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## **Book Reviews**

*Variability in Grain Yields: Implications for Agricultural Research and Policy in Developing Countries*, Edited by Jock R. Anderson and Peter B. R. Hazell, The Johns Hopkins University Press, Baltimore, Maryland, U.S.A., 1989. Pp. xix+395. \$ 52.00.

The book contains selected papers from the 1985 Feldafing Workshop. The workshop was organised by the Deutsche Stiftung für Internationale Entwicklung and the International Food Policy Research Institute. The papers are written by specialists in their areas and provide useful insights into variability in grain yields. Since the book has as many as 26 papers, commenting on each one of them in detail is beyond the scope of a book review. Hence, the present review briefly highlights the important issues discussed in the book.

The focus of discussion in the book relates to the changing patterns of variability in foodgrain production in the world and in some selected countries as well as on improvements in the yield levels of high-yielding and traditional varieties. The relationships between changes in yield variability and yield correlations and such causal factors as changes in agricultural technology, weather, irrigation, input availability and related variables are analysed. Also, the consequences of increasing yield variability, including its effect on different types of farmers and on poor urban and rural consumers are discussed.

The book is divided into four parts. The first part which consists of eight papers, brings out the evidence on patterns of yield variability in world cereal production. Case studies relating to China, Soviet Union, Syria, India, England, Southeast England and Bavaria are also presented. The second part provides findings of several studies regarding the relationship between plant breeding and yield variability. There are seven papers in this part. A comparative analysis of yield stability of the high-yielding cereal varieties and of the traditional varieties is reported in this part. Further, the limitations of the plant breeding programmes for achieving higher stability of yield are also examined. The third part mainly deals with the relationships between cultural practices and variability in yield. The former particularly refers to the use of inputs like fertiliser, pesticides, irrigation, pest-resistant seed, etc. The concluding part brings out the reasons behind the growing yield variability and its consequences to the farmers, poor consumers and the government in the decision-making. Further, the implications of the growing yield variability on agricultural policy and agricultural research priorities are also reviewed.

The first part of the book throws light on the patterns of changing yield variability. Hazell in his paper on changing patterns of variability in world cereal production observes that since the seventies, there has been an increase in the variability of total cereal production all over the world. This increase is mainly due to the variances and covariances of yield. The rest of the papers relate to individual country studies. The first among them is by Bruce Stone and Tong Zhong, who examine the changing patterns of variability in Chinese cereal production. This is followed by J.R. Tarrant on an analysis of variability in Soviet grain production. A similar work is carried out by H. Nguyen for Syria in which an attempt is made to relate the agricultural planning policy with variability in Syrian cereal production. The studies on Soviet Union and China are chosen as they are important suppliers in the world cereal market. Syria is considered because it is the riskiest cereal production nation.

The paper of Thomas S. Walker relates to high-yielding varieties and variability in sorghum and pearl millet production in India. The study, based on district level data, provides

insights into the increasing inter-regional yield variability. The papers of R.B. Austin and M.H. Arnold, and R. Webster and N.T. Williams deal with variability in cereal production in United Kingdom. The former attempts to assess the likely influence of yield variations in future, given the present high level of input consumption while the latter deals with the variability in wheat and barley at the individual farm level. The last paper in this part by G. Fischbeck examines the variability in winter wheat and spring barley yields in Bavaria.

The papers mentioned above use time-series data and study the variability in cereal yields with the help of variance decomposition methods. The main drawback of these studies is that though they identify the sources of change in yield variability, they are unable to throw light on the cause and effect relationships. This aspect is covered in the subsequent two parts of the book.

The second part of the book deals with plant breeding and yield variability. Arnold and Austin bring out the process involved in selecting high-yielding varieties that are adaptable to climatic regions and provide stable output. The authors point out the existing limitations in selecting high-yielding varieties by plant breeding experts and suggest remedial methods. W.R. Coffman and T.R. Hargrove's work present the numerous characteristics of a plant that determine its stability. Invariably there is a trade-off between breeding for stability and for higher productivity. D.N. Duvick examines the possible genetic causes of increased variability in U.S. maize yields. He observes that inter-regional maize yield increases may be due to the changing climatic and agricultural practices rather than due to the narrowing of genetic varieties. The other four papers address this problem. W.H. Pfeiffer and H.J. Braun examine yield stability in bread wheat; C.J. Peterson, V.A. Johnson, J.W. Schmidt and R.F. Mumm look into genetic improvement and the variability in wheat yields; H.N. Pham, S.R. Waddington and J. Crossa analyse yield stability of CIMMYT maize germplasm; and J.R. Witcombe studies pearl millet and hybrids in India and Pakistan. These studies suggest that high-yielding varieties have the same level of adaptability/yield stability as that of the traditional varieties.

The third part covers input management and yield variability. The studies cover inputs like fertiliser, irrigation, pest-resistant varieties and pesticides and relate them to yield variability. There are in all six papers in this part, of which the first three examine the relationship between yield variability and fertiliser, irrigation, and pest-resistant varieties and pesticides respectively. The common finding is that proper management of input use can result in stabilising yield. The remaining three papers in this part are concerned with the technological progress and input management and throw light on their inter-relationships. J.C. Flinn and D.P. Garrity bring out the relationships between agricultural practice, nitrogen and pesticide use, and their role in yield stability in East Asia. H. Hanus and P. Schoop trace the relationship between nitrogen fertiliser and fungicide on yield and yield variability in wheat and barley. J.B. French and J.C. Headley examine the influence of technology and weather on the variability in U.S. maize and wheat yields. The important finding is that they are able to distinguish between the effects of weather and technology in explaining wheat yields.

The last part of the book focuses on the impact of yield variability and its implications for policy. There are five papers in this part. V. Bindish, R. Baker and T.D. Mount make use of the district-level data from India to examine if rice yield variability can be offset by



improved information. They build an expectation behaviour model of rice farmers. Production risk is arrived at by calculating the difference between actual yield and expected yield for each year. J.R. Anderson, C.J. Findlay and G.H. Wan direct their attention to risks faced by cultivators. The analysis is based on data from Australian wheat farms. The authors observe that for determining riskiness, yield dispersions alone are not adequate. The economic returns for the crop rather than yield alone would give an appropriate explanation for risk involved in turning to modern technology. T.S. Walker argues that increased yield variability is not likely to result in household income variability. The reason is that household income depends on several crops and on other sources of income. D.E. Sahn and J.V. Braun examine the implications of variability in food production for national and household food security. The lack of data on inter-year fluctuations in consumption and nutrition at household level has limited the analysis. The results indicate that increase in production variability leads to an increase in consumption variability. In low income countries the poor households are faced with constraints. This limits their ability to keep up with increased production variability. The last paper by Anderson and Hazell summarises the main findings of the various papers and tries to draw policy implications and research priorities for future.

The book will be very useful to the researchers, particularly to the economists who have not given sufficient attention to the views of agronomists, plant breeders and geographers on this important subject.

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*Irrigation in Sub-Saharan Africa: The Development of Public and Private Systems*, Shawki Barghouti and Guy Le Moigne, World Bank Technical Paper Number 123, The World Bank, Washington, D.C., U.S.A., 1990. Pp. ix+99. \$ 7.95.

*Irrigation Management on the Indo-Gangetic Plain*, D.J.W. Berkoff, World Bank Technical Paper Number 129, The World Bank, Washington, D.C., U.S.A., 1990. Pp. xii + 54. \$ 6.95.

Given the complex production environment in farming with mounting population to sustain, irrigation remains one of the necessary conditions thought not sufficient by itself for increasing productivity of crops in the developing countries of not only Africa but also Asia. Both the studies, above noted, review the role of irrigation, its development and management and future strategies in Sub-Saharan African region (SSA) and India based on the experiences in the irrigation programmes of the respective regions.

The SSA region, with escalating food problems, continues to pose tougher challenge to the policy makers involved in Africa's agricultural development. The first study, dealing with SSA countries includes eight papers, of which the first seven papers discuss the physical potential for irrigation development, past problems and successes in irrigation projects and future irrigation strategies and the eighth and last chapter deals with country case studies covering Zimbabwe, Senegal Valley and Nigeria, all written by different authors involved directly/indirectly in the designing of agricultural and irrigation investment strategies for SSA countries.

The study highlights the success stories of small scale private irrigation systems and the dismal performance of large scale public irrigation systems with a few exceptions in Sudan, Cameroon and Senegal. It makes out a strong case in favour of the former to be given top priority in future agricultural and irrigation investment strategies with the role of the public sector limited to planning, regulation and management of water resources in SSA region. The papers included in this study thus address several issues facing the irrigation sector and thereby the food economy of SSA region.

However, some of the specific issues remain unanswered in the reader's mind. Since the study is a collection of different papers written by various authors, several contradictions come to the fore. To quote a few: achieving food security through food self-reliance or through reliance on agricultural export via the adoption of marketable high value crops continues to remain a dilemma. It is puzzling to note Jose Olivare's presumption (pages 9 and 10) that there is no available estimate of India's irrigation potential and based on this he has gone wrong with all the India's irrigation statistics while comparing with that of SSA region as could be seen from David Seckler's paper (p. 19) which completely contradicts Olivare's inference in general and about contribution of SSA's irrigation potential in particular. Also one should not forget, while emulating South-East Asian experience of impressive agricultural growth through irrigation development, the fact that it is indeed aided by technological (high-yielding varieties) and institutional (extension, fertiliser, credit, etc.,) support which subsequently attracted private sector irrigation investments.

