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Reviews in Brief

Agro-mechanical Diffusion in a Backward Region, Rakesh Basant and K.K. Subrahmanian, Intermediate Technology Publications, London, 1990. Pp. vi+94. £ 4.95.

This report is the outcome of a research project to study the development and diffusion of agro-mechanical technology, characterised by improved hand- and bullock-operated implements, which was sponsored by the Indian Council of Social Science Research, New Delhi. It attempts to explore the conditions and relationships which characterise the process of general application or diffusion of agro-mechanical technology in a backward region of Gujarat. The study is based on an intensive survey of a stratified random sample of 80 cultivators and all the artisan households consisting of 15 blacksmiths, five carpenters, one leather worker and one bamboo worker in the four villages in Kalol and Dahod talukas of Panchmals district, a relatively backward district in Gujarat. The selected talukas and villages represented different levels of development, Dahod taluk being agriculturally backward and Kalol, relatively better irrigated and agriculturally better endowed. From each taluk one backward village and another developed village were selected for the purpose of study. The data analysed in the report pertain to the year 1981-82. The study focuses on the three main agents directly involved in the process of generation and diffusion of agro-mechanical technology, namely, the cultivators who use agricultural implements, the artisans who fabricate them and the registered agents of outside fabricators in the market. It analyses the major factors affecting agro-mechanical diffusion and the responses of technology users and generators at the local level and formulates testable hypotheses regarding the processes of technology diffusion in transitional agrarian economies.

Analysing the major factors that condition the responses of technology users, the study notes that it is difficult to understand the logic of adopting new implements at the farm level since they cannot be directly linked to increases in yields or cropping intensities. Various interacting factors influence decisions about the use of an agricultural implement and in most cases the combination of influencing factors is specific to individual implements. The study shows that the size class bias in favour of larger farmers existed not only for agro-machinery but also for smaller, less costly implements. A positive association is observed between the use of seed-fertiliser-irrigation technology inputs and improved agricultural implements. Changes in sowing techniques and cropping patterns and changes in agricultural practices would necessitate the use of new implements and/or old implements with new specifications. A marked preference for multipurpose implements is also observed in the selected villages in order to economise on the use of scarce capital. The relationships between bio-chemical and agro-mechanical technology are found to be neither unique nor uniform across villages and cultivators. These relationships are further modified by various factors such as size of holding, availability of draft power, agro-climatic factors, fabrication and repair facilities. Inappropriateness of new implements with regard to these considerations emerged as the major factor constraining the diffusion of agro-mechanical technology and in providing impetus for various types of modifications in these implements in the study area.

Analysing the interaction between agents of technology generation and the various categories of users in the economic system, the study has identified concrete cases of interaction leading to improvements and some changes in agricultural implements. The

efforts of local artisans typically involved (a) making changes in the design of agricultural implements, (b) substitution of production material or parts and (c) addition of new parts, which are not mutually exclusive. It is reported that combinations of such changes do occur and also these changes are specific to regions, cultivators and agricultural implements. Modifications or adaptations of implements helped to reduce the operational disadvantages of both traditional and modern equipment, widen the range of productive activities for which mainly implements could be used and improve the relative advantages of both types of implements. The study comes to the conclusion that under the prevailing market conditions, investments in large scale fabrication of agricultural implements are likely to involve a waste of scarce capital. It is therefore suggested that the strengthening of the artisan based fabrication networks and a combination of local experience, scientific knowledge through links with formal research and development and effective interaction between artisan and farmers would encourage the growth of local technological capabilities.

Sources of Innovation: An Economic Analysis, Ira R. Bidkar, Himalaya Publishing House, Bombay, 1991. Pp. x+164. Rs. 100.00.

The study, which is a revised version of the author's doctoral dissertation, explores the micro and macro level factors that stimulate innovations and generate investment and growth. Specifically, the focus of the study is on the sources of innovations and on how technological progress is initiated. The study identifies a number of firms which have introduced new products or processes in the Indian economy and attempts to analyse the factors underlying these decisions. The relevant data for the study are collected from the records of firms wherever available and information gathered from mailed questionnaire to 150 innovative firms representing diverse industries and the decision-maker's subjective perception of the relevant factors.

