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## Book Reviews

*Agricultural Production, Marketing and Price Policy in India (A Study of Pulses)*, S.S. Acharya, Mittal Publications, Delhi-35, 1988. Pp. xiv+506. Rs. 300.00.

The book under review is a splendid effort in assessing the production, marketing and price syndrome of pulses in India and integrating them in both the macro and micro situations. It goes to the credit of the author that he has examined the different issues in perspective. The reader is able to get a fairly comprehensive view of the relatively unexplored area which in fact needs more of such analysis for understanding the problems of increasing production of pulses, specially in the context of marketing and price environment faced by pulse growers.

After introducing the state of pulses production and role of price and price policy in Chapter 1. The author has examined the various issues relating to pulses production, marketing and price policy in India in Chapters 3 to 12. As pulses constitute a sub-sector of agricultural production, other commodities such as cereals and oilseeds which are substitutes/complements both in production and consumption cannot be ignored specially when one analyses the issues related to the price policy. The author has taken note of this inter-relationship specially when he discusses the price policy issues and the changes in the cropping pattern. The book depicts the global and national pulses scenario, measures the growth and variability in pulses, and the effect of rainfall on pulses production. It is, however, not clear whether the coefficient of variation has been estimated from the residuals or from the raw data. The growth in pulses, by and large, is attributed to the growth in yield. The rainfall has considerable impact on pulses production. However, the inclusion of other factors in the model, may be in the form of a trend variable, may not give the same results.

An in-depth study of pulse growers, based on the primary data collected from various parts of Rajasthan, has been undertaken. Pulses are grown largely under rainfed or unirrigated land with mixed cropping being prominent in *kharif* season. The sole pulse crop, mainly gram in *rabi* season, dominates the total pulses production. The reasons for low yields are systematically presented. The study underlines the role of both price and non-price factors in area allocation under pulses. The author has also undertaken an economic analysis of pulses cultivation and has come out with the fact that market prices do not cover the cost of production (both average and bulk line cost) in pulses. Thus the prices of pulses in comparison to cost of production are not as high as is often believed. However, increases in the farm harvest prices (nominal as well as real) of pulses are higher than that of other crops. More so, the farm harvest prices for pulses are found to be more stable. The suggestions made on improvement of marketing and policy measures are valuable, which invite immediate policy action.

The book is really holistic in nature focusing attention on the basic issues hinging upon the future development of pulses in the country. The findings based on the primary data and the emerging policy options would certainly appeal to the readers and policy makers, and would also stimulate further in-depth studies on the aspects related to growth and sustainability in pulses production.

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*Economics of Sheep Farming (A Study of Tribal Area Bharmaur in Himachal Pradesh)*, S.K. Chauhan and T.V. Moorti, Mittal Publications, New Delhi-59, 1990. Pp. xvi+163. Rs. 120.00.

Though livestock, more specifically sheep, contributes a sizeable revenue to the economy and creates employment opportunities in the rural sector directly and indirectly, it receives less attention in terms of infrastructural development. Keeping this in back drop, the authors have attempted to portray the scenario of sheep farming in Himachal Pradesh with the available data. Books on livestock economics are very rare and we need more studies on livestock economics since the area is emerging as one of the vital sectors in the context of dryland farming.

The authors claim the usefulness of the book to the students specialising in resource use. But already there are a number of books dealing with this aspect. The book appears to be a Master's thesis rather than a textbook of rigorous economic analysis. The book suffers from certain limitations.

The book is divided into 11 chapters. The second chapter explains the methodology in which wool production function is specified. The variable, number of sheep in the herd ( $X_6$ ), may be considered as a specification error. The method of cost apportionment explained in this chapter had already been dealt in detail since the last 30 years in the farm business analysis literature. Also the authors have assumed linear cost function which cannot be justified in livestock production. The mathematical expression given for deriving the net returns is unnecessary since it is contrary to the claim made that the book will be useful for progressive farmers, for whom simple statements would be sufficient. It is not appropriate to use stepwise regression for resource productivity analysis since economic theory suggests the inclusion of important economic variables to study their effect on production. The partial correlation matrix is only an indicator and not a final procedure to drop variables.

The discussion on resource use efficiency in wool production lacks clarity in many places. In Chapter 10, the authors have deviated from the main theme of the book and while giving suggestions, more emphasis has been given to other sectors, which ultimately diluted the topic chosen.

On the whole, the book provides some basic information on sheep farming in Himachal Pradesh and the authors have not achieved what they aimed, since the material may be considered only for undergraduate teaching. Nevertheless, there is ample scope to improve the book in the next edition.

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*Participatory Development: People and Common Property Resources*, Kanchan Chopra, Gopal K. Kadekodi and M.N. Murty, Sage Publications India Pvt. Ltd., New Delhi-48, 1990. Pp. 166. Rs. 145.00.

Approaches to economic development have undergone distinct phases of evolution, from development of infrastructure to an emphasis on alleviating poverty, and macro economic restructuring for growth. Over the decades of planning for development, there has been a growing dissatisfaction with the macro economic development paradigm with its focus on infrastructure, markets and credit, soil fertility and HYVs, etc. *People and their institutions* were accorded a back seat in such paradigms. Yet, when the goals of development strategies failed to yield expected results, it was the *people and their institutions* which were blamed. A rethinking on development strategies has led to the rediscovery of *people* as the push-button for development to take off. The authors of this commendable book call for the emergence of a fresh social institution to be called *people's participation* aimed at sustained development at the village level. Such an approach requires the evolution of, and recognition of the importance of the non-market, non-governmental people's organisation in the management of resources.

Participatory development is examined as an approach to management and development of common property resources (CPRs). Such an approach is not alien to Indian traditional community management of CPRs. Some of the lessons that could be learnt from the traditional community management practices are: (a) since they involve the use of traditional source of authority, whether religious or social, it enables a fair amount of success, which is not likely to be the case with centrally administered policies of management; (b) such a process of management ensures a greater co-operation from the concerned people, specially because it aims at meeting the significantly felt needs of the local people; and (c) that community management relies on local authority which can realistically set the norms to be followed by the people rather than depending upon a central state authority to prescribe them. Regretfully, the traditional forms of management of CPRs witnessed a decline during the twentieth century owing largely to the pressure of population, increased state intervention and the operation of market forces. "The fact that there could exist another entity, such as the community, had been forgotten" (p. 20), and when after the seventies there was gradual rediscovery of the community, it was treated as though a new phenomenon.

For an empirical examination of participatory development, the authors have taken up the case of the now famous 'Sukhomajri model'. While the model has been described and examined by several scholarly works, this one merits a special attention for several reasons. Among them are the methodology it adopts, and its going beyond the question of describing success to explore the questions of replicability, and analysis of benefits to different sections of the rural population.

Prior to the emergence of the model in the seventies, the situation in the lower Shivalik range of the Himalayas, in and around the catchment area of Sukhna lake of the city of Chandigarh was dismal: high sedimentation and loss of storage capacity of the lake, which was a result of soil run-off and free grazing in the catchment area, and open access to fuelwood cutting and poor maintenance of the forest. Government investments in soil conservation, forest development, wire fencing and forest guarding, etc., had not met with the expected success. People had been ignored in all these measures of development and

maintenance of the forests, catchment area and the lake.

The foundation for participatory development was firmly laid when the villagers realised that the "problem does not lie here, it is in the villages; in the poverty and destitution of the village" (p. 39). Villagers were prevailed upon to stop grazing of animals in the forest and catchment area. Small dams were constructed. Stall feeding of the cattle was made incumbent upon the owners in order to be eligible to share the benefits of irrigation and pastures. These and several other measures began to yield good results: irrigation and increased productivity on land; afforestation and prevention of siltation, etc. Problems of distribution of water, or access to grass and fuelwood were overcome by evolving new patterns of rights to them. A village 'society' was formed consisting of the members representing all the households in the village and by co-opting some officials of different government departments. The 'society' received further strength when it was offered the contract for fodder grass, which hitherto was auctioned to the private contractors. The scope of village water users association, meant initially for distribution of irrigation water, was extended to the management of a large number of CPRs.

An important contribution that the book makes is the analysis of the linkages between private property resources (PPRs) and CPRs. In the sample villages studied, forest land (a CPR) comprises an important asset in relation to the PPRs in land: the former being more than six to eleven times the latter. The variation in success of participatory development is thus explained in terms of, among other factors, the pattern of asset distribution in these villages. The participatory institutions to manage CPRs initiated almost always as water users association also showed varying degrees of success which is explained in terms of the nature of village economies and the kinds of activities that they happen to work on.

The contractual arrangements between government agencies and the village 'societies' are examined and found to be of vital importance to the success of people's organisation. Even though a people's organisation may not guarantee equal distribution of access to CPRs, they make the poorest to derive at least some benefit, without which they would not have agreed to join them. Evidence from the study reinforces the need for such contractual arrangements between forest department and village 'societies', which can contribute to the preservation of forests, increase the productivity of PPRs and impart gainful employment within the villages.

