BOOK REVIEWS

Strategies and Recommendations for Nigerian Rural Development, 1969–1985. By G. L. JOHNSON, O. J. SCOVILLE, G. K. DIKE, and E. K. EICHER. (Michigan State University; Consortium for the study of Nigerian Rural Development, Report No. 33, 1969), Pp. 158.

Nigeria has a population of 67 million, the largest of any country in Africa. The great majority are engaged in agriculture. The land area of 225 million acres ranges from dry savannah in the north to moist tropical forests in the south. The chief export crops are cocoa, ground nut products, oil palm products, coffee, and rubber, but vast areas of staple foods are also grown for local consumption. The predominant farm units are smallholdings, supporting an average of 8 persons apiece and ranging from 2-3 acres in the South to 8-10 acres in the North. Even in specialized regions, most holdings produce at least 2-3 crops. The only major non-agricultural export is petroleum. This accounts for about 30 per cent of export revenue compared to about 50 per cent from agricultural products, and seems set to grow in importance once the disruptions of civil war are repaired. Nigeria is run on a Federal system, and following recent changes now has 12 States.

The Consortium for the Study of Nigerian Rural Development was formed in 1965, essentially by members of four American Universities amongst which Michigan is responsible for administration. Finance is provided by the U.S. Agency for International Development. The Consortium's aim of formulating long range plans for the rural economy is both admirable and exciting, and few other such comprehensive investigations have been attempted elsewhere in the developing world. This general report builds on numerous more specific studies, which have also been published.

The work is divided into 3 main parts. First comes a description of Nigerian agriculture, including its historical growth and change and a statement of what the Consortium regards as major policy issues. Second, three alternative future strategies are outlined. Finally, recommended means of implementing the favoured strategy are detailed and discussed.

The Consortium's broad suggestions are logical and straight forward, although they reflect the capitalist pre-dispositions of its members. A main theme is to provide individual smallholders with export crop prices which reflect overseas demand, and thus encourage them to expand production to a socially desirable level. At present State controlled marketing boards are the sole buyers of major export crops, and tax away significant proportions of export revenue as a source of finance for Government. These taxes, the Consortium feels, should be progressively removed over the early seventies, since they have both discouraged and distorted export crop production. The effect of better prices should be underpinned by 'production campaigns' in crops with a high payoff, mainly groundnut, cocoa and oil palm. Rubber and some import replacement crops should also be encouraged.

The production campaigns would involve supply of improved inputs, promoted by subsidies in the first instance and subsequently by an effective national credit system. Input distribution would be progressively handed over from the public to the private sector so as to release current bottlenecks. Existing produce marketing institutions would be improved. Agricultural education, research and extension would be thoroughly reorganised. Long-term research would also be geared to more effective staple crop and livestock production. Rural infra-structures would be improved in high payoff areas. Subject to the demands of this programme, government expenditure would be rigorously pruned. As one means of achieving this, expenditure on publicly-operated land settlement schemes and plantations would be discontinued.

Outlining reasonable general proposals is comparatively straight forward. Producing a report which helps Nigerians to deal effectively with their complex problems is much more difficult. It may not be surprising that on this count the report is disappointing. Many criticisms can be levelled, and only a few will be mentioned here.

Perhaps most important, the book is hard to follow. It is annoyingly repetitive, in a way which blurs rather than increases clarity. Despite this it gives insufficient detail on essentials (see below). It makes endless use of itemizations and sub-itemizations which, for one non-American reader at least, merely help to confuse. There is no really good map of Nigeria, although essentially the same inferior map is reproduced in 3 separate places.

A big defect in content is the tendency for arguments to be unsatisfyingly vague. The important recommendations of the Consortium on export crops, for example, are not adequately substantiated, even if correct. Thus the statement that 'economic research by CSNRD workers' indicates a particular crop to be most profitable (see with cocoa, p. 74) should surely be at least backed up by reference to a full analysis. The latter might be contained either in a separate Consortium report, in an appendix to the book, or both. In fact no comprehensive feasibility analyses seem to have been published elsewhere, and there is no appendix dealing with such matters. Again no indication is given, within the suggested cocoa programme, of the relative economic desirability of new planting and replanting.

