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Book Reviews

Agricultural Adjustment Problems in a Growing Economy. Edited by Earl O. Heady, Howard G. Diesslin, Harald R. Jensen, and Glenn L. Johnson. Assembled and published under the sponsorship of the North Central Farm Management Research Committee. Iowa State College Press, Ames, Iowa. 312 pages. 1958. $3.95.

SELDOM does a group, as a group, accept the challenge of reaching unanimity in describing the current agricultural adjustment problem, analyzing its causes and consequences, and suggesting research needed to resolve it. Such was the task accepted by a group of 35 leading agricultural economists in March 1957 under the sponsorship of the North Central Farm Management Research Committee. This group, which consisted chiefly of midwestern agricultural economists, contributed papers covering the major aspects of the current farm income problem with emphasis on viewing the adjustment problem and suggesting possible solutions. These papers are compiled in "Agricultural Adjustment Problems in a Growing Economy."

To lay the groundwork for consideration of necessary adjustments, a summary of the existing situation in respect to farm income, the demand and supply outlook, and the trends in numbers, size, and resource productivity of farms was presented. An analysis was then made of the basic forces giving rise to the existing income and resource-adjustment problem, followed by an inventory of empirical knowledge that might be used in making projections of demand and output and specific recommendations for adjustments. Finally, research needs and educational and policy steps were outlined that should perhaps be used in correcting resource maladjustments in agriculture and in bringing real incomes to persons employed in agriculture in line with those of other segments of our economy.

Declining farm incomes during a period of rising national and personal incomes imply that production and resource adjustments in agriculture have not been sufficiently rapid to allow resource returns and incomes comparable to those in the rest of our economy. The technological breakthroughs in agriculture, which have helped agriculture to make its contribution to increased economic progress, have caused, and probably will continue to cause, the income and resource transfer problems in agriculture. The conference accepted the main challenge of exploring the means whereby we could obtain a balance between agriculture and industry in our expanding economy. It examined the adjustments necessary within agriculture to permit society to gain from an increasingly productive agriculture and to provide comparability of resource returns to persons owning equal amounts of resources. More specifically, the group explored the following types of problems:

(1) What specific type and quantity of resources should be transferred out of agriculture?
(2) How can the agricultural plant be made more flexible?
(3) How can we improve our knowledge of the productive function so that we can devise programs to bring forth production levels for particular products that are consistent with consumer demand?
(4) How shall we allocate research money for technological research and education?
(5) What should be the structure of agriculture in terms of number and size of farms, degree of specialization, number employed in agriculture, and the optimal capital to labor ratios for particular type-of-farming and entrepreneurial situations?
(6) What modifications are needed in current farm and public programs to facilitate rather than counter these needed adjustments?

The crux of the overproduction problem appears to lie in the condition that aggregate adjustments in supply are only partially reversible. Some seemingly plausible hypotheses presented related the marginal value product of specific categories of inputs to their acquisition and sal-

vage value as an explanation of the degree of adjustment to be expected in response to price.

Among the contributing authors, there appeared to be almost unanimous agreement that major adjustments must be of a production nature, as efforts to manipulate demand through advertising and promotion cannot be expected to achieve a great deal. Population was considered to be the chief shifter of demand, while technology was considered to be the chief shifter of supply. The future race between technology and population is crucial because it was reported that a 4-percent contraction in demand for food products in a free market situation could cause the farm price level to fall by 40 to 50 percent.

Despite lower farm prices, the present trend in agricultural output is not expected to reverse itself until 1965. Based on models that projected aggregate demand and supply for the period 1955–65, it was concluded that unless more effective production-control measures are taken now, the annual surplus of agricultural production will be a chronic problem for at least another decade.

Certain institutional rigidities were reported to be impeding progress in the necessary structural adjustments suggested. These rigidities represent imperfections and immobility in factor markets other than the labor market. They consist of historical Federal land-allocation acts, present price-support and farm credit programs, acreage allotments, customs, tenure, and leasing arrangements. Major criticism was levied against current farm price-support programs that stem from successful attempts to gain protection from loss of sunken costs, thus holding resources in agriculture long after they should have been removed and often encouraging capital investments that are not justified otherwise.

