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BOOK REVIEWS

Cost of Cultivation of Some Indian Field Crops, V. G. Panse and S.D. Bokil, Technical Bulletin (Agriculture) No. 3, Indian Council of Agricultural Research, New Delhi, 1966. Pp. 112. Rs. 4.00.

In a planned economy like that of ours reliable information on cost of cultivation of crops is very essential for policy decisions. In particular, availability of up-to-date and reliable cost of cultivation data for crops has a vital bearing on price policy for agricultural produce. Cost of cultivation data find a variety of uses at the micro level also, such as in farm planning activities. Panse and Bokil have brought together the available cost data on different crops in various regions in the country in their book.

There are four chapters in the book. In the first chapter, the uses of cost of cultivation data are discussed, a differentiation made between farm costs and commodity costs and the various costs concepts have been defined. The methods of collecting primary data have also been discussed and the importance of canvassing a representative sample of farmers has been highlighted. The second chapter is devoted to presenting the data on cost of cultivation of rice, wheat, jowar, groundnut, cotton, jute, mustard, sugarcane, and potato. The fourth chapter is devoted to drawing some broad conclusions about the structure of costs of different crops in different regions of the country.

The data presented in the book have been taken primarily from the following sources : (a) the pilot scheme for assessing the cost of production of cotton and rotation crops in Akola district (1952-53), (b) the first series of studies in the economics of farm management (1954-57), (c) the scheme for assessing the cost of cultivation of sugarcane started by the Indian Central Sugarcane Committee in 1955, and (d) the scheme for assessing cost of cultivation of cotton and rotation crops in principal cotton tracts in India (1960-63). The cost items that have been considered are human labour, bullock labour, seed, manures and fertilizers, irrigation and water charges and depreciation and repairs, etc., of implements. Certain items of costs like insecticides are treated as miscellaneous costs. The sum total of the value of all these cost components is described as "prime costs." The inclusion of depreciation as an item of prime cost is not justified in so far as a major part of the depreciation (depreciation due to aging) is unrelated to the cultivation of any individual crop. Rent, land revenue and interest on owned as well as borrowed capital have not been considered. It would have been of considerable value if estimates of these cost items could also have been presented.

Some very interesting inferences have been drawn by the authors on the basis of the data presented. The high proportion of labour cost to total cost of cultivation is a pointer to the rather backward character of our agriculture. This proportion is as high as 80 to 90 per cent for the more common crops. In general, expenditure on manuring and irrigation is proportionately very low. The data presented indicate almost complete absence of expenditure on plant protection measures. It has also been observed that in general the level of output is posi-

tively co-related with the proportion of non-labour costs to total cost of cultivation.

While the data presented in the book should be of great help to research workers and policy makers in the country, the authors have done well to point out the obvious shortcomings of the data. The available data on cost of cultivation relate only to a small proportion of the area under different crops in various regions of the country. Moreover, most of the data relate to a very old time period. The authors have rightly pointed out the need to bring the cost data up-to-date through fresh cost studies and by the construction of index numbers on input prices.

JAI KRISHNA

Taxation of Agricultural Land in Andhra Pradesh, C.H. Hanumantha Rao, Studies in Economic Growth, No. 8, Institute of Economic Growth, Delhi, Asia Publishing House, Bombay, 1966. Pp. xviii + 171. Rs. 25.00

(The political advisability of increasing land taxation in an agriculture-dominant economy like India has been questioned quite often by writers.) The present study goes a step further and casts doubt even on the economic possibilities of raising large additional revenues from the agricultural economy of Andhra Pradesh. It is shown by Rao that the small farmers of Andhra Pradesh are already overburdened with direct taxes. Of course, there is some scope for additional taxation of the richer sections of farmers and this the author insists must be tapped in the interests of inter-sectoral and intra-sectoral equity.

This is basically a fact-finding study. It was undertaken as doctoral dissertation for the Ph. D. degree of the University of Delhi with the object of studying and analyzing the impact of taxes on agricultural land in Andhra Pradesh. The author does not start out with any theoretical hypotheses regarding the burden of agricultural taxation in Andhra Pradesh. Nor does he conclude with any judgment regarding what ought to be the rural-urban tax incidence pattern.

