asia of yesteryears. With the advent of modernisation, there has been an incisive articulation of property rights. In the presence of gross inequality in the distribution of land and resources, there is a rapid increase in the proportion of landless agricultural labourers. The situation has worsened owing to the demographic pressure. This observation, the author says, is in line with the macro trends

witnessed in the country.

This book is one of the most comprehensive ones from the point of view of the survey of literature, methodology, meticulous data collection and interpretation of results. It is not often that one comes by such detailed and systematic exercises.

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Agriculture and Technology in Developing Countries: India and Nigeria, Sumit Roy, Sage Publications India Pvt. Ltd., New Delhi, 1990. Pp. 223. Rs. 190.00.

How to increase food production is an important question for most of the developing countries. There is substantial literature on the role of modern technology in increasing food production. The main focus in the bulk of available literature is on the factors determining the adoption of new technology within a competitive framework. The distributional consequences of the benefits from the use of modern inputs have also been examined. However, not much work has been done on the role of the state and the economic and political policies of the state in the adoption of new technology. This brief book under review addresses this question in detail. The author has made a commendable effort to make a comparative study of India in South Asia and Nigeria in West Africa. The book is an outcome of the author's rich personal experience in the economic and political systems in the two countries.

The major theme of the study, the methodology used and the limitations of the book are outlined in the introductory chapter. The similarities and differences in the economic and political systems in the two countries are clearly brought out. The methodology adopted is interdisciplinary, based on economics within a socio-political context. The book is descriptive and uses information collected from published and unpublished materials. No statistical analysis has been made using either aggregate or farm level data collected through field work in both the countries. The remaining part of the book is organised into four chapters.

Chapter 1 deals with the rise of modern technology against the background of the state agricultural and industrial policies during the plan period, the influence of external agencies such as the Ford Foundation, the World Bank and the United States Agency for International Development in India and the World Bank in Nigeria, and the state policy incentives through credit and subsidies. The comparison leads us to believe that India's success in attaining self-sufficiency is due to its emphasis on the production of food crops, agricultural policies such as land reforms, credit and subsidy policies, assistance of international agencies to adopt modern technology and the closed nature of the Indian economy until recently. Whereas the failure of Nigeria to attain self-sufficiency in food production is attributed to the neglect of food crop and its focus on cash crops to earn foreign exchange. The food imports are financed through oil revenues. This led Nigeria to emerge as a net importer of foodgrains. The discussion on the agricultural and industrial policies of the post-independent India is very elementary and well known.

The author examines in Chapters 2 and 3 the influence of the state policy relating to the

production and import of chemical fertiliser and the agrarian policies such as land reform, credit and subsidies, etc., on the diffusion of new technology among the peasants. However, the role of the state in the adoption of other components of modern inputs such as new seeds, insecticides, mechanisation of the irrigation system, etc., are set aside. The state in India has established a network of agricultural research stations and extension services. These institutions have played an important role in modifying the imported technology to suit local conditions and to reach the farmers. This is also an important factor for the success of the green revolution to increase food production in India.

The production and import of chemical fertiliser is studied within the state policies of industrialisation. The state policy of self-sufficiency and import substitution enabled India to depend less on fertiliser imports. Nigeria followed a more open policy which led the economy to depend heavily on the import of fertiliser. The message the author seems to convey through the comparison of India and Nigeria is that the trade linked nature of the Nigerian economy was responsible for its instability since it is more exposed to adverse global changes. The author thus seems to advocate a policy of active state intervention as is the case in India.

The diffusion of modern technology is examined on the basis of case studies in Meerut (Uttar Pradesh) in India and Funtua (Southern Katsina, Kaduna), Nigeria. The author collected data from a random sample of 75 peasants in Meerut district in 1976-77 and a random sample of 28 peasants within the Funtua region of Nigeria during 1982-83 to 1984-85. Based on the case studies, the author infers that relatively large peasants were able to take greater advantage of technology or have access to it on better terms than the small peasants. Displacement of tenants in India and of small farmers in Nigeria were identified in the green revolution areas. It should be noted that these conclusions are based on a study of a small sample of peasants from a particular region in both the countries. These results cannot be generalised for a country as a whole and hence the conclusions should be read with caution.

The author examines the short run and long run policy alternatives of the state to support the use of modern technology to increase food production. The discussion is not sharp and the conclusions are not presented very precisely. The reader would find repetition and overlapping of discussions throughout the book which could have been avoided.

The message of the book seems to be that a closed economy with active state intervention and a host of import substitution and self-sufficiency policies are essential to increase food production through modern technology. However, those who advocate liberalisation, open economy and trade linked growth would find it hard to digest these lessons drawn from the comparison of India and Nigeria.

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Political Economy of Indian Agriculture, Ashok Rudra, K.P. Bagchi and Company, Calcutta, 1992. Pp. xiii+477. Rs. 120.00.

It is indeed sad that Ashok Rudra, the author of this brilliant book, is no more with us. His work was versatile and included areas of planning, agricultural economics, levels of living and poverty, and political economy.

Using a Marxist perspective, he could make a thoroughly probing attack on the beliefs of neoclassical economics particularly as applied to agriculture, applying strictly the principles of logic and statistics. He also relied on perspectives gained from field work, for ground reality mattered most to him. His rigorous sense of logic as well as comprehension of ground reality provoked him to attack some Marxist beliefs too. The book under review is an evidence of his objective approach and intellectual honesty.

The book actually is a 're-incarnation' (as the author himself called it) of his earlier volume, *Indian Agricultural Economics - Myths and Realities*. The earlier book itself had provided not only an Indian textbook to our students, but also a different one in so far as theoretical framework was far more critical of the prevailing approaches. The present volume also continues to be so, with even greater clarity and relevance.