Low per capita incomes per worker in agriculture imply underemployment of agricultural labor. The standard solution offered, therefore, is the reduction of the labor force in agriculture. The conference group lacked unanimity as to the short-run effectiveness of such a move. One author hypothesized that a reduced labor force in conjunction with farm consolidation, which usually means improved management on newly annexed land, could result in increased output in the short run.

Some proposals were presented as alternatives to migration in areas in which labor tends to be somewhat less mobile, and other proposals were presented as a means of increasing mobility. An appraisal was presented of local-urban industrial developments as a means of increasing the opportunities for nonfarm employment for farm families as an alternative to geographic mobility.

Despite recognition that technology has been largely responsible for our increased agricultural output, little research evidence is available with which to evaluate the consequences of its adoption on net farm revenues. Some very useful models were presented as a basis for predicting the consequences of research funds allocated for technological research in agriculture. Pilot plant operations, such as industry employs, were suggested as a laboratory in which to evaluate these technological processes.

An evaluation of past and current farm legislation and agricultural credit programs has shown them to be based on a desire to protect incomes rather than to facilitate needed adjustments. Invariably, these programs have attempted to insulate farmers from price stimuli. Until a large majority of our policymakers recognize that a need for adjustment is at the root of our farm problem, it is not likely that an effective and realistic farm program will be enacted. A combination of soil bank, flexible price support, marketing quotas, and export subsidies was presented as a modified program. The conference concluded on a note of scholarly presentation of socio-economic goals in a growing economy, farmer political behavior, and the value problem in agricultural policy.

One cannot deny that much "old ground" was covered in the papers contributed. But seldom do we find in one reference a clear statement of the adjustment problem in agriculture; an inventory of research available as a basis for evaluating present resource and production maladjustments; and the presentation of hypotheses and models useful in the development of research needed to develop effective educational and policy steps to bring about a balance between supply and demand.

The conference defined well the nature of adjustment problems and went further in outlining research needs in:

(1) Adjustment of individual farm units to technological change;
(2) Population movements to transfer labor in agriculture displaced by technology;
(3) The capital problems of agriculture;
(4) Off-farm sources of income;
(5) The type of programs needed to adjust supply and demand.

These are valuable contributions to our field. As agricultural economists, we must assume the burden of responsibility for providing the research bases for development of the policy and educational programs needed to facilitate these adjustments.

Carroll V. Hess

Land Economics. By Roland R. Renne. Harper and Brothers, New York. xiii, 599 pages. Revised Edition, 1958. $8.00.

LAND AND WATER have certain unique characteristics that distinguish these resources from other major factors of production and cause their owners and users to respond in special ways to the stimulation of economic or institutional change. The methods of owning and using land and water and their share in the national income are therefore determined according to principles whose application differ sufficiently from those of other productive factors to justify separate study. These are Renne's reasons for a book on land economics; they are reflected in the organization of his discussion.

The book is organized into six parts. Part I orients land economics in the field of social science and discusses land problems, policies, and programs. The three major purposes to which land economics and other social sciences should be directed are: First, provide an explanation of a broad area of social phenomena; second, develop a system of welfare guidance in the formulation and evaluation of social policy; third, formulate effective solutions for specific problems.

Part II deals with principles of land utilization. It includes chapters on supply and demand for land, land supply and requirements for specific purposes, the process of resource allocation, economic response, and land conservation.

In part III, land rent and income, land values and appraisal, mortgages, credit and land use, and land taxation are covered.

Part IV deals with property in land. Chapters are included on land appropriation, social control of land property, and land tenure and tenancy of agricultural and nonagricultural land.

Part V points out distinctive features of agricultural and nonagricultural land use. It also covers various aspects of water use and integration of the uses of water and land. Some of the recent developments in river-basin and watershed programs are included.

In part VI, the improvement of land use through land use planning is covered in one chapter. Another chapter on land reform has been added in this edition. This chapter deals with problems of the undeveloped countries of the world and the importance of land-tenure improvements in solving these problems.