Given the unfavourable environment of irrigation in SSA as compared to Asia (Seckler, p. 17), unfavourable macroeconomic and sectoral policy environment for irrigation projects in Africa (Barghouti and Ashok Subramanian, p. 83), little experience of private sector involvement in SSA's irrigation development (Salah Darghouth, p. 91) and inadequate research information on farmer organisations in resource management, environmental dimensions of irrigation development and possible disputes and conflicts during the transition from the traditional system to modern agricultural schemes in managing the common property resources (Moigne and Barghouti, p. 56), it is indeed challenging to plan on appropriate scale for future irrigation systems for SSA region even though most of the papers in this study, while acknowledging the above limitations, collectively make a special emphasis on the prospects for small scale private irrigation systems. Perhaps what is needed is, as mentioned by Moigne and Barghouti (p. 56), the time is now ripe for the scholars and engineers to shift their attention from Asia where the green revolution, the advancement of irrigation, the evolution of farmers' groups and the emergence of local institutions and other organisations have provided excellent opportunities for scientific investigations, to Africa wherein the challenge for technicians and policy makers now lies to improve resource management, local participation and balance between technical and social investment in agricultural development. This study, on the whole, is a welcome addition to the irrigation literature of developing countries in general and of the African region in particular.

Managing the situations which cannot be controlled is the crux of the Indian irrigation systems. Violation of rules and norms by the beneficiaries while sharing the scarce resource, namely, irrigation water continues to engage the attention of planners, policy makers and researchers alike. The second study under review focuses on the relative performance of irrigation systems and management strategies in the Indo-Gangetic plain by comparing the irrigated agriculture's relative success in the west and relative failure in the east.

In the western part of Indo-Gangetic plain where farmers decide 'crops to water', the irrigation systems are relatively successful as in the case of the Bhakra scheme. In the eastern part of Indo-Gangetic plain where farmers plant the land fully and 'demand water to crops', irrigation management gets complicated and ironically the potential benefits are never realised under both excessive and deficit rainfall situations although for different reasons as in the case of the Gandak scheme. The suggested solutions are striking a balance between ability to respond and manageability of irrigation system to achieve feasible control, crop planning and conjunctive use of water.

The author's description of background information on schemes, acts and historical perspective are quite graphical and lucid. However, excessive reliance on rainfall alone while explaining the variability in irrigation performance and farmer's interference in particular is not entirely convincing since a wide range of socio-economic, political, institutional, cultural and technical factors which are quite contrasting between the east and the west did contribute equally, if not more, towards the performance of the present state of the irrigation system. Also, the suggestions regarding the use of oil engines in Uttar Pradesh and Bihar to promote better use of irrigation water is untenable both from private and social point of view. Other socially and economically desirable ways like improving electricity use efficiency and curtailing non-productive and wasteful uses which are relatively more rampant in the east deserve utmost consideration.

The case studies are too brief. They would have been more wholesome with the incorporation of equity and efficiency aspects of irrigation management. Finding typographical errors in standard technical paper is indeed distracting. On the whole, the study is a welcome addition towards a better understanding of variability in irrigation management vis-a-vis farmers' interference.

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*Agricultural Growth and Structural Changes in the Punjab Economy: An Input-Output Analysis*, G.S. Bhalla, G.K. Chadha, S.P. Kashyap and R.K. Sharma, Research Report 82, International Food Policy Research Institute, Washington, D.C., U.S.A. in collaboration with the Centre for the Study of Regional Development, Jawaharlal Nehru University, New Delhi, August 1990. Pp. viii+119.

The analysis in this research report relates to the structural changes that have taken place in the Punjab economy during the period 1969-70 through 1979-80 using input-output technique of analysis. The report is divided into seven chapters. Chapter I summarises the results whereas Chapter II describes the growth of the Punjab economy during the period 1960-61 through 1982-83. Methods of compilation and sources of data are described in Chapter III. Chapter IV develops on the structural features of the Punjab economy. Chapter V works out the linkages in the economy, followed by the estimation of income and employment multipliers in the Punjab economy in Chapter VI. The last chapter presents the conclusions and policy implications.

Compiling of input-output table is itself a grand task. The authors have very skilfully

handled this problem by categorising the Punjab economy into 39 sectors. They have updated the input-output table of 1969-70 by making proper and needed adjustments, detailing additional sectors and bifurcating some that were found aggregated in the earlier version of the input-output table. The sources of data for various sectors are also provided.

The Punjab economy has undergone some important changes especially in the agricultural sector and agro-processing or other agro-related sectors. The study of these linkages assumes importance in the ever growing Punjab economy. The authors have done a commendable job in taking up such a huge task in which they have succeeded without any doubt.

Following the basic input-output model of Leontief, the authors have worked out income and employment multipliers for the Punjab economy. Inter-sectoral linkages have been given at the disaggregated level. Backward and forward linkages of the Punjab economy have been discussed with and without import leakages. At each level the authors have provided a brief discussion of the methods of estimation of the coefficients, which adds to the usefulness of the study and provides a ready reference for the readers and also for research workers.

Direct and indirect income and employment multipliers in any inter-sectoral analysis have great value in so far as the understanding of the working of the economy is concerned. Direct, indirect and induced multipliers both for income and employment in the Punjab economy have been worked out, taking import leakages into consideration. A significant change has been observed within the industrial sector of Punjab when the 1979-80 parameters are compared with those of 1969-70. Whereas in 1969-70 it was agricultural based economy, in 1979-80 the industrial sector indicated higher income and employment multipliers.

The authors, on the basis of this analysis, have observed that the rapid agricultural growth, pioneered by the green revolution in the Punjab, has been responsible in bringing about total transformation of the economy. This accelerated the growth of other sectors of the economy through their inter-sectoral linkages.

Very useful information has been provided in three appendices by way of presenting tables of inter-industry flows and patterns of final demand in the Punjab for the year 1979-80 followed by the detailed table of linkages analysis. This has been followed by a description of sectors in the Punjab for the year 1979-80.

The updated input-output tables relate to the period 1979-80 and the publication is brought out in 1990 - after a period of a decade. This research is, therefore, a post-mortem of the Punjab economy. It attempts to see as to what had happened during the period 1970-80. A basic question remains whether this study could provide any worthwhile direction for the planners or policy makers for the future as tremendous changes have already taken place in Punjab agriculture since then. During the eighties the growth of the services sector has slowed down; Punjab agriculture has moved towards specialisation and much efforts are being made towards sustainability of agriculture. All these are bound to change the directions of Punjab agriculture and thus the associated sectors. The policy lesson from the Punjab experience as given at the end is already well documented by the development economists.

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*Appropriate Technologies for Rural Development in India*, Floris P. Blankenberg, Concept Publishing Company, New Delhi, 1991. Pp. 296. Rs. 300.00.

This book is an attempt to abstract a common perspective on understanding implementation issues in appropriate technology projects, out of seven case studies done by the author. These are: the introduction of windmills, solar cookers and bio-gas in Gujarat; bio-gas, power ghansis, potters equipment and hand-pumps in Tamil Nadu. These case studies were covered during two stretches of field research by the author.

The author argues for a theoretical framework which uses several variables, broadly classified into two complex of factors, to understand the character of implementation of intermediate technology projects: project management and project environment. Broadly speaking, project management factors deal with the what-so-ers and how-so-ers whereas project environment factors deal with the why-so-ers of such projects and the common macro threads in them.

The literature on appropriate technology is replete with tall claims and unsympathetic criticisms of specific technologies in local contexts; in sweeping critiques on the whole movement being a sop to the poor who are being marginalised by the capitalist mode of economic development. This book is an interesting attempt to bring together a larger perspective and real life project management concerns together to explain the futility of the efforts of well meaning individuals/organisations to swim better against the unrelenting tide of bigger unfavourable developments.

The author uses the analytical instrument of the project cycle to identify and concentrate on some critical stages in any project: identification, formulation, appraisal, implementation and operation. Unfortunately, the outcomes and ultimate impacts are not explicitly covered on the plea that the focus of the study is on implementation rather than impact. All the same, the author has defined implementation with a broad brush involving all the above stages of the project cycle.

The overall conclusion is that though there were several redeeming features and successes in appropriate technology interventions, on balance, the quality of implementation was poor and it is likely to remain so. Thus such technologies are likely to have only marginal impacts. The author traces most of the reasons to project environment: casual presumptions on needs of the poor on the part of influential elites in politics, bureaucracy, science and technological institutions; choice of technology triggered by availability of specific hardware rather than comparative evaluation; choice of implementing agencies and structures so as not to disturb the existing vested interests at various levels, etc.

The above conclusions sound prima facie true to reality. It will ring a bell for any one with more than a casual interest in appropriate technology. The operational learning for project implementing agencies is that their yearning for dramatic results in terms of large impacts cannot be realised simply by better and more aggressive project management. Having said this, the author does not offer any suggestions on how they could negotiate with the elites determining the project environment to offer a better chance for intermediate technology. The author classifies the patterns of interaction between various actors involved into three types: enforcement, consensus and bargaining. While there is pleading in favour of the consensus approach, the author is short of suggestions on how to switch over. There is also a need, in all fairness, for the evaluative studies to distinguish programmes from



specific projects, especially as it relates to modes of interaction and implementation. Programmes, by necessity, have to address larger goals and broadly relevant beneficiary needs like energy saving and availability of drinking water. It is the responsibility of specific projects under a programme to fine tune implementation to local contexts. Is there any need for consensus building before launching an energy conservation programme? Should a government wait for an appropriate project environment before improving project management? How can one improve project environment except through successful examples of project management in spite of all odds?

