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## BOOK REVIEWS

*Rural Industrialization. The Impact of Industrialization on Two Rural Communities in Western Ireland.* By D. I. F. LUCY and D. R. KALDOR. (London: Geoffrey Chapman, 1969), Pp. 208, 35s.

With the low income farmer emerging as a major problem in Australian farming, this book is of more than casual interest to agricultural economists and State Ministers of Industrial Development in Australia.

The book reports the findings of a case study of the effects of the establishment of a medium-sized industrial plant (100-250 employees) in each of two rural districts in Western Ireland. One district was without manufacturing activity and the other had sparse industrial activity—a creamery, a weaving enterprise and some sawmilling. However, the findings were about the same from both locations. The focus of the study was primarily on the economic impact of local industrialization on households and on farm business.

Major findings were: (i) a substantial direct employment effect limited to a radius of 12 miles of both plants; (ii) an increase in household incomes of about three-quarters of the plant employees as a result of employment in the new plants; (iii) many farm residents obtained employment in the new plants though few were farm operators; (iv) employment of farm operators in most cases did not result in a reduction of farm output, but in many cases to an increase, there commonly being a substitution of farm work time for leisure time and a substitution of labour of farm wives and other residents for the operator's farm labour. Farm machinery was more frequently increased, as was on-farm investment, as a result of plant employment of operators; (v) farm operators who obtained plant employment tended to come from smaller than average farms, and tended to be younger and to have had more formal education than those who were not in a plant job.

This research study is essentially of the nose-counting type. It is a neat study and well done. It is suitable as a project for students-in-research-training. Although the findings hardly make 'a major contribution to the theory of rural development' as claimed in the blurb, they are of the sort required by policy-makers.

HENRY P. SCHAPPER

*University of Western Australia*

*The Economic Development of Thai Agriculture.* By T. H. SILCOCK. (Canberra: Australian National University Press, 1970.) Pp. 250, \$10.00.

Thailand's strategy for economic development, Professor Silcock declares, is not to concentrate attention on large scale industry but rather to encourage expanded agricultural output by spending a large share of the funds available for development upon rural infrastructure projects such as roads and irrigation works. Rice growing, which despite its importance as an export crop tends to be identified by the author with subsistence farming, has been discouraged by the export tax on rice

and shifts of resources to other export crops, such as kenaf, maize and rubber, and to vegetables and fruits have taken place.

This diversification of agricultural production is regarded favourably by Silcock as something which encourages or enables farmers to enter the market economy. There is little attention given the question whether the real resource costs of alternative export crops to rice make the shifts economically advantageous or otherwise from a national point of view.

The Thai emphasis on agriculture in economic development policy is said by Silcock to have been very successful. He warns against easy generalizations from this experience but, by and large, expresses a firm belief in improved transport and communications as a prescription for economic development. Indeed, he reverts to this theme so frequently throughout the book that an unguarded reader could receive the impression his favoured policy is to construct a network of roads all over the country so that farmers could produce fruits and vegetables for the Bangkok market. If roads *per se* fail to bring about the desired economic growth in any region, an American air-base seems the next best thing to spark off development.

Myrdal's lament over the quality of statistics the economic planners have to work with in Asian countries is echoed many times in the course of the book. To someone headed for a post as an economist in Thailand the scholarly evaluation of statistical series and reconciliation of inconsistencies will undoubtedly be useful. For the casual reader seeking insights into economic development generally or interested in comparing Thailand's policies and achievements with those of other developing countries, it will render much of the book dull and messy. By contrast Appendix I is one of the most readable parts of the book.

The first chapter briefly mentions, as a feature of some interest, the agricultural emphasis in Thailand's economic development policy. It briefly notes some theoretical considerations, describes the method of gathering observations and the field work carried out, gives the historical background in a couple of pages and winds up with an outline of the book. This brisk pace is not maintained.

The author emphasizes that his questionnaire was not directed to verification of hypotheses. He sees little value in the explicit formulation of hypotheses in our present state of knowledge and used a formal questionnaire almost grudgingly 'to conform to the stereotype of a research worker which current American fashion has imposed' and as a means of opening up discussion. Nevertheless, he is himself certainly not free from hypotheses, witness the recurring ideas on the role of transport in development and the cropping diversification which follows taxation of one's most profitable crop.

The second chapter is devoted to some of the problems of measurement and valuation encountered in Thailand especially as a result of underpricing of rice by world standards.

A general chapter reviewing the growth of the rural sector is followed by two chapters dealing with trends for each major crop and two more dealing with trends in each region.