(In making his empirical study, the author essentially depends on the data collected from the field for the period November 1958 to October 1959. Regarding earlier years he relies on the published data. For field investigation he selects a stratified sample of 288 cultivators from out of 8 size-groups of land holdings in nine villages of three economically distinct regions of Andhra Pradesh (Telangana, Rayalaseema and Delta). He collects data on gross output, cost of cultivation, taxes paid, etc., from the farmers having different sizes of land holdings, producing different crops and working under different ownership patterns (e.g., owner-cultivators, rentiers, etc.)

Although the field data on taxes and incomes should be used with great caution, the author fails to do so. Taxation is a very sensitive area in human reactions and to base analysis on data collected from the taxpayers themselves may not yield reliable conclusions. The farmers could possibly have exaggerated the

incidence of taxation on them by overstating their tax liability and understating their net outputs. Nowhere in the study does the author indicate the reliability limits of his data. The minimum he could have done was to compare, based on his sample data, his estimates of the total direct taxes paid by the agricultural population, with the revenues yielded by the State Government from various regions of Andhra Pradesh. Similarly, he could have estimated the total gross and net outputs of the agricultural sector from his sample data to see how well these compared with the published or official estimates.

The data of the study are utilized to analyse the changes in the incidence of land taxes over the years 1939-59. (Land taxes are defined to include all taxes levied on agricultural land, viz., land revenue, surcharge on land revenue, commercial crop taxes, education and local cesses, and water rates. The impact (or direct money burden) of these taxes on the farmers is assumed to equal the incidence (or real burden) of land taxes on the assumption that the land taxes are neither shifted forward nor shifted backwards. The author does not give any reasons for making such an important assumption except that "land taxes in India, in so far as they constitute a fraction of rental value of land, can rarely be shifted forward to consumers or backwards to wage-labour and tenants." (p. 1.)]

)In assuming that the direct taxes on land are not shifted, the author has made a "heroic" assumption. There are reasons to believe that large farmers, contributing a significant proportion to the total marketed output, may be in a position to shift the burden of their taxes on to the consumers in the context of scarcity situation prevalent in the country. And as a significant percentage of the direct tax revenues comes from the large farmers, Rao's assumption would overstate the tax incidence on them.) This, however, is only a methodological criticism and in no way invalidates his policy conclusions.

(The term incidence of land taxes on the farmers is defined as the ratio of land taxes to net produce. The net produce, in turn, is defined to equal gross output *minus* the costs of cultivation including the imputed value of family labour. Thus the net produce includes the return of land, return of own capital invested and the reward of entrepreneurial and managerial functions performed by the farmers.)

(The concept of tax incidence used by Rao assumes that the proportionality rather than progressivity is the desirable "norm" of taxation. Conceptually this may not be acceptable to many. Besides, it leads to inconsistency in his analysis because when he comes to his policy recommendations he implicitly bases his recommendations on the desirability of progressivity in agricultural taxation.)

The study arrives at certain significant conclusions regarding the reality of tax incidence pattern in different regions of Andhra Pradesh.) For example, it finds that although the per capita incomes of agricultural populations of different regions are widely different, the incidence of taxes on the farmers is quite similar. Again, it finds that the incidence of direct taxes on the farmers is higher for the foodgrains crops than for the non-foodgrains crops, for the unirrigated lands than for the irrigated lands, on the rentiers than on the owner-cultivators, on small holdings than on large holdings. The lower income groups in the rural areas

are found to be bearing a heavier direct tax burden than their counterparts in the urban areas. The study further finds that the surcharge on commercial crops has not introduced any progression in land taxation in Andhra Pradesh. In fact, the water rates have introduced regressivity in land taxes.

The study thus concludes that the direct taxation of agricultural land in Andhra Pradesh is inequitable in every possible way. It contradicts the conclusions of the Taxation Enquiry Commission regarding the tax incidence disparity between the rural and the urban sectors in favour of the former.