As regards replication of the model, the authors point out to the minimum requirements such as the nature of asset distribution which is linked to the manageability of CPRs; presence of the catalysts, namely, committed leadership and support from government and other outside agencies; employment situation and prospects, etc. A sociologically important articulation of another pre-requisite which the authors make is noteworthy: people's confidence in development process. The lack of such a confidence is usually a result of a gap in communication between planners and people on the goals of development. People's organisations are better equipped to bridge this gap. Participatory development becomes meaningful only when people are integrated with other agents of decision-making, such as the government, technology, and social and cultural institutions. This book calls for such a process of development wherein individuals are not treated in isolation.

*Diffusion of Agricultural Innovations in Village India*, Satadal Dasgupta, Wiley Eastern Limited, New Delhi, 1989. Pp. xi+193. Rs. 150.00.

The modernisation of agriculture has become an essential ingredient of economic development. Since the mid-sixties, Indian agriculture has witnessed a sequential technological improvement. However, the diffusion of these innovations has been powerfully motivated by the economic incentives, their compatibility in the system in terms of resource availability and the social prestige attached by way of their adoption. The relative scores of these factors for adoption of an innovation would vary from region to region and even from one farmer to another in the same area.

The available literature on the subject 'diffusion and adoption of agricultural innovations' produced by various sociologists, extension educationists, psychologists and economists has been enormous. The author has done a remarkable job to synthesis the varied research material on the subject. As many as 343 studies have been quoted in the book. The claim of having reviewed the entire set of research studies on the subject, however, does not seem to be valid. The maximum number of studies carried out from the mid-sixties to the mid-seventies was due to the initiation of green revolution in this period when one could visualise the systematic adoption process more conspicuously.

Based on the components of diffusion process identified by Katz and his associates, the various studies on the subject have been reviewed in the following format.

In the chapter on 'Diffusion of Innovations', the traits and pattern of innovations which affect the rate of their diffusion in a social system have been analysed. Over time the diffusion curve is expected to be 'S'-shaped. The profitability, cost involved, simplicity, commerciality, compatibility and trialability were believed to be the main characteristics of an innovation, which affect its adoption.

The studies relating to the concept 'adoption process' have been reviewed systematically in Chapter III. The various mental stages involved in the adoption process have been discussed with empirical evidences. The time period required for each stage of an innovation is believed to vary from one adopter to another. The skipping over of a stage of adoption has also not been ruled out.

The personal, situational and social characteristics of various categories of adopters and non-adopters have been discussed in Chapter IV. It is observed that literacy, size of holding, socio-economic status, commercial orientation and extension contacts have shown positive relationship with the adoption process. The roles of social, psychological and religious factors in the adoption process have also been elaborated. The consensus of studies on this theme has shown that the adopters had weak social and religious sentiments as compared to non-adopters while business and risk orientation, motivation, futuristic attitude and political consciousness were higher in the case of adopters.

The various alternative sources of information, their credibility and use in adoption stages have also been delineated through a number of references. The personal and non-institutional channels, in general, were predominant. However, young, upper class, educated farmers and opinion leaders relied more on mass media and institutional sources of communication.

The characteristics, role and performance of opinion leaders, extension agents and mass media as they affect the diffusion of agricultural innovations have been extracted from

various studies and presented in the last section. The opinion leaders had higher socio-economic status than the average farmers, extension agents had more contacts with persons of higher socio-economic status, while mass media was neutral to such factors.

For students of rural sociology, psychology and extension education, this book can be of immense use, because it is a synthesis of the findings of a large collection of studies on diffusion and adoption of agricultural innovation. However, repetition and overlapping of discussions could have been avoided. Even the title 'Diffusion of Agricultural Innovations in India' rather than 'in Village India' could serve the purpose. Certain printing errors have also marred the value of the study to some extent.

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*Studies in Minor Irrigation With Special Reference to Ground Water*, B.D. Dhawan, Commonwealth Publishers, New Delhi, 1990. Pp. xv+209. Rs. 200.00.

Increase in agricultural production is inexorably interlinked with the development of irrigation. For, irrigation provides for higher intensity of cropping and productivity. While the state has made tremendous strides in augmenting irrigation potential - surface as well as groundwater - in the post-Independence period, commensurate efforts to make effective and efficient use of it have not taken place, particularly in the case of major irrigation projects. This has, understandably, led to a comparison of relative efficiency of irrigation systems - minor, medium and major. In the process, a debate on minor versus major irrigation has emerged. Among the minor irrigation systems, the traditionally dominant groundwater irrigation has proved to be more efficient in terms of ensuring higher productivity and intensity of cropping. It is however not totally free from the problems relating to equity, dependability and operational efficiency. In this context, the book under review gains importance as it enables us to understand the complexities of groundwater irrigation.

The book, consisting of 12 chapters, is a collection of papers published by the author in various professional journals over a period of time. Executive summary of the papers presented in the introductory chapter helps the reader to comprehend the contents and sustain interest in reading the book. In the recent past several misconceptions have developed about the relative cost efficiency of minor and major irrigation projects. While the cost per hectare of irrigation potential created by major projects is said to be higher than that under minor projects, the difference is not alarmingly wide as claimed by several scholars, for, the investment figures given in Plan documents do not reflect the private investment in minor irrigation, especially groundwater irrigation. A lucid account of these factors given by the author in the first chapter, apart from adding to the value of the book, is an enlightening discourse, especially for those who romanticise the efficiency of minor irrigation on the score of least cost.

Major issues of interest in general presented in the book are: the status of groundwater potential, use and replenishment; regulation of groundwater use; economies of tubewell irrigation; internal and external economies of groundwater and under-utilisation of potential

created by public tubewells. A detailed analysis of problems and prospects of groundwater exploitation in East Uttar Pradesh provides useful understanding of methodological underpinnings to evaluate tubewell irrigation.

Like surface water, groundwater potential is also a function of rainfall and rate of percolation conditioned by soil characteristics, terrain and geological formations. In the anxiety to champion the cause of minor irrigation, specifically groundwater irrigation, some scholars have come out with a catchy phrase that *minor should become major*, stating that groundwater potential has doubled to 80 million hectares. It has become a puzzle for researchers working on irrigation to understand the rationale behind this magic figure. The author has done a good service to the researchers by unfolding the mystery behind the magic figure (p. 25).

Regulation of groundwater utilisation to provide equal opportunity to a cross-section of prospective beneficiaries and also to control its over-mining is one of the issues of concern for planners. Given the common property nature of groundwater and ownership of a major chunk of the available arable land by individuals, ensuring stipulated distance between wells to tap groundwater appears to be an impracticable proposition. Limitations of indirect means like regulating institutional finance, non-supply of electricity for pumpsets as controls to check proliferation of wells in any given region have been brought out well in the book.

Given the nature of land distribution, the emergence of modern tubewell technology has exerted a number of negative externalities on small and marginal farmers. Low cost traditional methods of water lifting have to be abandoned due to the mining of aquifers with deep tubewells. Resource poor farmers and small holders are deprived of the benefits from groundwater in the wake of tubewell technology. How to ensure equity and reduce external diseconomies to small and marginal farmers is an important question. The author gives a graphic picture of both internal and external economies of groundwater exploitation.

Like surface irrigation projects, groundwater irrigation systems also are subject to criticism on account of under-utilisation of potential created. This has several limitations. The potential estimated at the time of constructing an irrigation system is subject to variations in the course of its productive life, depending upon the availability of water, crops chosen to irrigate, timely service and repairs to the machinery.

Many a time farmers fail to identify potential aquifers and make wasteful expenditure, subjecting themselves to indebtedness and consequent perpetuation of poverty. It would have been extremely useful if the author had reflected upon some institutional arrangements required to help farmers in identifying right locations for digging wells. This would have further enriched the value of the book. However, the book is a comprehensive treatise on the problems of groundwater irrigation and serves as an excellent guide for researchers and planners. This also helps to dispel some misconceived notions about the debate on major versus minor irrigation.

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*Doing Development - Governments, NGOs and the Rural Poor in Asia*, Edited by Richard Holloway, Earthscan Publications Ltd. in association with CUSO, London, 1989. Pp. 233. £ 5.95.

The book under review is a splendid work on development programmes undertaken by different non-Government organisations (NGOs) for the rural poor of South Asia and South-East Asia. It contains 14 contributions, of which six relate to South Asia and eight to the South-East Asia. There is a widespread and deep rooted belief that all the development programmes are effectively organised by the Government agencies, particularly for the economic development of the rural poor. There is a widespread gap between the rich and the poor in terms of resource endowments. The rural poor is unorganised and suffer a lot. But the authors have pointed out that voluntary and non-Government organisations are doing a far better and more effective job to improve the lot of the rural poor in the South and the South-East Asia.

In the context of the rapid increase in the number of rural population in the South and the South-East Asia, most of the development programmes implemented through Government and Government agencies have adversely affected the position of the poor. Instead of bringing out any improvement, these programmes have made them poorer and powerless in relation to the rest of the society. It is particularly so in the case of rural women. This was not the intention behind the development programmes, but it has been the result, achieved by sustaining, reinforcing and encouraging existing social and political structures that exploit the poor.