Rice acreage has increased but average yields per acre have declined, possibly, the author speculates, because of labour shortage and a resultant resort to more extensive farming methods. He later draws attention

to the discouragement of fertilizer usage and other yield-increasing practices by rice price policy.

Rubber planting in Thailand responded to buoyant demand during World War II and the Korean War but the rate of planting was much less than in Malaya and Indonesia. In explanation Silcock very plausibly advances the view that the different rates of expansion reflected the absence of large scale plantations in Thailand where land policy favours small holdings. As a result there were, he claims, no visible examples of large profits from estate rubber to encourage smallholders nor could they gain experience in rubber production on large estates.

Kenaf production and export from Thailand was stimulated by failure of the jute crop in Pakistan in 1960 and the resultant high prices. No mention is made of Pakistan's multiple exchange rate policy which has kept jute prices up and encouraged the production of jute and substitute fibres in other countries.

A short chapter examining the factors promoting growth again refers to the fact that public capital formation has contributed principally through transport and irrigation. Two weaknesses noted by the author are the comparative neglect of less capital intensive technological improvements in agriculture and the entrenched attitudes to land and water, including the tradition that irrigation water should be provided free of cost. More could probably have been said of the inefficiencies in allocation of developmental funds between projects and of water between alternative crops, which would almost certainly result from such a pricing policy for water.

In a chapter on policy towards the rural sector, Silcock refers to the basic strategy of opening up development possibilities by means of roads and irrigation water. He doubts that the realities of the rural situation have been taken sufficiently into account in designing overall policy. In particular, he suggests that there is an undesirable preoccupation with keeping farmers on their farms. This does not seem to square entirely with the reported emphasis on labour-displacing machinery in agriculture but if the retention of rural labour on farms were an objective of policy this should not surprise nor necessarily be deemed undesirable. Premature migration of labour from agriculture to urban areas before sufficient employment opportunities have been created to absorb it, is one of the most socially and politically disruptive forces in an underdeveloped country. When upwards of 75 per cent of the male work force is engaged in the rural sector, population is growing and the industrial base is small, rural employment usually has to continue to grow in absolute terms for several decades to avoid large-scale unemployment even though the rate of industrial growth is quite spectacular.

The policy of taxing rice exports, Silcock claims, would be commendable if it were deliberately employed to encourage movement out of subsistence agriculture (rice growing?) to a more diversified production pattern. Even if not part of a deliberate policy to this end, the export tax on rice, he avers, works in the right direction. This may be correct although one suspects the full pros and cons of the rice tax have not been examined. Perhaps it is no accident that the Green Revolution, transforming other parts of Asia where incentive prices for rice and other grains have been provided, tends to be regarded in Thailand as a mere catchphrase without much substance. Incidentally, Silcock also

tends to exaggerate the ease with which markets other than Japan, can be found for Thai maize. The Japanese market has been one of the few areas of growing demand for maize and sorghum and expansion of Thai exports may not be a matter of simply installing drying equipment but rather of reversing the trend towards agricultural protection in the E.E.C.

In the concluding chapter, the author puts forward a number of conclusions or recommendations for policy changes. These tend to be prescription-based rather than closely following from the analysis and include the suggestions that more use be made of benefit-cost analysis in project appraisal and that appropriate shadow prices for rice be used in evaluating irrigation projects. He urges less opposition to tenancy and the encouragement of development-minded landlords. He calls for attention to less capital intensive methods of raising labour productivity, complaining that the American training of influential members of the Thai elite results in modernity being identified with abundant capital per head.

Perhaps this might seem a disappointing harvest of policy recommendations to emerge from a book as ambitious in scope as this one. However, the main aim has been to open up a subject on which little was known and to describe and explain what has happened in the development of Thailand's agriculture. The author's command of the Thai language, his indefatigability in the field, his historical sense and profound local knowledge of South-East Asia have enabled him to record many useful observations and insights. The book is a very topical one in view of the currently greater appreciation in many developing countries of the agricultural sector's potential contribution to general economic growth.

J. N. LEWIS

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*Supply Response in Underdeveloped Agriculture: A Case Study of Four Major Annual Crops in Thailand, 1937-1963.* By J. H. BEHRMAN. (Amsterdam: North Holland, 1968). Pp. 446, Hfl.80.

Debates on agricultural policy for underdeveloped areas are frequently based on conflicting *a priori* hypotheses regarding the direction and degree of responsiveness of agricultural output to various incentives. These debates can get nowhere until empirical research shows which hypothesis is consistent with reality.