While revising the book, the author has dropped four chapters from the previous work, which related respectively to rate of growth of agriculture, production functions, marketable surplus functions and on the significance of tests of significance. Though a separate chapter on production functions is dropped, a critique of the indiscriminate manner in which production functions are fitted is not missed in the retained chapters. The new version also contains two perceptive chapters which were not there earlier - on 'The Self-Contained Village Society' and 'Non-Maximising Behaviour of Farmers'. Other chapters have also undergone significant changes, justifying a new title for the book.

The first part of the book, among the four parts, is devoted to a critical attack on what Rudra called "Some Efficiency Myths". Four chapters in this deal with the myths of neo-classical economics, regarding allocative efficiency of Indian farmers, employment efficiency or absence of surplus labour, market efficiency, and moneylending efficiency. The sum and substance of these myths is that "everything is fine in the Indian countryside; that all institutions work efficiently; and that all that is required are more fertilisers and more irrigation water". He is equally critical of the belief of a Marxist School about the prevalence of semi-feudalism and that this (or prevalent institutional set-up) is necessarily anti-growth. A similar myth is about tenants being necessarily inefficient without taking into consideration the combination of owned with leased-in land and the size of holding. He also attacks the belief that small farms are more efficient. The attack in all this is both at a theoretical and empirical level, and also presents a critical review of the work done in the area so that students can know not only Rudra's stand on the concerned theme, but also the stand of others. One can come across highly perceptive observations in the debate presented, such as "one ought to distinguish between forces that *drive* small farmers to such intensive effort and factors that *permit* them to indulge in such a more intensive effort" (p. 133), the former being more important (p. 134). As a result, the readers can better appreciate the issues in Indian agriculture and derive correct policy implications.

The second part of the book is a critique of the strategy of agricultural development based almost only on technological factors disregarding the need for institutional reforms. The next part presents a critical review of the debate on production relations in Indian

agriculture, including the famous debate on the Mode of Production. He has shunned easy generalisations, as for example, when he brought in the heterogeneity of labour in Indian agriculture based in different institutional and cultural settings. It is again in terms of heterogeneity of labour that he has explained why even a poor peasant is often compelled to hire labour, in spite of having his own family labour. Yet he was bold enough to attack pointless complexity and sophistication if he thought that it did not help in unravelling the correct nature of India's political economy. The immense survey work as well his theoretical insights enabled him to see that there were basically only two classes in Indian agriculture, defined in terms of antagonistic contradiction with each other - the class of big landowners and the class of agricultural workers, though these two classes, he conceded, did not exhaust the total economically active population.

The fourth and final part of the volume is additional to the revised version. It contains an interesting chapter which presents an abstraction of empirical observations made by the author through surveys. The model is that of a village society which is self-contained and isolated from others *in respect of production relations* both in engaging labour and leasing land. The employers, landlords and agricultural moneylenders restrict their transactions only to residents of the same village. The significance of this is that factor markets are segmented without free movement, ensuring a strong hold of the propertied class over the working class. But in this the workers also can have a countervailing power, in so far as they do not face competition from outside labour. Rudra has claimed that this is not just a pure theoretical abstraction, but is generalisable in broad terms.

In sum, this is an unusually perceptive text, challenging received theory - both neo-classical and Marxian and substantiating the contentions with statistics from surveys made by the author. If the function of a textbook is more to provoke thinking and promote research aptitude than merely to inform, then this is it.

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M.V. Nadkarni

Production and Marketing of Potato in India, S.S. Sangwan, Mittal Publications Pvt. Ltd., New Delhi, 1991. Pp. xix+258. Rs. 170.00.

This book is the author's doctoral dissertation in Economics submitted to Jawaharlal Nehru University, Delhi. It is a splendid effort towards analysing the dynamics of potato supply in India. The author has selected Uttar Pradesh for analysing the main determinants of acreage supply under potato. The study is organised into eight chapters. Besides the statement of the problem and hypotheses in the first chapter, the second chapter estimates supply functions with Nerlovian supply model using first differences of time-series data. The third chapter deals with the production conditions for potato and specification of supply variables while Chapter IV describes the distribution of potato area and production in India and the selection of the study region. In Chapter V, the behaviour of potato acreage, production, yield and other supply variables is discussed by using simple statistical techniques. The estimated equations along with their statistical and econometric characteristics and their results are presented in Chapter VI, whereas the supply of potato and market imperfections are discussed in Chapter VII. The last chapter presents the conclusions and policy implications.

Regarding the trend analysis, the author has brought out that the increasing trend in potato acreage depicts three-yearly cyclical path and the acreage planted under potato may have been affected more by the yield level in some preceding years than only by the yield of one previous year.

Over the years, the acreage planted under potato crop has been significantly influenced by its profitability per unit of area. The supply elasticities of potato acreage with respect to its price (absolute, relative and their first differences) are significantly positive for Uttar Pradesh and most of its nine sub-regions. Also these are relatively higher than the acreage elasticities of the important foodgrain crops such as wheat, maize and rice obtained in the earlier studies which support the view that the cash crops are more responsive to price changes than the crops which are largely produced for subsistence needs of the farmers. This indicates the need to improve the yield levels in various regions and sub-regions of the country through the extension services and distributional set-up for certified seeds of crop and credit. The farmers are more prone to the changes in the variability of relative price and the regions which show higher response to price are more averse to the price risk.

The coefficient of variation in harvest season prices is at a higher level than that of lean season prices throughout the study period, indicating low market integration during the harvest period. The seasonal and regional price variations in potato have shown deterioration in market efficiency over time and the level of efficiency in the markets of dominant producing regions is lower than the predominant consumption centres. The results lead to the conclusion that there has been less growth of post-harvest facilities like cold storage and transportation in the producing regions than in the consuming centres. This necessitates establishment of these facilities within the producing regions to bring their efficiency on par with the consumption centres. Also there is a need to further examine the location of cold storage facility at the micro level vis-a-vis the production of potato for concrete policy decisions. Along with it in the long run, the fluctuations in the production of potato should be brought to the minimum through acreage planning especially in the peak years of the cycle to cope with smooth increase in the post-harvest facilities.