Within the project environment, the author has treated two separate facets: socio-economic and political structures, and basic transformation processes in society like capitalist development, commercialisation, urbanisation, etc. Nevertheless, the author perhaps errs in attributing several back-wash effects of such transformation processes to vested interests at central and state level politics and bureaucracy.

It is, however, not clear whether the theoretical framework articulated by the author was formulated prior to the case studies or the result of field studies. The reader gets an impression that the first is the case. In addition, English usage and grammatical mistakes are plenty, sometimes testing the patience of the reader. This is especially true in the first and last two chapters.

On the whole, the book might be of interest only to the newcomers in the field rather than to the people who are already in the game.

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*Transfer and Alienation of Tribal Land in Assam (with Special Reference to the Karbis of the Karbi Anglong District)*, B.N. Bordoloi, Distributor: Western Book Depot, Guwahati, 1991. Pp. x+309. Rs. 300.00.

The main aim of the present book is to probe into one of the basic and vital problems concerning the tribals both in plains and hills of Assam State in its proper perspectives. There is no chapter or section in the book describing the methodology of the study except a brief mention to this effect in the Preface to the book. Even the objectives, hypothesis, tools, techniques and review of literature have not been given and used for clarity. The study is presented in a simple style of government reports on the basis of secondary as well as primary data pertaining to the crucial problems of transfer and alienation of tribal land.

The book contains eight chapters. The first three chapters respectively present an historical account of Assam, constitutional safeguards for tribals, and legal safeguards for tribal land in general. It is noticed that Assam is a state blended with hills and plains in the North-East India, rich in natural resources but backward from the point of view of industry, transport and surface communication. The tribal population is found to be the weakest and poorest even today although the constitutional provisions provide all possible safeguards for the welfare and development of the scheduled tribes and the Government of India is fully aware of the magnitude of the problem and is empowered to amend the constitutional provisions wherever considered necessary in the interest of the tribal communities.

The next four chapters examine the extent of transfer and alienation of tribal land within

the tribal belts and blocks, land systems in Karbi Anglong and North Cochar hills districts, extent of transfer and alienation of tribal land in the Karbi Anglong district with special reference to the Karbis and alienation of tribal land due to installation of major irrigation and industrial projects respectively. This is followed by the eighth and final chapter of summary of main findings and policy implications. The incidence of land alienation of tribals in the villages outside tribal belts and blocks is much lower than in tribal belts and blocks. The same is true for the tribal families below the poverty line with 31 per cent and 47.34 per cent respectively. The tribal population lives mainly near the forest areas. There are 524 forest villages in the Reserve Forest Areas of Assam and 47 per cent of the population of the forest villages are tribals. In spite of the legal provisions under Chapter X of the Assam Land and Revenue Regulation 1886 as amended up-to-date, transfer and alienation of tribal land and encroachment of their land by the land hungry non-tribals, moneylenders and muslims from nearby Bangladesh border districts and other alien people have been going on unabated since pre-Independence and even now. These practices have virtually turned many tribal families into landless and poor. Besides, the developmental activities for construction of irrigation, extension of industrial and provision of infrastructural facilities have further accelerated land transfer and displacement of tribal people in recent years. What is worse, the rehabilitation and resettlement of the displaced persons have not been undertaken seriously and due compensation has not been paid in time.

Due to their poverty, the tribals cannot take to legal action and thereby get redressal of their grievances. It is suggested that the Government and local administration should take prompt action to evict illegal and unauthorised possession and encroachment. Provision of credit to meet their urgent needs, implementation of the Act in letter and spirit and provision of legal assistance to the affected people by the Government are also necessary. However, alienation of land cannot be prevented through legal devices alone. More emphasis must be laid on human resource development and various other aspects of tribal development. Hence, it would have been better for the author to look out, examine and refer to some success stories in this regard which he has not done at all. So much so, he has presented a long bibliography at the end of the book but no inferences have been drawn in the text anywhere. That could provide answers to the pertinent questions of why such situations do not exist in some areas and states, what brought the dawn of a new era for tribals in such areas and what exactly should be done for overall tribal development immediately.

In Himachal Pradesh, for example, the tribal development strategy and the efforts of government have brought about far-reaching changes in the conditions, outlook and economy of the tribal population (Bajpai, 1991). In the so-called IAS villages in tribal areas of Himachal Pradesh one or more IAS officer(s) from every household in such village(s) hold high offices of even the Chief Secretary, Commissioners, Dy. Commissioners, Directors and even Vice Chancellors and Ministers or Speaker - who further help to develop the tribals by implementing the development projects for them in letter and spirit in toto (Thakur *et al.*, 1988). As such, Himachal Pradesh is now called the land of affluent tribesmen of India. The high hills tribal areas of Himachal Pradesh are the most difficult, secluded, inaccessible and dreaded being behind the sky-high snow-clad mighty mountain passes but the tribal development strategy and spectacular achievements thereof are worth replicating elsewhere including Assam for rapid and autonomous tribal development (Thakur *et al.*, 1991). The government and voluntary agencies have to work together for ushering the dawn of a new



era for the tribals (Thakur and Patnaik, 1992).

Thus legal and constitutional safeguards and protective measures alone are not enough. Making tribals affluent, stand on their own legs and catch up with the rest of India's population requires a multi-dimensional tribal development approach to which there is no reference in the book. It also has some errors as on pages iv, 3, uses acres instead of hectares, gives chapter outlines under Contents and again under Preface (repetition) but without the title of the chapters which may be corrected in future edition of the book. The book of course contains a wealth of information on a vital topic and will be useful to all those interested in tribal development.

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*Agriculture in Britain: Changing Pressures and Policies*, Edited by Denis Britton, C.A.B. International, Wallingford, Oxon, U.K., 1990. Pp. xxii+215. £ 15.95.

There are a plethora of studies published all over the world on 'agriculture' in general and, in particular, on the primary sector of Britain. Nevertheless, the study under review stands out markedly different for its quite fascinating and current theme. Further, the book has come out at the most appropriate time when the whole world is changing at a quickening pace on every side. "Agriculture, in Britain and elsewhere, is as much exposed to the impact of these changes as any other part of the economy .... If it is not to be swept along by forces outside its control, the agricultural industry has to prepare itself to face pressures and either withstand them or adapt itself to them...." (p. vii). Further, this timely and very interesting 'theme' is very ably dealt by several contributors who are specialists in the 'field'. Moreover, it has an excellent 'introduction and summary' by the editor, which enables the reviewer to remember the famous 'epilogues' written by the late George Bernard Shaw, in his books which are quite meaningful and form the 'heart' of the books.

The book is divided into eleven chapters. Chapter 1 reviews the main features of present agriculture in Britain and looks into the main trends over the past 30 years, making use of available statistical data. It considers that it is a meaningful exercise because some of these trends have been so regular and it is foolish to neglect them. The most notable feature of this review is the emphasis on rise in the yield per hectare and per animal. Further, it points out that farms in England are becoming larger and fewer which is in conformity with the developments of the countries which have 'developed agriculture', perhaps with the exception of Japan. Another most persistent trend of British farming is the decline in the labour force due to 'mechanisation'. But, as against it, weekly earnings of farm workers

have shown a substantial increase in real terms. Finally, it looks at the prevalent land ownership and land tenure and concludes that most farm land is still owned by private individuals notwithstanding the fact that financial institutions have made incursions into the land market. As to the future pattern of land tenure, it is rightly said that it is likely to be influenced as much by political as by economic factors.

Chapter 2 deals with changing public attitudes to farmers and farming. It starts with the statement that during and after the Second World War there was a general positive appreciation of farmers' achievements; but the strength of the farmers' position in the public mind began to be undermined after Britain entered the European Community (EC) in 1973. Now, farmers are being attacked for their allegedly harmful impact on the environment (see the discussion on p. 39).

Chapter 3 tries to provide detailed information regarding the prospects for continuing development and application of new technology in agriculture and its implications. The analysis is so detailed that in the final section of the chapter one can see the literature of new technology and its implications when applied to specific products like cereals, grass land, milk, beef and sheep production and forestry. Chapter 4 can be considered as the 'central' to the whole book in more than one way. Firstly, it has questions relating to the future use of Britain's present area of agricultural land taking into account the expected improvements in technology dealt with in Chapter 3 and it comes to an interesting conclusion that 5 million hectares may have to be diverted to non-food uses. Secondly, it argues that the decisions of individual farmers as to the future land use depend on the economic and political constraints and opportunities rather than on agricultural policy. In this way, many interesting arguments are put forth by the author of this chapter.

The nature of conflict between agricultural and other interests with reference to Britain's agriculture is the subject matter of Chapter 5. Land uses causing conflict are given in a tabular form in a very convincing manner (p. 95). Further, it quotes a survey which has studied at length the damage done to ecosystems by both agriculture and industry and it holds industry as the main culprit. Chapter 6 centres around the 'supposed surplus land' of Britain and its best use. In this connection, a mention is made to 'sustainable development' of the agriculture.

Chapter 7 deals with 'pressures' and starts with the statement that in agricultural policy making, the erstwhile consensus has become a thing of the past and now more and more voices demand to be heard. Public opinion through its expressions of demand for various kinds of food, views of 'conservationists' and electoral influences pressurise the government in the announcement of its agricultural policy meant for farmers. The chapter concludes with the observation that some farmers respond to all the pressures to which they are subjected. 'Farm income' is analysed in Chapter 8. While it concludes that the general level of incomes from farming (both in the case of full-time and part-time farmer) is falling, at the same time it has evidence of the fact that land owning farmers are found in the wealthiest section of the society. Chapter 9 is in a way an extension of Chapter 8 as it focuses on 'part-time farming' in the context of farm income.