The study, however, ignores the indirect taxes levied on the farmers. A study of sectoral tax comparisons can be fruitfully made only after looking at the total picture of taxation on the populations of the two sectors. One, therefore, cannot accept the implicit suggestions made by Rao that as most of the land holdings in the State earn incomes well below the income tax exemption limits making them pay land revenue is inequitable and discriminating against the farmers. Tax burden is a total concept and one cannot consider parts of it to arrive at a conclusion with serious implications.

In making policy recommendations the study suggests that direct taxes on large cultivators should be raised in the interest of inter-sectoral and intra-sectoral equity and the progressivity in agricultural taxation should be introduced through the adoption of a progressive surcharge on land revenue. This recommendation is defended on grounds of equity and administrative convenience.

The book presents a very useful description of the land tax system and the agricultural economy of Andhra Pradesh. Also it presents a good summary of the literature on certain concepts of agricultural economics like gross output, net output and the cost of production in a subsistence and family farm set-up. The sample data of the study, given its reliability, throws ample light on the regional differences in the agricultural economies of different regions of Andhra Pradesh.

The book has an adequate printing and get up. Its presentation is clear and logical and it contains exhaustive footnotes containing the literature on agricultural economics. Unfortunately, the author has not provided the reader with the questionnaire that he used in his field investigations. It might have been helpful in appraising the reliability of his data and, also, it might have proved useful to future researchers.

VED P. GANDHI

Tea Price Stabilisation : The Indian Case, Himansu Roy, The World Press Private Ltd., Calcutta, 1965. Pp. viii + 204. Rs. 15.00.

The study of foodgrain prices in India has been a fascinating field to research workers in India and we have quite a voluminous literature on this subject. But until now, the study of prices of plantation crops has not attracted much attention. Literature on the structural aspects of tea industry in India is rather limited and a

large majority of them are the products of various committees appointed to enquire into one or other aspects of the industry. Therefore, Himansu Roy's book is a welcome addition to the meagre literature available in this field.

The book is divided into eleven chapters. The introductory chapter provides the historical perspective of our tea industry. The next three chapters deal with the causes of fluctuations in tea prices. The present system of auctions at Calcutta and Cochin is far from satisfactory; competition is imperfect and speculation is not uncommon. The author is of the firm opinion that this has been responsible for some of the major ills of the tea industry in India. The number of selling and buying brokers is limited and very small; auction buyers are also limited in number. The restrictive provisions in auction rules and the almost indissoluble financial and other ties between the producers and brokers on the one hand and the brokers and auction buyers on the other help to perpetuate this state of affair. The system of auction has not helped in stabilizing prices as it is not sufficiently endowed with the tools required for stabilization of prices. Distribution of tea within the country is also not free from concentration and, therefore, the consumers get very little benefits of the corresponding fall in auction prices. This is a great obstruction in the path of consumption expansion, which is very important for the expansion of the industry and as a price stabilizer of Indian tea.

Post-Mortem (in author's own words) of International Tea Agreement is carried out in the next chapter. The author has given a good account of the causes of failure of the agreement.

The author has given an exhaustive account of the problems facing India's tea industry. The problems of 'common' tea, higher cost of Indian tea, uneconomic gardens, finance and variable external demand have all been discussed in the book. There is an urgent need for replantation and replacement of old bushes. According to the author's estimates, the impending crisis is very serious. In 1964, over 41 per cent of the plants would have reached the end of their economic life while 21 per cent will live another 6 to 16 years and 18 per cent, 16 to 26 years more. The various forms of concentration in tea industry have been discussed with the help of data available in the minute of dissent of Shri K. G. Sivaswamy to the Report of the Plantation Inquiry Commission—Tea (1956). It would have been more useful if the author had tried to get some data for recent years, at least on some aspects of concentration, and had attempted to assess the changes that had taken place during the intervening years.

The author's plan for tea price stabilization is presented in the last chapter. According to the author, "the approaches of the various committees, although, are highly constructive, they are neither integrative nor enabling in nature as a result they have a little practical value." Therefore, he has developed 'an integrated approach, enabling as such, consistent with the mood and temper of our planned economy and social trends.' The author has suggested the setting up of a number of organisations; some of them with a number of branches or directorates. His suggestions include

- (1) An International Tea Organization for collating all statistical information as to world tea production, consumption, etc.;

- (2) An Indian Tea Statistical Organization for dealing exclusively with the statistical aspects of Indian teas;
- (3) An Indian Tea Institute of Fundamental Research for undertaking intensive research in lowering costs and raising the standard of quality;
- (4) An Indian Tea Finance Corporation for providing medium and long term finance to tea gardens; and
- (5) An Indian Tea Trading Corporation for buying and selling all teas.