Based on analysis of data from a sample of 13 Indian firms, the study examines the role of causal factors such as research and development (R and D), market structure, market demand, relative input prices and the risk element in generating innovations. It also examines various governmental policies that promote, retard or distort innovations. The results of the multiple regression models tried to examine the effects of non-price variables on R and D reveal that R and D input is an important explanatory variable in the determination of innovation output. R and D expenditure in Indian firms constituted about one-third of the total cost. The results also validate the hypotheses that technology-push and demand-pull factors play complementary roles in innovation. Though the study provides evidence to support the premise that technological self-reliance promotes R and D and innovation, the converse is not borne out.

The size of the firm emerges as an important determinant of R and D expenditure. While risk is a significant variable explaining 27 per cent of the variation in R and D expenditure, it is found to be a poor explanatory variable for innovations. The study provides empirical support to the importance of demand-pull model of innovation; but induced innovation is found to be a relatively weaker phenomenon. It is also noted that lack of institutional finance did not hinder R and D and innovation in the firms selected for study. The effects of major governmental policies on R and D and innovations often varied among firms depending on the firm-level parameters, the promotional effects being less powerful than the regulatory

effects; the policies seem to distort technological choices. The Epilogue points to the need for re-examining the conventional thinking on development policies. The study makes a notable contribution to our understanding of the role of research and development in the process of technological innovation in industries. The review of relevant literature and testing of hypotheses against empirical evidence enhance the value of the study.

Towards Eradication of Child Labour, Edited by Indira Hirway, Jacqui Cottyn and Pushkar Pandya, Oxford & IBH Publishing Company Pvt. Ltd., New Delhi, 1991. Pp. x+307. Rs. 195.00.

The volume contains the papers and proceedings of an international seminar on child labour, organised by Antar Bharati and Gandhi Labour Institute in collaboration with International Falcon Movement, Socialist Educational International, Belgium and Frederich Ebert Stiftung, Germany. The focus of the seminar was on "(a) understanding the root causes of the emergence of child labour system in the context of the dynamics of the forces operating at the national and international levels, (b) drawing lessons for policies and programmes for eradicating child labour from the experiences of developed economies, (c) formulating an indicative action plan towards abolition of child labour from the world, and (d) evolving strategy for effective implementation of policies and programmes pertaining to child labour." The volume includes the text of the action strategy for eradication of child labour from the world. The selected papers are organised in 25 chapters. The first chapter presents a succinct summary of the main findings on child labour reported in the papers presented at the seminar and considers the basic issues relating to the eradication of child labour from the world. The second chapter provides broad estimates of child labour in the world, examines the dynamics of these processes which regenerate and perpetuate the phenomenon of child labour, studies the factors underlying the limited success of official interventions and draws policy inferences for eradicating child labour from the third world countries. The problems of child labour in Europe and in South Asia are examined in Chapters 3 and 4 respectively. Highlighting the experiences of Germany, the United Kingdom, Norway, Sweden, France, Belgium, Portugal, Cyprus and Malta, the study reveals that child labour was an integral part of the early stages of development of the capitalist mode of production, and to a considerable extent, its incidence depended on the socio-cultural and religion-based values of the society. Consequently, its eradication could be brought about not only by legal measures but by social awareness and people's movements including trade union movement. The process of eradication of child labour was long, frequently spread over decades. The experiences of Asian countries, especially the Philippines, Sri Lanka, Thailand, Nepal and Indonesia, show that in spite of some differences, the nature and characteristics of the problems of child labour are similar in the countries covered. Despite the implementation of some scattered and low key programmes for child labour, the problem of child labour is still acute in these countries and there does not seem to be any hope for the working children in the near future. The dynamics of the exploitation of working children in the different sectors of the Indian economy and at the macro level are discussed in Chapters 5 to 25. The sectoral studies are concerned with the problems of child labour in handicrafts, lock industry, carpet industry, tea industry, diamond processing units, glass industry and brocade industry. The macro level studies deal with the dimensions of the problem of child labour in India

and examine the issues pertaining to the policy of the Government of India in historical perspective. The volume also includes studies which discuss the issues pertaining to health and education of working children, role of international agencies, national governments and voluntary agencies including trade unions in the eradication of child labour.