The review of the issues discussed in the preceding chapters is found in Chapter 10 and that too in the context of the EC. Having outlined the main reasons why negotiations for Britain's entry into the EC were so prolonged in the beginning only, it further goes on explaining the significance of the three pillars of the Community's Common Agricultural

Policy (CAP), *i.e.*, (i) community preference, (ii) common prices, and (iii) common financing for Britain.

In the eleventh chapter entitled 'Conclusions', the editor attempts to identify the adjustments in Government Agricultural Policy. This chapter ends with a list of questions which have to be put on the agenda for discussing at all levels - local, national and international.

On the whole, the book provides an excellent in-depth well reasoned and interesting description of 'changing pressures and policies' of agriculture in Britain. It enables an incisive insight into the 'changing place of farming', 'technology', 'part-time farming', etc., of British agriculture to the reader. Hence, this book, it is hoped, would prove very useful to the scholars, planners and the policy makers not only in Britain but in developing countries with an agricultural orientation all over the world.

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*Institutional Finance for Agriculture*, B.M. Desai and N.V. Namboodiri, Oxford & IBH Publishing Co. Pvt. Ltd., New Delhi, 1991. Pp. xii+100. Rs. 125.00.

Public policies have addressed to technological, economic and institutional credit to agricultural development. Rural finance policy has largely concentrated on relating institutional constraints to economic and technical opportunities for the development of the agricultural sector. The book under review examines the performance of rural financial institutions (RFIs) by analysing the data for the period 1960-61 to 1980-81. The three-tier co-operative financial institutions, co-operative land development banks (CLDBs), Indian scheduled commercial banks (ISCBs), regional rural banks (RRBs) and rural electrification corporations (RECs) are the institutions covered in the study.

The study has used four performance criteria, *viz.*, contributions of rural financial institutions as they relate to the size and functional structure of operations, association of degree of agricultural progress and investments with the institutional variables and skewness in the inter-class distribution of loans; loan delinquency rate of farmer level credit; viability; and economies of scale in transaction costs of these institutions. The study has used published data. Contentwise, it has seven chapters.

The study indicates that rural loans and deposits each as a percentage of agricultural output and value added have continuously improved from 1960-61 to 1985-86. This percentage has increased more sharply for rural deposits than for rural loans. The authors have viewed that the former reflects the financial deepening of the rural sector and the latter reflects the proportion of agricultural output and net domestic product (NDP) financed by institutional loans. The annual compound growth rate was over 18 per cent for rural deposits, 13 per cent for rural loans and 12 per cent for agricultural loans.

The authors have attempted to study the functional structure of agricultural loans by classifying them into two types. One of these is the pattern of all agricultural loans, *viz.*, those for agricultural inputs distribution system (AIS), agricultural production sub-system (APS) and agricultural marketing and processing sub-system (AMPS). And the other is the pattern of APS loans, *viz.*, loans for current production growth and stability (CPGS), current

production diversification and growth (CPDG) and current production loss minimisation (CPLM). However, the second pattern of loan analysis was carried out with respect to primary agricultural co-operative credit societies (PACS) and CLDBs only.

The study revealed that APS loans (80 per cent) dominated, followed by AIS loans (15 per cent) and then AMPS loan (5 per cent) for 1961-62 to 1981-82 period. The long run compound growth rate was the lowest for APS (10.7 per cent) compared to AIS (12.5 per cent) and AMPS (15.3 per cent) loans. Based on these findings, the authors have pointed out that the policy of translating AIS into actual practice has been poor. This in turn implied unsatisfactory attainment of backward and forward linkages between AIS and APS. As regards the pattern of APS loans advanced by the co-operatives, the study showed that CPGS loans dominated, followed by CPLM loans and then CPDG loans.

The authors have tried to show that institutional rural financial system (IRFS) operations have encouraged agricultural output and NDP per hectare on the basis of positive association of these two, separately, with various operations of IRFS such as banking infrastructure, rural deposits, different types of agricultural loans and non-credit operations of PACS. But the correlations alone do not indicate causal relationship. Moreover, the level of significance of the correlations was not indicated to arrive at firm conclusions. It must also be remembered that credit alone does not encourage agricultural growth.

As regards the delinquency rate of 'Direct' agricultural loan, the study showed that it ranged from 43 per cent to 48 per cent taking all field level RFIs together. It was the highest for ISCBs (47 to 50 per cent), followed by CLDBs (13 to 50 per cent), PACS (33 to 45 per cent) and finally RRBs (17 to 22 per cent). Such high rates were broadly attributed to natural factors like drought and floods, connivance among local politicians, bureaucrats and borrowers; and inappropriate loan sanctioned and recovery policies. The authors content that the loan delinquency can be brought down with improvement in non-price related policies and controlling the connivance factor.

The study has shown that all RFIs including apex co-operative banks and ISCBs were viable in the sense that they had positive unit profit for the entire period under study. Among the various financial institutions, State Co-operative Banks (SCBs) were the most profitable, followed by District Central Co-operative Banks (DCCBs), ISCBs, CLDBs, PACS and RRBs in that order of importance. However, the unit transaction costs was the lowest for CLDBs, followed by RRBs, DCCBs, PACS, ISCBs and lastly SCBs.

The study finally showed that all financial institutions except PACS prevailed under constant returns to scale in their transaction costs during all the years under reference. PACS, however, suffered from scale diseconomies in these costs during the entire period. Several non-price instruments are suggested to improve viability and economies of scale in transaction cost of these institutions.

The value of the book would have considerably enhanced if the authors had examined the performance of RFIs across the regions and the related issues. One also wonders why the authors did not stretch their analysis beyond 1980-81 when the data on most of the financial aspects were available for the recent years. On this account, the relevance of the study is limited for the present policy makers. Although the authors have tried to incorporate 1985-86 data at a few places in the concluding chapter, they have forgotten to reflect this change in the heading of Table 7.1.

However, the book is well structured. It must be mentioned in the end that this is an excellent study on institutional finance for agriculture which will be a useful addition to the literature.

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*Agricultural Finance in India*, Umesh Chandra Gupta, Anmol Publications, New Delhi-2, 1991. Pp. xvi+397. Rs. 450.00.

Agricultural finance as a branch of the discipline of agricultural economics is one of the most important fields of specialisation for the students, bankers and extension workers. Indeed, the role of agricultural finance/capital as a crucial factor of production in modern agriculture, is one of giving a push to the development process.

The book under review is though quite unsystematic, yet it pertains to the research work carried out by the author to fulfil the requirement of doctoral degree. The study examines the role of agricultural financing, more particularly of the State Bank of India (SBI) in Rohilkhand division of Uttar Pradesh (U.P.) along with the problems of agricultural-farmers, bankers in the area under study and suggests remedial measures. Since the study pertains to the Rohilkhand division, the findings cannot be generalised either for the state as a whole or India. As such, the title of the book is misleading.

The study is divided into nine chapters. Chapter 1 deals with the socio-economic conditions of Rohilkhand division and Chapters 2 to 5 with the forms and sources of agricultural finance, emergence and expansion of SBI, the various strategies adopted by the SBI in agricultural financing and the mode of financing agriculture in Rohilkhand division. Chapter 6 analyses the districtwise agricultural finance operations in Rohilkhand division. The recovery performance of agricultural advances together with the mode and period of repayment is discussed in Chapter 7; while problems relating to the repayment of loans are discussed in Chapter 8. The last chapter presents the conclusions of the study and also puts forth the suggestions.

The study does not follow the scientific method of conducting a research, *i.e.*, the problematic situation or defining objectives, developing hypotheses based on existing literature on the topic; designing appropriate methodology to collect data as well as using appropriate tools to verify the proposed hypotheses and lastly deriving the inferences from the study and also making possible recommendations/suggestions therefrom.

As a blue-print, the objectives of the study ought to have been framed as (i) to study the extent of inequality and pattern of loan disbursement, deposits mobilised, recovery performance, overdues position, etc., of SBI in Rohilkhand division of U.P., (ii) to assess the schemewise credit appraisal procedures adopted by the SBI as well as the credit-worthiness of farmers, (iii) to establish the cause and effect relationships amongst variables that affect both loan advances and repayment, and (iv) to enumerate the various problems faced by bankers, farmers and other institutions in agricultural financing of SBI with particular reference to the Rohilkhand agriculture. Thereafter, based on existing literature on the topic, preliminary discussion with the various agents, a few hypotheses could have been formulated

for verification. Moreover, to verify these hypotheses, both primary and secondary data need to be collected. Again, to collect the primary data a sampling technique, say two-stage random sampling procedure wherein selection of SBI branches serves as the first unit/stage while that of farmers as the ultimate unit, could have been followed.

Besides percentages and averages, a few statistical tools such as compound growth rates, coefficient of variation, Lorenz curve, Gini concentration ratio could have been applied so as to examine the pattern of growth and extent of inequality in loan disbursement, deposit mobilisation, etc. Likewise, marginal analysis/financial ratios could have been applied for assessing the credit-worthiness of farmers as well as multiple regression analysis to establish the cause and effect relation in the loan disbursement and overdues. The Chi-square and/or "t" test could have also been used to statistically verify the various problems faced by the bankers, farmers, etc.

As regards the chapter scheme, it is suggested that the first chapter should present the socio-economic profile of the region together with the banking institutions and their mode of financing, the problematic situation and objectives. Another chapter could have included a brief review, the proposed hypotheses and methodology and the entire results should be presented in one chapter under the various objectivewise sections. Lastly, a chapter should be devoted to the summary, conclusions and policy implications.