Although the author has given some reasons for setting up a number of organizations and corporations, they are not very convincing. One would like to know how much of the functions proposed for these organizations cannot be performed by any one of the number of institutions already functioning in the country. The author has branded the recommendations of various committees and commissions as of "little practical value." He may be right. But, it is doubtful whether his recommendations listed under his 'plan' are more practical. The implications and possible after-effects of the author's proposal to give a monopoly to the Government owned Tea Corporation in buying and selling tea are not spelt out in the book.

The basis and machinery for fixation of production quotas and prices for different estates and their implementation have not been explained.

It would have been more helpful if the author has adopted some of the simpler forms of analysis (tabular, graphical and functional). For example, the tea price trends (1955-60) discussed in pages 95-104, contain a description of every price rise and fall during this period, with not even a table to show the prices prevailing in each one of these years, and it becomes very difficult to get an overall picture of price behaviour during this period. Again, one or two tables giving production, offtake, exports and prices, side by side in the same page for a fairly long period, would have helped the reader much better in forming an overall impression on the course of behaviour of these variables. Such a table would have also brought out the relationships, if any, between these variables more easily and clearly. Further, the statistics quoted in a number of places are fairly old and more recent data could have been obtained at least for many of them, may be with some difficulty. Perhaps, the recent data may show a situation much different from the one revealed by the statistics of earlier years. For example, on page 10, it is told that (based on 1962 data) in production and exports, India is followed at a remote distance by Ceylon. Firstly, even in 1962, the figures quoted by the author show that Ceylon was not far away from India but very close with an export of 205 million kgs. as against our exports of 214 kgs. Secondly, data for later years would have shown a much different picture. Again we see in page 53, that two non-Indian packers and blenders packed between them 85.5 per cent of the total tea packed during 1954-55. It would have been interesting to note whether this concentration has been further worsened or improved in the recent years.

A discussion on some of the following important fields which have a bearing on tea price situation could have improved the validity and usefulness of the analysis

made in the book. The expanding world tea production and falling demand in traditionally tea consuming areas like Britain have a direct bearing on Indian tea prices. The substitution between tea and coffee and other beverages is another field. Some forms of co-operation or understanding between India and Ceylon to stabilize, or rather to improve the world tea prices, may be beneficial for both the countries. The nature, form and area of such understanding need to be explored.

The otherwise well-written book is marred with too many (332 in all) quotations and footnotes and some of them are too old to fit in well with the present situation. The author, in his Preface, has stated that he has not been guided by any dogma or doctrine although his 'plan' may assume a 'socialist outlook.' But, in some places, the reading is rather different. On page 160, we come across a sentence like, "auctions are however the *privilege* and *paradise* of a few." (Italics supplied). The book has a long bibliography and an index. The author has taken much pain to go through the reports of various committees, pamphlets, memorandums and bulletins and drawn out much material which will be useful for any one interested in this field. The book is a valuable addition to the limited works presently available in the subject and those who are interested in tea industry would certainly benefit from the book.

C. MUTHIAH

African Agricultural Production Development Policy in Kenya 1952-1965, Hans Ruthenberg, Ifo Institut fur Wirtschaftsforschung, Munchen, Springer-Verlag, Berlin, Heidelberg, New York, 1966. Pp. xvi + 164. DM 27.

Literature on the dual economies in South-East Asia, Africa and Latin America is abundant. It gives an account of the nature and content of these economies and the points and compass of the political, social and economic conflicts between peasant farming and plantations. Studies are also available on the deepening conflict and widening gap over time in socio-economic levels in the two parts of the rural sector. It is also possible to pinpoint the causes of this increasing cleavage. The growing frictions largely arise out of demonstration effect provided by the plantations to peasant farming and the haphazard adoption of the modern and sophisticated systems and practices of the cultivation by the latter from the former. However, no account of the positive efforts by the state to uplift the peasant farmers and to checkmate the widening gap which work to the detriment of the weaker of the two is available. The book under review is probably one of the few attempts evaluating the effort at boosting the peasant economy and reinforce it with the necessary competitive strength to stand up to the giant plantation economy. The endeavour is not a sustained success. Nonetheless, it provides the details of approach and scope of success and non-response for such ameliorative planning.