Various NGOs, such as people's movements, religious organisations and universities have developed alternative strategies whose programmes are specifically intended to empower the powerless and selectively enrich the poorest. Such programmes are implemented with mass involvement of rural people and have become successful.

Non-Government organisations have the commitment and the experience, whereas the national governments have the means and the resources. The authors have tried to highlight the differences existing between the Government and NGO programmes in the strategies and the means adopted by them for implementation. Moreover the difficulties experienced by them to work together are also highlighted in the book. The authors have also concentrated on the singular nature of NGO programmes, and the obvious differences between them and those run by the Governments.

The book was written based on the experiences of NGOs in Asia with which the Canadian University Services Overseas (CUSO) organisation, a Canadian development agency, has been associated. The only exception is an Indian example of dairy enterprise which has illustrated vividly the results of government programmes specifically intended to benefit the poor. In all other cases, the efficiency of NGOs in implementing the programmes for benefiting the poor has been highlighted. The programmes taken up by various NGOs range from agriculture to rehabilitation of the disabled, and they have clearly proved that all sorts of irrelevant programmes are being imposed by the government upon the rural poor ending in dismal failure. Participatory Action Research is the main strategy which has been used by the voluntary agencies. This is vividly illustrated in the articles by Ponna Wignaraja in Chapter 2, by S.P. Wickramaratchi in Chapter 6, by Janet Durno in Chapter 7 and by Rafael S. Espiritu in Chapter 14. This methodology is adopted in all the cases to improve the lot

of the rural poor.

Strengthening of indigenous self-reliance is the main theme of all programmes. The article on the work of the Appropriate Technology Association in Thailand with sustainable agriculture is another example. It starts with the cultivation of rice and fish together in the paddy field and moves on to a whole new integrated agricultural system that allows Thai people in the North East to be self-sufficient in food rather than having to make up a regular annual deficit by seasonal migration to the towns.

In this book, the authors have arrived at the following conclusions:

(i) All the government programmes and policies intend to develop those who have land and collateral resources for investment, on the assumption that it will develop the poor.

(ii) Through government programmes the rich peasants have become richer and the middle class have become wealthier at the cost of the poor.

(iii) Rural surpluses have been extracted by the rural elites and urban rich and objections of the rural people have been suppressed in the name of security.

(iv) In the government programmes, the rural poor are not associated. The growth oriented policies and programmes have no significant impact on the lives of the poor. In fact these programmes have got adverse effect on poor people for whom they are designed.

(v) It is a common notion that planning for rural development programmes are best done by the urban experts, usually males.

(vi) The participation of the rural poor in the development plans is necessary, but is to be limited to their collaboration in the plans prepared by outside experts.

(vii) The experts and Government know best about development programmes and the rural poor are advised to participate in the plans designed for their development.

The gist of the entire book, if considered as a guide to the readers, indicates that the skills, knowledge and resources of the poor are to be utilised properly for rural development. Outsiders and the Government should recognise the value of indigenous knowledge, collect it systematically, and incorporate it into development programmes. The ideas put forward by the Asian NGOs are pertinent in view of changing the lives of the poor and the powerless for the better. The book is a valuable source of various strategies adopted for rural development in different countries by different voluntary organisations.

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*China's Rural Development Miracle with International Comparisons*, Edited by John W. Longworth, University of Queensland Press, Queensland, Australia, 1989. Pp. xxiv+457. \$ 30.00.

The book is the outcome of an international symposium on 'Rural Development Strategies: Theory and Practice', jointly sponsored by the International Association of Agricultural Economists (IAAE), Chinese Association of Agricultural Economists (CAAE) and Chinese Association of Agricultural Science Societies (CAASS) held in October 1987 at

Beijing. It contains thirty-four papers in full and seventeen papers in abstract form. Twenty of the fifty-one papers, prepared by Chinese Agricultural Economists, provide an inside view of rural development in China, based on data which were not previously available to the outside world.

The highly centralised, rigid administrative control for over 30 years, from 1949 to 1978, has led China to inefficient rural production set-up. The mode of ownership adopted under the 'left' deviational ideologies in pursuit of 'an ever larger size and higher degree of public ownership' and the prevailing egalitarian practice in distribution had greatly reduced the enthusiasm of the peasants for production and productivity. Furthermore, the strict system of resident registration had divided the country's urban and rural residents into two groups, seriously limiting the peasant's job opportunities and personal status. This duality forced the Chinese Communist Party to introduce rural reforms in 1979. The changes brought by these reforms in rural China are the central focus of the papers. However, some papers deal with the rural development experience of other countries.

The papers are grouped according to the subject area and are presented in seven parts. The three papers in the first part set the scene presenting the advances made in the rural areas as a consequence of rural reforms. The papers in the third part elaborate the recent Chinese experience and prospects for the future and the papers in the sixth part concentrate on ownership, management and reward systems with reference to China. The papers in the fourth part deal with infrastructure development and fertiliser use. Bruce Stone and Gunvant Desai in their paper present a comparative perspective on fertiliser policy for China and India. Rural investment and finance is covered in the fifth part; technology, research and environmental issues figure in the seventh part. The experiences of other countries on various facets of rural development are presented in the second part of the book.

The Chinese presented the successes of the reforms and also stressed the problems they are facing. The overseas participants called the development in China over the period 1978-86 as 'China's Rural Development Miracle'.

The change from people's communes to household responsibility system; raising purchase prices paid by Government agencies and reducing the number of products controlled by the State brought in an incentive structure in the rural areas. These incentives helped overall improvement in agricultural productivity which lifted grain output to over 400 million tonnes in 1984. The per capita income of rural residents increased at an average annual growth rate of 15.53 per cent during the period 1978-86. But the differences in the degree of economic development among different regions and the differences in families to avail the opportunities to raise their income brought in a growing income inequality in China. This is a major difficulty to be faced in a society conditioned 'to eating out of the same iron pot' for so long. It is not so easy 'to smash this iron pot' and persuade the masses that 'some people must get rich first in order that we all can eventually get rich'.

The unemployment problem in China, both in the rural and urban areas, is similar to the problem in India. Chen Jiyuan suggested a three stage process to transfer surplus rural labour. The first step is part-time farming, the next step is to leave farm work and enter non-agricultural sector in the rural areas. The third step should be moving to small towns rather than to existing large cities. The three-stage process is appealing and it is equally valid for India for the development of the non-farm sector for labour absorption and relieve the big cities from congestion.

This edited volume covers most aspects of rural development of China and other countries. This is useful for researchers, administrators and policy makers for understanding how institutional changes aimed at creation of individual initiative bring in rural development.

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*Planning for Agricultural Development*, J.A. Mollett, 2nd Edition, Avebury, Gower Publishing Company Ltd., Aldershot, Hampshire, England, 1990. Pp. xvi+264. £ 32.50.

In the Preface to this book, H.W. Singer observes that "... the capacity for improved agricultural performance is crucially a matter of management, and of realistic planning properly implemented at the grass roots level", which is precisely the area of the book. Environmental factors, structural adjustment policies and their impact on agriculture have been given more emphasis in this edition. With the addition of two new chapters: 'Women in agricultural development' and 'Nutrition in agricultural planning', the value of the book for academicians has increased manifold.

Women are an integral part of the agricultural labour in developing countries, more so in the under-developed pockets of these countries. The importance of women labour is evident from the example of Himachal Pradesh (an agriculturally backward region of India), where more than 50 per cent of the total human labour comes from women. In some pockets, the male labour ploughs the fields and sows the seeds only. All other main operations are being carried out by women, yet the food intake by them is virtually the 'left-overs' of men.

While discussing demand-supply projections in the context of agricultural planning, the author has very rightly said (p. 90) that it is not the targeted level or the total available level of inputs which should be taken for working out the expected output levels; rather the planners should consider the 'inputs actually applied' by the farmers for working out future output levels. In many countries (and within a country many state governments), where data are not kept regularly and properly, the state planners take 'target input' as available and actually applied input. This always gives wrong signals.

A large volume of literature for the country as a whole as well as for almost all the states is available for predicting the supply response of farmers under all possible situations for almost all important crops, yet these models are under-utilised/not utilised by the planners. The result is obvious - if there is good monsoon (keeping all policy tools aside), the production is good. Keeping this in view, the author has very rightly pointed out that "... the results obtained thus far, from supply functions based on production functions, have not proved to be empirically reliable." The main difficulty coming in the way is that our planners are not able to identify the inputs which will actually be employed by the ultimate user, the farmer. Therefore, there is an ever increasing need for identifying those inputs which the farmers actually use in production, as a wrong set of variables will produce wrong and elusive results.

Another good point in the present edition is a comprehensive bibliography which includes almost all the attempts made in the field of agricultural development, throughout the world. The purpose of writing any technical report is defeated, once it does not generate the interest

in knowing the reasons why a particular society within an economy is not following the path of development. The reasons may be different for intra- and inter-country. No serious attempt has been made in the present edition to identify the factors responsible for development and retardation of development.

The usefulness of the book is limited for researchers and students in a developing country like India. But this reviewer hastens to add that this could be a useful reference book for those who really feel concerned with agricultural project planning.