The technical soundness of some of the proposals must also be questioned. Apart from future yield forecasts, the assumptions behind which are not made clear, there are other aspects causing disquiet. For example, the statement that 'a crumb-processing center with a capacity to process "ruber" (sic) from a minimum of 500 acres of wild rubber can be installed in Nigeria for about £4,000' is manifestly incorrect unless some Nigerians have been engaging in secret research. Such a plant would handle about 0·3 long tons per day. In West Malaysia at present the recognised minimum economic size of crumb plant is one handling about 10 tons per day and costing at least £50,000. Similarly, the lack of almost any reference, in the oil palm proposals, to the crucial aspect of processing and its substantial investment requirements, is an important omission.

Another major but poorly explained issue is taxation. Thus it is stated (p. 138) that revenue lost by eliminating direct marketing board taxes can be replaced by 'other less-damaging taxes on agriculture such as income and land taxes and indirect taxes in the form of excise and import taxes'. No further guidance is presented. The known difficulties of collecting income taxes from small farmers in South East Asia provide some comment on this statement. The suggested use of part of the increasing petroleum revenue to cover some of the rural crops is in itself not sufficient. Again, little detail is given on the proposed handover of publicly sponsored settlements and plantation enterprises and of agricultural input distribution to a private sector which at present hardly exists. Although reference is made to substantial expenditure on and high-level mismanagement of public schemes, no indication is given of the schemes' physical extent, of their grass roots performance, or of how they should be transferred into private hands. The proposed turning over of fertilizer distribution to a 'private firm(s)' (p. 90) might produce no improvement if there was only one big firm involved.

The best presented section of the book, as might be expected from the authors' background, concerns 'supporting programs' of education, research and extension. One useful proposal is to concentrate such development on three 'agricultural centres', each comprising clusters of educational and research institutions. Another important suggestion is to put most extension effort around production campaigns for particular crops, and to focus advisory efforts within these campaigns on progressive farmers from whom large spread effects can be anticipated. This reviewer would not, however, agree with carrying the integration of teaching with research work as far as the Consortium would wish. Under its suggestions most new research expenditure would be channelled to the University rather than to existing research institutions. Teachers would be encouraged to devote much more attention to research, and research workers to teaching. Whilst this kind of arrangement may be quite appropriate at U.S. Land Grant Colleges, it may be undesirable in circumstances where the number of students, often for the wrong reasons, is likely to grow faster than the number of teachers. In practice, unless there is a strict bar against teaching in research institutions, these pressures are likely to lead to undesirable resource allocation by siphoning off the relatively few good research workers into teaching. This is why teaching and research functions are normally segregated in South East Asia.

Perhaps it has been too much to expect a polished report from the Consortium at this early stage. The recommendations are, anyhow, only intended to be 'preliminary'. It is to be hoped that the next issue will help to clarify some of the points mentioned above.

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Banks and the Capital Market: An Australian Study. By J. O. N. PERKINS and J. E. SULLIVAN (Melbourne University Press, 1970), Pp. 120, $2.40.

Current conditions in agriculture have prompted many suggestions for innovation in the financial sphere to assist farmers, such as the creation of a government-sponsored Farm Mortgage Insurance Corporation. Thus this book may be of value to the general reader who seeks to evaluate such proposals within the wider framework of the Australian capital market as a whole, for it succeeds in rounding out the character of the major institutions which act in the Australian capital market to unite borrower and lender. These institutions' roles are revealed in nine chapters, the first two of which delineate the distinguishing characteristics of the transactors, and the assets transacted, in this particular market. The succeeding three chapters discuss the trio of major institutions: the banks; the non-bank intermedaries; and the central bank. Chapter 6 relates monetary phenomena to the level of national income generally, reserving for a separate chapter consideration of the specific ways financial intermedaries affect national income. The market imperfections discussed in Chapter 8 are assessed, in the final chapter, as tending to diminish for the reason that the capital market's evolutionary direction is towards greater competitiveness.