It would be interesting to briefly narrate the approach. It is essentially selective and concentrates effort on bringing about certain basic changes. They are, for example, land reforms in their limited compass of consolidation of holdings and enclosing the grazing and community land for more systematic utilization. Cash crop cultivation is sought to be introduced in the peasant sector along with

measures to boost the production of food crops to increase the share of their marketed production. Livestock raising and dairying have been given their due place to go along with the enclosure movement for systematic use of the grazing areas. Provision of necessary market and credit organizations for the peasant farmers are further additional selective measures which were expected to make the other changes effective and abiding.

The other redeeming features which we ordinarily do not find in all the developing regions are the wholesome combination of persuasion and pressure to plant agricultural innovations. Permission to peasants to grow certain cash crops is conditional on their acceptance of a package of improved agricultural practices. Here again the beginnings were made in a modest way with selected farmers in chosen areas to begin with. Subsequently, however, the effort spread wider through knowledge of favourable results emanating from the limited effort. The main effect that needs to be emphasized in the approach and achievements and which is often missed is that no inputs were made available to the farmers either free or on excessively concessional terms. This was so because unless farmers felt the impact of paid inputs they were unlikely to make judicious use of them.

It is conceded that the effort was not universally successful. There were areas of high, low and no response. The resources in finance and personnel that the state could provide were limited. They had, therefore, to be judiciously farmed out. Some wastage did occur either because the farmers could not make an optimum use of inputs or because the personnel manning the extension services were not quite efficient and effective.

A few circumstances in Kenya were favourable to the success of this programme of rehabilitation. A large number of whites sold their large farms and migrated to their homeland. This land was available to the Government for distribution among the small peasants and the landless. There were, besides, areas of land over which extension of cultivation was possible. Such land was also taken up for settlement. Land reclamation also helped in the rehabilitation of the weaker sections. Such favourable conditions might not obtain in other countries plagued by problems presented by dual economies.

What is, however, relevant for the developing countries is the positive approach of the earlier British rulers in Kenya who contributed substantially to the programme. The successor independent national government speeded up and reinforced the effort. Equally significant in the selective approach was the meticulous care exercised in the use of the limited inputs through a proper pricing and distribution arrangements. The size of the programme was kept proportionate to the available physical and financial resources and competent, trained and suitably oriented extension personnel. The developing countries may not be able to fully copy what Kenya did and achieved. Probably the manageable size of the country and the relieving features that came in handy in Kenya are advantages not necessarily available to the rest of the underdeveloped world. Perhaps, the selective approach and programme and the provision of inputs at a price might not be initially well received. Yet they should prove sustaining in the long run.

The evaluation in terms of the cost of the programme and its achievements also make an interesting reading. The results varied from area to area depending upon the physical and climatic conditions as well as the quality of the tribes inhabiting them. They also differed in the increased aggregate production and the quantum of produce that was marketed. It is claimed that for every pound the government invested in the programme the outcome in terms of achievements was of the order of £ 8.4. The evaluation in terms of the cost-benefit analysis which appears later shows that depending upon situations and areas the results were both significantly positive and disappointingly negative. For the countries where the problems of dual economies are acute and which cast a long shadow on the economic, social and political complexion of the people, the endeavour and achievements in Kenya should provide valuable practical lessons in planning and development in the field.

M. B. DESAI

REVIEWS IN BRIEF

Studies in Utilization of Agricultural Land, D. S. Chauhan, Shiv Lal Agarwala & Company, Agra, 1966. Pp. 210. Rs. 20.00.