On the whole, though the book follows the traditional system of conducting a research, it puts various empirical facts at one place. However, further attempts in this direction along the lines suggested above would definitely enhance the value of the study. The price of the book is beyond the reach of the students and research scholars.

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*Growth and Justice: Aspects of India's Development Experience*, C.T. Kurien, Oxford University Press, New Delhi, 1992. Pp. xvi+295. Rs. 275.00.

This book has ten chapters, divided into three parts. The first part on "Growth and Justice: The Problem Defined" consists of three chapters, the second on "Review of Economic Performance" of five chapters, and the third on "Some Underlying Theoretical Issues" of two chapters. Chapter 5 was earlier published in *Economic and Political Weekly*. Of the other nine chapters, three (1, 8 and 9) were earlier lectures delivered and six (2, 3, 4, 6, 7 and 10) papers prepared for seminars, at various places - some of these nine also published later elsewhere. All of these chapters were prepared or published during 1983-87. This five-year period thus seems to have been a very productive period of the author.

It is both difficult and easy to do justice to the book. Difficult because it is a book of nearly 300 pages and the space here is limited. And easy because a number of these chapters were published earlier, so that many readers may be familiar with them; and also because some chapters have considerable repetitions which are inevitable in such a collection as this which puts together the work done in a short span.

In view of this, it seems to this reviewer that adequate justice would be done to this collection by highlighting here the general concerns of the author, by pointing out the strong



points of this collection, and by summarising the thrust of some of the more significant chapters. This is done in that order.

The focus in this collection is on the question: Why has economic development not made much dent on mass poverty, in spite of some notable achievements of growth and diversification of economic activities in India? The answer leads the author to the root of the problem: the intrinsic unequal endowments in the society work in practice to the advantage of the better endowed. This analysis of the first part is followed in the second part by a detailed statistical and policy analysis with specific experiences of the eighties. The second part also contains two chapters describing the Indian experiences of decentralised planning and village industry development. The third part is addressed to some theoretical issues on the State and the Market.

This is a valuable collection. In spite of three broad themes, the chapters are tied together to demonstrate how economic development as it takes place does not make much impact on the well-being of the poor and the powerless, and to suggest what ought to be done to make economic development materially more meaningful to them. The author's pro-poor bias, which perhaps includes primacy of distribution over growth even in the short run, is clear. One, therefore, understands with sympathy the author's lament over the recent liberalisations. But one should not fail to notice, as the author himself has shown, that the earlier policies of 'the large state' had also not worked well to the advantage of these groups.

A reader will read this book with interest and profit. It is lucidly written. In the problems dealt with, there is a historical perspective, a critical review of present policies and experiences enriched at places by statistical evidence, a scholastic approach and a deep personal involvement.

Of the ten chapters, four seem to this reviewer to be of greater significance and interest. So the remainder of this review is restricted to presenting their gist.

The principal point deduced by the author in his first chapter on 'Development and Livelihood of People' is that for "the poor and the powerless, development becomes a reality only when these sections acquire effective power, and when those exercising power as their representatives become truly responsive to their needs."

In Chapter 7 on 'Decentralised Planning', the author reviews the policies and practice from early times (1882) to 1982, and accounts for slow progress. What has taken place is only 'the decentralisation of administration of planning'. The author points out how decentralised planning from the bottom in several areas can make for better targeting and fulfilment of social objectives.

A similar long-term review of the policy and development of village industries is given in the next chapter. The author argues for a tapering off and eventual extinction of low productivity village industries, and a gradual switch-over to new types of village industries - which work on improved methods of production, which are high value adding, and which cater to fast growing demand. Such a switch-over in a substantial measure will take place only in the long run. During the short period of transition, the author advocates for continuing the policies of protection for the existing village industries, though with discrimination.

Finally, both the students of political science and economics will benefit from a perusal of Chapter 9 on 'State and Market in Economic Processes'. It is well-known that both the State and the Market are involved in economic activities. Yet, there are a few inter-connected studies of these institutions. The state is studied in political science and the market in



economics, each in isolation. The author argues that a complex reality cannot be understood properly unless these two institutions are examined and analysed in an inter-related way. It is only then that our understanding of growth and justice, involved in economic development, would improve. The author is aware that such an interdisciplinary approach may dilute the rigour of analysis, but he takes the view, following N. Georgescu-Roegen, that a 'workable body of descriptive propositions for a given reality' which may emerge from such an approach ('the principle of practical opportunism') is preferable to the rigorous, if superficial and empty conclusions which may follow from the alternative, unidisciplinary isolated approach to social problems. Well said, Georgescu-Roegen, and well-followed, Kurien, in this collection!

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*Technological and Socioeconomic Changes in Agriculture in India - A Case Study*, Brahm Swarup Ojha, Jasbir Singh and Jai Parkash Gupta, Oxford & IBH Publishing Company Pvt. Ltd., New Delhi, 1992. Pp. xi+237. Rs. 350.00.

Indian agriculture witnessed a distinct change during the past twenty-five years. The transformation was realised in the form of new agricultural technology and socio-economic changes. The issue related to technological change received due attention by researchers and scientists to project its impact on agricultural development. Unlike technological change, the literature on socio-economic aspects is quite limited.

The book under review is a welcome attempt that provides an incisive account of technological as well as socio-economic changes in Haryana agriculture. It is based on the updated survey of an earlier work carried out by Jasbir Singh and V.K. Sharma. The present edition covers a sample survey of over 3,000 farm households for the period 1975-76 to 1986-87.

Logically, the authors divide Haryana State into five zones on the basis of dominating crops. Delineation of zones is necessary for framing need based differential policies for rapid agricultural development. In this context, the investigation is based on the spatial and temporal impacts of physical, cultural, social, institutional and technological factors on agriculture in different zones.

The variation in soil, water resources development, water table depth and quality are identified as important physical factors for regional differences. Likewise, the cultural ecology of the state reveals that success of agricultural development in Haryana was largely affected by a strong and self-cultivated tenurial system. High literacy rate was equally instrumental for agricultural prosperity in advanced regions of the state.

Caste politics is strongly emerging in the Indian context. The authors discuss this issue to display how castewise, the cultivated area and operational holdings are changing over time. It is reported that the cultural and historical background of the high caste farmers in the social order largely stimulated the rapid adoption of the new agricultural technology in the state. The authors feel that the agricultural transformation of Haryana was possible because of the skill, resource endowments and industry of the farmers in higher social order.

However, available evidence confirms such inference but more empirical studies are necessary to avoid any kind of controversy and to build a better social order.

The technological, biological and institutional variables are discussed with reference to irrigation, high-yielding varieties, chemical fertilisers, mechanisation, plant protection measures, agricultural credit, agricultural research and education, input-output prices, etc. The authors are correct to a large extent in reporting that while irrigation development stepped up agricultural production, it is equally responsible for the regional imbalances between canal and tubewell irrigated areas. Moreover, it is irrigation that induced the use of modern inputs and is further responsible for widening regional and inter-class disparities.

The stage has now reached that the benefits of new agricultural technology with the existing resource endowments and socio-economic environment have saturated in high growth regions. In this context, the authors have rightly argued that the rate of return on investment in agriculture has declined and that there is no incentive for small farmers to invest on modern inputs. Such a state of affairs calls for research resource allocation in agriculture with special emphasis on lagging regions and weaker groups of farming communities. An important point for serious consideration has been raised for siphoning the agricultural surplus to rural development programmes for faster economic growth and to avoid regional and inter-class disparities.

Considering the crucial factors, like existing inequalities and level of agricultural development, twenty-three planning regions are proposed. Evidently, the developmental strategies and policies will unlikely be identical for different regions. The proposed planning regions will essentially be useful in devising appropriate policies to accelerate the rate of agricultural growth and minimise the regional disparities in the state.

One leaves the book with good understanding on technological and socio-economic changes in Haryana agriculture. The merit of the book is that it contains enormous field level and size-classwise data on various socio-economic and technological aspects. Important variables are depicted in maps, and regions are delineated according to their use during the two time periods. These provide clear profile of changes in important growth promoting or retarding variables. The book will essentially be useful to the planners and researchers. It will guide the planners in formulating development strategies according to the level of prosperity or poverty of various regions. To researchers, it may be a source book to redefine the research agenda according to resource endowments, socio-cultural aspects and level of technology adoption. Besides planners and researchers, the book must be read by all those who are interested in the agricultural development of Haryana.

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*Integrated Rural Development in Asia: Learning from Recent Experience*, Edited by H. Ramachandran and J.P. de Campos Guimaraes, Concept Publishing Company, New Delhi, 1991. Pp. xvi+338. Rs. 300.00.

This volume is dedicated to Professor V.K.R.V. Rao, the doyen of economists, who has built quite a few prestigious research institutions in India. It is based on an international

seminar held at the Institute for Social and Economic Change, Bangalore in 1988, inaugurated by Professor Rao on his 80th birthday. The seminar was co-sponsored by the Institute of Social Sciences, The Hague and the Asian Institute of Technology, Bangkok. As many as 14 papers were presented at the seminar analysing in detail the experiences of various Asian countries in implementing the Integrated Rural Development (IRD) programmes during the last two decades. The first part of the volume contains the papers which present a status report on the IRD programmes in the six countries - Bangladesh, Indonesia, Nepal, Philippines, Sri Lanka and India. The second part deals more specifically with the varied experiences of the host country. There are seven papers, some of which are case studies. A postscript at the end of the volume running into hardly 4 pages provides the highlights of the discussions.