The acreage allocation decisions by the potato growers are mostly based on the post-harvest period prices (February to March) when about 95 per cent of the producers sell their produce and the lean period prices (September-October) when most of the farmers purchase potato for seed. The author should have analysed these prices separately to get better response instead of using one period prices from January to October. No doubt, the study is of wide interest to the researchers, planners, the policy makers and the potato growers, yet the use of its findings is very much constrained by the old data (1955-56 to 1982-83) used by the author when the book is published with a time lag of nine years.

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Uncertainty and Farm Production Decisions, U. Sankar and G. Mythili, Himalaya Publishing House, Bombay, 1991. Pp. 264. Rs. 135.00.

The book can be broadly divided into two parts. The first part deals exhaustively with the theoretical formulations regarding issues relating to specification of various factors as

well as risk affecting farmers' production decisions. Part two analyses the Farm Management Study data of the years 1981-82 to 1983-84 to understand the farmers' decision-making process under various environmental scenarios.

Part one has five chapters, of which Chapter 1 explains the scope and objectives of the book. In Chapter 2 the authors have correctly emphasised the need for a model to explain the various features of farmers like market and non-market opportunities, institutions and policies to understand and predict their behaviour. In the generally used input-output relationship yield uncertainty is introduced as a random term. The authors have reviewed the work of earlier economists in this area. Similarly, the views of economists on market opportunities for farmers are well documented. Chapter 3 explains the need for describing the uncertain consequences in the form of probability distribution either by safety-first or portfolio approaches. It reviews the various models under these approaches along with their drawbacks. Since these two approaches required information only on the first two moments of the income variable and had difficulties in ranking the actions of the farmers, Chapter 4 discusses the expected utility approach. The specification of a state-dependent production function and a comparison of expected utility and other approaches have been clearly brought out. Chapter 5 explains the importance of credit and crop insurance because one cannot always assume that the farmers can buy all the needed inputs. Crop insurance acts as a risk shifter. But the access to credit and crop insurance is not uniform to all farmers.

The authors deserve warm appreciation for reviewing the works of various authors in specifying the factors that decide the production decisions of farmers under conditions of uncertainty. This would enable the researchers and students of agricultural economics to understand the various models used to describe uncertainty in farming decisions and their merits and drawbacks at one place.

Part two of the book has five chapters. The study districts are divided into three zones based on certain agro-climatic characters. Chapter 6 provides the basic information on agro-socio-economic conditions. But no uniformity is adopted in providing the basic information, *i.e.*, in some cases it is for districts, in some others for the study area as a whole, for some villagewise, etc. But much care has been taken to provide as much information as possible to decide on the factors influencing the production decisions of farmers. Chapter 7 discusses the various resource endowments of the farm households and their utilisation for the three years. But much of the data was for the first year of the study only; with this information the differences in the basic structure of the farms of five different size-groups have been brought out. As regards utilisation of resources, it is provided yearwise and size-groupwise. Chapter 8 provides information on cropping intensity, diversification and cropping pattern for the three years and for five size-groups and analyses the reasons for changes in these factors. But one thing to be noted is that the sample was selected for some purpose, so each and every sample has groundnut. This may not reflect the correct picture of the condition in the study area. But the authors have indicated this while drawing certain implications. In Chapter 9 the authors have discussed the various conceptual issues in estimating the cost of cultivation of groundnut and compared the cost under the various concepts. This will be an interesting area for those who are specialising in farm management research. The authors have also analysed the risk and crop diversification as well as the effect of drought on farm size. Finally, they have estimated stochastic gross revenue functions and compared the results of the four versions of the function. By this the authors

have tried to overcome some of the deficiencies of the generally used production functions with a random variable. Chapter 10 explains the economics of groundnut cultivation with alternate cost methods.

In general, this book has discussed the various models used in estimating farm production decisions under uncertainty and tried to modify them to obtain some comparative static results. Using farm management study data, it also provides an estimation of the nature and extent of state-dependent effects on farmers' input-output choices and incomes. This will be a useful book for researchers and students interested in studying the farmers' decision-making process.

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Technical Change, Income Distribution and Rural Poverty: A Case Study of Haryana, R.K. Sharma, Shipra Publications, Delhi-92, 1992. Pp. 187. Rs. 195.00.

The main objectives of the book are to examine the impact of new technology on production efficiency and income distribution among different size-groups of farms. The study is mainly based on a sample of 3,412 rural households divided into six farm size-groups selected from 360 National Sample Survey villages in Haryana. The book is divided into seven chapters. Apart from presenting the changes in the agricultural economy in Haryana, adoption of new technology and factors influencing it and methodological issues, detailed analyses have been carried out on production efficiency and income distribution by size-groups of farms. Wherever necessary, analyses have been carried out with respect to regions in Haryana and adopter and non-adopter households. Haryana State has been divided into six homogeneous agricultural regions by applying the method of principal components analysis.

A good account of agricultural economy of Haryana since the early sixties has been presented in Chapter 2. The improvement in agricultural performance of the state has been impressive during the period, viz., 1960-61 to 1985-86, covered in the study. However, the division of this period into sub-periods has not been done with due consideration of weather conditions and hence the results for the sub-periods show sharp divergences.

The rate of adoption (defined as the proportion of adopters to the total number of farmers in each size category) is positively related with the farm size while the intensity of adoption [defined as the proportion of area under high-yielding varieties (HYVs) to total cropped area] is inversely related with the farm size (Chapter 4). The adopters are found to allocate a comparatively higher proportion of area to wheat and rice crops. The adoption of HYVs has been significantly influenced by area under irrigation, holding size and use of tractors, irrigation emerging as the main determinant out of these.