The brevity of the book reflects the aim to provide a basic institutional background for the general reader and, to a lesser extent, students of economics undertaking a monetary theory course emphasising theory rather than descriptive material. As a consequence, it does not replace, for example, the more detailed *Studies in the Australian Capital Market,* edited by Hirst and Wallace, to which those seeking a fuller description and analysis will still turn. Indeed, it is a surprising omission that no list of further reading in this area is offered. Nevertheless, the coverage is sufficiently wide such that the more recent arrivals on the banking scene, such as the Australian Resources Bank and the Australian Industries Development Corporation, are discussed along with some less-familiar non-bank financial intermediaries such as the short-term money market. The book will thus provide, as the authors' claim, 'the basic framework of knowledge that is necessary for an adequate discussion or understanding of particular policy issues'. This claim should be recognised as limited to the institutional framework, for little is offered in regard to the theoretical relation between money and the level of national income beyond a brief treatment of the quantity theory of money.

The discussion of imperfections in the capital market holds out the allocative efficiency of the competitive model as a desirable goal. Some relatively simple applications of demand and supply analysis enable the authors to highlight the considerable degree of imperfection in the Australian capital market. One argument, an exception to this simplicity, utilises implicitly Friedman-type constraints on the demand for money. This is their argument that interest should be paid on current accounts to eliminate one such imperfection. But the linkage of this argument to an inflationary situation, in which the opportunity cost of holding money is raised by inflation, tends to obscure the essential point that even in the absence of inflation the public will not hold the optimal level of money balances. Hence the general case that economic welfare and wealth would be increased by paying interest on money, that is, until the marginal utility of additional money balances was allowed to fall to equal the zero cost of producing money, is independent of the inflationary process.

As a concise discussion of the capital market, the book presents a sound introduction to a complex subject.

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Input-Output in the United Kingdom, Proceedings of the 1968 Manchester Conference. Edited by W. F. GOSSLING. (London, Frank Cass & Co. Ltd., 1970). Pp. 209, £3.

This book consists of six major papers given at a 1968 conference on input-output models and applications, held at the University of Manchester. The text of a foreword to the conference and some slighter papers are included also. The papers vary greatly with regard to the type of model considered and to their theoretical sophistication. Consequently there are marked differences in the extent to which they might supply ideas for future research in input-output economics in Australia.

Representatives from two official government institutions present papers, one setting out problems encountered by the Central Statistical Office (C.S.O.) in the preparation and publication of the *Input-Output Tables for the United Kingdom*, and the other discussing the use of input-output methods by the Department of Economic Affairs (D.E.A.). This Department was set up by the Wilson Government, and as a regular exercise made use of the Cambridge model for medium term projections of the pattern of output and employment based on a planned schedule of aggregate demand and total employment. The paper presented at the conference gives only the most general discussion of the work done and problems encountered. It is of only limited interest to readers without a fairly detailed knowledge of the actual model used.

More interesting is the report on the work of the C.S.O. in collecting data and preparing the official tables. The British, like the Australians, are irritated by the long delays in the publication of the official tables. The U.K. tables for 1963 (not available at the time of the conference) were eventually published in 1970; Australian tables for 1962-63, on the point of publication for many months, are not yet available. In the U.K. there is forward planning for future tables—1968, to be available in 1972, with an updated version of the 1963 tables to be used until the official 1968 table is ready; in Australia, some thought has been given to the preparation of a table for 1968-69.

Both of these papers make reference to the need for updating or projecting the technical input-output coefficients where tables of earlier years are being used currently for forecasting purposes. Everyone who has had contact with input-output will have experienced doubt regarding the forecasting value of a set of coefficients based on past experience, where it is known that technology has been changing. This matter is discussed in what are, to my mind, the most interesting papers in the collection. In the first, K. J. Wigley reports on work forming part of the Cambridge Growth Project, and in the first part of his paper, focuses his attention on the fuel input coefficients in non-fuel industries. He discusses the past trends in fuel consumption, shows that naive extensions of these trends lead to nonsense results and discusses various models used for a more feasible projection of input coefficients. His most successful model relates changes in the relative importance of fuels to changes in relative prices and to constraints on instantaneous substitution due to gradual rather than rapid replacement of equipment. In the second part of his paper Wigley suggests how a production function used in association with the input-output model might supply a yearly time series of other input coefficients for the model.