This book is a modified version of the author's post-doctoral thesis on land utilization, submitted to the Agra University in 1959 for the D. Sc. degree. It is composed of five parts divided into 13 chapters. The contents in the last two parts were published from time to time in the form of papers. The introductory part outlines the subject-matter and scope of the study. The second part explains the concepts of utilization of agricultural land, discusses the relative role of factors governing land utilization, the classification of land according to topography, soil types, climatic factors of rainfall and temperature by natural regions, sub-regions and natural divisions and formulation of land use classes. The third part deals with the overall pattern of land utilization in India in 1958-59, its pattern in the different sub-regions of India according to the 1951 Census and in the different States and analyses the utilization of the sown area and the cropping patterns in different States with special reference to Uttar Pradesh. Part IV entitled 'Problems' deals with (1) the myth of the bounty of India's land resources, (2) the declining productivity of land, (3) land utilization and cropping pattern in Uttar Pradesh, (4) factors determining farm production pattern, based on a field inquiry in two villages in the Bijnor district of Uttar Pradesh, (5) changing pattern of land utilization in eroded regions in the Agra district, (6) method of calculating the index of crop intensity, (7) relationship between technology and sociology in economic growth, and (8) regional self-sufficiency in food and land use. The last part discusses the land use policy in India.

Agricultural Credit Through Co-operatives and Other Institutions, FAO Agricultural Studies No. 68, Food and Agriculture Organization of the United Nations, Rome, 1965. Pp. xii + 212. \$ 3.00.

The Director-General of FAO set up in 1962 a group of experts to study the possibilities of strengthening the provision of credit to agriculture, especially through co-operatives. The terms of reference for the group were outlined as follows : "(1) to study, analyse and assess the institutions and facilities in developing countries for channelling funds from domestic and external sources to aid agricultural development, especially through co-operatives and other farmers' associations operating in such fields as credit, supply, processing and marketing; (2) to review the scope for improving the effectiveness of the use of these funds in the interest of enhancing the efficiency of agriculture and promoting the well-being of rural population; (3) to recommend the most suitable means for assisting governments to keep under review and to promote the continuing progress of agricultural financing facilities for such purposes, either by strengthening existing institutions or by the creation of new ones; and (4) to indicate further studies on lines of action which could be taken in two or three selected countries to implement these recommendations." This report prepared by the group describes the background of the problem of agricultural finance, presents the facts and findings relating to the development of agricultural credit which are typical of the African and Asian regions, as also with reference to special conditions in some Latin-American countries and deals with the considerations which should apply to all formulations of policy in the field of agricultural finance. The report is preceded by a summary. It is reported that in most countries of the regions visited by the group of experts, development of agriculture has not yet reached the stage where

the average small and medium size farmer makes a proper use of the credit facilities extended to him. This fact is attributed to his traditional approach to socio-economic problems and to the conditions in which he lives. The production element in agricultural credit gradually increases only at later stages of agricultural development. The report observes that little initiative has been shown from the side of agricultural credit institutions, or by extension services to bring about the essential co-ordination between credit and extension education. The existing training facilities were clearly insufficient to provide for the large numbers of qualified staff at all levels necessary for providing credit on sound lines. It is reported that in the least advanced areas of developing countries, the pre-requisites for the existence of efficient, strong, democratic, self-reliant and autonomous co-operative societies have not yet been filled. In several countries, the awareness is increasing that a sharp dogmatic distinction between co-operation and state activity cannot be drawn and that attempts to this effect are not in the interest of strengthening the agricultural credit structure. Regarding the role of central banks, the group noted that the approach of most central banks to agricultural credit and their attitude toward agricultural credit institutions were unsatisfactory. The improvement and streamlining of the agricultural credit system at all levels on the lines suggested in the report would result in a greater demand for institutional credit and also create the possibility of providing sufficient internal finance for meeting a larger proportion of the total credit needs of the rural population. This report does not pretend to suggest final solutions for all the problems besetting the strengthening of the agricultural credit structure, but only indicates the direction in which solutions will have to be sought. It recognizes that investment in the "human factor" is the most promising way to agricultural development and that technical assistance given in the proper manner and accepted in the right spirit will be of great help to all developing countries in helping themselves to make quick and durable progress.

The State of Food and Agriculture 1966, Food and Agriculture Organization of the United Nations, Rome, 1966. Pp. 242. \$5.50.