The production efficiency of farmers has been examined in Chapter 5. Firstly, the approaches to measuring production efficiency have been reviewed. This has been followed by examining the relative efficiency of small, medium and large sized farms by using Cobb-Douglas production function. The effect of new technology has been studied by introducing dummy variables for adoption in the function. The explanatory variables used

in the function are land, human labour, fertilisers and manures, irrigation, bio-chemical inputs, operational cost, technology and farm size. Three distinct models, based on different assumptions, have been used for examining input use efficiency of the farmers. The results of Model III, which incorporates all the three hypotheses set out in the beginning of the chapter, indicate that output elasticity coefficients of all the inputs are positive and significant, indicating judicious use of inputs by the farmers. The positive and significant elasticity coefficient of labour refutes the generally held view of zero marginal productivity of labour. The technical efficiency of the farmers is found to be inversely related with farm size. The adoption of new technology has significant effect on crop output. The magnitude of elasticity coefficient of gross cropped area varied between 0.52 and 0.89 in different equations of the model, which appears to be quite high. This could possibly be due to the use of unstandardised land input variable in the function. It has, however, not been mentioned in the study as to how the land input has been measured.

The income distribution and poverty related issues are examined in Chapter 6. The gross value of output, net value added and farm business income per household are positively related with the size of farms. The adoption of new technology seems to have significant and positive effect on all these measures of household incomes, as these are uniformly higher for the adopter households as compared to the non-adopter households in each size-group of farms for the state of Haryana and for each of the six regions. The increase in crop production is found to be the main source of increase in income of the adopter cultivators. The percentage gain of the adopters over the non-adopters in various categories of households is found to decline with the farm size. The regression analysis based on disaggregated data indicates that output per acre is inversely related with the farm size, while the net value added and farm business income per acre increase with the farm size. It is important to note that concentration ratios of net household income for the adopter households for all the regions and the state as a whole are consistently lower than those of the non-adopter households. For the state of Haryana, the magnitude of concentration ratio of income is 0.33 for the adopter households as compared to 0.41 for the non-adopter households, implying that the new technology has reduced the extent of inequality among the adopter cultivators. Further, only 20.71 per cent of the adopter households are below the poverty line while such households formed 43.49 per cent of the non-adopters and 30.80 per cent of the whole sample. The intensity of absolute poverty is also conclusively lower for the adopter households as compared to the non-adopter households for all the regions and for the state as a whole. But these results will have to be taken with a little caution as the average farm size of the adopters is greater than that of the non-adopters in almost all the identical farm size-groups and this difference is more pronounced in the highest farm size category.

Most of the chapters of the book end abruptly without any concluding remarks. The book contains a lot of printing mistakes. For instance, at one place, one finds an incomplete sentence (p. 137). The interpretation of results at places is also not quite correct, at least in keeping with the sign and significance of the coefficients of regression analysis. The data used for the analysis of the book are also quite old. Notwithstanding these drawbacks, the book is a good addition to the literature on Haryana agriculture.

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Castor Economy: A Profile and Analysis of Indian and International Market, Devi D. Tewari and V.M. Rao, Oxford & IBH Publishing Co. Pvt. Ltd., New Delhi, 1991. Pp. xvii+171. Rs. 225.00.

Castor is an important non-edible oilseed which is mostly grown in India, Brazil, China and Thailand. Because of its use for industrial and medicinal purposes, castor oil has its importance in the domestic markets of the producing countries as well as in the world market. India and Brazil are the largest exporters of castor oil whereas U.S.A., U.S.S.R. and European Economic Community (EEC) are the prime importers. Keeping in view the importance of castor, the authors have undertaken a study on castor consumption, production, marketing and trade. The specific objectives of the study are mentioned in Chapter 1.

Chapter 2 highlights the major uses of castor oil and its pattern of domestic disappearance in different countries of the world. Growth and instability in domestic disappearance of its oil in various regions and the world during 1961-86 are worked out and discussed. In this chapter, the authors have tried several functional forms to examine the trends in domestic disappearance of castor oil but the form which gives the compound growth rate has not been tried. The selection of exponential growth rate has not been well justified. The original forms of the functions used for trend analysis have not been given in the text. The authors have not given any explanation for the variations in growth in consumption. It would have been better if before computing the coefficients of variation, the time-series data had been detrended. On page 20 the empirically estimated demand functions include three variables, *i.e.*, P, IP and T but actually P and TP along with time variable have been studied in the demand functions. Is it total industrial production or the production related to castor oil industries as a variable which is actually relevant? This should be specified. In the case of ROW and the world, the application of ordinary least squares technique for estimation of demand functions is not justified because of its having positive autocorrelation. The explanation for inelastic price elasticity of demand has not been given in the text.

Chapter 3 deals with the pattern of production, area and yield of castor crop in the major growing regions in the world. While decomposing the growth in the castor production into its components, area, yield and their interaction, the authors have taken into consideration only the first and the last four years' values of these factors but not the values lying between these years. On page 39, in Brazil, the annual decrease in the yield is 11.33 kg/ha (Table 3.11) instead of 13.33 kg/ha. It is stated that the growth in the castor production is stagnant/declining and has higher instability in some of the regions but the authors have not suggested any measures to achieve higher growth and stability in the production of castor. In most of the cases, inelastic supply with reference to price shows that price has insignificant effect on acreage under castor crop whereas in some of the regions, the supply elasticity appears to be negative which is in contrast to *a priori* economic criteria. The authors have not justified the low/negative effects of price on the acreage of the crop. On page 54 in Table 3.24, the signs for the level of significance are missing for the values of growth rates of production, acreage and yield in India. Relatively higher values of coefficient of variations (CVs) for production in Gujarat and Orissa are due to the existing higher growth in production which has not been eliminated from time-series data while working out the real values of CVs in production. The results reveal that there is a large scope for increasing the castor yield particularly in irrigated area by adopting the improved production technology.