The book would be improved if greater advantage had been taken of the opportunities to tie the illustrations back to the discussion of theory. Some of the recent contributions on benefit-cost analysis and statistical techniques applied to analysis of land and water problems might well have been included. Although public action for developing and managing land and water resources is discussed in several chapters, the growing need for legally organized local districts to provide local management is given too little attention.

In this revision of his 1947 land-economics text, Renne has eliminated much of the statistical and descriptive material and has attempted to deal more with relationships and principles. The book should be widely accepted as a text for introductory courses in land economics. The scope of topics treated should interest students wishing to become familiar with the field.

Harry A. Steele

The Niger Agricultural Project. By K. D. S. Baldwin. Harvard University Press. 221 pages illus. 1957. $5.00.

GOOD INTENTIONS are no substitute for knowledge and adequate preparation. This is the lesson to be learned from this analysis of the failure of the Niger Agricultural Project.

The purposes of the project were to settle peasant farmers on land in northern Nigeria, which had heretofore been empty, and to expand production of food—mainly peanuts for export and sorghum for local consumption. Great reliance was to be placed on large-scale, mechanized land preparation.

This scheme, which was located at Mokwa in northern Nigeria, was initiated in 1949 by the Colonial Development Corporation (British Government corporation) and the Nigerian Government. Although it was to be a commercial operation—in 1950, it was placed under the control of a limited liability company formed by the two interested parties—it wasn't expected to be very profitable. The company had responsibility for clearing the land and planning and controlling the agricultural operations. In 1954, it was liquidated and the company assets were purchased by the Northern Regional Government of Nigeria, who are using it as a pilot farm and training center.

Mr. Baldwin does a thorough job of appraising the various aspects of the project. He covers the human problems, those that involve regimentation, a feeling of insecurity and the settlers' wives, as well as the economic, agronomic, and mechanical ones. The study is objective and well-documented; it contains many references to unpublished material made available to him by the organizations involved.

The major reason for the failure was that the planning omitted the crucial stage of finding local answers to many questions on which information was not available; for example, choice of crop, planting dates, use of fertilizer, the size of acreage that could be cultivated in a hoe economy, suitable types of equipment, cost of mechanized operations, the possibility for marketing the products, and the ease with which labor could be obtained. In addition, experience gained in other areas, such as the Gezira scheme in the Sudan, was assumed to be applicable without first being tested locally.

"Other data were incomplete or misinterpreted," according to Mr. Baldwin. "Answers to basic questions by experimentation and then by small-scale pilot operations were not obtained."

Mr. Baldwin not only does an excellent job in getting at the causes for the scheme's failure, but, just as important, he writes his account in a constructive vein. His purpose is to find out "why," so that valuable lessons may be learned for future use. In this respect, the Colonial Development Corporation is to be complimented for their sponsorship of the study. Thus, although the scheme itself was a failure, much of value can be derived from it that may well be used to advantage in the future.

Sidney Gershben

Economic and Technical Problems of Australia's Rural Industries. By D. B. Williams. Melbourne University Press, Cambridge University Press, New York. 1957. $5.00.

THIS TIMELY AND COMPLETE economic analysis of Australia's present and future agricultural development is believed to be the first single work since World War II that has stressed the vital role of agriculture in the economy of Australia and, at the same time, has given proper attention to individual factors and problems that affect agriculture's part in the economic growth of the country. Analyzed in their proper perspective are such important elements as land policies, capital and credit, taxation, and extension services.

Early in the book the author points out Australia's dependence on agriculture for more than four-fifths of its export earnings. Emphasis is given also to the responsibilities that agriculture must assume in the country's overall production planning.

The present aim of the Commonwealth Government is to insure the future expansion of agricultural output to levels that will provide for domestic consumption and exports and at the same time maintain a high standard of living for Australia's future population, now increasing at about 2.5 percent a year. In this connection, Mr. Williams takes particular pains to point out the part Government has assumed in the encouragement of rural development in Australia.

At the outset, the author emphasizes the significance of the technological revolution now underway in Australia's agriculture. Later, he devotes a special chapter to the subject. His chapter treatment of this topic, however, is disappointing. Its importance in Australia's agricultural development is not emphasized sufficiently after the treatment given the subject earlier. No mention is made of the small-scale irrigation systems, dams, and water-conservation measures that have been developed over a wide area in the last few years—improvements that proved to be important in avoiding tremendous losses from the drought of 1957.