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*The Elusive Target: An Evaluation of Target-Group Approaches to Employment Creation in Rural Asia*, Edited by M. Muqtada, World Employment Programme (ARTEP), International Labour Organisation, Geneva, 1989. Pp. x+238.

The development strategies followed in many developing countries in the past have not led to the desired results. These countries have faced increasing unemployment and income inequalities over the years which at present seems to be insurmountable. Some Asian governments resorted to varied interventions to generate employment, especially among the rural poor. Special schemes have been designed for the targeted groups in the hope that they would achieve what the growth process failed to tackle, *i.e.*, high levels of unemployment/under-employment and poverty. However, these earnestly drawn approaches to create employment are still in a state of flux and yet to crystallise, with the exception of India, within a national plan framework. Given the quantum of resources going into these schemes, one does sit back and asks: Have these schemes served the intended purpose? In this backdrop the present volume is a collection of evaluation studies conducted under the auspices of ILO-ARTEP on special employment creation schemes (SECS) in selected Asian countries. The four country studies, which are based on primary level data, not only assess the nature, benefits and cost-effectiveness of selected programmes but also investigate their sustainability, replicability and related issues that are crucial to policy makers.

In Chapter 1, Muqtada brings out issues and challenges for the special rural employment programmes in general. It presents an overall picture of some of the schemes and their potential roles, and provides a preliminary evaluation of their impact in some selected Asian countries. The author discusses the broad features of short-term employment; self-employment; and special employment-oriented projects. It is noted that evaluation reports on the rural public works programme (RWP) and food-for-work programmes (FFWP) have recorded a favourable impact on the landless or near landless population who could gain access to employment in these schemes as expected. These have largely helped generate slack season employment. It may be pointed out here that employment figures do contain bias and leakages are also extensive. The actual benefits in reality are meagre. Given the resource constraints, the scale of operation has to be limited and could also affect the labour demand patterns reflected in seasonal labour shortages in agricultural production activities. There are also chances of complacency creeping in. RWP's deficiencies are listed (p. 6) which mainly emanate from lack of proper management and commitment on the part of

executing authorities. In the case of SECS, they are hardly linked to a comprehensive rural development programme. The author details BUTSI (Indonesian Board for Voluntary Service), an Indonesian programme, which engages volunteers from among the educated youth in the rural areas to strengthen village administration, extend production and infra-structural base, increase work/income opportunities, provide general and applied education on health, nutrition and family planning, etc. The scale of SECS is small in terms of resource allocation and coverage of the target population, with the exception of India. It is observed that SECS have catered mostly toward self-employment with little employment multiplier effect. Moreover, from a macro economic viewpoint, the credit based schemes have a long way to go before any tangible impact is registered on employment of hired labour and income generation. As regards the skill development, it is rightly argued that need-based training and training for self-employment assumes fundamental importance and fresh thinking is required on the nature and contents of skill development, organisation and management, credit and information back-up, etc. (see, for details, Singh, 1991). The author rightly stresses that rural power structure is extremely deep-rooted and given the current scale of operations of SECS would require long-term concerted support by national and local government agencies and sizeable resource inputs before any tangible results can be realised through group mobilisation and unionisation.

The issues of demand and supply of loans and its cost-effectiveness are also touched upon. The political urgency in employment creation has led to less attention being given to cost-effectiveness of the schemes. In the case of promotion of rural enterprises, it is argued (p. 24) that policy makers should address to the borrowing cost of credit as transaction cost of credit is invariably high and that credit cannot be a substitute for complementary factors like extension services and adequate training. On the whole, it is felt that SECS under the present circumstances arrest the growth of poverty and decline in income and exchange entitlements. SEC programmes as one shot credit delivery cannot self-sustain a household and implies continuous dependence on external resources. A need is felt to link SECS to the broader issue of structural reforms in respect of asset redistribution, large scale education, training and family planning programmes, organisation of the poor, etc. Policies and strategies have to encompass a host of other policy issues with long run bearing. The *bailing out* considerations need to be slowly phased out. SECS have to be placed within the framework of a multi-dimensional strategy of economic development.

In Chapter 2, Mustafa Alam evaluates major special employment programmes in Bangladesh in terms of the nature of employment created and target group reached; nature and extent of scheme assistance; employment creation and income generation; and cost-effectiveness and replicability of the schemes. The author finds that the poorest among the land-poor were not adequately accommodated within the schemes, there was an over-representation of the relatively land-rich households contrary to the ideal of reaching the poor among the unemployed and under-employed. Provision of credit without any collateral was not a uniform practice, it varied across the funding agency. SECS in Bangladesh have attempted to remove shortage of credit in the creation of self-employment opportunities for the rural masses. The tendency has also been to extend multiple loans though the amounts are small in order to have effective use of credit. The participants mostly preferred non-crop activities in the hope of earning relatively higher profits within a shorter period of time. However, none of the schemes incorporated training programmes worth the name in their

operations. The trend has been to rely quite heavily on hired labour in certain schemes. SECS have helped in income generation and the cost of creating a unit of employment is within limits. It is argued that collective ventures in scheme-funded crop cultivation of high-yielding varieties, through the leasing-in of land, may hold prospects of a satisfactory degree of employment generation and profit earnings.

D. Bandyopadhyay presents the Indian case study in Chapter 3. It is argued (p. 90) that the IRDP stabilised from the third year in terms of utilisation of the total allocation, implying that in any country-wide programme covering a multitude of people and operated through a vast apparatus, a fair measure of stability in the programme content and procedure is necessary to achieve success. The implementation has been quantity dominated instead of quality. Credit mobilisation all through has been less than optimal. It is pointed out that block as a unit for allocation of resources results in serious anomalies, which the author does not discuss (p. 92). A fairly low level of per family investment in some states is observed. On page 96, it is observed that there is no organic link between the sub-programme (TRYSEM) and the main programme (IRDP); otherwise all the trainees could have been easily accommodated in the secondary sector which is difficult to comprehend. It is also felt that given the incremental capital-output ratio of the scheme offered, fairly high investment is needed to push the families well above the poverty line in the short run. There are two main reasons for the failure of selected beneficiary households to cross the poverty line: very low pre-development income and the incremental income through asset endowment being not sufficient to cover the gap.

Mahesh Banskota in his chapter on special employment and income generating programmes in Nepal discusses the case of small farmer development programme (SFDP). The study area is Bishnu Panchayat of the two project areas covered by the scheme. The project covers the economic programmes for which there is bank financing; the social programmes; training; and a separate women's activity programme which includes all the three types of programmes. Unlike the Indian programme, the loanee is given purchase-certificate to get what he wants. The programme has both group and individual activities and it encourages group savings. However, the records do not distinguish between loan requests for individual and group activities. The group is left to itself to choose its activity jointly or in small groups. However, the project has not made any progress in terms of expansion of activities and coverage, though the amount of loans disbursed has gone up over time. Female participation is minimal. Crop production is apparently the most extensively participated activity. The project has reached successfully if one considers the landless households as a criterion but when income is the basis, then 70 per cent of the loans disbursed has gone to those with income level of about Rs. 12,000. This calls for revision of income criterion regularly. The criteria for determining the target group have been either inadequate or have not been used properly. Women have performed better than men in the repayment of loans, especially in livestock and business sectors. The project has had a favourable impact upon the income of the project households. The project in fact did not directly generate employment but did induce participating households to generate employment. Surprisingly, the beneficiaries are satisfied with the project; however, complementary inputs are needed to make the schemes more viable.

In the last chapter the Sri Lankan case is presented by S.M.P. Senanayake, N.A. Fernando and Piyasiri Wickramasekara. The study looks into self-employment programmes and

income-generating schemes implemented by government and non-governmental agencies. It covers National Youth Services Council (NYSCO), Central Bank of Ceylon (CB), Women's Bureau (WB) and Sarvodaya Movement (SAR) in two districts. In NYSCO, the majority of the beneficiaries are engaged in non-agricultural activities while in others the distribution is more or less equal. Within on-farm employment group, livestock production activities dominate while in the non-farm activities manufacturing ranks first in all except NYSCO. SECS have paid greater attention towards reducing unemployment among youth. Surprisingly, the schemes have not given due attention to female participation in handicrafts and similar activities when manufacturing activities did create higher employment than the trading activities, the latter in fact were more capital intensive.<sup>1</sup> This does call for proper planning of activities to be financed. The argument on page 190 that "family labour use results in lower cost of production (true), increases the ability to compete in the product markets....." is rather difficult to digest when the scale of operation of these enterprises is too small and these enterprises have rather high under-employment. Income earning capacity is relatively better in trading and manufacturing activities. The study rightly stresses the necessity for conducting need-based training programmes while the projects are in progress. A positive relationship between project success and the initial level of capital does indicate higher loans for making enterprises viable. Expectedly, banks have not been an important source of funds for expansion. The need is to link credit with marketing, entrepreneurship and product development. The need is for greater scrutiny of the schemes for their financial viability before the grant of loan.