Chapter 4 highlights on trade in castor oil in the international and the Indian market and also deals with the exports and imports of castor oil and beans. No reasons have been given for the steady decreasing demand for castor oil in U.S.A. as an importing country and for the larger stocks of castor oil in importing countries than in the exporting countries. The estimated exponential growth rates in castor oil exports and imports are given in Table 4.17 but the exponential (semi-log) functions have not been fitted for all the countries (Table 4.15 and 4.16). Secondly, in Table 4.17, the exports growth rate for Brazil and imports growth rate for U.S.A. must have negative signs because of negative coefficient of time variable in both the cases (Table 4.15 and 4.16). Thirdly, in Table 4.17, the signs for 1 per cent level of significance for the values of growth rates of imports in the case of EEC, U.S.S.R. and the world are missing (Table 4.16). In the context of castor oil marketing, the price of castor oil behaviour and variability in the international and the Indian market need to be analysed with the help of data.

Chapter 5 deals with the various policies and programmes affecting production, crushing and exports of castor beans/oil in India. In order to step up the production of oilseeds including castor beans, the Government of India has set up a Technology Mission on Oilseeds and targets are fixed to achieve one million tonnes of castor beans production by 2000 A.D. The Government has started several schemes and has given incentives to promote castor oil exports to GCA and RCA countries. In this chapter, while projecting some key variables of castor, the selected forms of the function used have not been specified. Secondly, the projection based on the past trend may not be valid under dynamic changes in future in the world and the countries. Hence, better forecasting techniques which consider the changes in future are to be used for projection purpose.

In the last chapter, the summary of the study, conclusions and policy implications are presented. The authors have suggested several measures to be taken up in future for increasing the production of castor beans and exports of castor oil in the country. Some of them are of general nature and are not based on the findings of the study.

On the whole, the study on castor which is an important export item and a source of earning foreign exchange will be really useful to the policy makers and the export organisations. Various issues and policies related to consumption, production, marketing and trade of castor in the domestic and international markets have been discussed very well. The authors have suggested possible strategy and policy guidelines for increasing the production of castor beans and exports of castor oil.

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Agriculture and the State: Growth, Employment and Poverty in Developing Countries,
Edited by C. Peter Timmer, Cornell University Press, Ithaca, New York, U.S.A., 1992.
Pp. xiii+311.

This collection of 12 papers, originally presented in a conference held in 1989, is addressed to the broad theme of the role of the state in promoting agricultural development as a contribution to economic growth and to poverty alleviation. The discussion is in terms

of what - given the nature of the state - it should or should not do and what it can or can not do. The arguments presented are both theoretical and empirical and the approach is from a political economy perspective.

In his introductory essay, Peter Timmer identifies broad areas of agreement and disagreement in mainstream academic consensus on the role of the state. It is agreed that state intervention, direct and supportive, is necessary for agricultural research, extension, irrigation and rural marketing infrastructure. On the other hand, intervention has been considered to be neither desirable nor likely to succeed in respect of price stabilisation, organisation of co-operatives and marketing boards. Land reform, in Timmer's view, also belongs to the set of interventions on which there is 'widespread disagreement'. His summary of the debate on this topic is: "Although nearly all economic analysts support some form of land reform, they do so primarily for reasons of political dynamics or distributional equity. The recent 'neo-neo-classical' literature on interlinked markets has significantly undermined the earlier Marshallian view that only owner-operators could use land efficiently. Without strong efficiency gains, the economic case for land reform becomes much weaker, especially if substantial disruption occurs to established patterns of input supply and output marketing." In other words, according to 'main stream economics', efficiency gains are the litmus test. Political dynamics and distributional equity have to yield if efficiency gains can not be clearly established or even in the face of hypothetical efficiency losses. It is regrettable that, in an otherwise well-reasoned paper, Timmer endorses this view-point in a couple of peremptory paragraphs.

Just Faaland and Jack Parkinson in their paper add state farms to the taboo list of interventions. More generally, even in the areas in which state intervention *prima facie* is considered to be legitimate or desirable, Faaland and Parkinson are sceptical about whether it is likely to be effective. The scepticism derives from the nature of the state and the range and complexity of the state-agriculture interface. In their words, in developing countries, "the limitations placed on the role that can be played by government are essentially three-fold. First, we believe that many governments in Third World countries have the characteristics of what Myrdal terms 'soft states': weakness, insecurity and reluctance to enforce policies. Second, of course, even strong governments find it hard to influence development constructively and effectively in such a widely strung operation as agriculture. Third, we have an inherent faith in the ability of people to improve their condition if given reasonable support in the form of services that the state, and often only the state, can provide." The conclusion that they draw is that "the nature of governments in most developing countries is such that only limited direct influence can be exerted on agriculture. This points to the need to improve market mechanisms as much as possible.... Nevertheless, in developing countries market forces alone can not be relied on to promote the changes that are needed. Increasing agricultural production requires a conjunction of favourable measures and circumstances; the essence is a mutually reinforcing package deal."

The nature of the state is also the subject of the paper from Raymond Hopkins. He proposes three models of political economy, namely, those in which the state is (a) an arena for competitive pressure groups, (b) a rent-seeking, self-protecting actor on its own and (c) a development-oriented builder at varying levels of capacity. Historically, states have sought to pursue six main purposes through intervention in agriculture: extraction of resources; expansion of the state; protection of agriculture as a resource; economic development;

welfare of the poor; and political stability. The three basic models, which are not mutually exclusive, largely explain the nature and dynamics of how these purposes have been pursued and the results that have followed.