In the first chapter 'Introduction to Country Experiences', the editors have made an attempt to focus attention on the common features of the IRD programmes as implemented in different countries under diverse socio-economic conditions and different political systems. The objectives of IRD programmes may be broadly and explicitly confined to the generation of economic growth and the alleviation of rural poverty. Under certain political conditions, the IRDP may be construed as merely populist measures where the twin objectives may not be duly emphasised. However, to ensure the comparability of the country experiences, the editors had advised the contributors of the papers to deal with three areas: (i) the strategy of spatial integration and the expansion of the rural economy through the establishment of linkages, (ii) the strategy for delinking the poor from the prevailing pattern of asset-ownership and (iii) decentralisation of organisational structure. These areas are invariably covered by each of the papers.

Guimaraes has made an attempt in his paper to examine 'what have we learnt', from the experiences of the Asian countries. Admittedly, there is some ambiguity about 'integrated development'. The concept of IRD has been to some extent influenced by the basic needs strategy of development introduced by the International Labour Organisation in the early seventies. Over the years, IRD projects have evolved a typical format whose main characteristics are (i) multi-sectoral nature, (ii) limitation of the area of intervention, (iii) local participation and (iv) emphasis on poverty alleviation. Without generalising, it may be said that the effectiveness of IRD projects in increasing agricultural production has been very limited. Their replicability is also limited due to the high intensity of resource inputs. Regarding their sustainability, it is observed that the programmes implemented with special administrative arrangements, aided by abundant resources, run into difficulties once the pilot stage is over. One of the important inferences that can be drawn from the experiences of the formulation and implementation of IRD programmes is that for fighting rural poverty effectively, something more than the traditional type of IRD programme has to be adopted. The need to organise the poor on the basis of common interest and group solidarity gains importance from the point of view of sustainability and replicability of the programmes. The induction of non-government organisations is one of the common features of the IRD programmes from this angle.

The Bangladesh experiences are presented by two authors tracing the evolution of the poverty alleviation programme from its obscure beginning from community development programme, the Comilla model, Area Development Programmes and the Shwanirbhar movement (self-reliance) of the seventies. In the eighties, spatial reorganisation of the IRD

programme was introduced making *Upazilas* the administrative units numbering 460 covering the whole country as the planning units. Though the two papers do not indicate specifically the achievements of the IRDP in Bangladesh, very little impact could have been made on poverty mitigation as this country has one of the lowest per capita income among the six Asian countries.

Nepal, with a predominantly agrarian economy, has not lagged behind in experimenting with rural development programmes. The paper on Nepal's experience is confined to a study of the Karnahi Bheri project which is funded by Canada and started in 1981. This project called K-BIRD has faced quite a few administrative problems though funds were not a constraint. Lack of co-ordination among sectoral agencies, high staff turn-over and lack of incentives have reduced its effectiveness. In a postscript the author has mentioned that to ensure people's participation in construction activities, a system of users' committee was being set up.

The Sri Lankan study is confined to IRDP in Ratnapura district, funded by the Dutch Government started in 1984. One of the objectives was to reinstate the lost ecological balance in the project area specially in the hydrological catchment areas. As the programme was confined to selected key areas in the district, the benefit of the programme was available only to 10 per cent of the district's population. The problem of co-ordinating the flow of funds from various agencies has resulted in some amount of duplication of activities. The implementation of the IRDP through village level organisations has created some employment at the village level.

The Indonesian experiment is different from those of other countries. Indonesia has adopted two national programmes aiming at increasing the agricultural production, called 'Development Working Area Unit' and Provincial Development Programme (PDP). The first programme has as its main objective transition from traditional to modern villages and adoption of a blue-print approach for development. Interestingly, all the villages in the country are classified into three groups: *Desa Swadaya* (traditional village), *Desa Swakarya* (transitional village) and *Desa Swasembada* (modern village) based on a few criteria. The PDP is an experiment in building a self-sustaining capacity for integrated poverty-focused rural development activity. The study concludes, without providing any statistical details, that the PDP philosophy should be adopted as a national pattern for rural development.

The Philippine experience is discussed in two papers. Here the programme was started in 1970 with the implementation of the Integrated Area Development (IAD) project whose objective was to correct regional disparities and to shift the benefits to the marginalised poor, thereby achieving social equity. The earlier IAD projects were river basin development programmes and rural infrastructure projects funded by the World Bank and other agencies. Organisational rigidities, budgetary procedures and the lack of inter-agency co-ordination are the factors listed by the authors, retarding the progress of the project implementation. It is concluded that "the persistent problem of mass poverty in the rural areas continues to challenge policy makers and development planners".

As regards Indian experience, there are seven papers dealing with specific issues and case studies. It is only in the Indian context that the performance of IRDP is reviewed empirically which none of the other country studies has attempted.

Six papers in the second part: "IRD Experiences - Indian Specificities" turn out to be Karnataka specificities as all of them are based on case studies in Karnataka. The first paper

makes an in-depth analysis of the impact of IRDP on the economic conditions of the beneficiaries in two blocks in Kolar and Dharwar districts. It is observed that "though the programme has not prompted poverty line crossing on a substantial scale, by creating assets and increasing income and employment, it has promoted income mobility among the beneficiaries and thereby initiated the process of poverty removal" (p. 225). The dynamics of the participation of rural people in the development projects are examined in another paper based on a survey of a cluster of villages in Hassan district. The next paper makes an evaluation of a scheme for the alleviation of extreme poverty, namely, the Bonded Labour Rehabilitation Programme in Karnataka. The income earned by the bonded labourers is much lower than that earned by other beneficiaries under IRDP. Assets acquired by this group of beneficiaries invariably do not earn as much as the other assets. The problems of scheduled caste beneficiaries are analysed in another paper based on a small sample survey conducted in Tumkur district in Karnataka. It is revealed that among the selected households, the largest beneficiaries of the allotment of sites are the small and marginal farmers. A case study of rural elites and development is based on a field study conducted in a village in Bangalore district. The village was blessed with enlightened rural elites who took initiative in getting certain benefits to the village which could have otherwise gone to other villages. The last paper deals with technologies for rural development where the author draws from his experience in propagating simple technological innovations through ASTRA (Application of Science and Technology to Rural Areas) in Tumkur district. Some broad generalisations about the adoption of technological innovations are made by the author.

The postscript at the end of the volume appears to be too short. The editors could have elaborated a little more on the common features of the IRDPs in different countries and also could have listed the factors contributing to their success or failure. Most of the country studies have not provided comparable empirical data to assess their effectiveness and sustainability. A chapter devoted to these issues would have considerably helped the readers. Except in the Indian context, the role of financial agencies in rural development as partners in the developmental process is not mentioned in the country studies. On the whole, this is a welcome addition to the growing literature on rural development programmes.

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*Agrarian Unrest, Peasant Struggles and Social Change: A Study of Telangana in A.P., T. Papi Reddy, Sony Publishing House, Warangal (A.P.), 1990. Pp. vi+388. Rs. 100.00.*

This book is an attempt to bring out the dynamics of socio-economic and political change in the Telangana Region of Andhra Pradesh. To analyse and project the change it is imperative to make an in-depth study of history and progress of peasant movements specially in developing countries. The origin and development of these movements are not similar throughout the country, but every agrarian unrest is location-specific. The objectives of the study are to evaluate agrarian tensions vis-a-vis agrarian social structure and to identify social and economic factors which are conducive to growth or otherwise.

The description of the historical perspective of the agrarian social structure over a period



of time is interesting. The author has taken pains to describe the transformation of self-contained economy and the evolution of caste system. In fact, it is true that the British rule resulted in new agrarian relations which were not progressive but exploitative.

The causes for agrarian unrest have been explained and in fact, this has made the policy makers to initiate the land reforms which are not very effective due to defects in the Acts. It is well-known that the green revolution in the country has generated economic inequalities, but the contention that it has contributed to agrarian unrest is not tenable. The other factors enumerated are pertinent. Many political parties have been supporting the peasant movement to highlight the farmers' problems. The role of feudal landlords such as Jagirdars, Deshmukhs and Doras, their exploitative character and how the colonial rule helped them are brought out in a very interesting way. These exploitative tendencies have contributed much for the unrest of the farmers.

It is true that the impact of land ceilings is very marginal. Thus the agrarian unrest increased warranting the intervention of Rytu Cooli Sangam (RCSs). Though their intervention has helped to mend the atrocities of landlords, their uncivilised acts on innocent people have been inhuman. The author has convincingly substantiated his thesis that agrarian unrest is the root cause for the peasant upsurge. It is stated that labour has become an important force in the balancing of political power (pp. 1-2). Can it be authenticated? In the democratic process, though an individual has the freedom to exercise his franchise, is this exercise guaranteed?

The statement (p. 30) that permanent settlement has built in inequality in the economic structure is not realistic because the process of settlement was to avoid eviction and fix the land revenue based on fertility and other factors. The ownership of land instils confidence and the farmer can take up land improvements to increase the farm returns. The *Vetti* system enjoyed by the 'Doras' is nothing but fleecing the innocent rural masses. The *Pethandari* culture and *Pairavi* systems which have robbed the masses of rural area are depicted well.