The volume in fact presents insights into the functioning of various SECS and do throw up important issues for the policy makers. Asian countries have to learn from each other's experiences. It clearly comes out of this volume that there is multiplicity of schemes for the target group which does dilute their impact. Moreover, efforts have not been made to capitalise on the availability of traditional skills of the people to improve their lot. Target achievement by the implementation machinery in general appears to be more important for them instead of the follow-up actions, correct selection of activities, etc. There is a need for having a package instead of piecemeal schemes for tackling poverty and unemployment in these countries. On the whole, researchers in the area would find the book an interesting reading.

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#### NOTE

1. This is true even in India where micro enterprises in industry have been found to be more effective than the trading activities. See Singh and Bhargava (1988).

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*Agricultural Development, Rural Credit and Problems of Its Recovery*, A. Ranga Reddy, Mittal Publications, New Delhi-59, 1990. Pp. xv+189. Rs. 250.00.

The ever increasing overdues and the resultant non-viability of lending agencies consequent on blocking of their lendable resources with the borrowers have raised fresh questions concerning the rural credit. In the words of Narasimham Committee on the Financial System: "The intended socially oriented credit, in the process, degenerated into irresponsible lending. Loan waivers have added an additional element of politicisation of banking apart from the grave damage to the concept of credit discipline by encouraging defaults." Though the urgent need to address the issue of infected loan portfolio has been realised, there seems to be considerable ambivalence in solving the crisis presently faced by the rural banking set-up. Against this background, the book under review which evaluates the problems of overdues on the basis of a micro level study of Primary Agricultural Credit Societies (PACS) in Guntur district of Andhra Pradesh during the period 1975-82 assumes topical relevance.

The book is divided into seven chapters. Chapter 1 reviews a few studies/reports on rural credit, the basis of which provided the author with the necessary background to take up 'area specific and time specific' empirical investigations to fill up the gaps and appraise the conditions. This chapter also deals briefly with the objective, scope and organisation of the study. The main objective of the study is to find out the major trends in the magnitude of overdues in 24 selected PACS of Guntur district covering 192 defaulters. Chapter 2 discusses the Indian money market with reference to rural credit structure and its constituents. Chapter 3 deals with the agro-economic conditions and agricultural credit structure of Guntur district. Chapters 4 to 6 are devoted entirely to the discussion on overdues, their dimensions, causes and cures. Chapter 7 presents the summary of the conclusions and findings. In the form of appendices, the author has reproduced three of his earlier papers published elsewhere to bring into focus the seriousness with which the issue of overdues has to be addressed.

The rural money market in a developing country like India has its duality - organised and unorganised - with divergent business practices and rates of interest. Despite specialisation developed between these two sectors and funds flow between them, the links between them seem to be weak and hence the persistence of the dichotomy between the two markets. The author is of the view that despite the domination of organised sector on the rural credit scene, the distribution of institutional credit is uneven among the different size-groups of cultivators and regions of the country. He has therefore advocated *perestroika* type of reform in institutional credit management to bring equity and justice to the landless labourers and marginal farmers.

While portraying the rural credit structure of Guntur district, the author has explained that the forward and backward linkages in the agricultural economy of Guntur district have strengthened due to the progressive character and technological change prevalent in the region. However, the rural credit market of the district is as fragmented as in any other part of the country on account of the plurality of agencies, with the institutional credit accounting for 48 per cent of the farm credit as compared to around 40 per cent for the whole country. The author has observed that the institutional credit and farm size are positively correlated in the district as in most cases of factor markets in the developing world.

Next comes the dimensions of overdues. The most disquieting feature of the agricultural credit in India is the incidence of overdues which are credit agency neutral. For the period

under reference, the incidence of overdues was higher in commercial banks followed by co-operatives and regional rural banks. Apart from diversion and substitution of credit resulting in misallocation of resources, the higher degree of overdues adversely affects the liquidity of lending agencies and their capacity to maintain and expand farm credit. In an attempt to examine the dimensions of overdues at the level of Central Co-operative Bank, PACS and borrowers in Guntur district against the macro context of the country, the author observes that the overdues measured in terms of demand are lower than those in terms of loans outstanding for all levels of credit dispensation. The capacity to repay the loan measured in terms of the difference between total income and total expenditure (p. 108) has not, however, been fully explained. The other interesting conclusions of the study are: (i) the incidence of defaulters is higher for medium-term loans than for short-term loans; (ii) the incidence of overdues is higher in the case of big farmers as compared to small farmers; and (iii) there are considerable regional variations in terms of membership, borrowing, default, difference between overdues and owned funds of societies.

While analysing the causes of overdues, the author recognises that the causes of co-operative overdues are quite complex either at the society or defaulter level. Delinquency by non-wilful defaulters, failure of harvest, social consumption and natural calamities figure prominently in the list of causes, which are, of course, well-known. The governance of the sample PACS dominated by large and medium farmers mostly belonging to the forward castes is stated to be another important cause for the mounting overdues. The reason for this phenomenon has not been fully probed into. The incidence of defaulters is more among growers of food crops than among non-food crop households, probably because of the non-profitable nature of the food crop cultivation. The author could have highlighted this finding with necessary farm plan and income-expenditure statements of both food crop and non-food crop cultivators. Though the author has observed that the attitudinal factors relating to the willingness to repay are quite favourable among the sample selected, he maintains that the low rate of interest charged on the loans by the co-operative credit societies act as an incentive for default especially among the affluent farmers. This finding of the author has no universal application. Nor has he explained the above with any supporting data. The remedial measures suggested by the author are: (a) charging differential rates of interest on wilful defaults; (b) streamlining the management and strengthening the supervisory staff; (c) restructuring the working capital and (d) prompt legal action for improving the recovery.

The analysis of the author on the financial structure of Guntur District Central Co-operative Bank Ltd. (DCCB) (p. 88) would have been fruitful had he examined in depth the causes for wide fluctuations in the data on overdues which was as low as Rs. 31.6 lakhs in 1967-68 but shot upto Rs. 124.9 lakhs in 1968-69. Similarly, the amount of overdues went up from Rs. 70.6 lakhs in 1975-76 to Rs. 308 lakhs in 1976-77. The author has also not provided any insight into the deposit mobilisation efforts of the DCCB. The deposits should have been analysed separately instead of clubbing with borrowings.

A field survey of this nature, if conducted at the borrowers' level with the help of a pre-tested questionnaire, would have provided ample opportunity to know the actual cost of borrowing, income generated out of the loan amount and such other vital details. A few case studies would have explained the extent of influence of the unorganised money market vis-a-vis institutional agencies; a comparison of the services provided by the moneylenders with PACS would have given sufficient insight into the rural credit scenario. Some of the

arguments are found to be repetitive. The book does not come out with any solutions to the vexed problem of overdues.

The efforts in writing the book (published in 1990) would have been more worthwhile had the author taken note of the available information on the subject particularly after 1983. The Agricultural Credit Review Committee set up in August 1986 at the instance of Reserve Bank of India under the chairmanship of A.M. Khusro observed in its Report (1989) that the future thrust on rural credit has to be on preserving the vitality of the credit structure which has shown signs of atrophy in the process of quantitative expansion. Though the Committee was highly critical of the politicisation of rural banking, it has not suggested any major structural reorganisation (except proposing to set up an apex co-operative bank and merger of RRBs with sponsor banks), as the basic foundations of the rural credit system has been found to be sound and well suited to Indian conditions. All considered, this book should have served its purpose better if some contemporary issues defying solution were dwelt in depth and some updating was done.

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*Interlinked Agrarian Markets in Rural India*, Kailas Sarap, Sage Publications India Pvt. Ltd., New Delhi-48, 1991. Pp. 177. Rs. 195.00.

This book is a largely revised version of the author's doctoral dissertation in Economics, submitted to the University of Delhi in January 1986. What distinguishes this book from the earlier ones which are largely theoretical is that it is based on very careful, detailed and intensive field work that is rare on the subject under study. Based on his empirical data drawn from six villages in Sambalpur district of Orissa, the author discusses the nature and extent of different types of interlinked transactions among various sections of borrowers. A variety of interlinkages including those in land, labour, inputs and output markets has been found, in which informal credit was central. The functioning of the formal credit market has also been analysed in order to find out the access the different groups of borrowers have to it. The credit gap of small farmers in relation to their credit requirement and the existing supply of formal credit has also been estimated.

The book is divided into eight chapters. Chapter 1 introduces the objectives of the study, sources of data, and the design of the study and Chapter 2 deals with the salient features of the study area and credit market structure. Small farmers' access to formal credit is discussed in Chapter 3. In Chapter 4, the characteristics of linked and non-linked households are discussed. Issues related to credit transactions, lenders' collateral requirements and interest rates are discussed in Chapter 5. Chapter 6 is devoted to interlinked credit market in which marginal and small tenants are engaged. Chapter 7 discusses the interface of landless agricultural labourers with the informal credit market. Chapter 8 makes a broad evaluation of the findings and their policy implications.

It is important to highlight that linked credit transactions are confined mostly to marginal and small farmers, small tenant cultivators, and landless labourers. The author convincingly shows that the phenomenon of interlinkage is essentially a manifestation of the economic survival strategies of the rural poor and explains the weaknesses of their bargaining power.