Peter Lindert's chapter on "Historical Patterns of Agricultural Policy" is a most interesting and illuminating exploration - in empirical and theoretical terms - of the evolution of agricultural policy in different types of states over time. He identifies two broad patterns. One is the developmental pattern: in early modern European and contemporary developing countries, the state taxes agriculture while in modern industrial states, the government subsidises agriculture. The second is the anti-trade pattern: governments tend to tax exportable-good agriculture and protect import-competing agriculture. Both patterns are counter-intuitive since they conflict with models of efficient resource allocation. The empirical part of the paper seeks to substantiate these patterns on the basis of longitudinal and cross-section comparisons. The theoretical part consists in testing these trends in, what Lindert describes as, a 'modest and frugal' framework of pressure-group interactions. The framework is 'modest' because the political process is complex; it is 'frugal' because it concentrates on a few fundamental forces. The basic hypothesis is that governments intervene to redistribute benefits away from groups determined by market processes and toward groups selected by government policy. Using the nominal protection coefficient (*i.e.*, the ratio of the domestic producer price to the border price) as a dependent variable, the statistical test evaluates the explanatory contribution of various hypotheses for understanding the two historical patterns. Lindert's conclusion is that "the developmental pattern, in which developing countries tax agriculture and developed ones subsidise it, is best explained by a combination of two related forces. First, as the agricultural sector shrinks, farmers increase their effectiveness in lobbying and gain widespread sympathy, especially in electoral democracies. Second, the agricultural lobby is also increasingly mobilized by the rising income sensitivity of farm operators and landowners to price movements that government could prevent." A third explanation is more tentative: "Perhaps the state could tax agriculture heavily in early settings, and subsidize it heavily in industrialized countries, partly because of the basic price inelasticity of agricultural demand and supply. The greater price inelasticity of agriculture should mean that any given amount of government redistribution, whether toward agriculture or at its expense, could be achieved with lower net deadweight costs than in other sectors of the same size and trade orientation. When agriculture is involved, there is less scandalous national waste to dampen the advocates of redistribution and to mobilize its opponents."

Lindert notes that England was an important exception to the general pattern since "it stood out among early modern nations in its desire to make grain expensive at home from the 1660s to the 1840s". This was because of the domination of the landed aristocracy until the 1840s when the Reform Act of 1832 and changes in political representation in favour of industrial interests made it possible to repeal the Corn Laws. Lindert does not discuss India but it will be an interesting topic for research to explore the Indian case in relation to his general pattern. India too would appear to be an exception since agricultural subsidies are sizeable despite its being a developing country with an agricultural sector to which Lindert's hypotheses of shrinking size, worsening terms of trade and low net deadweight losses do not apply.

It is easy to see that state intervention is inescapable for stimulating and exploiting the

potential of agriculture for rural development and poverty alleviation. This is the theme of three of the papers. Writing on "Agricultural Growth and Poverty Alleviation", Timmer poses the question: "How fast must the agricultural sector grow in order to absorb the new entrants to the labour force?" His conclusion is that "policies to reduce poverty in agriculture are largely synonymous with policies that stimulate employment and rising wages in other sectors of the economy. Their successful implementation depends on a healthy relationship, in terms of both market linkages and policy balance, between the agricultural sector and the rest of the economy." Graham Donaldson (Division Chief, Operations Evaluation in the World Bank) has attempted an objective assessment of the Bank's experience with 'Government-sponsored Rural Development'. The focus of the World Bank's rural development projects, which originated in the McNamara period, was on improving incomes and employment for the "people who have to find a livelihood in rural areas, who remain surrounded by poverty and who are subsistence-oriented, with low productivity and significant constraints on adapting to rapid change". A number of factors have been responsible for poor performance in the Bank's portfolio of rural development projects: lack of suitable technologies, defective design, a poor policy environment, inadequate commitment on the part of borrower governments. Most notably, Donaldson, relying on the Bank's evaluation reports, finds that the single most important failure of the Bank relates to institution-building. "Institutional development has suffered most when reliance on autonomous or semi-autonomous project management units have substituted for, rather than strengthened, line agencies." Also, "because of the scale and prominence of Bank-supported rural development projects, too many of these projects tended to divert rather than create additional human resources, particularly in the absence of adequate local staff resources and with poorly performing training components." Donaldson concludes by pointing out that the "most basic requirement for rural development projects is for local-level programs to plan, co-ordinate and implement the process; and this raises the question of whether governments can do rural development." If they can not, one wonders why Donaldson stops short of concluding that the World Bank, located in distant Washington, will, most certainly, not be able to. In a short and incisive contribution, Cristina David supplements the critique of the World Bank's rural development projects. In her view, simpler single-sector projects are to be preferred to multiple-component, 'integrated' projects in which the weaknesses rather than the strengths of individual components get reinforced. Also, the World Bank's compulsions to meet its lending targets have resulted in loans exceeding the effective absorptive capacity of low income countries. The costly mistakes made by the World Bank (often described in its literature as the 'learning process') is ultimately a burden on the debt of borrower countries.

The potential for agricultural exports is a matter of special interest to us in India in the context of liberalisation and structural adjustment. Chapters by Alberto Valdes and James Houck contain a fair assessment of prospects and constraints. Houck points out that agricultural exports will be difficult to sustain if they entail depressed wages or general inflation or a serious fall in government revenues. On external constraints, the strongest statement is to be found in Timmer's concluding chapter: "While the United States preaches the benefits of competitive exchange rates and export-led growth to its aid-recipient countries, it simultaneously finds its own agricultural exports undercut by foreign price competition and in need of direct subsidies to remain competitive. The schizophrenia and doublespeak

required of aid officials, the Department of Agriculture, Treasury, and State, and most commodity organizations in the United States are testimony to the inherent inconsistencies in a more widespread strategy of export-led growth based on agriculture."

Two other chapters on food aid by Edward Clay and by Walter Falcon are instructive. Food aid has many faces: surplus disposal, humanitarian relief and development assistance. The debate on costs (benefits) to donors and benefits (costs) to recipients under each of these aspects is by now well documented but remains inconclusive. The availability of food aid in terms of quantum and timeliness has often been inconsistent with need. Its potential as development assistance, particularly during structural adjustment, has not been sufficiently recognised or put to use. As Falcon points out, the central question about food aid that is most often asked is: why there is no simple way to work out food aid arrangements when there are surpluses of food in some countries and deficits that lead to widespread hunger in many others? There is no satisfactory answer in theory to this question. Notably, the US is determined not to build up food stocks and has chosen to idle more of its land - through set-asides, paid acreage diversions and the conservation reserve - than the combined *total* arable lands of West Germany, Denmark, Portugal, the United Kingdom and the Netherlands.