The observations of Fact Finding Committees do not always reveal the truth since their composition and temperament are against the Government. The RCSs were able to eliminate some of the anti-social habits among the rural poor. The "Sangams are the only authority respected by the poor and in some cases also (by the) rich" (p. 172). It is not clear whether it is autocratic or democratic authority. The Agency Tracts Interest and Land Transfer Act of 1917 and subsequent regulations specially restricting the land transfer from the tribals to the non-tribals are applicable in all the tribal areas of the state. Since the analysis is based on Government records, the applicability of the Act could have been considered. Referring to the changes in agrarian structure, the author has indiscriminately used each district as urban and backward. For Example, Mahaboobnagar is mentioned as backward in the context of its higher average size of the holding (p. 260), while it is mentioned that the proportion of female agricultural labour to total workers is higher in the urban district of Mahaboobnagar (p. 266). It is a spurious relationship. While interpreting the results, the reasons are not given. Indicating the percentage increase or decrease is not of much help to the readers. For example, the reasons for the decline in the number of primary credit co-operative societies and for the increase in the membership of these societies (p. 274) are not stated. In the earlier discussion it was stated that because of the Act there were no land transfers in Adilabad district. But this statement is contradicted on page 281 where it is noted that in Adilabad due to lack of irrigation facilities, the decline in the holdings was due to sale of land. Similar

contradictory statements are made in regard to the proportion of agricultural labour to the rural population in Mahaboobnagar district too (p. 284). For all the success stories, the author has projected the left parties and their cultural and frontal organisations as redeemers, ignoring the efforts of Andhra Maha Sabha and Congress parties which also did yeoman service for the upliftment of rural peasantry in the early periods.

There are many spelling mistakes and errors in syntax and printing. It seems that neither the author nor the publisher has taken pains to go through the text carefully; at least an errata would have provided a saving grace.

*Hyderabad.*

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*Agricultural Growth and Equity (A Micro-Level Experience)*, C.H. Shah, Vimal Shah and Sudarshan Iyengar, Concept Publishing Company, New Delhi, 1991. Pp. 235. Rs. 155.00.

There is a strongly held view that benefits of the technological breakthrough in agriculture have not been shared equally between regions or amongst groups of holdings in the same area. It is often argued that the growth in agriculture has failed to achieve equity in income distribution. The present study refutes this notion. This is the third consecutive micro-level study (second resurvey) undertaken during 1974-75 in the same taluka, viz., Matar taluka of Kheda district in Gujarat State. The previous surveys were conducted during 1929-30 and 1964-65. The study was confined to the same 28 villages selected during the 1964-65 survey and it is based on a fairly large sample of 1,111 households, i.e., 578 cultivators, 314 agricultural labourers and 219 non-farm households selected from three natural regions of the selected taluka. Most of the households, i.e., 863 belonged to the 998 households that were selected during the 1964-65 survey.

The book is organised in 14 chapters. The first chapter sets out the theme of the study and describes the methodological issues. The changes that have occurred during the decade 1964-65 to 1974-75 in the selected taluka are described in Chapter 2. These changes relate to demographic features, roads and communication, social overheads, irrigation, cropping pattern, etc. The changes in the structure of land holdings are narrated in Chapter 3. The sources and pattern of use of irrigation are examined in Chapter 4. It is noted that during the decade under study irrigation facility in Matar taluka has been widely extended. It is available for more than half of the net sown area and in all the three regions of the taluka. The regional differences in the irrigation facility have also narrowed down and it has reached all the classes of farmers.

The subsequent chapters deal with the impact of irrigation. The study notes that the use of irrigation has brought about substantial changes in the intensity of land use, cropping pattern and crop productivity. The cropping pattern was predominated by wheat and paddy (Chapter 5). It has promoted the use of modern farm machinery such as tractors and water lifts (Chapter 6) and use of inputs such as high-yielding variety (HYV) seeds, chemical fertilisers and pesticides. It is observed that the expansion of irrigation facility has transformed the farmer's approach to the system of farm production and helped in building inter-sectoral market links (Chapter 7). The use of HYVs has been studied cropwise in terms of area in which HYV seeds have been used (Table 7.2) but a similar attempt has not been made in regard to the other two inputs, viz., chemical fertilisers and pesticides.



The findings on the marketing of crops and animals products are presented in Chapters 8 and 9. The study brings out that there has been an increase in the proportion of marketable surplus and the inter-class variations in the extent of marketable surplus have also narrowed down. The study reveals that even the small farmers had sizeable marketable surplus. Chapter 10 presents the findings on labour employment. It points out that during the decade under study the overall employment level has increased. The increase is more for hired casual labour. Surprisingly, the authors have ignored the extent of use of family labour, which forms a major proportion on the small farms. Chapter 11 deals with the assets, liabilities, savings and investment. The growth rates of the output and the assets have been expressed in terms of paddy equivalent. The study reveals that the high rate of investment has been accompanied by reduced inequality in the distribution of assets and the overall growth of assets is accompanied by reduced relative burden of debt. A glaring lacuna is observed in this chapter that while the title of the chapter includes 'savings', the details are not found in the text. Also the authors have ignored the study of income from both the farm and non-farm sectors.

The consumption pattern and the extent of poverty are studied in Chapter 12. The authors state that there has been a marginal decline in the overall per capita consumption expenditure, but the decline was observed for big and medium farmers and gain for all other groups. For all groups together the distribution (in terms of Gini ratio) was less unequal and the value of inequality coefficient which was low has been further reduced. The regional analysis suggests that the inter-regional differences in per capita expenditure levels have narrowed down. Chapter 13 examines the consumption of durables and the quality of consumption. On the whole, there was increase in the number of households owning common assets and quite a few new assets have made their entry in the life of the people belonging to all the groups.

The last chapter summarises the results of the study. It explains how irrigation induced modern farm technology improved the standard of living of the people. The outcome of the study is that the growth in farm production has led to modernisation and marketisation of rural economy and it has a definite percolation effect. The study brings out that the lower income groups have been benefited by this growth and the extent of the benefit was greater for them. The study, however, admits that the percolation is not large enough to remove poverty and there were some households who did not benefit from the growth (p. 227). The authors have explained in detail the percolation effect among the beneficiaries, but attempts have not been made to assess the reasons for being by-passed from the growth by the non-beneficiaries. Lastly, the study is silent about the policy implications. The inclusion of a few policy recommendations in this chapter would have been quite relevant.

There are certain statements in the book which are not convincing. For instance, on page 37 it has been stated that roads and canals together act as blocks to the natural flow of rain water. This is not correct. It is well-known that whenever public works like roads and canals are constructed, provision for the safe drainage of rain water through nala bunding is made by the P.W.D. authorities. Secondly, on page 138 it has been mentioned that the substitution of cotton crop by paddy and wheat might add to the bulk of fodder available. In this regard it may be stated that normally the straw of both these crops is not fed to the cattle. At the most they may be used during scarcity conditions only. The area under bajra crop has gone down and the jowar crop, which makes a delicious fodder crop, has almost been extinct

(Chapter 5, Table 5.1). Under the circumstances we cannot say that the availability of dry fodder might have increased. There are also some printing errors found in the book.

On the whole, the book is an excellent exercise to understand the process of agricultural development and its impact on rural economy. The findings defy the usual criticism against the green revolution that it is confined to large size farmers only. The study proves that the benefits of growth have percolated amongst the weaker sections. It is hoped that the findings of the study will be useful to the farm scientists, development planners and researchers.

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*Ecology and the Politics of Survival: Conflicts Over Natural Resources in India*, Vandana Shiva in association with J. Bandyopadhyay, Pandurang Hegde, B.V. Krishnamurthy, John Kurien, G. Narendranath, Vanaja Ramprasad and S.T.S. Reddy, United Nations University Press and Sage Publications India Pvt. Ltd., New Delhi, 1991. Pp. 365. Rs. 250.00.

Modern economic development, particularly under capitalism, has attracted systematic and widespread criticism on two grounds: that it is based on exploitation of man by man leading to poverty and inequality - the socialist critique; and that it has led to unsustainable exploitation of natural resources leading to both ecological degradation and poverty - the ecological critique. What is even more important, the attack is not confined to academic criticism alone, but has also expressed itself in both cases in the form of conflicts and protest movements. The socialist critique led to even revolutions and changes in the nature of the state, though recently the clock has turned back on socialism. Ecological conflicts may not so far have led to political revolutions at least in recent history, but they have been too serious and prolonged to be ignored.

The book under review by an author, who is both a scholar and an activist herself, is an eloquent expression of the ecological critique. What is most notable about this critique is that it is not on aesthetic grounds but on the ground that ecological degradation affects the very livelihood and survival of people who get deprived and marginalised in the process. The book, written in association with seven others including the late B.V. Krishnamurthy, offers a well articulated theoretical critique as well as a documentation of the conflicts over natural resources that took place in India in the seventies and the eighties.

The conflicts covered here are classified into two main categories - those over forests and land use, and those over water, fisheries, and dams. Having covered a large number of conflicts, the book could not of course have done full justice to documentation, but has nevertheless succeeded in bringing out the salient features of each conflict and the issues involved. Though we miss more recent movements of the late eighties and the early nineties, for example, the movement over Sardar Sarovar Project, the issues involved have not very much changed over the years.

For the authors, these conflicts prove that modern economic development, instead of taking off the whole society with an improved quality of life for all its members, actually involves economic polarisation and ecological destruction inherent in resource intensive

development. They assert that in the context of highly unequal distribution of purchasing power and scanty knowledge of ecological processes involved (or scanty respect for them), development has essentially meant the production of non-essential goods, which leads in turn to unsustainable use of resources. This also involves global control over resources through an internationally integrated capitalist economy and loss of local control. The loss of local control means deprivation and unsustainable use. The global economy has no respect for conservation of local resources, since, having exhausted one resource, it can move on to exhaust another resource. For Shiva *et al.*, there is no solution to the problem within the framework of a market economy and modern economic development based on it. "The growth of the market cannot solve the very crisis it creates.... while natural resources can be converted into cash, cash cannot be converted into nature's ecological processes" (p. 342). For the authors, development is both unnecessary and undesirable. Conventional economics, they say, wrongly identifies stability with stagnation. Communities which survive on subsistence economy, content with what they get from nature, and do not have modern artefacts and lavish consumption, are wrongly considered as poor or living in misery.