Another important point that the author makes relates to the identification of the household characteristics associated with different types of linkages. Among farm households the characteristics which are crucial in understanding the pattern of linkage are the size of land holding, nature of tenancy contract, education and caste status, non-land income-earning assets, and the proportion of males to total workers in the household. The corresponding features in the case of landless labour households are the proportion of male workers to total family workers, migrant and caste status, and possession of mortgageable assets. Further, differential socio-economic features, such as worker-dependant ratio, access to land and the amount of crop income of borrowers contribute to a variety of linkages even within the same geographical area. The author has found that most of the linked credit transactions entail high rates of interest (both explicit and implicit). The implicit elements accounted for as much as a quarter of the effective interest rates. These are levied by underpaying the wage rate and price of the produce.

According to the author, even though some reforms have been initiated in the formal credit market, benefits to the poor are still not commensurate with their numbers. In view of this, the author maintains that mechanisms have to be developed to improve the access of the rural poor to the agricultural credit market on better terms. But the author does not specify what these mechanisms have to be. Similarly, he neglects the case for land redistribution and tenancy reforms to improve the bargaining and purchasing power of the rural poor. Inasmuch as the root cause of the interlinked transactions is due to insecure tenancy and limited land ownership of the poor, this neglect on the part of the author is a serious omission. But, the author's suggestions for reducing transaction costs of borrowing formal credit, less procedural and bureaucratic formal credit, representation of the poor on the managing committee of the co-operatives and investment in the social infrastructures like primary health centres are well taken.

The book under review is a very welcome addition to the scant empirical literature on interlinked agrarian markets.

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*Farmer-Financed Irrigation: The Economics of Reform*, Leslie E. Small and Ian Carruthers, Wye Studies in Agricultural and Rural Development, Cambridge University Press, Cambridge, 1991. Pp. xiii+233. £ 35.00.

The two economist authors of this book under review are known scholars of irrigation problems of the Third World countries. In this book, they deal with the ubiquitous problem of cost recovery in public irrigation systems. They argue here for the creation of financially autonomous institutions to collect user fees, so as to ensure to the farmers efficient irrigation service that is so central to modern, high yield farming.

The authors have drawn liberally from their earlier two studies, one by Leslie Small under the auspices of the International Irrigation Management Institute (IIMI) and the other by Ian Carruthers for the USAID. With a view to reaching the non-specialists, they have kept the format of their presentation simple, free from the tedious repetition of references -

they use innovative device of boxes in bold letters to enunciate on some particular aspect, say, stages of irrigation development.

The book is divided into three parts. Part I, consisting of Chapters 2 and 3, is concerned with the theory and concepts in financing. Part II, which covers Chapters 4 to 8, deals with the issue of relevant criteria for evaluating financing policies for irrigation. The third part focuses on the core argument of the book, namely, case for financial autonomy, which is developed in Chapters 9 to 12. Besides these eleven chapters, we have one highly perceptive, introductory Chapter 1, entitled 'Irrigation Financing in Perspective', and one concluding chapter on conclusions and recommendations, not to mention of a small, three-page section on chapter notes and an Index. To help the reader, each chapter is subdivided into several sections with apt titles which are listed on the Contents page.

As the first chapter sets the tenor of the book, it deserves careful perusal. "In several large developing countries like China, India, Indonesia and Pakistan, half of all agricultural investment goes into irrigation." This factual observation not only underlines the costliness of irrigation development (minor irrigation is no exception) but also the critical role being played by irrigated farming in keeping food supplies well matched with population growth. Any setback in this investment effort, as has occurred already in India in the Seventh Five Year Plan, may prove deleterious to pace of agricultural growth in the first place, and the whole planning effort ultimately.

A crucial point to realise now is that slow-down in the expansion of irrigated farming can occur despite there being no visible reduction in fund allocations for the irrigation sector. This is, *inter alia*, because such outlays are getting increasingly absorbed in maintaining the already established irrigation works, principally in two things: (1) rehabilitation and modernisation of old works and (2) mounting subsidies incurred in bridging the huge gap between revenue receipts (from user fees) and the resource cost of providing irrigation service. Of course, the two are interlinked to some extent: inadequate funding for repairs and maintenance needs of an existing system leads to its premature deterioration and thus hastens the demand for replacement funds on account of major repairs. As the size of the existing irrigation system has by now grown manifold in the Third World countries (fourfold in the case of India since 1951), the deficit on the revenue account is steadily growing, *ceteris paribus*, and thus encroaching into the investment cake earmarked for further development of the irrigation sector. If such a process ensues simultaneously in other sectors of the economy, as indeed is the case in India, the aggregate deficits create a climate of resource crunch, more so at the level of the states of the Indian Union whose degrees of freedom for fund mobilisation from both domestic and foreign sources are constrained compared to the Centre.

The authors enumerate ten major ills afflicting Third World irrigation system, of which insufficient financial resources and low priority for operation and maintenance is just one. On the one hand, they rightly point out the interlinked character of these ills, and, on the other, they draw our attention to the macro economic setting within which many of these ills arise, or have to be coped with. One may not, however, share their holistic approach in the matter of comparative advantage in crop production in an international context, because many developed countries themselves pursue protectionism to shelter their domestic agricultural sector. In this very context it is questionable why funding agencies like the World Bank (some 25-30 per cent of World Bank agricultural lending is for irrigation projects)

should be evaluating irrigation projects as if free trade regime prevails in agricultural products, notably foodgrains (75 per cent of the irrigated acreage in India is devoted to the production of foodgrains).

Anyway, the authors reveal a high order of realism when they state as follows: "Contrary to many others, we place relatively little importance on the possibility that user fees will encourage individual farmers to be more efficient in their use of water" (p. 218). Earlier they had observed: "We conclude that rational decisions about changes in irrigation fees or other methods of resource mobilisation cannot be made without simultaneously reviewing the broader context of the nation's sectoral price and taxation policies and its general macro economic policies and environment. For this reason it is not possible to give simple, universal answers to questions such as 'what is the best approach to financing the recurrent costs of irrigation?' Rather, a *framework of analysis* must be developed, which can then be applied flexibly to individual situations. This is the challenge that we undertake in this book" (p. 9, emphasis added).

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*Reaching Out to the Poor: The Unfinished Rural Revolution,* Geeta Somjee and  
A.H. Somjee, Macmillan Press Ltd., London, 1989. Pp. xv+152. £ 12.99.

The burden of the song of this book may be summed up as under: Poverty cannot be understood in terms of economic factors alone; other wider cultural, political and human problems go hand in hand with poverty and must be taken into account for a full understanding of the phenomenon of poverty. The poorest of the poor have been subjected to exploitation and social isolation for so long that they have no human and social capacity to fight back on their own. They need a human agency to help them get a share in the benefits of economic development. The character of the human agency and, more specifically, its attitudes towards the poor would significantly influence the outcome of its efforts to improve the conditions of the poor.

The authors make these assertions on the basis of a longitudinal field research, spread over two decades, covering the efforts made, principally, by four co-operative dairies in Gujarat, viz., Amul in Kaira district, Dudhsagar in Mehsana district, Sumul in Surat district and Sabar in Sabarkantha district, to induct the poor among the non-producers of milk into their fold. Efforts made by some other agencies such as Christian missionaries, social workers' organisations and individuals to reach out to the poor are also studied to assess the nature of their impact.

The results were found to be uneven not only between the co-operative dairies and other agencies but even among the dairies. In the case of the dairies, the differences in the performance could be attributed in a large measure to the extent of support which socially concerned personnel (either technocrats or veterinary doctors) obtained from their superiors in their endeavours to extend the coverage of the dairies to the poor who lived in the villages served by the dairies. In the case of other agencies, the attitude of the agencies towards the poor was a significant factor in the degree of involvement of the poor in the activities or

programmes which were expected to alleviate their poverty. The results were disappointing where the attitude was rigidly paternalistic, as in the case of Christian missionaries in Surat district.

The authors rate very highly the efforts of the veterinarians, technocrats and extension workers of co-operative dairies and shower generous praise on them. Achievements like the 'double revolution' which these functionaries brought about in some talukas of Surat district - first by transforming inexperienced (in dairying) *Adivasis* into milk producers and then by making them the principal source of the dairy's milk supply - would justify the high praise to a certain extent. However, the four case studies show that the dairy personnel have not been uniformly or equally successful in reaching out to the poor. In the areas where the poor are a source of cheap labour for the landlords and where modern agricultural technologies have opened new opportunities for pursuing agriculture on commercial lines, the efforts of the vets and technocrats to extend the economic benefits of dairying to the poor have met with stiff resistance and, consequently, achieved only a moderate success.

