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BOOK REVIEWS

Agricultural Development Principles: Economic Theory and Empirical Evidence. By ROBERT D. STEVENS and CATHY L. JABARA. (Johns Hopkins University Press, Baltimore, 1988.) Pp. 478, ISBN 0 8018 3582 8.

The neoclassical theory of agricultural development made a major advance in the 1960s when it was recognised that more efficient allocation of available on-farm resources (for example, through farm management extension) could make only a minor impact on rural poverty. The provision of new, more productive inputs (new technology), largely through public investment in research, came to be seen as the major source of agricultural growth. A further step forward occurred in the 1970s with the recognition of rural institutions as a crucial element in the process of change. In addition, the role of culture was given belated (and largely token) acknowledgement. The induced innovation theory popularised by Hayami and Ruttan (1985) ostensibly links these four elements – resources, technology, institutions and culture – in a general equilibrium framework, with each element influencing and influenced by the other three. With this conceptualisation there can be little disagreement. However, the major aim of this theory (as its name implies) is to account for technological and institutional change in terms of changing relative resource endowments. In other words, agricultural development is viewed as a necessary technological and institutional response to underlying economic forces (specifically, changes in relative factor prices). Culture enters the picture (if at all) as a passive, conditioning factor, promoting or retarding agricultural development. Its role in defining the very meaning of development for a particular society, and providing the beliefs and values which guide individual and social action, is largely ignored. Political factors are presumably exogenous to the model and show their presence in the form of policies which distort market signals and thus prevent the economic laws of development from being fully and efficiently expressed. The theory thus glosses over the fundamental importance of power relations in the allocation of resources, the development and dissemination of technology and the transformation of institutions. The conflicting interests which permeate the problem of rural poverty are hidden behind the comforting neoclassical imagery of equilibrium.

Nevertheless, Stevens and Jabara see neoclassical theory, particularly the theory of induced innovation, as providing the 'solid economic framework' and the 'rigorous tools of economic analysis' which they need to construct the 'principles' of agricultural development. Hence, their book is fundamentally flawed at the outset. The very concept of a textbook of universal principles which, if correctly applied, will result in efficient development is an example of the 'physics envy' which has long been the bane of the social sciences. The complexity of the problem, the fundamental nature of the values which it evokes, and the diversity of theoretical perspectives which

continue to coexist fruitfully, all call for a more modest and eclectic approach, as demonstrated, for example, in the excellent book of readings edited by Eicher and Staatz (1984). As an earlier textbook writer correctly acknowledged: 'The variability in physical, economic, political, and cultural forces prevents the rendering of sweeping advice and increases the need to tailor programs to specific conditions' (Mellor 1966: v).

Stevens and Jabara's preoccupation with principles leads them to crudely simplify the development debate. For them, 'the subject of development is how to increase the size of the economic pie and how to divide it up' (so much for culture!), and induced innovation theory 'explains the development of agriculture in the wide variety of economic conditions prevailing in both less and more developed nations' (p. 113). With this degree of confidence in their chosen perspective, 'somewhat differing theories of agricultural development' (including those of writers as critical of the induced innovation model as George Beckford and Keith Griffin) can be simply listed in a footnote (p. 135). Marxian theories are at least put on view for a few paragraphs before being buried in the bibliography, because 'it is important that those concerned with development understand both basic Marxist terminology and the shortcomings of Marxist development theory' (p. 127).

Conservationist perspectives on agricultural development also receive short shrift from the 'rigorous tools of economic analysis'. To Stevens and Jabara, 'the greatest weakness of the conservation model is its noneconomic nature' (p. 120). Hence 'economically rational farmers who ignore soil conservation practices are condemned, even when these investments would considerably reduce their incomes'. They conclude that 'wise decisions about conservation activities can be made only when they are placed in an economic framework. Then the rate of return on these investments can be compared by farmers and by society with the returns from alternative uses of these resources' (p. 121). It is ironic, at a time when the issue of 'sustainable development' is at last getting a hearing and the World Bank itself is belatedly recognising the inadequacy of conventional project appraisal techniques for assessing the environmental impact of its rural development projects, that the authors should conclude 'project benefit-cost analysis ... [is] ... the cutting edge of development' (p. 166). Critics of the World Bank-financed penetration of the Amazonian rainforest may well say: 'Cutting edge, indeed!'

