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Vol XXXVII
No. 1

ISSN 0019-5014

JANUARY-
MARCH
1982

INDIAN JOURNAL OF AGRICULTURAL ECONOMICS



INDIAN SOCIETY OF
AGRICULTURAL ECONOMICS,
BOMBAY

REVIEWS IN BRIEF

Economic Development and Betterment Taxes in Karnataka, S. P. Kher, Gandhi Chowk, Dharwad-1, 1980. Pp. 236. Rs. 45.00.

The book deals with different aspects of economic development of Karnataka State. Divided into 13 chapters, the introductory chapter presents an overview of the State's economy and the socio-economic indicators of development from 1956-57 to 1975-76. Chapters 2 and 3 describe the problems of agricultural development and food distribution policy in the State respectively. The next four chapters are concerned with the problems of industrial development, regional development, district planning and the programme of minimum needs. The problem of finances and tax incidence are examined in Chapter 8 followed by a discussion of rural taxation and irrigation and betterment levies in Chapters 9 and 10 respectively. The progress of rural electrification and the cost-benefit aspects of rural electrification and the pricing policy of the State road transport undertaking are dealt with in Chapters 11 and 12. The last chapter summarizes the conclusions of the study. It comes to the conclusion that economic development in Karnataka has not been adequate to provide food, employment and housing to the growing population and to meet the minimum social needs of the people, viz., education, health and drinking water. About 37 per cent of the population were living below the poverty line and poverty in the urban areas was found to be more acute than in the rural areas. The need is suggested for integrating employment-oriented schemes with other programmes of agricultural development and minimum needs programme and for adoption of a new strategy of developing central villages or growth centres. Students of regional development economics will find this book useful.

Economic Problems in Transfer of Agricultural Technology, Research Bulletin No. 27, Indian Agricultural Research Institute, New Delhi-12, 1980. Pp. vii+157.

Studies in Economics of Irrigation, Research Bulletin No. 32, Division of Agricultural Economics, Indian Agricultural Research Institute, New Delhi-12, 1980. Pp. viii+126.

Both these research bulletins are brought out to mark the Seventy-fifth anniversary of the Indian Agricultural Research Institute (IARI). The first publication includes twelve papers presented at the national seminar which was organized to discuss the economic problems in the transfer of agricultural technology and held in the Division of Agricultural Economics of the IARI at New Delhi on November 9 and 10, 1978. These papers are contributed by seventeen scholars working at IARI, Union Ministry of Agriculture, New Delhi, agricultural universities at Pantnagar, Ludhiana Coimba-

tore and Bangalore, ICRISAT, Hyderabad, Indian Institute of Management, Bangalore and CIMMYT. The role of economists in agricultural research is examined by Dayanatha Jha in his paper. It is argued that economists could play a very constructive role in improving the efficiency of the research system by involvement in three related processes, *viz.*, (a) determination of research goals and priorities, (b) resource allocation decisions and (c) *ex ante* evaluation of research results, which are discussed in detail. In his paper Stephen D. Biggs suggests a framework for national and decentralised research and development systems which might be useful to multi-disciplinary groups working on technological and institutional problems for reducing poverty in the rural areas of Asia. J. S. Sharma and S. K. Tewari make an attempt in their paper to examine the major economic constraints at the farm level in the transfer of technology and to present a methodology to study the impact of some of these constraints on the transfer of new farm technology. C. C. Maji presents a brief survey of some of the important definitions of technology and technical change in agriculture and discusses the probable impacts of an innovation on any one of the four different categories of technology: biological, mechanical, chemical and agronomic. The conceptual issues involved in the assessment of the economic feasibility of adoption of technology at the farm level are discussed by V. Nagadevara in his paper with an illustrative case relating to installation of a sprinkler irrigation system in Kurnool district of Andhra Pradesh. It is pointed out that it is just not enough to assess the economic feasibility of adoption of a new technique at the farm level based on either the cost-benefit analysis or the efficiency criterion. It is also necessary to consider the minimum economic size of the holding and the risk factor involved in adopting the new technology and to provide the farmer with sufficiently reliable information on the yield variability. James G. Ryan and M. S. Rathore make an attempt in their paper to test if it is feasible for research scientists in an *ex ante* framework to purposefully design agricultural technology for small farmers in India. The induced innovation theory of Hayami and Ruttan is used as a basis for the empirical tests in the paper. Farm data collected from village level studies conducted by ICRISAT in Andhra Pradesh, Maharashtra and Himachal Pradesh are analysed to examine the extent to which small and large farms differ with respect to their resource endowment ratios. The roles of resource mobility and factor market access are examined in three of the six villages studied in Maharashtra and Andhra Pradesh to see to what extent they reduce the necessity for basically differentiated technologies for small and large farms. Considering the great variability in factor ratios within and between farm size-groups in the three regions selected for study, it is suggested that it is imperative for research to provide "ranges of input options" rather than a single "package of practices" and that technologies need not be basically different between small and large farms. Y. P. Singh discusses in his paper the reasons for the acceptance and rejection of technology by farmers in India and examines whether the rejection factors can be manipulated. In another paper K. N. Singh and K. Vijayaraghavan highlight some of the major fac-

tors influencing the behaviour of farmers towards the adoption or rejection of an agricultural innovation. A. S. Kahlon and B. S. Pathak make an attempt to identify the characteristics of mechanical technology and analyse the organizational and economic factors in the adoption of mechanical technology with special reference to Punjab. V. Rajagopalan discusses in his paper the general theme of economic requirement and content of experiments and organizational pattern to integrate disciplinary objective into an overall framework of evolving a set of technological packages for transfer to farmers' fields. A paper by K. R. Kulkarni discusses the results of experiments carried out under the All India Co-ordinated Agronomic Research Projects with a view to identifying the farm resource constraints in obtaining optimum yields of crops. R. B. L. Bhardwaj and Rajat De describe some of the economic factors which affect the acceptability of a new technology by the farmers.