The role of the state in agriculture involves major dilemmas, in varying forms and extent, in all developing countries. The objectives of policy are multiple and conflicting: allocational efficiency, balanced growth, revenue mobilisation, export earnings, price stabilisation, food security, improved productivity, labour absorption, poverty alleviation. In addition to budget and balance of payments constraints, domestic pressure groups and international protectionism are major factors that impede policy reform and implementation. In these circumstances, no collection of essays can be adequate in terms of width or depth. They can only be expected to illuminate and instruct. This collection should certainly stimulate study and research on the determinants, scope and limitations of state intervention in agriculture.

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Managing Irrigation: Analysing and Improving the Performance of Bureaucracies, Norman Uphoff, with Priti Ramamurthy and Roy Steiner, Sage Publications India Pvt. Ltd., New Delhi, 1991. Pp. 263. Rs. 180.00.

Canal irrigation has attracted a good deal of social scientist's attention during the past decade with eminent scholars like Robert Chambers, B.D. Dhawan, David Corten and several others having contributed to improving the quality of the discussion. While all of the recent literature finds great scope for raising the performance of large irrigation systems in developing countries, most of the studies find irrigation bureaucracies to be the principal source of under-performance, and explore ways to get these bureaucracies 'de-bureaucratised' - which is and has repeatedly proved to be contradiction in terms. This book falls in this genre of contributions on improving the performance of irrigation systems.

"Increasing attention has been focussed on how the participation of farmers in irrigation management can improve the efficiency, equity and overall performance of irrigation systems in developing countries. A crucial factor in performance that has received less attention

is the structure and performance of irrigation agencies that are responsible for managing many or most of these systems in the third world." This, the book says, is its central focus.

The book is divided into two parts: Part I, with five chapters, analyses the factors affecting irrigation performance. After evolving a comprehensive conception of performance - as net benefit accruing to government, users and the bureaucracy itself - in Chapter 1, the authors analyse alternative modes of organisation in irrigation agencies and identify four important variables in management structures and processes: concentration of authority, structuring of activities, accountability and responsiveness. Chapter 3 analyses the objectives of irrigation management and identifies a rather impressive set of criteria for evaluating managerial effectiveness. Chapter 4 is important and examines how agro-ecological context, technical context, economic context, historical context, socio-cultural context and politico-legal context shape irrigation management objectives. Finally, Chapter 5 explores organisational variables affecting agency performance: structure, orientation, activities, capacities and linkages of the agency.

Part II of the book, having four chapters, explores the elements of a strategy the authors outline for improving the performance of irrigation bureaucracies. Chapter 6 reviews various management approaches available in the mainstream literature as alternatives to centralised management, and Chapter 7 explores structural and normative approaches to agency reorientation. Chapter 8 carries on somewhat in the tradition of Chapter 6 reviewing some more relevant frameworks from social sciences, organisation theory and management literature. And, finally, 'Chapter 9 pulls together what we think is the state-of-the art'.

The book is lucid and easy to read. It operates on an *a priori* format throughout. Its arguments have appeal at an intuitive plane; and no evidence is mustered to support the view-points the authors advance although experience in several canal systems in the developing world has been used, in a somewhat piecemeal manner, to enrich their enquiry.

The major service that this book renders is of presenting a vast body of social science and management knowledge which can be usefully deployed to enhance the performance of irrigation systems. While the book excludes options like turn-over of systems to farmer organisations, it is more because the authors want this book to deal specifically with improving irrigation performance by improving agency effectiveness rather than replacing agency management.

One aspect that the book has left relatively unexplored was the demand for high performance. A credible hypothesis which may explain why irrigation systems under-perform in the developing world is that the performance as the authors have defined is never at the centre-stage of the agenda of irrigation system managers. Governments, politicians, departments, contractors - who control the political economy of irrigation projects - have expectations from irrigation managements which have little to do with Uphoff's conception of performance. What is not sought is naturally not secured. In contrast, extensive experience with small scale private as well as communal irrigation systems in the developing world suggests that when performance is at the centre-stage of the agenda of key decision-makers, high performance is secured, no matter whether or not decision-makers have access to management or social science knowledge bases.

At a time when, in a country like India, there has been growing disenchantment with and erosion of faith in bureaucratic management of economic enterprises, the authors' enthusiasm for performance improvement without major surgery in the design of irrigation

organisation is likely to be far from infectious. However, if there are top managers in canal irrigation bureaucracies in this country - or others - who wish to rise to the high expectations the authors of this book have of them, they would not find a better guide than this book in embarking upon a programme of reorientation and change.

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Women in Agriculture: A Socio-Economic Analysis, Shashi Kanta Varma, Concept Publishing Company, New Delhi, 1992. Pp. 192. Rs. 225.00.

It is a known fact that India lacks adequate quantitative data on women in agriculture. Farm women - cultivators and agricultural labourers - constitute so significant a part of the working women population in the country that it necessitates a fuller understanding of their status and role at present as well as in future too. The study points out that a few sporadic and lopsided studies on women in agriculture have been conducted in the country under so many limitations. Since most of them do not mirror a clear and complete picture as to the nature and extent of farm women's participation in a wide range of household and non-household activities, a few well meaning studies are needed on the above topic. Research also suggests that across the centuries, the day to day life of rural women has been full of hardship, deprivation and the struggle for survival.

This is a doctoral dissertation, conducted in Haryana, a show-piece of India's Green Revolution. Also it is a comparative study of two different zones - hot and semi-arid region (district of Hissar) and irrigated or hot and humid region (district of Karnal) of Haryana. From among these two districts, two blocks were randomly selected; from each of the selected blocks two villages were randomly selected out of the total number of populated villages. Twenty-five men and women from each of the four selected villages representing high, medium and low socio-economic strata of the village community were randomly selected for collecting data for the present investigation. The whole data were collected using a structured schedule. The researcher herself makes it clear that the study suffers from all the limitations of a student's research project; time and money being the main constraints. The study was confined to only a few villages of Haryana with a total sample of 100 (couples, husband and wife of the family) respondents.