The book is aimed at undergraduate students tackling the subject for the first time. The lack of balance in the treatment of fundamental issues and alternative theories makes it unsuitable for this purpose. New students, more than any other category, need to be made aware of controversy as well as consensus, and to be shaken free of their acquired dependence on textbook solutions. Even accepting, however, that the principles espoused by the authors are non-controversial, the book is not particularly well presented. The intention is to make Hayami and Ruttan more accessible by combining expositions of induced innovation theory with clarification of the basic economic concepts involved. The result is a falling between two stools. Highly technical passages, often relying on extensive quotations and the listing of further references, are interspersed with elementary, albeit

extremely compressed explanations of such concepts as demand and supply curves, arc and point elasticities, real and nominal prices, and the rate of return on investment [with the helpful explanation that 'the calculation is multiplied by 100 to provide the rate of return in the usual percentage form' (p. 78)!]. The student would be better served by consulting Hayami and Ruttan directly and referring to a basic agricultural economics text to be reminded of elementary terms and definitions.

A further problem is that the prose frequently does not flow well. Some samples: 'Level of consumption is the amount of goods and services in the public and private sectors, plus savings, which people experience as estimated by GNP or NNP per capita' (p. 34). 'Through this investment process, at least some institutional changes that would have reduced growth would be prevented from being implemented and futilely absorbing large amounts of public resources' (p. 148). In addition, many of the diagrams in the book are ungenerous. Figure 6.3, headed 'Induced Technological Change and Labour-Using and Labour-Saving Technological Change, Shown with Isoquants', is squeezed into 40 mm on p. 136. As good neoclassicists, the authors might have reminded their publisher of the adage: 'The marginal rate of substitution of pictures for words is 1000'.

It is disappointing that a major attempt to survey such an important field of study should fall short of the mark. However, the book is not without redeeming features. It does incorporate useful material which could be used to supplement student reading (for example, on the demographic transition, alternative arrangements for land development, female labour in agriculture, agricultural marketing). It should be ordered for the library and included on student reading lists as a supplementary reference, but it fails to qualify for its intended role as a basic text in agricultural development.

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Agricultural Extension. By A. W. VAN DEN BAN and H. S. HAWKINS. (Longman Scientific and Technical, Essex, co-published in United States with John Wiley & Sons, New York.) Pp. 328, ISBN 0 470 21160 1.

Billions of dollars have been invested in agricultural research centres throughout the world. Results emanating from these centres are diffused very slowly, especially in developing countries due to poor investments in agricultural extension. Based on few economic studies, authors argue that returns on investments in agricultural research and agricultural extension (30 to 60 per cent) are higher than returns on other investments in agriculture such as irrigation. Evenson estimates

that it is profitable in less industrialised countries to invest 1 to 1.5 per cent of the value of agricultural production in agricultural extension.

This book adds significantly to the world literature on agricultural extension. The book is based on a textbook published by the first author in Dutch in 1974. It is now in its seventh edition. A German version of this book has been published in collaboration with Professor W. H. Wehland of the University of Bonn in 1984. German and Australian contributions strengthen the rich experience of the Department of Extension Education of Agricultural University in The Netherlands. This is one of the major strengths of this book and it is very well reflected in synthesising the various disciplines of social sciences and practical agricultural extension in several countries.

The authors make particular note in the book that agricultural extension is one of the policy instruments for various agencies to stimulate agricultural development. However, extension is an effective instrument only when combined with others, such as research, provision for inputs, credit and marketing. The chapter on 'Theoretical Background to Farmers' Use of Extension' provides a sound basis for planning extension programmes. The content and quality of this book are further strengthened by chapters on extension ethics, evaluation and action research and management of extension organisations.