The other specially interesting paper also relates to the work of the

Cambridge Growth Project. J. R. C. Lecomber tackles another difficult problem in the application of input-output models—the handling of imports. Demand functions for imports are incorporated in the model so that changes in relative prices allow substitution between home production and imports. This is a considerable advance on the assumption used in earlier input-output work, that imports are a constant proportion of the output of user industries, and on the technique sometimes used of scaling competitive imports to satisfy a balance of payments constraint.

There is a modest paper on the possible use of input-output by a large multi-activity firm, and a paper presenting a complex linear model which is developed first for a firm and then aggregated for the economy as a whole. The model is interesting for its treatment of innovation as an endogenous process. The flow of inventions is not 'explained', but the model can be used to forecast the manner in which new efficient techniques will be adopted.

The full transcript of the discussion following the papers is included, and this will be of particular interest to readers who wish to study one or more of the papers in detail. It is possible that other general discussion of current work and future research needs in the field may touch on work being done or contemplated in Australia and may provide a valuable contact for the Australian research worker. However, problems covered at the conference are selective in both the material discussed and manner of the discussion and the book is in no sense a manual on input-output techniques.

G. C. McLaren *Monash University.*

The Impact of the Sonauli-Pokhara Highway on the Regional Income and Agricultural Production of Pokhara Valley, Nepal. By M. C. W. Schroeder and D. G. Sisler (Cornell University: USAID Paper No. 32, 1970), Pp. 113.

In 1968, a highway was built from the Indian border to the isolated Pokhara Valley area, which lies in central Nepal. The sudden stimulus of improved transportation provided an ideal opportunity for studying the economic development of a subsistence economy. In addition, the study provided economic information as a basis for a development plan of the area. It was with the thought that this might be a valuable case study in regional development, that the paper was considered for review.

The nature of the study necessitated the use of data from a sample survey. Detailed income and consumption data from 125 households within the Pokhara Valley are presented in Chapter 2. Five important areas were sampled but no criteria are presented to justify either the relative weighting given to different areas or the selection of households within a particular area. As predictions for consumption patterns, and indeed regional income, were based on marginal propensity to consume estimates of the 'average' family, some form of confidence limit analysis of the sample would seem to be essential.

Cash crop areas, estimated from aerial photographs and by detailed field inspection, are discussed in Chapter 3. Chapters 4-6 describe the patterns of trade and the relationships between various groups within the Valley, with special reference to the impact of the highway on development. The important short term consequence of the road was to sharply reduce prices of imports to levels comparable with surrounding districts and this had the effect of increasing real incomes of consumers. The major long term impact of improved transportation is thought to lie in the changing pattern of crop production, especally in terms of fertiliser responsive crops. Cropping patterns have largely determined the nature of consumption in the past, therefore, new technology, resulting in a rapid increase in production, is likely to markedly alter consumption patterns. To assess the extent of this increase in production, some conclusions are drawn regarding supply response of the farming community to changing prices, new technology and a changing institutional environment.

Given the detailed assemblage of data in Chapters 2-6, the regional income analysis (Chapter 7) is somewhat disappointing. The approach used the national accounts identity to estimate regional expenditure, which was then compared with total income from cereal grains, other agricultural products and non-agricultural revenue. These two measures should correspond but it is left to the reader to decide whether the calculated difference of Rs 2·03 million was due to net investment or government expenditure. Interpretation of the identity is also difficult (p. 78) as the equals sign is replaced by a plus sign and one coefficient has been left out.