Coconut Development in Kerala: Ex-Post Evaluation, D. Narayana, K.N. Nair, P. Sivanandan, N. Shanta and G.N. Rao, Centre for Development Studies, Trivandrum, 1991. Pp. iv+139. Rs. 40.00.

The book embodies the results of a detailed study of coconut plantations, dealing with production, consumption, price formation and technology of cultivation and also an ex-post evaluation of the credit schemes for the rejuvenation of the crop refinanced by the National Bank for Agriculture and Rural Development (NABARD). The study is organised in two parts: Part A (Chapters 2 to 5) contains an analysis of coconut economy of Kerala, based on secondary sources of data and Part B (Chapters 6 to 9) is an ex-post evaluation of coconut development schemes, based on a survey carried out in 1984-85, covering a sample of 422 beneficiaries selected from Kasaragod, Kozhikode, Malappuram and Ernakulam districts of Kerala. The reference period of the data is 1983-84.

The study shows that the share of Kerala in the area under coconut in India and in production has declined from about 68 and 70 per cent in the fifties to 59 and 50 per cent respectively in 1986-88. The decline in the share of the state in the all-India production of coconut is ascribed mainly to the decline in per hectare productivity of the crop. The analysis of price trends and fluctuations in coconut prices reveals that though the movement of coconut price has been very favourable with the decline in the imports of copra and coconut oil since the early seventies, such favourable situation was marked by sharp year to year fluctuations as well as increasing seasonal variations in prices. It is argued that the potential for increasing the productivity of coconut in the state crucially depends on the availability and diffusion of technologies at the farm level and on irrigation.

Three distinctive strategies are suggested for increasing the production of coconut, namely, rejuvenation of the existing gardens, systematic replanting of the old gardens and new planting. The ex-post evaluation of the NABARD credit schemes which are intended to bring new areas under coconut cultivation in the selected districts and implemented through the primary land mortgage banks, highlights the uneven growth in the area under new plantings. It is observed that the target area for the scheme was identified mainly in the districts of Malabar having large areas of wasteland, with only a limited scope in the central and southern districts of the state. The progress of implementation of the scheme was tardy, calling for rephasing. Even with such rephasing to cover more area and involving a longer time period, the physical and financial achievements fell far short of the targets. Moreover, most of the land brought under the scheme was either marginal or sub-marginal. The nature of investments called for in such lands and the destruction of coconut plantings by wild animals resulted in many beneficiaries being denied the second and subsequent instalments of credit, resulting in reduced flow of credit. A large number of beneficiaries in the study areas dropped out of the scheme due to availability of own funds, misutilisation of loans and difficulty in repayment of loan. Often the funds disbursed was found to be inadequate. The repayment of interest was found prompt in all regions, mainly due to the subsidy

incentives provided by the lending agencies. Clearing of loans prematurely was found to be fairly high in all regions due to the farmers' desire to get rid of their encumbrances on land. The relatively long duration of the scheme interacting with the changes in ownership of land militated against the fuller use of finances provided under the scheme in coconut cultivation. The findings point out the need for adopting a realistic approach to project formulation, by taking into account the trends in the sector and the underlying factors. The need is highlighted for proper co-ordination among the lending institutions, the different departments of the state and the research institutions for efficient implementation of the projects. The study also suggests that the co-operative set-up should be broadened to integrate the activities supporting production, marketing, processing of coconut and credit.

Economic Co-operation in SAARC Region: Potential Constraints and Policies, V.R. Pan-chamukhi, Nagesh Kumar, V.L. Rao, I.N. Mukherjee, S.K. Mohanty and M.P. Lama, Research and Information System for the Non-aligned and Other Developing Countries, Interest Publications, New Delhi, 1990. Pp. xii+275. Rs. 250.00.