Authors have reviewed and incorporated most of the recent literature into this edition. However, the section dealing with diffusion and adoption has retained some old references from The Netherlands and India. There is a growing criticism of Rogers' model of diffusion and adoption but the authors do not attempt to correct this by reviewing more recent studies. Similarly, not much effort has been made to incorporate adoption and diffusion of soil and water conservation technologies which effect sustainability of agriculture in less industrialised and developed countries.

Management of extension organisation is incomplete without a discussion on research management. Appropriate technology development and role of extension agencies is dealt with very poorly. Concepts like farming systems research and extension/development are not discussed. Participatory model was poorly covered in this book. At the grass root level, several farmers' groups/associations are emerging as a major participatory model of extension both in developed and developing countries which was not discussed in detail.

Good organisation, systematic layout, lucid language, and practical examples make this book an engaging read. Balanced treatment of theory and practical experiences from several countries is a feature of this book. The presence of discussion questions at the end of each chapter stimulates learning. I strongly recommend this as a text for agricultural agents in less industrialised countries. Project leaders, consultants, academics, trainers and scholars should find this book valuable as a source of reference material. However, many economic advisors and graduate students majoring in development economics should find this book interesting reading. Some of the problems of aid projects are due to lack of understanding of agricultural extension systems by the consultants. This book could enhance their understanding of agricultural extension. For those economists whose time is limited, chapters 1, 2, 9 and 10 are highly recommended.

Recent literature on this topic has focused on specific aspects of agricultural extension such as training and visit system, computers and communications in agriculture, while this book treated extension as a total concept. Thus, it is a useful text for beginners to gain an overall understanding of extension in developed and developing countries.

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An Introduction to Agricultural Systems. By C. R. W. SPEDDING. (Elsevier Applied Science, London, 1988.) Pp. 189, ISBN 1 85166 191 3.

This rather delightful little book might best be regarded as an introduction to agricultural science from a systems perspective. Although introductory in one sense, it obviously reflects a lifetime of insightful thinking about the issues involved. The book is a pleasure to read in terms of its conciseness and clarity. It is written in a manner comparable with Professor Spedding's excellent oral expository style.

Although there is some reference to economics in the text, the approach leans towards the biological view of systems, rather than the more socio-economic orientation inherent in the 'farming systems' literature.

Professor Spedding defines a system as:

'a group of interacting components, operating together for a common purpose, capable of reacting as a whole to external stimuli: it is unaffected directly by its own outputs and has a specified boundary based on the inclusion of all significant feedbacks.'

Clearly, there are many nuances in this definition. Given the current interest in sustainable agricultural systems, it is interesting to speculate on the definition of a sustainable system. Given the inherent difficulty (especially for economists) with the word 'sustainable' (for example, Tisdell 1988), the likelihood of a commonly-agreed-upon definition of sustainable systems seems remote. Professor Spedding unfortunately does not give us the benefit of his insight on this issue.

The layout and presentation of this book are first class. There is a most effective use of simple figures and tables. As with the prose, clarity is a feature.

A flavour of the contents is given by the chapter headings. These include The Purposes of Agriculture, A Systems Approach to Agriculture, Biological and Economic Efficiencies (separate chapters), The Contribution of Science. Then there are a series of chapters which cover some of the basic points of Ruthenberg's *Farming Systems in the Tropics*. This inclusion of a developing country orientation is welcome and broadens the book's appeal.

Does a systems view of agriculture assist in an introductory text such as this? This reviewer believes that it does. The reason is, that systems thinking, even in an almost purely biological context inevitably leads to notions of trade-offs, between inputs (and outputs) of different types and to issues of how to evaluate unlike physical consequences. In other words, systems thinking is a major step towards, and virtually a

prerequisite to, economic analysis. In this sense it is an important disciplinary bridge. While this point is not highlighted to a significant degree it is an underlying strength of the presentation.