The study investigates the nature and extent of involvement of rural women and men in agriculture and home activities as well as the extent of exposure of modern crop technology to farm women. It presents a comparative drudgery index for agricultural operations and examines the impact of mechanisation on farm women in terms of employment, displacement, workload and income. Also the study has investigated the extent of contribution of women in the cultivation of four major crops grown in the area - wheat, paddy, cotton and bajra. The role of women in decision-making in all important matters of home and farm and the utilisation pattern of savings in the family are also studied.

The major findings of the study include: farm women generally have low social participation. A majority of the respondents of high socio-economic stratum had joint family system. The number of joint families was found to reduce with a reduction in the socio-economic status of the family. Pesticide dusting, spade work during field irrigation,

ploughing, sowing, manure and fertiliser application, uprooting seedlings and marketing of grains were exclusively performed by men. Transplanting and storage of grains were found to be the exclusive domains of women. Other farm operations like weeding, harvesting, carrying head load, threshing and winnowing were performed jointly, but predominantly by women.

The household activities are predominantly performed by women irrespective of their socio-economic status. On an average, a woman devotes about 6 hours in the peak season against 7 hours in the slack season in household activities. The amount of drudgery per-man day of work shouldered by women was found to be significantly higher than that shouldered by men in the case of wheat cultivation; but it was in the reverse order in rice. The major force influencing inter-sex assignment of tasks was the social value held by men and women alike. In fact, the farm machineries in use demonstrated the play of this value.

Finally, even though the author aspired to have a clear and complete picture on women's participation in household and non-household activities, this study also adds up to the collection of 'a few sporadic and lopsided' studies on women in agriculture in India because of its many limitations. Instead of studying two blocks (even though of different zones) of the same state, if one of the study blocks were from a backward state, the results could have been different. Again, many of the gender problems could not be got through an interview schedule; the sample has to be observed continuously. The different ways of ordering the components of the research strategy could have been group interviews, participant observation and structured schedule.

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Encroached and Enslaved: Alienation of Tribal Lands and Its Dynamics, Philip Viegas, Indian Social Institute, New Delhi, 1991. Pp. ix+169. Rs. 70.00.

The book under review is an in-depth study of a major issue of the land alienation of tribals of Orissa. As a follow-up of his action-research project on 'Forests, Environment and Tribal Economy', the author has analysed the issue of land alienation which has led to the problem of survival of the tribal community in Orissa. As a freelance research scholar of environment and tribal development, the author has contributed to the existing literature on the study of problems of the tribal community.

The problem of land alienation of tribals has led to their displacement from forests and from slash-and-burn cultivation. Irrespective of different legislations, promulgated by the Central and State Governments to protect the rights of the tribals over their land, the tribals are in constant conflict with the local bureaucracy and the landed class. This book deals exhaustively with the process of agrarian change, extension of land alienation, its process and the Government initiative for structural change.

The book is divided into six chapters. While analysing the process of agrarian change in the first chapter, the author has pinpointed the worst conditions of the land ownership of the tribals in Orissa. The three-fold classification of the land owned by the tribals, viz., the community land, the land owned by the clan and the individual holdings went unrecognised and the problem of land alienation of the tribals in the state got aggravated owing to the communication gap between the tribals and the government along with in-built loopholes

in the legislation meant for protecting the ownership rights of the tribals.

Such analysis of the problem of land alienation of tribals is based on primary data collected from 248 respondents from four districts, *viz.*, Ganjam, Dhenkanal, Koraput and Phulbani of the state, as explained in the second chapter on methodology. The main objectives of this study were: (1) to study the extent and causes of land alienation among tribals in rural Orissa, (2) to identify and understand the processes involved in alienation of tribal lands, (3) to generate a critical awareness among the tribals of the ways and means devised by moneylenders, middlemen and landlords for the alienation of tribal lands and to mobilise them to take appropriate action against such manipulations and (4) to inform the tribals with regard to land development and water management techniques with a view to increasing the productivity of land as one of the several deterrents against loss of land through mortgage, distress sale or abandonment. The author has adopted an integrated approach of the conventional and participatory methods of research. Although the data collection constituted a major part of the project, it has played a secondary role in the form of mobilisation of the people within the framework of the erection-reflection-action cycle.

The third chapter describes the communitarian aspect of the social organisation and values as the characteristic features of the tribals, which get eroded with the dislocation of their economic organisation. The cause of land alienation of tribals lies in two-way exploitation, *viz.*, colonial and indigenous moneylenders. Such exploitation leads to transferring the ownership rights of land from the tribals to the moneylenders and to fragmentation and commercialisation.

While discussing the dynamics of the process of dispossession of tribal land in the fourth chapter, the author has probed into the interplay of social, cultural, economic and political forces under it. Rural indebtedness and illiteracy are basic reasons along with encroachment by landlords in dispossessing the tribals from their ownership rights.

In his critical appraisal of legislations promulgated by the Central and State Governments to protect the rights of the tribals over their land, the author points out in the fifth chapter that these legislations have in-built loopholes which have been judiciously manipulated by the non-tribals to concentrate land in their hands.

In order to generate a critical awareness among the tribals of the ways and means devised by moneylenders, middlemen and landlords for the alienation of tribal land, the author has discussed in the sixth chapter the measures for mobilising the tribals in the form of people's organisation at the village, cluster and block or regional levels. In order to inform the tribals with regard to land development and water management techniques and in order to mobilise them to take appropriate action against such manipulations, the author has cited the example of PREM (People's Rural Education Movement) Behrampur. He has stressed the fact that the problem of tribal land alienation and agrarian social structure could not be isolated. He has emphasised the need to formulate development programmes, policies and legislations in view of tribal culture, ethos and social set-up. He has rightly concluded that "so long as these structural constraints persist, the growth-with-equity model will perhaps remain only a distant dream".

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