The book examines the growth and structure of trade, joint ventures and technology transfers among the countries of the South Asian Association for Regional Co-operation (SAARC) and explores the possibility of expanding mutually beneficial economic links among the countries of the region. It also identifies areas of co-operation in trade, investment and technology. After a brief analysis of the salient features of Indian economy, focusing on macro-economic indicators, savings, and investment, agricultural and industrial production, trade and balance of payments, the book analyses the SAARC countries' trade structure in terms of broad economic categories as defined in the publications of two international agencies, viz., United Nations Conference on Trade and Development (UNCTAD) and the World Bank. It identifies the top ten products traded (exported and imported) by SAARC countries on the basis of three-digit Standard Industrial Trade Classification. The analysis of commodity composition and concentration of trade is followed by an analysis of geographic distribution and concentration of trade. Trade trends are studied with the help of Hirschman index of commodity and geographic concentration. An attempt is also made to examine the trade complementarities. The study shows that the trade/gross domestic product ratio in most of the SAARC countries has either been stagnant or declining. The balance of trade of all the SAARC countries was adverse during the eighties. Primary commodities dominated the export structure. Generally the commodity concentration of imports has been lower than that of exports for all the SAARC countries, excluding India. The outward orientation of these economies has been constrained by recession and protectionist policies in the advanced countries, together with a decline in real aid flows. The study identifies broad areas of co-operation in trade in primary commodities and minerals and manufactured goods and joint ventures in industry and services between India and the other SAARC countries.

The review of the composition and trends in India's trade, joint ventures and technology transfers in relation to other countries of the region shows that India's trade with SAARC countries is characterised by high degree of instability and commodity concentration. Yet, significant volume of technology has been transferred by the Indian organisations and enterprises to the other SAARC countries, especially to Sri Lanka, Nepal and Bangladesh through joint ventures, technical collaborations, turnkey projects and consultancy services.

The study emphasises the need for establishing effective links between the various multi-lateral clearing and payments arrangements with a view to facilitating and increasing intra-regional trade in the region. It considers the need for expanding the membership of the Asian Clearing Union (ACU), for removing the constraints in the functioning of ACU, for rationalising the exchange control regimes and for achieving limited convertibility of the currencies of the SAARC countries. The study also considers specific issues relating to industrial co-operation within the region, such as identification of regional projects, their evaluation, modalities for their financing and the mechanism for smooth implementation of all these components in the process of regional co-operation. The exploitation of the immense potential of economic co-operation in trade and joint ventures in various areas of manufacturing and services in the region is hampered by a number of constraints which include high tariff and non-tariff measures, discriminatory practices, information gap, problems of finance and credit and infrastructural facilities. The study outlines several policy and infrastructural support measures in the areas of exchange trade and technology information, business/trade contracts, trade fairs, regional trade preferences, clearance and payments arrangements, trade and development finance, state trading, etc., for fostering economic co-operation among the countries of the region.

Institutional Changes in Agricultural Product and Input Markets and Their Impact on Agricultural Performance, A.M. Thompson, FAO Economic and Social Development Paper 98, Food and Agriculture Organization of the United Nations, Rome, 1991. Pp. vi+54.

The study reviews the experience of institutional reform in Africa in the context of structural adjustment in the agricultural sector and examines the arguments for and against intervention in agricultural markets in the light of the debate taking place in both the developing and developed world about the role of the state in improving market efficiency. It presents the experience of liberalisation in Ghana, Malawi and Somalia and draws lessons from their experience to enable a more informed participation in policy dialogue by governments and the policy makers. The study critically examines the arguments advanced for government intervention in agricultural markets from the efficiency and equity considerations. It is noted that imperfections in the futures and credit markets, increasing returns to scale and certain infrastructural activities promoting public good, imperfect information and externalities in agriculture may justify government intervention on efficiency grounds. Where it is difficult to tackle market imperfections directly, and these imperfections have led to monopolistic or oligopolistic situations, governments may either compete directly with the private sector or create a state monopoly. It is pointed out that the rationale for government intervention for achieving an acceptable income distribution is one of the most controversial because such intervention on distributional grounds will introduce new distortions into agricultural markets. The review of the experience of African countries towards liberalisation in agriculture shows that in Ghana and Somalia the potential responsiveness of the agricultural sector is strong because of the high level of distortion which had existed in the output markets before liberalisation. The need is also suggested for complementary reform of input markets by encouraging actively private sector co-operatives in the provision of inputs in these countries and for non-price support measures for the cocoa sector in Ghana in particular.