A gem of a book. I strongly recommend it to all beginning students of agriculture (including economists) throughout the world. It is equally recommended to seasoned professionals as a stimulating refresher about the broader context in which they are working.

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US Agricultural Policy: The 1985 Farm Legislation. By BRUCE L. GARDNER (ed.). (American Enterprises Institute for Policy Research, Washington, D.C., 1988.) Pp. 385, ISBN 0 8447 2256 1.

Before approaching this collection of papers on United States agricultural policy I would recommend that the reader should do some preliminary reading on the history of agricultural policy interventions in the US and on the mechanisms that have been applied. Such prior preparation is not a reflection on the quality of the papers – far from it. It is desirable to obtain some appreciation of the preoccupation of US policy analysts and commentators with national government interventions to achieve desired outcomes. While most of the contributors appear in principle to favour market-based policies, an underlying suspicion of such policies is evident in the emphasis given to appraisal of benefits and costs associated with different kinds of interventions. This is perhaps a recognition that political forces are sustaining the highly interventionist policies in the commodities about which most debate on agricultural policy in the US revolves.

This book is probably the best and most comprehensive of several similar collections of papers on options for what was then the upcoming 1985 farm bill. That legislation was framed against the background of what was widely perceived to be a crisis in US agriculture. Much of it is devoted to consideration of how the government can best intervene to achieve certain policy objectives. Some of the objectives include increasing farmers' incomes, increasing US exports, facilitating farm level adjustment, forcing reform on the European Community, limiting budgetary costs and facilitating transmission of market signals to the farm sector. Attention is also given to the significance of macroeconomic policies and developments for the farm sector and approaches to dealing with the farm financial stress that was evident in the US at that time.

The paper that comes closest to advocating market-based policies is that by D. Gale Johnson who maintains that if price supports continue to be the major policy instruments, ways must be found to adjust them to minimise their effects on production and marketing. The contribution by G. Edward Schuh concentrates on issues of the

importance of macroeconomic developments for agriculture and of reforming US policies to make them more flexible and to make US farm products more competitive internationally. He actually advocates use of deficiency payments as implicit export subsidies on second-best grounds to make the most efficient use of US resources. Such questionable propositions seem to have been influential in the policies actually adopted in the 1985 farm legislation.

One aspect that strengthens this collection of papers is the inclusion of a paper by Stefan Tangermann that indicates EC perceptions of US policies. The emphasis is on the use by the US of deficiency payments as defacto export subsidies and the consequential similarities between US and EC policies. This comparison overplays the similarities and underplays the important differences, in particular the extensive use of area reduction programmes in the US which at least help to offset the production and export distortions created by high support prices. An important observation in this paper is that introduction of outright export subsidies by the US could politically support the intensification of EC surplus-generating policies. A sobering view of this contribution is that virtually no mention is made of the rest of the world. Examination of policy statements accompanying many US policy 'initiatives' in recent years indicates that a motivating factor is to 'get tough' in countering 'unfair' EC policies. As we have seen, those US policies have had a greater detrimental impact on other exporting countries than on the EC.

The above papers are mentioned here largely because of their direct association with international trade consequences of US policies which are probably of most direct interest to Australasian readers. The issues covered are far more comprehensive and provide a good background to many of the factors that are considered in framing US agricultural policies.

The income situation of US farmers has changed dramatically for the better since the 1985 farm bill was enacted. Much of that change can be attributed to factors such as exchange and interest rate changes and the 1988 North American drought which increased world prices and had little to do with US farm policy. However, massive government support in the first 3 years covered by the 1985 legislation also played a part. There is a perception in the US that the 1985 farm legislation has been relatively successful, though budgetarily costly. Many economists, especially those in countries like Australia, would, however, question many of the stated objectives of the 1985 legislation, particularly that of export expansion. It will be interesting to observe whether similar collections of papers are forthcoming in the lead up to the 1990 farm legislation at a time when US agriculture is not perceived to be in crisis.

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