This annual report which reviews in the usual pattern the world food and agricultural situation and policies during 1965-66 has devoted two special chapters to the study of (1) agriculture and industrialization and (2) rice in the world food economy. Reviewing the food and agricultural situation and outlook, the report mentions that the world agricultural production received a set-back in 1965-66. According to FAO's preliminary estimates, the combined production of crops, livestock, fishery and forest products increased only fractionally from an index of 130 in 1964-65 to 131 in 1965-66, while the index of per caput production showed a decline from 107 to 106 during the same period. The set-back in agricultural production was mainly confined to the developing regions where adverse weather was widespread. A study of the average annual rate of change (compound interest) in total agricultural production in 55 countries between 1952-55 and 1962-65 shows that in no less than 11 of the developing countries including India, population growth exceeded the rise in production. Population growth is now so rapid in some of these countries—more than 3 per cent per year in several countries of Latin America and the Far East—that a very large increase in agricultural production is needed merely to keep pace with it from year to year. As regards the world stock situation, it is reported that stocks of wheat declined by 22.5 per cent in

1965-66 as compared to 1964-65 as the import requirements of India and the U.S.S.R. increased sharply and those of Mainland China remained large. Stocks of a number of other products, including cotton, coffee and sugar rose in 1965-66. The growth of the world economy as a whole appears to have slowed down slightly in 1965. The combined gross national product of the industrial countries rose by 4.5 per cent with U.S.A. leading the group by 5.5 per cent, compared with an expansion of about 5.5 per cent in 1964. While there was substantial economic growth in several of the rather few developing countries for which data are available, progress was held up in a number of them by the poor harvests and other factors. The effect on food supplies and consumption of the poor harvests in 1965-66 was generally at least partly mitigated by increased imports and reduced exports and by drawing on stocks.

Regarding international trade in agricultural products, the preliminary FAO indices indicate that the value of world trade in agricultural, fishery and forest products declined slightly in 1965 compared to 1964. There was little difference in the course of export earnings as between the developed and the developing countries as a whole. The disappointing results obtained by agricultural exporting countries in 1965 and the vicissitudes in certain commodity markets such as cocoa and sugar, served as a reminder of the continued seriousness and difficulty of solution of agricultural commodity problems. Following the first United Nations Conference on Trade and Development, most of the international machinery on trade and development started to function in 1965. Attention has been given to problems of international development assistance, including food aid. The disappearance of much of the surplus stocks of agricultural products in the United States has brought the prospect of some important changes. These include introduction of steps to put back into production some of its reserve of unused farm land and making its food aid independent of existing surplus and also conditional on self-help measures to improve food production in the recipient country.

The special chapter on agriculture and industrialization brings out the close interdependence of the agricultural and industrial sectors. In particular, it stresses the role in both agricultural and industrial development of industries based on agricultural raw materials, and the way in which industry contributes to the expansion of agricultural production by supplying both the consumer goods needed to provide the incentive and the inputs required to provide the means for increased production. It pays special attention to the problems encountered in some of the main industries using agricultural raw materials in the developing countries.

A special study of the rice crop in the world food economy in 1966 designated as the International Rice Year, emphasizes the need to speed up greatly the process by which technical improvements are transmitted to, and put into practice by the farmers in the developing countries for increasing rice production sufficiently to meet their needs. This involves a multitude of economic and institutional factors, *viz.*, adequate supply of production inputs, remunerative prices, better credit and marketing facilities, improvements in land tenure systems, research, education and extension. The study urges the need for bringing out a technical revolution and international collaboration in research in rice production.

Agrindus—Integration of Agriculture and Industries, Haim Halperin, Frederick A. Praeger, New York, 1963. Pp. ix + 214. \$7.00.

This book presents the problem of the village as a social, organizational, political, economic and technological category in the context of rapid industrialization and urbanization. The technological revolution, industrialization and high levels of productivity are weaning people away from agriculture and thereby from the rural community. The village is therefore shrinking. This book propounds the idea of agrindus for halting this trend away from land. Its main theme is that agriculture can be combined with industry without undermining the village and that it is possible to improve and even reform the village and bring it into line with changing conditions. It contains a general outline of the principles and characteristics, and the premises for the economic planning of the agrindus. The problem of integrating agriculture and industry is discussed with special reference to Israel. The agrindus holds out a prospect for the solution of the problems of agriculture and the village in other parts of the world as well.