Behrman makes a contribution in this direction. He examines the responsiveness of Thai producers of rice, kenaf, corn, and cassava to changes in price, crop yield, risk factors, malaria control, and the size of the agricultural population during the period 1937 to 1963. Major emphasis is laid on the response of *total* agricultural output to price changes, both over the short-run (defined to include one production period following the price change) and the long-run (defined as a period long enough to permit adjustment of expectational variables to a once-and-for-all change in price). Moreover, for rice, Behrman develops a model for estimating the price elasticity of the *marketed surplus* of a subsistence crop. The investigation is conducted at the *changwat* or provincial level, permitting both time-series and cross-section analyses.

Behrman applies a slightly modified version of a dynamic supply response model devised by Nerlove (discussed in Chapter 5) to estimate the responsiveness of planned total output to different stimuli. The principal equation in the three equation structural model presents desired area planted (proxy variable for desired output) as a linear function of expected relative price, expected yield, standard deviation of price over the preceding three years, standard deviation of yield of crop during last three years, farm population, annual malaria death rate, plus a disturbance term. Non-linear maximum likelihood estimates of the coefficients are obtained.

In the case of rice, the model accounts for most of the variance in the planted rice area from 1940 to 1963 in the 50 changwats comprising the Northeastern and Central Regions of Thailand; most of the regressions have coefficients of determination significant at the 0.1 per cent level. The coefficient of relative price is found to be asymptotically significantly non-zero at the five per cent level in 33 of the 50 changwats. The mean price elasticity of supply for these 33 changwats is, however, quite low, 0.26 for the short-run and 0.31 for the long-run. With regard to the other crops, the coefficient of price is significantly non-zero at the five per cent level in neither of the two changwats producing cassava, in only one of the eight changwats relevant to corn, and in seven out of eight changwats growing kenaf. The short and long-run price elasticities of supply of corn and kenaf are greater than one in changwats where response to price is statistically significant. Across changwats growing rice the short-run price elasticity of supply is higher where alternatives to rice production are obtaining.

Behrman then develops a new model for estimating the price elasticity of the *marketed surplus* of subsistence crops, and applies it to aggregate Thai rice data. This model seems to measure the income effect of price changes more adequately than a previous model devised by Krishna. However, since he did not observe any significant changes in farm consumption of rice due to relative price and income changes, the implied price elasticity of the marketed surplus of Thai rice is necessarily higher than the price elasticity of total supply.

The author concludes that 'the study has provided new and compelling evidence, . . . that . . . farmers in underdeveloped countries respond rationally and substantially to economic incentives. . . . The burden of proof . . . now lies with those who maintain that the supply behaviour of farmers in underdeveloped agriculture cannot be understood predominantly within the framework of traditional economic analysis' (p. 337). This conclusion seems to me too strong in the light of his results. Most of his estimates of the coefficient of price are significant only if we take the 25 per cent level cut-off point adopted by the author. Of course, this could be mainly due to the poor quality of, and gaps in, the data available to Behrman.

The limited support this study lends to the hypothesis that the supply curve of agricultural products is not backward bending cannot be generalized for all underdeveloped agriculture. Thai agriculture is unique in being virtually free of tenancy problems and there is relatively less population pressure on cultivable land. Thai farmers also enjoyed a climate of considerable social mobility and unusual political stability over the period under study. Previous studies have also found a positive

relationship between the supply of agricultural products and price, but different models of estimation have been used.

Behrman's estimates of price elasticities of supply should be interpreted and applied cautiously. Quite apart from estimation errors, data deficiencies embodied in the estimates, and shifts in the supply curve, Thai policy makers should note that the price elasticity of supply varies along a supply curve unless supply is a linear proportional function of price. This is not true for any of Behrman's estimated supply relationships.

Behrman has added to the very limited stock of knowledge about the behaviour of farmers in underdeveloped agriculture. Economic researchers contemplating a similar study would do well to read Chapters 5 and 6 which contain a good critical appraisal of existing models for estimating supply response. And it is hoped that statistical agencies will take note of the gaps in the data discussed in Chapter 7.

T. G. BENTICK

*University of Adelaide.*

*The New Strategy of Agricultural Development in Operation: A Case Study of the Kaira District in Gujarat.* By B. M. DESAI and M. D. DESAI. (Bombay: Thacker.) Pp. 148, Rs.25, 1969.