The second publication contains a collection of eight studies on the economics of irrigation which are contributed by the scientists of the Division of Agricultural Economics of the Institute. These studies are grouped under three chapters. A summary of the major findings of these studies is presented in the last chapter. Chapter I embodies four studies which deal with the allocation of irrigation water resources in Upper Ganga Canal in Western Uttar Pradesh, the Krishnarajsagar project in Karnataka, the Rajasthan Canal Command Area Project Phase II and the Tomaria reservoir system in Uttar Pradesh. These four studies, using linear programming techniques, indicate the scope for optimal allocation of irrigation water between canal regions and among different crops within a canal region and the possibilities for increasing cropping intensity, diversification of crops and returns from farming. Chapter II is concerned with irrigation water management and includes two studies. The study on Dacca-Narayanganj-Demra irrigation project area in Bangladesh, using multiperiod linear programming technique, indicates the possibility of increasing net income in the study area by optimizing the resources with existing technology. It also suggests the need for proper pricing of irrigation water to avoid its misallocation and to get higher returns. The second study in this chapter assesses the impact of construction of field channels in the Hirakud canal system in Sambalpur district of Orissa on the cropping pattern, cropping intensity and farm income in two sets of villages— with and without field channels. The results of the study indicate higher use of farm manure and fertilizers, plant protection measures, higher levels of input use and better water control, leading to higher per hectare yields of paddy crops and net incomes of farmers and higher demand for labour in the improved villages as compared to the control villages where field channels do not exist. The cost effectiveness of irrigation devices is examined in two studies in Chapter III. The study conducted in the Union Territory of Delhi showed that among the assured water supply devices, tubewell is found to be the most economic, and canal as the most effective and cheapest source of irrigation though its water supply is not assured. Farmers using canal water derived maximum benefits followed by those using tubewell, pumping set and Persian wheel. Another study examines and compares the benefit-cost

ratios of an electrically operated deep tubewell in Illam Bazar development block in West Bengal at different rates of interest by using 12 paise and 18 paise as prices of electricity and 8 and 16 working hours a day. It is revealed that the benefit-cost ratios at both the prices of electricity are higher when the tubewell is worked for 16 hours a day, and greater than unity, thereby indicating the financial viability of an energised deep tubewell even at higher rates of interest and higher price of electricity. It is suggested that the subsidy on the price of electricity is not necessary from the financial point of view. The summary at the end of each chapter enhances the utility of the publication.

Both the publications make significant contribution to the literature on the subjects covered by them.

Irrigation Policy and Management in Southeast Asia, International Rice Research Institute, Los Banos, Philippines, 1976. Pp. vii+198.

This volume contains the proceedings and papers submitted to a seminar on irrigation policy and water management in Southeast Asia sponsored jointly by the International Rice Research Institute, the Agricultural Development Council and the Southeast Asian Regional Center for Graduate Study and Research in Agriculture and held at Los Banos, Laguna, Philippines from 22nd to 25th June, 1976. One of the main objectives of the seminar was to provide a forum for the presentation of recent research results on irrigation policy and management of irrigation systems. It includes 19 papers presented at the seminar, which are grouped under four parts. In addition to these papers, an interpretative summary which identifies the main themes emerging from the seminar and highlights the most important issues discussed, is provided in Part I. The research papers are primarily empirical and are based on local research and case studies, which are prepared by specialists in irrigation policy research and management and by scientists from international organizations. Of the 19 papers included in this volume, eight papers deal with irrigation systems in Philippines, five papers are concerned with Indonesia, four with Thailand and two with Malaysia.

The interpretative summary of the seminar proceedings in Part I identifies three basic issues in expanding and making more equitable irrigated agricultural production in the selected countries of Southeast Asia. These are concerned with (a) alternative strategies for developing irrigation infrastructure including investment strategies in constructing new irrigation projects, renovating old systems as well as large scale versus small scale irrigation infrastructure; (b) alternative approaches to improve the operations and maintenance of irrigation systems; (c) specific policy options. Each of these three themes is discussed in detail. Part II includes four papers—two relating to Malaysia and one each relating to Indonesia and Thailand—which describe the strategies selected in planning and designing irrigation structure in these countries. Of the five papers in Part III, four papers

present the results of technical research in water management and maintenance of irrigation systems in Indonesia (1) and Philippines (3) and another paper describes the water management training programme for water management technologists in the Philippines. Part IV contains six papers dealing with the economic issues of irrigation in Indonesia (2), Philippines (3) and Thailand (1) and analyses the economic performance of various types of irrigation projects and the pricing of irrigation water. The organization of irrigation activities and behaviour of irrigators are considered in Part V which comprises four papers—two relating to Thailand and one each relating to Indonesia and Philippines, three of them being sociologic or anthropologic and the other being socio-economic. The volume provides valuable information on irrigation policy and management in some of the countries of Southeast Asia.