Three projections to 1978, involving different assumptions of economic growth, show that per capita incomes could increase from Rs 860 at present to Rs 1120 with organised agricultural development. If planned investment is undertaken in the non-agricultural sector, per capita income could increase to Rs 1210 by 1978.

Presentation of the study is poor. Expressions such as 'the author's estimate . . .' appear frequently, raising doubts as to whether the work was completed by one or two authors. Journal references are inadequate and several pages are either missing or duplicated.

The importance of the study lies in the collection and presentation of economic data from a rapidly changing region. More rigorous analysis of the region's development would have increased the value of the study.

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The Australian Environment. Edited by G. W. LEEPER (C.S.I.R.O. in association with Melbourne University Press, 1970). Pp. 163, \$5.80 soft covers, \$3.80.

This new edition, written largely by a new generation of scientists, fulfills an urgent need, particularly by teachers and students, for an up-to-date concise text on this subject.

There are 11 chapters, headed—Landforms, Climates, Soils, Water and Irrigation, Vegetation, the Pastures of Southern Australia, Tropical Pastures, Field Crops, The Forest as a Crop, Animal Production and Native Fauna respectively. The former chapter on historical development of agriculture has been omitted and three new ones introduced—on forests, native fauna and tropical pastures. The last of these has been separated from the former single chapter on pastures.

The chapter on climate is unchanged; others, such as water and irrigation, field crops and animal production have been updated within the original format, with minor modifications and additions. For example, flax receives no special consideration in this edition and fruit crops are dealt with by regions, rather than by crop.

The chapter on soils has been completely rewritten by Leeper. He avoids the soil classification previously given, and concentrates on special aspects and problems under the sub-headings of Poverty and Replenishment and Mapping and Pedology. For example, duplex profiles and gilgai are discussed as features of Australian soils.

The chapter on vegetation, though 6 pages longer, adopts a modified classification with simpler and more consistent terminology. This makes far easier reading, after Table 7 has been digested, and will be welcomed by teachers. The general reader will welcome the expansion of the section on pastures, and Donald's succinct account of the invasion of Australian native pastures by exotic species. The original description of pastures by Zones has been retained for tropical pastures, but not for temperate ones, so the pasture map has disappeared from this edition.

The new chapters on forests and native fauna rightly help to reflect the lessening of the former dominant position of agriculture in our concept of the Australian environment, although the one on native fauna concentrates on the relationships between agriculture and some of the principal fauna species, as predators or grazing competitors.

Professor Leeper is to be congratulated on avoiding the trap of allowing this type of publication to become substantially larger with each new edition. Much of the general usefulness of this book, particularly for students and teachers, rests on this.

R. L. REID *La Trobe University, School of Agriculture.*

Six Trace Elements in Soils: Their Chemistry as Micro-Nutrients. By G. W. LEEPER (Melbourne University Press, 1970), Pp. 59, $1.95.

Professor Leeper is well-known, amongst many other things, for his knowledge of the chemistry of trace elements in soils. This inexpensive booklet represents a culmination of his interest in this area of soil chemistry and it should prove to be of much value to those for whom the book was written. In this regard Professor Leeper has had in mind the student—'the more ambitious undergraduate and the graduate working in neighbouring fields, as well as the postgraduate entering on soil chemistry'.

The booklet deals with those trace elements which are required by both plant and animals, namely iron, manganese, zinc, cobalt, copper and molybdenum. An introductory chapter is followed by a chapter on the chemistry common to all six, and then follows individual chapters on each.

The standard text-books on soil science and plant nutrition are notoriously inadequate in their treatment of trace elements and for this reason alone the book is a valuable contribution. Further, the booklet is an excellent introduction and will provide a sound basis for further reading; the references have been selected and quoted in a manner intended to facilitate the latter. However for anyone to obtain the full benefit from this booklet, it is essential that he or she has a basic knowledge of fundamental chemistry and is prepared to read it from cover to cover.

The booklet, therefore, is to be recommended and undoubtedly should fulfill the purpose for which it was written, namely '. . . to help the student in his early reading in the chemistry of trace elements in soils'.

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