Mary E. Long

Modern Computing Methods. Philosophical Library, New York. 129 pages. 1958. $8.75.

THE READER quickly learns that this particular "cookbook" of computing methods requires a thorough understanding of "ingredients." The publication is the result of a compilation of notes used as the basis for lectures given by the staff of the Mathematics Division, N. P. L. It can only be assumed that N. P. L. refers to the National Physical Laboratory in London—the abbreviation is never defined.

These notes were part of a course, "Computers for Electrical Engineering Problems," held for representatives of various British industrial concerns. The overall course was designed to teach the basic principles in the use of electronic computers, and the techniques of numerical mathematics involved in the solution of problems in electrical engineering.

The course, and consequently the publication, deals with methods of computation for such mathematical concepts as linear equations and matrices, roots of polynomial equations, latent roots of matrices, finite difference methods and differential equations. But the reader should be forewarned. Detailed theoretical accounts of each topic are not presented. It is evident from the brief discussions that such background material was not one of the objectives of the compilers of these lecture notes. Some development of concepts is provided at times but this is not generally the rule.

The first four chapters are termed the "algebraic" part of the book, that is, those methods that pertain to determining roots of polynomials, deriving solutions to systems of linear equations, and matrix manipulations. The next six chapters are considered the "analytic" part. This refers to the type of methods used in solving varying types of differential equations: ordinary, hyperbolic, parabolic, and elliptic. The last two chapters are devoted to the tabulation and computation of mathematical functions.

Thus various methods of solution are presented. The advantages—or disadvantages—of such computation, whether by high-speed electronic computers or desk calculators, are weighed and commented upon. N. P. L. experiences with their electronic computer, the DEUCE, are detailed, as well as the advantages of certain programming techniques. Frequent examples throughout the publication illustrate the procedures to be followed. In most instances, these illustrations are oriented in the direction of engineering and the physical sciences.

The brevity with which these topics are treated is readily acknowledged. However, the appendix

contains a comprehensive list of references that supplement the text material; it is divided into sections that correspond with chapters of the book, thus providing ample opportunity for the serious reader to study a particular topic more thoroughly. A short statement about the material covered is appended to each reference.

Another part of the appendix is devoted to the electronic computers built for the N. P. L. by the English Electric Company, Ltd.—the Pilot ACE and the DEUCE. Machine components and characteristics are discussed and an example of the use of the DEUCE is given. Another section describes and explains the use of the "Mechanical Differential Analyzer," an analogue computer dealing specifically with ordinary differential equation problems.

Certainly this publication would be a welcome addition to any technician's bookshelf, but it would be of limited use to those engaged in agricultural economics. Above all, it would be an ambitious undertaking for anyone not already schooled in the topics that are covered.

Hyman Weingarten

Perspectives on Conservation: Essays on America's Natural Resources. Edited by Henry Jarrett. Resources of the Future, Inc., Washington, D. C. Published by the Johns Hopkins Press, Baltimore. 1958. 260 pages. $5.00

IN THESE ESSAYS, first presented as papers at the 1958 Forum of Resources for the Future, some of the country's foremost resource experts seek to answer these questions: What has the conservation movement accomplished during the last half-century toward wise use of America's resources? Where does the movement stand today? What are the prospects for the next 50 years, in the face of accelerated consumption caused by growing population, spreading cities, and a rising standard of living? Chief contributors are John Kenneth Galbraith, Ernest S. Griffith, Luther Gulick, Edward S. Mason, Thomas B. Nolan, and Gilbert F. White. Commentary is contributed by Bushrod W. Allin, Robert C. Cook, Harry A. Curtis, Samuel T. Dana, Charles M. Hardin, Henry C. Hart, Robert W. Hartley, Philip M. Hauser, Samuel P. Hays, Joseph L. Intermaggio, Minor S. Jameson, Jr., Robert E. Merriam, Sigurd F. Olson, William Pincus, Paul B. Sears, Byron T. Shaw, and Abel Wolman.

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