Feeding India's Growing Millions, Pandurang V. Sukhatme, Asia Publishing House, Bombay, 1965. Pp. x + 172. Rs. 17.50.

This book is based on the lectures on "The Food and Nutrition Situation in India" delivered by the author at the annual sessions of the Indian Science Congress, the Indian Society of Agricultural Statistics and the symposium organized by the National Freedom from Hunger Campaign Committee in New Delhi in 1961 and subsequently published in the Journals of the Indian Society of Agricultural Economics and Statistics in 1962. In this book, the author discusses the extent of hunger and malnutrition in India, the immediate and future food requirements for tackling the problems of deficiencies in diet and ensuring an adequate level of nutrition for India's growing millions and the prospects of raising the needed foods. As a background to the analysis, the author has examined in the first chapter the sources and limitations of the available data on food consumption and on calorie and nutrient requirements as a basis for appraising the extent of hunger. A method of estimating the incidence of hunger is propounded in the next chapter and its use in estimating the extent of undernutrition and malnutrition is well illustrated. Chapter III examines the magnitude of the food problem and its implications for food planning and sets out nutritional goals at several levels. The possibilities of raising food productivity are examined in the last chapter. It considers the question of achieving a higher level of nutrition in India.

A few important conclusions of the study deserve to be noted. The Indian diet is characterized by preponderance of cereals which account for 75 per cent of the average calorie intake. The per capita calorie supply has been estimated at 1,970 and the supply of proteins at 51 grams per capita per day as against the average per capita requirements of 2,300 calories and 62 grams of proteins per day. There is a significant deficiency of protective foods especially animal products which account for less than 7 per cent of the average calorie supplies. The wide gap as of the order of 300 calories between the per caput calorie supplies for the country as a whole and average calorie requirements indicates that a high percentage of population, particularly the poorer sections, suffer from undernutrition in India. On the whole, at least one in every four and probably one in every three of India's

population is undernourished. As regards the incidence of malnutrition, it is estimated that about 250 millions or 50 per cent of India's population are either undernourished or malnourished.

As a first step in computing future needs in food supplies, the author has formulated nutritional targets at three levels—minimum, medium and long-term levels. On the basis of a minimum target of 2,370 calories, the present diet is grossly inadequate and falls short by one-fourth. The inadequacies in the present diet are more clearly brought out when it is compared with the food supplies needed to attain the medium level of nutrition (2,380 calories). The protective foods available per person are only a half of what they ought to be and the diet as a whole falls short of what is desirable under this target by one-third. These deficits imply that for the country as a whole, the available total supplies in foodgrains must be increased by 15 per cent and those in protective foods by at least 50 per cent to attain the minimum level of nutritional target. On a conservative assumption of population growth of the order of 10 millions per annum, it is estimated that India would have to raise her food availability by nearly 4 million tons annually, merely to provide the minimum nutritional needs of the additional population. The requirements are more under the medium targets and would call for doubling of total food supplies and trebling of animal food supplies in 1976. Over the last decade, total food supplies have tended to increase at the rate of 3 per cent while per caput food supplies increased at the rate of $1\frac{1}{4}$ per cent per annum. On the basis of the past trend, it is pointed out that the minimum target of nutrition cannot be achieved until about 1981. Considering the possibilities of raising the needed foods, the author points out that India has an adequate potential to ensure a minimum level of nutrition to the population over the next 20 years. Should the rate of growth in food supplies over the next decade be inadequate to achieve the minimum goal by even 1980, the author advocates the need to intensify efforts towards limiting the size of the family and to initiate a determined policy for the removal of excess cattle. Attention is also drawn to the need for stimulating agricultural productivity by various means as quickly as possible to arrest further decline in the low levels of nutrition of a large majority of India's population.

This book will prove useful to the students of agricultural economics and the planners alike. The select references at the end of each chapter and an index add to its usefulness. It is an invaluable addition to the existing literature on the subject.