It may be noted that the efforts of the vets and technocrats did not spring from the social concern of the organisations to which they belonged, but were, quite clearly, made by them in their *individual capacities* out of their *own* concern for the poor. The success of such initiatives and efforts, however impressive or spectacular, are of little help for policy or organised action for improving the economic lot of the poor. This criticism is not meant to downgrade the value of individual action, but only to suggest that such action can only supplement other well-conceived strategies and carefully drawn plans for large-scale poverty alleviation. Indeed, the point tellingly emerging from the book is that the effectiveness of the anti-poverty programmes would be greatly enhanced and their objectives better achieved, if highly motivated individuals like the vets, technocrats and extension workers of the Gujarat dairies are enlisted in the task of executing the programmes.

A related point deserves mention. The institutional charter of the dairies in Gujarat did not require them to do any thing for the poor, non-producers of the milk. Yet the technocrats and vets were encouraged in their efforts to bring the poor within the fold of the dairies' activities. It is a moot question whether the encouragement was provided out of concern for the poor or tactical considerations of achieving corporate goals of the dairies.

The above comments do not, however, detract from the value of the book which lies, in the main, in providing many useful insights into 'the complex world of the constraints of the poor' and the problems which beset the paths of those who endeavour to reach out to them.

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*Irrigation Planning In India*, A.P. Srinivasamurthy, Himalaya Publishing House, Bombay-4, 1990. Pp. vii+103. Rs. 125.00.

Irrigation planning in India refers to the aims, objectives, financial and physical targets, programmes, policies and measures in irrigation development. Further, it also covers the formulation, implementation, evaluation and reformulation of plans related to irrigation development. The author of the book has made efforts to collect and compile the relevant information mainly from the Planning Commission reports. This book as such has ten chapters including an Epilogue. The first chapter deals with the characteristics of India's planned economy and the second chapter with the background to irrigation development. The third chapter provides a historical perspective on irrigation development and administrative set-up for irrigation management in India. The fourth chapter on irrigation project classification and plan outlays deals with the classification of projects on cost and area basis. However, the reason for switching over from cost to area basis is not mentioned. This chapter also gives a general picture of irrigation investment from the First Plan to the Seventh Plan. It also discusses the share of irrigation investment in total public sector outlay. The relative importance of the major and medium projects and flood control is also highlighted but the discussion on this aspect is loosely connected in this chapter. The fifth chapter is devoted to a discussion of ultimate irrigation potential, plan targets, achievements and cropwise distribution of irrigation water. As regards the irrigation potential, the basis for the assumptions made in the Seventh Plan to improve the estimates on the irrigation potential is not well discussed. The contents of the three tables in this chapter give the achievements. It would have been useful if the author had attempted a detailed discussion on this important topic of irrigation development. The discussion on the area irrigated under different crops in different years is not well placed as it does not match with the discussions in this chapter.

The sixth chapter deals with irrigation development in several states, where the potential created up to 1984-85 is compared with the ultimate potential under major/medium and minor projects. Other than attempting a comparison between the states, the reasons for under-utilisation/development have not been focused. This chapter also mentions very briefly the various water disputes, such as inter-state river water disputes and includes a brief section on national water grid.

The seventh chapter mainly covers the under-utilisation of the irrigation potential from 1979-80 to 1985-86 and Command Area Development Programme (CADP). It gives state-wise expenditure made on CADP during the Sixth and Seventh Five Year Plans. The discussion on CADP is well presented. The cost of irrigation development and returns to irrigation investment are discussed in the eighth chapter. Planwise cost per hectare of irrigation development is given under major/medium and minor projects. It is not mentioned whether the costs are based on current or constant prices. The discussion on returns to investment is weak as it is vague and too general.

The ninth chapter contains a good account of the major contributions made by the international agencies for irrigation development. The last chapter summarises the major points covered in the book. In many places (chapters) the tables have no titles. Except the Planning Commission reports, other references quoted in the book are too old. This book is just an addition to the existing literature on general irrigation.

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*Macro-Policies for Appropriate Technology in Developing Countries*, Edited by Frances Stewart, Westview Press, Inc., Boulder and London, 1987. Pp. x+315. Paperback: £ 31.00.

The book aims at, and substantially succeeds in, identifying and exploring the role of political economy associated with such macro policies as to influence the chosen set of appropriate technology choices. The central hypothesis of the book is that "forces of political economy often provided the decisive obstacle to the introduction of appropriate macro-policies because the policies would change the distribution of benefits from economic activity in a way that might conflict with dominant interest group" (p. 272). The macro policies, the actions of the government, substantially depend on the nature of the government: "what interests it represents and hence how it is affected by different decisions, what objectives it holds and what game it is playing" (p. 8).

Economists' first-best recommendations normally completely ignore the limitations or constraints imposed by political economy or assume a single entity, government representing national social welfare maximisation interest. In reality governments are not homogeneous but have ties with numerous groups. The ties of some groups may be strong or weak, depending upon the conflicting interests served or harmed by macro policies postulated by them. Interestingly, no group may be completely homogeneous. For example, workers will be differently influenced by the choice of an alternative technology according to their skills, their experience and versatility, and their family circumstances. Bureaucratic support for inappropriate policies partly stems from a recognition of the political reality that strongly favours those who would lose by appropriate technology policies (large scale domestic producers, large farmers and foreign technology, management and machinery suppliers from the advanced countries and bureaucrats themselves), and partly from the fact that bureaucrats' own objectives (maximum plan fulfilment and its quickest execution) are usually best met by inappropriate choices.

The countries studied represent an interesting mix in terms of the usual classification of political economy. It includes the planned economy of India and the more laissez-faire Philippines; socialist Tanzania and more capitalist oriented Kenya; foreign aid dependent countries, heavily, Tanzania and Bangladesh, and marginally, India; relation with multinational companies, warm welcome Philippines and Kenya, and studied distance Tanzania and India. Nonetheless, Taiwan, where the local elites in decision-making were displaced by people from the mainland in 1949 and an early effective land reform was accompanied by the development of a small scale (rural) industry, managed to escape the inexorable pressures and to adopt a set of policies broadly supportive of appropriate technology (p. 296).

In India, the agricultural strategy that started in the immediate post-Independence period with the philosophy of allround and self-reliant development of the rural community was, according to Ashok Rudra (Chapter 2), transformed (under U.S. government and Ford Foundation advisors) into one narrowly focusing on production concentrated in high potential regions, crops, and on rich farmers and depending exclusively on purchased inputs (of new seeds, fertilisers, pesticides, irrigation through mechanised tubewells, and mechanisation) from distant and, often, sophisticated large scale industries. The policies that favoured it include R & D, and price and credit policies which subsidised the production,

sale and finance of chemical fertilisers, tractors and mechanised tubewells. The forces of political economy that favoured such a 'package' were large farmers, domestic and foreign fertilisers and machinery producers, and bilateral and multilateral aid donors.

In Bangladesh a comparison of two shallow tubewell crop irrigation technologies, one operated manually (MOSTI) and the other mechanised (ST), reveals that the MOSTI technology generated twenty times more employment per acre and its investment cost per acre was 1/320 of the ST [Stephen Biggs and J. Griffith (Chapter 3)]. Whereas the gainers from MOSTI were small and landless peasants and rural artisans, those that gained from ST technology included large peasants, bureaucrats and equipment producers. Consequently, the policies levied heavy taxes on pipes used in the MOSTIs and favoured the ST through subsidies on the equipment.

The Bart-Duff study of paddy thresher technology in Thailand and the Philippines (Chapter 4) lends support to the classic conflict between output and employment; the thresher appears to maximise output in the Philippines, but at the expense of employment (which was 7 per cent less than without thresher) and a deterioration in income. The technology's profitability was partly due to the yield increasing effects (from 0.7 to 6.0 per cent of the grain) compared with manual threshing methods and partly due to government policies towards credit and tariff. In contrast, in Thailand where there was an expanding land frontier and only a small landless labour class, real wages were rising.

Agricultural growth generates non-agricultural activity through consumption, forward and backward linkages. In the Philippines, a one per cent increase in the agricultural output led to a more than one per cent increase in non-agricultural employment in the rural areas (Chapter 5). Taiwan, which witnessed rapid growth of very labour intensive crops (mushrooms and asparagus) and processing at decentralised level (of bananas and pineapples) by small scale local companies, the rate of growth of non-agricultural employment was more than twice the rate of growth in the Philippines (which witnessed large scale mechanisation/tractorisation of agriculture and processing by large scale capital intensive multinational companies, *e.g.*, integrated rice processing plants) at a time when agricultural growth rates were similar [Gustav Ranis and F. Stewart (Chapter 5)].

Of the two sugar processing (sulphitation) technologies, open-pan (OP) and vacuum-pan (VP), in Kenya, multilateral as well as bilateral aid donors favoured the VP technology which permits rapid flow of funds that are subject to normal control procedures and VP mills are not required to write off their heavy depreciation. In contrast, in India, where OP technology has, of late, become compatible with VP technology in most circumstances, 30 per cent of the sugar output is OP-processed compared to 1.7 per cent in Kenya (Chapter 6). The dominant gainer groups from VP technology in Kenya were foreign machinery suppliers and foreign firms supplying management services, large farmers (many of whom were absentee landlords with positions in the government), and the aid community [Raphael Kaplinsky (Chapter 6)]. The prevalence of OP technology in India is associated with a large and powerful group of small farmers and machinery producers.