In 1965 the Government of India announced a major agricultural programme directed at raising foodgrain output through the use of exotic varieties of wheat and rice and locally developed sorghum, millet, and maize hybrids; and this book is the first published report from India's Agro-Economic Centres on the all-important High Yielding Varieties Programme. Under conditions of high soil fertility and careful water management the new varieties have high yield potential—two or three times that of most local varieties. The High Yielding Varieties Programme (HYVP), first implemented in 1966-67, concentrated on organizing supplies of seed, fertilizer, plant-protection materials, information and extension, and institutional credit for farmers, in districts with assured water, who were expected to follow the recommended package of inputs and practices. *The New Strategy of Agricultural Development in Operation* is a study of the HYVP for hybrid millet (*bajra*) in a district in Gujarat State during the monsoon season of 1967.

While foodgrain output in India has not increased as rapidly as was expected (hoped?) in 1965, there has been a large increase in the output of agricultural economists, and others, studying and evaluating the many and varied aspects of the HYVP. There have been major evaluation studies conducted in all States in each season under the programme started by the Programme Evaluation Organization of the Planning Commission; there have been dozens of Ph.D. theses and other studies conducted by the Agricultural Universities; and there have been a good number of evaluation studies of particular aspects of the programme and of limited areas such as Districts and Blocks by the regional Agro-Economic Research Centres under the Department of Agriculture. Desai and Desai's study is a standard example of the third type. It differs from the usual mainly in that it has been filled out with minute descriptive detail, particularly in the chapters on organization and administration, and by the fact that it has been published.

In general, the Agro-Economic Centres' HYVP Evaluation Studies follow a fairly standard framework and methodology. First, they describe the organization and operation of the various government agencies involved in the programme (departments of agriculture, co-operatives, community development) and the supply of seed, fertilizer, other physical inputs, extension and institutional credit. They rarely examine the role of the irrigation department which, in India, does not maintain good relations or co-operate closely with the agriculture department. They then jump abruptly into an evaluation of the HYVP on a small sample of villages where there have been 'participant' and 'non-participant' farmers. Desai and Desai follow this framework closely.

For a reader unfamiliar with the organization of Indian agricultural programmes, much of the book will be uninteresting at best, and virtually incomprehensible at worst. Institutional and organizational arrangements for inputs and so on are described in such excruciating detail that after ploughing through it one hopes that the Gujarat farmers were able to make more sense of the programme itself than I was of the author's description of it; and as one read the book one undoubtedly developed the impression that they probably did not. This feeling is reinforced by the long chapter on 'performance at the farm level' which is based on four villages and samples of 60 'participants' and 40 'non-participants'. This small sample is subjected to endless cross-sectional analysis. Farmers are divided into farm size groups, tenancy groups, members and non-members of the credit co-operative, and others: multiplied, averaged, proportioned, divided, turned upside down and round about, to see how much fertilizer they used, how much it costs, how much they borrowed from the co-op, what yields they obtained (compared with local millet and tobacco), and finally, what they thought of it all.

There is also a chapter (Chapter 1) on the 'organizational set-up and target fixation' which helps to show why it is that India rarely achieves its plan targets for agricultural production. Farm production decisions made by non-farmers high up in the State departments of agriculture often make so little sense to those far down the chain of command (the farmers themselves) that it is safe to say that the farmers are regarded as mere tools.

In the final chapter, 'conclusions and recommendations', we learn that the methods of fixing targets are unrealistic, that there have been input supply and quality problems, that the credit system does not meet the real needs of the farmers, and that the farmers in general simply did not appreciate the efforts being made for them or understand how to grow hybrid millet. The recommendations are mainly obvious suggestions on how to improve the existing machinery. There is no questioning of the machinery itself or any real attempt to relate it to the needs of the farmers.

It is difficult reading and yet, if one wants to know how Gujarat implemented its HYVP for millet in 1967—when the programme itself was still very much in an experimental stage—then it is worth skimming through this book. Originally it probably led to some improvement in the HYVP of the next year and this after all was its main purpose. As a useful study of the HYVP in operation, as claimed in the title, it suffers from the fact that the HYVP was in its infancy in 1967 and has

since grown out of most of the problems raised. At a more general level the book tells us a good deal about the way Indian administrators regard the farmers in their 'charge'.

BRIAN LOCKWOOD

*Australian National University.*

*Elements of Regional Economics.* By H. W. RICHARDSON. (Ringwood, Victoria: Penguin, 1969.) Pp. 166, \$1.20.

Regional economics is one of those ill defined areas of economics where macro and micro problems are mixed. The area has some origins in economic theory dealing with location and some with more pragmatic 'theories', often developed by geographers, such as central place theory. But a great deal of regional economics has been developed to analyse acute policy problems which have arisen in undeveloped regions like north-east Brazil or southern Italy, or depressed regions which have fallen victim to changes in technology or changes in demand patterns. Examples of the latter region are the Lancashire cotton region, coal mining regions in various countries and, in a mild form, the dairying areas of northern N.S.W. and Queensland.