Thus the opposition to development is total. It follows that what is called for is going back to the days before capitalist development to the supposedly idyllic life free from non-basic wants and free from penury. There may be an increasing - even if small - number of followers to this view, but alas! the world is not moved by this dream.

Unfortunately, the book does not concede that corrective steps can be taken within the framework of development and that development of proper technology and shift from ecologically dirty to resource-saving and pollution abating technologies are possible. It does not recognise the implications of totally giving up economic development in countries which have huge populations under poverty. Yes, development has generated conflicts. But, are the authors sure that giving up of development in the context of widespread poverty and unemployment would not cause far more conflicts and even violence? A pessimistic way of looking at it is to view development process as riding a tiger; once we are on it, it is difficult to get down. An individual can take *Sanyas*, but a country cannot do so and afford to give up development. In a companion volume,\* Shiva has given an ecological explanation for the violence in the Punjab. Is she sure that it is not due to the lack of development of the non-agricultural sector and employment opportunities for the youth, ethnic issues apart?

Though she believes that it is for the ecological movements to stop this reckless and blind advance to economic growth, she does not recognise the reconciling role played by movements, and introduction of corrective steps without having to reject development. For example, she refers to 'wasteland' development in Karnataka through growing eucalyptus and depriving the locals of access to their common lands for grazing. But thanks to the anti-eucalyptus lobby and a popular movement, the later phase of social forestry in Karnataka took to mixed plantations to meet the local needs of fodder and fuel, though fodder still requires greater attention. But the point is that the strategy is not beyond correction. Similarly, it was a popular movement against industrial pollution by a polyfibre plant which forced more effective implementation of pollution abatement measures in Karnataka.

A problem with taking an extreme stand is that the chances of its being taken seriously

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\* Shiva, Vandana (1989), *The Violence of the Green Revolution: Ecological Degradation and Political Conflict in Punjab*, Natraj Publishers, Dehra Dun.

are limited. It has the risk of being dubbed as unrealistic and rejected totally. The need of the hour in a country like India is to build environmental concern into development strategies rather than reject development itself.

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*Forest and Tribal Life (Study of a Micro Region)*, Rohit Shukla, Ambubhai T. Desai, A.B. Vora, R.B. Lal and K.M. Kulkarni, Concept Publishing Company, New Delhi, 1990. Pp. 141. Rs. 125.00.

The book under review is the outcome of a study sponsored by the Department of Environment, Government of India, entrusted to an inter-disciplinary and inter-institutional team of authors. It contains 141 pages with eight chapters in all. Of this, around 50 per cent of the pages are used for presenting the contents, preface, glossary, tables, figures, photographs and index. It is noted in Chapter 1 that the study was undertaken to investigate (i) the impact of environment on food and housing; (ii) the pattern of resource use; (iii) socio-cultural traits sustaining tribal ecology; (iv) economic causes either reinforcing such cultural traits or damaging them in the light of increasing modernisation; and (v) to draw plans for development of appropriate methodology which could be adopted for broadbased studies in future.

For the purpose of this study, Danta taluka of Banaskantha district of Gujarat was purposively selected. From the taluka, four villages were selected on the basis of proximity of road, population, topography and forest cover. Two villages belonging to the hilly region and another two in the plain region were selected for the study. All the households of each sample village were arranged into four different categories of land ownership. The total number of households selected for the study was 73, of which 40 belonged to the hilly region and the remaining 33 households were from the villages of the plain region. The survey was probably conducted during 1985-86. The tribal population accounted for 86.1 per cent in the hilly region and 99.2 per cent in the plain region. On the whole, the tribals accounted for 92.7 per cent of the population in the sample villages.

The second chapter provides the salient features of the area of study. It explains the location of the sample villages and provides the general background of the Danta taluka. The region has vast natural resources specially the minerals and the forests. This taluka is said to be the largest producer of marble in the region. Copper mining activities in the area have been started under the aegis of the Gujarat Mineral Development Corporation. A cement factory has also been established in the taluka. The authors believe that the mineral resources may provide good means of livelihood for the tribal communities provided the State Government works out various schemes of mineral based development including quarrying activities (p.35). However, this suggestion need to be examined in the context of environment, ecology and the socio-economic conditions of the tribals.

Chapter 3 deals with tribal society. The aspects discussed in this chapter include hierarchical divisions of tribals, socio-cultural traits and customs, locational concentration of groups, communities and implications for environment. Danta taluka in the Aravalli region

consisted mainly of Bhils. However, the Rajputs belonging to Indo-Aryan group came to this area and settled permanently (p. 38). It is observed that all of them have common and homogeneous socio-cultural traits and customs (p. 40). It is also stated that the immigrants cleared the forests, established themselves in tribal villages and maintained a social distance (pp. 39-40). Further, it is observed that socio-cultural practices and the technology of tribal society did not change over time (p. 47). If there exists and persists dual society, it could have been interesting to examine the development process of tribal economy in the light of Boeke's theory of sociological dualism. However, the way of life of the tribals is reported to have originated, developed and flourished in the forest setting. It is observed that the tribals do not destroy the forest environment because most of their deities stay in such environment. In order to keep the ancestral spirits appeased, they would not indulge in actions which might destroy the forest environment. Hence, ecological balance is maintained (p. 43). But then how the dense forests of the taluka have disappeared? (p. 57). It could have been useful to assess the capacity of the local resources and the safe limits of environment and ecology vis-a-vis social customs and beliefs. Moreover, the existence of the cement factory and other resource extraction activities in the study area find no reference regarding their impact on environment and ecology.

Though Chapter 4 is titled as 'Environment and Material Technology', in reality it only explains the nature and type of houses built, type of goods the tribals keep (*i.e.*, utensils, farm implements, hunting weapons and fishing implements, furniture and musical instruments). Since the tribals meet their needs from forests around them, the study has cautioned that restricting the use of forest is irksome to them (p. 56). Similarly, Chapter 5 on 'Forest' begins with the observation that both legal and illegal felling of trees during pre- and post-Independence have resulted in wide scale degradation of forests in the taluka. However, the extent of felling and the degree of degradation have not been estimated. Moreover, this is contrary to their earlier observation that forests are protected and ecological balance is maintained in the region (p. 43). Further, the section on 'Katha manufacture' in the study neither explains nor examines this sub-title (p. 57).

Chapter 6 addresses to 'Environment and Tribal Subsistence Economy in India', while Chapter 7 is titled as 'Tribals and the Environment'. In the former, the relationship between the tribals and the environment has been emphasised and in the latter socio-economic characteristics of the households are broadly discussed and not the 'tribals and the environment'. It is observed that the self-sufficient subsistence economy of the tribals was disturbed due to ruthless exploitation by the non-tribals and land alienation had become deep rooted in this tribal region (pp. 70-71). The authors have stated that 39 per cent of the total land holders in a tribal village had to mortgage nearly 15 per cent of their land to the non-tribals (p. 76). Some other studies also reported that the State Government had detected 43 cases of land alienation from the tribals to the non-tribals in Gujarat. Simply on the basis of such reports, the study under review has concluded that the outsiders disturbed the ecological balance and also adversely affected the economic life of the tribals (p. 70). Further, it is stated that the "outsiders benefit at the cost of the sons of the soil" and the tribals remained isolated from the forces of change (pp. 80-81). The study apprehends that the tribals are being used by the outside market forces to harvest and sell illegally the forest products (p. 78).

It is only in one of the chapters (Chapter 7) that the results of the field survey are presented.



Though the study has argued that the land use pattern determined the economic activities of the tribals, the land use pattern of the sample households is not provided in this study. Similarly, the details of the main occupational distribution of the total working population (372 persons) in the sample households are not made available in the book. However, Table 7.7 explains the subsidiary occupation of 142 persons only. Moreover, the figures of total workers in the sample villages of the hilly region do not tally (Tables 7.6 and 7.8). The reference number of the table and data on page 96 of the book should be corrected. Furthermore, the total geographical area of both the regions under study should add to 3,717.21 ha instead of 4,018.46 ha (p. 85); and the proportion of land under agricultural use should be 14.52 per cent and not 46 per cent (p. 84). There are many other inconsistencies in the book. It may also be worth mentioning here that Sembalpani village in the hilly region has no forest cover (p. 85), but the households' income generated from forests in this village is reported to be as high as 38 per cent of the total (p. 95). On the other hand, Sandhosi village in the plain region has over 50 per cent forest cover but forests accounted for a negligible share (0.8 per cent) in the total annual income of the households of this village (pp. 85 and 95). But the book does not provide any explanation to this outcome.

However, the authors have made useful suggestions in the last chapter. Since the tribals rely heavily on forests, the need for quantification of various forest-based needs and consumption pattern has been emphasised. Similarly, research and development activities in production, harvesting, collection, storage, processing, marketing of various forest products have been recommended. One of the important policy recommendations is to earmark some additional forest areas as 'buffers' for the exploitation of the tribals and it must be carefully worked out and monitored as part of sustainable management plan. However, the problems and suggestions made in this chapter are general in nature which do not emerge from empirical investigations. Furthermore, the chapters of the book seem to have been written independently by different authors. Therefore, there are many self contradictions and discrepancies in the book. Nevertheless, the book would hopefully stimulate the researchers to concentrate on issues raised in the book which need further investigation for their conclusive resolution.

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