The choice of large scale capital intensive technology by the parastatals in the capitalist Kenya and socialist Tanzania is partly attributable to the bureaucrats' (within parastatals and government departments) objective of output maximisation in a short period in the face of financial stringencies and ease of access to foreign finance and foreign technology and machinery and partly due to the belief that small scale activities would require far more

administrative and supervisory resources and would therefore delay securing the desired increase in output [James (Chapter 7)].

A number of instances of government policy that encouraged the adoption of inappropriate technology are: (1) depreciation write-off permitted to VP technology in Kenya, (2) overvalued exchange rate, protection and subsidisation favoured mechanisation of agriculture in the Philippines, (3) tax on materials in the MOSTIs in Bangladesh, (4) exclusion of informal sector activities from the purview of formal credit channels and reluctance on the part of banks to handle applications of small credit applicants and (5) the sugar price regulations in Kenya and India (p. 288).

An appropriate technology in a labour surplus economy is a labour intensive technology. Policies aimed at promoting appropriate technology must promote rural industry dominated by labour intensive small scale units by developing rural infrastructure (financial, technical and marketing services). For instance, in Taiwan, where substantial infrastructural and organisational investments took place in the rural areas, non-agricultural income accounted for over half of rural income in 1971 compared with between 15 and 20 per cent in the Philippines where the bias against agriculture has been greater and investment in rural infrastructure substantially less (p. 15).

The dominant influence of 'product quality' on choice of technique is well appreciated. Invariably, capital intensive techniques produced 'higher' quality products, that is those that commanded international acceptability owing to uniform quality. However, when such western product quality standards involve tremendous loss of employment and income earning opportunities and say, contain same degree of nutritional content as in the case of rice processed by big plants, there is need to develop 'appropriate products', keeping in mind the vast number of low income consumers. The successful experience of export of canned pineapple from the Philippines, a high quality large scale capital intensive technology based product to high income markets, and from Taiwan, a lower quality (more broken and uneven) labour intensive technology based product to lower income consumers in advanced countries, reveals that there is no unique 'international standard' to justify a particular technology choice (p. 291). Since advertising tilts tastes artificially away from appropriate products by providing partial information, there is need to counter it either by imposing restrictions on advertising or by disseminating information about alternative products.

Sources of technology - both as to information and the development of new technology - have been heavily biased towards the modern sector, and within that towards the relatively large scale; R & D being carried out in developed countries by large scale firms. Decision-makers normally have access to only a sub-set of the world technological shelf, and this sub-set varies with the type of the unit. Policies to affect the change include policies towards local R & D, dissemination channels, and informal sources of technical change. Some examples of remarkable improvements in appropriate technology are (1) production of high quality rice by combining rubber roller with a steel huller in the case of small rice mills; (2) bamboo version of the MOSTI wells; (3) improved sugar quality through OP sugar technology; and (4) small scale threshers compared to large scale threshers.

A complete set of appropriate technology policies is unlikely to be introduced without major changes in political power. Nevertheless, some potential for improvement in the adoption of appropriate technology does exist through such non-confrontational policies that promote appropriate R & D and dissemination, improve rural infrastructure, and develop

appropriate standards to give positive support for appropriate technology without being directly and overtly negative to inappropriate technology (p. 297). South-South markets offer considerable potential for trade in appropriate products. Policies to promote such trade, e.g., by mutual preferences, mutual trade liberalisation, monetary arrangements, or counter-trade, form part of the array of appropriate technology policies.

Thus the book contains a good treatment of the development and diffusion of technology and, more so, its interaction with the political economy with a focus on macro policies for appropriate technology.

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*Handbook of Energy for World Agriculture*, B.A. Stout, Elsevier Applied Science Publishers Ltd., Essex, England, 1990. Pp. xiii+504. £ 75.00.

There are many books, manuals and handbooks on energy use in agriculture, renewable technologies for developing countries, energy for rural development, etc., which attempt to view particular sectors or end-uses or technologies, but Stout has made a commendable effort in presenting a comprehensive overview of different aspects of non-commercial energy, technologies for conversion, energy management and alternative policy frameworks for developing agriculture. The author, in collaboration with three others, has compiled huge data as evidenced from 171 tables, 263 illustrations and over 600 references covering different regions, sectors and alternative sources (mainly for the seventies and early eighties). The book contains nine chapters and two appendices, besides a conversion chart.

The first chapter reviews energy studies for the developing countries (which consume only about 15 per cent of world energy), analyses per capita energy consumption and the essential nature of energy to supplement limited human energy capacity. The relationship between labour, energy use and agricultural production along with the energy balance of different agricultural systems and the growth of agricultural energy use in 2000 A.D. are reviewed. The primary energy consumption levels of petroleum, coal, natural gas and electricity including nuclear energy in different countries are surveyed with reference to economic (energy prices and terms of trade between oil and other commodities) and environmental (including socio-economic impact) concerns.

In the second chapter on energy use, commercial energy use for agricultural inputs like farm machinery (manufacture and operation), fertiliser production and use, energy for human and animal labour, irrigation equipment and pesticide production and application is illustrated with various examples from developed and developing countries. The third chapter focuses on problems in presenting a 'neat, concise, homogeneous global picture of rural energy use' owing to 'incomplete and vastly different methodologies' (p. 101). Energy flows are analysed by taking examples from Latin America, Africa (Ethiopia, Sahel village and Senegal), Asia (Bangladesh, China, the Philippines, Sri Lanka, Thailand and Pakistan) and New Zealand. Issues such as structure of energy consumption, commercial and non-commercial energy use in agriculture are also analysed. Under energy management, opportunities of conserving energy in various aspects of agricultural production through

better germ plasma research, fertiliser and biological nitrogen fixation, pest control, energy efficient irrigation, better tillage, better managed post-harvest system, transportation and food processing and also an efficient food consumption system have been analysed. Energy use in fertiliser production, farm machinery and irrigation equipments, though it helps to increase productivity, has various limitations.

The fifth chapter on energy from biomass provides information on various conversion processes of biomass energy. Impact of biomass energy on land use, market linkage, institutions, transportation, food and politics shows that 'biomass fuels are no panacea' (p. 206). Wood fuel, fuel crops, crop residues, fresh water and saltwater plants, etc., are to be treated as supplements to oil and other fuels. Biomass fuels may be gaseous (producer gas, biogas, hydrogen), liquid (ethanol, methanol, vegetable oil) and solid (charcoal) and the conversion technologies are described with reference to different types, feedstock, conversion process, designs, primary products, utilisation, by-products, net energy balance, environmental aspects, R & D or commercial use with an overall assessment.

The sixth chapter highlights aspects of solar energy collection and storage (flat plate and focusing collectors, photovoltaic cells, solar ponds) and its application to agriculture (water desalination, pumping, crop and grain drying), cooking and heating (space and water and greenhouses). But solar energy provides a case of expensive structure and complexity. The focus of R & D should be on devising simple, inexpensive and reliable systems.

The seventh and eighth chapters deal with wind energy, its conversion, applications, feasibility studies and economics and with hydropower (potential, classification, planning hydro-electric power system, distribution, small hydro sources versus alternative sources). The review on micro, mini and small hydro sources makes an interesting reading. The last chapter on alternatives focuses on issues of energy options for increasing energy supply through renewable alternatives and decreasing energy demand through efficient energy management.

Importance should be given to suitable renewable energy development to meet the needs of energy cropping, solar options, integrated energy systems (such as in Zinbu Brigade of China), decreasing energy demand especially in the food system, housing, transportation and other aspects of quality of living. The formulation of rural energy policies within the national and global energy policies deserves high priority. Crucial (though small) supplies of commercial energy for energy intensive inputs should be supplemented by renewable sources. Appropriate price policies and relative subsidies for poorer consumers are necessary. Further, economical energy use and a transition to renewable energy to reduce depletion of exhaustible energy sources and to improve environment through promotion of efficient farming systems also assume importance. The necessity to address to the needs of the poor, avoidance of dumping renewables to rural areas to facilitate the urban affluent to use non-renewables and other policy issues should involve 'many interests concerned, including agriculture, fisheries, forestry, rural development, nutrition and consumer organisations' (p. 454). More attention needs to be focused on national policy concerns, world food security, technology assessment (pay-back periods, return, lifecycle costs, social impact, effect on environment) and sophisticated computer simulation techniques for developing integrated energy system models. The example of the Center for Advanced Studies on Energy Management in Agriculture (Ludhiana) in tackling agricultural energy problems is cited as a model for other developing countries.

The book points out that there are no early solutions to energy supply and conservation dilemmas of developing countries and the discussion on "alternative energy forms and efficiency measures is designed to help developing countries in their quest to ensure a better quality of life for their citizens through effective energy strategies".

Renewable technology development has close links with the development and exploitation of non-renewables. The technology of conversion also changes over time. The role of renewables need not be exaggerated but their development should be ensured for long-term stability and 'strong' sustainability of rural energy systems. The objective of the book will be amply served if the developing countries systematise and integrate studies on agricultural energy use *a la* non-commercial energy sources.

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