Economists who have faced these questions have adapted a wide range of tools from conventional economics such as input-output analysis, trade theory and economic growth theory. Under these circumstances it is not surprising that regional economics is not a very coherent field. It seemed to me that the development of 'regional science' by Walter Isard and his colleagues at the University of Pennsylvania was a rather self-conscious attempt to achieve some integration in the field and to extend it outside economics. One looks to see how any new book in this field has attempted to give it coherence. Richardson relies almost entirely on a useful division of the subject into three fields.

Part one discusses homogeneous regions and this section deals with methods of analysis, largely drawn from macroeconomics and growth theory which *assume* that each region is homogeneous—or more strictly that it can be represented by a point, and that distance and location can be ignored. In the second part the 'nodal region' is the focus of attention. Here the region is assumed to be centred on a node or city and this provides a useful setting for discussion of contributions to central place theory, economics of agglomeration, gravity models and the analysis of 'growth points'. The 'planning region', which is defined by administrative or statistical boundaries provides, in Part three, the setting for a discussion of regional policy models, of regional policy in Britain and a general round up of regional planning techniques.

Within each section the book provides mainly a review of literature without much discussion of how it fits into a coherent whole. There are some areas where the author has done some work of his own and these are usually treated more energetically. Sometimes he seems to draw conclusions from the theory without taking account of the limiting assumptions on which most of the formal models in this area are based. In other areas, such as his discussion of William Alonso's analysis of urban location, he misses the most fundamental limitation of the analysis, though it has been discussed in the literature. In discussing regional policy he comes down heavily in favour of taking workers to where the jobs are, rather than the opposite. His criticisms of some of

the arguments which have been used to justify the opposite policy in Britain are little more than assertions that the factors involved have been exaggerated.

Unfortunately, one cannot recommend this as a good introduction to the field. However, it is difficult to suggest something that is better. Perhaps it would be as well to rely mainly on John Meyer's 1963, and A. J. Brown's more recent survey article.<sup>1</sup> Neither achieves the kind of integration that I have asked for but both are more thorough and taken together are more comprehensive than this book.

MAX NEUTZE

*Australian National University.*

*Economic Relations between India and Pakistan*, by C. N. VAKIL and G. RAGHAVA RAO. (Bombay: Vora, 1969.) Pp. 214, \$5.00.

Professor Vakil was the first person to publish a detailed study of the effects on the economy of the India sub-continent of its division into two independent, and not very friendly, countries. That was in 1950. Much of this book is a repetition of what he said then. It reminds us of the shock which was caused when Indian cotton and jute textile mills were separated from Pakistan's jute and cotton, and Pakistan found itself across a border from India's coal and steel and, more important still, the water on which so many of West Pakistan's irrigation canals depended.

Since 1950, the position has got worse, not better. India has replaced Pakistan's cotton and nearly all its jute. Pakistan has built its own mills. Trade between the two countries is down to the merest trickle. The Berlin wall is less of a barrier than the Indo-Pakistan frontier. Only this year the Indus Waters Agreement took final effect. The water of the Sutlej, the Ravi and the Beas now stays entirely in India.

This book tells the story; but its main value is the way it recaptures the atmosphere of 1950, when the optimists still hoped that the interdependence created over a century might yet be restored. Perhaps it still may be, but not yet awhile.

M. ZINKIN

*Unilever Ltd.,  
London.*

*Foundations of Indian Agriculture*. Edited by V. DAGLI. (Bombay: Vora, 1968.) Pp. 378, \$7.00.

*Statistical Outline of Indian Economy*. By V. G. KULKARNI. (Bombay: Vora, 1968.) Pp. 293, \$6.00.

Dagli has edited a book of some thirty-one short contributions of uneven and mostly superficial quality. Among the most solid and stimulating chapters are those of M. L. Dantwala (Incentives and Disincentives in Indian Agriculture), S. R. Sen (Pattern of Utilization) and V. S. Vyas (Irrigation and Power Development). The book covers

<sup>1</sup> Meyer, J., 'Regional Economics: A Survey', *American Economic Review* Vol. 53, pp. 19-54, 1963; Brown, A. J., 'Surveys of Applied Economics: Regional Economics with Special Reference to the United Kingdom', *Economic Journal*, Vol. 79, pp. 759-96, 1969.

much ground and with its statistics and bibliography can serve as a limited introduction to today's agricultural problems in India.

Kulkarni's book is a valuable statistical reference and is one of the best available guides to the measurement of economic progress (or change) under the first three post-war Plans and the beginning of the Fourth.

J. G. CRAWFORD

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