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BOOK REVIEWS

Foundations of Farm Policy

By Luther Tweeten. The University of Nebraska Press, Lincoln. 537 pages. 1970. \$9.50.

It is seldom that one reads a textbook which ranges so broadly on the topic of farm policy. Tweeten's book would be worth having, if for no other reason, because the chapter and references provide leads to key literature on several topics of importance to agricultural economists.

If there are two criticisms that can be aimed at this particular work, they are the ones of (1) undertaking too broad a range of subject-matter materials in one book and (2) writing some portions of the book, particularly those relating to the sociological-psychological aspects of policy, at a level above that which many upperclassmen and some graduate students will be able to comprehend. These are relative criticisms, however, particularly if one accepts Tweeten's suggestion that "the three requirements for success in policy study are to: read, read, read."

If one wants a shorter treatise on farm policy, some topics might better be left to books in economic history of the United States or in general banking and finance. An example of fairly difficult terminology is a statement on page 87, "the propensities to save, invest, and be efficient will be high and economic growth most rapid in an area possessing social-psychological characteristics of secular asceticism and functional activism." The author does go on to define these terms but again in terms of a set of characteristics that are not easily unified.

The book includes sections on what agriculture wants from society and what society wants from agriculture. Needless to say, the objectives viewed from these two vantage points differ substantially. The section on goals and values from a rural perspective draws heavily on the work of John Brewster as well as others.

The author goes back in history to cite the early protest in U.S. farming, starting with the effort to voluntarily cut surplus tobacco production in the 17th century, the failures that resulted, and the activities of rioters who cut and destroyed tobacco in order to reduce supplies and improve prices. The history of early farm organization movements in New England draws heavily on work by Carl Taylor that traces the cooperative movement starting with New England dairy farmers in 1910. It is clear that problems of diversity of

interest and the inability to coordinate a common farm organizational thrust have plagued farmers from an early date.

The author centers a good deal of attention on the key need for education of rural people in our changing economy. A table listing expenditures for agricultural research and development programs shows the high proportion which has gone for protection of forests, crops, and livestock; for efficient production of farm and forest products; and for product development and quality. On the other hand, it shows the small expenditures which have gone to assist developing countries, to expand export markets, to raise the level of living of rural people, and to improve community services and environment. The author presents a convincing case that some reordering of priorities is needed.

Sections discussing economic history, attitudes, institutions, and technology are exceptionally good. The author's estimates of equilibrium levels of inputs in farming seem reasonable—as evidenced, for example, by the rapid shifts of labor out of farming in recent decades, an adjustment suggested by his analysis.

Tweeten provides a brief history of farm programs since the 1920's and then lists five program choices of key importance:

(1) Should we continue heavy investments in technology? Here, the answer seems to be yes, because of the increased productivity which amounted to \$75 billion in 1965 alone.

(2) Should we have free markets or income support for agriculture? His answer to this question is that some program help is needed but that program benefits should be tied more to people than to holding commodity prices above free market levels. The latter policy, according to the author, results mainly in capitalization of benefits into land prices.

(3) Do we need long-run or short-run programs? The answer here seems to be that we need some of both.

(4) Should we have voluntary or mandatory programs? The answer is suggested as being voluntary to the extent possible in keeping with the accomplishment of policy objectives.

(5) What voluntary programs should we have? Here, the answer varies somewhat by commodity and problem situation. The author does a good job of citing the slippage in past commodity programs, but may, in this

reviewer's judgment, overplay a bit the problem of improving the distribution and mobility of capital in agriculture.

With respect to the economic structure of farm production and input markets, Tweeten cites evidence that the family farm has held its own relatively well in the past, but probably faces increased competition from large industrial farms in the future primarily because of the hurdles of large capital and management requirements. He suggests that commercial agriculture is well along on the trend to 1 million farms and 2 million farmworkers.

Increased international trade is cited as a key place where farm producers' welfare can be helped. Recent expansion in trade for farm products is in keeping with the author's optimism. This reviewer believes, however, that Tweeten's long-run estimates of demand elasticities in foreign markets are high and do not adequately reflect the decisionmaking setting in other countries. The placing of formal or informal limits on the amounts of foreign exchange which can be spent for agricultural imports, protectionism, the likelihood of retaliation by competitors if prices are cut significantly, and so on, are all variables which have impacts on the aggregate elasticity of demand for U.S. exports.

The book includes a significant section on rural poverty. A number of key statistics are cited showing the location and incidence of poverty. This serves well to support the following sections, which review the effectiveness of poverty programs and find them lacking because (1) programs have typically been structurally unsound, e.g., they have missed the major poverty groups by utilizing a regressive commodity program mechanism, and (2) those people in poverty who most need help often do not make use of the help which is available. So the delivery system for poverty programs has been less than adequately effective.

A number of suggestions are made for prospective poverty program needs. These include (1) differentiation of people according to their degree of employability, (2) improved mobility and better factor markets for labor, (3) the multifaceted needs for improved education, and (4) the need for realism in appraising opportunities for industry in rural areas. Overall, programs need to be better tailored in terms of cost-effectiveness for specific categories of the poor.

A summary and conclusions section on public welfare efficiency discusses several criteria, including those termed Pareto, Kaldor, Hicks, and Scitovsky.

W. B. Sundquist

Organization and Competition in the Midwest Dairy Industry

By Sheldon W. Williams, David A. Vose, Charles E. French, Hugh L. Cook, Alden C. Manchester. Iowa State University Press, Ames. 339 pages. 1970. \$12.50.

Dairying is a dynamic industry. That is one's first impression from this study and evaluation of changes in the Midwestern dairy industry in the past two decades. However, the nature of the industry and the availability of data make limiting any analysis of dairy market structure strictly to that region difficult if not impossible. Because of the importance of the Midwest to the total U.S. dairy industry, this book affords the reader considerable perspective regarding the changing national dairy scene.

The study is a wrap-up of the regional research project, "Changing Market Structure of Midwest Dairy Industries," of the North Central Dairy Marketing Research Committee. In this respect, the book is unique. Although several individual research publications often arise from a regional research project, this reviewer knows of no other project from which an overall publication has resulted. Many specialists contributed to this book. However, its authors were members of the steering committee which planned and carried out the study with guidance from the regional committee.

The first nine chapters of the book focus on changes in the structure and organization of the dairy marketing industry, and the conduct of firms operating in the industry. General chapters deal with market institutions and technological developments and procurement markets for milk.

Separate chapters effectively summarize changes in the number and size of plants and firms, market shares, business organization, product differentiation, private labeling, vertical integration, merger activity, economies of scale, and price competition for each of the major dairy industries. This study primarily used published information from university research studies, USDA, Bureau of the Census, and other sources. Many of the data used in this book are several years old, and only limited new information was obtained. The discussion and data are similar to those presented on a national basis by the National Commission on Food Marketing in a technical study, "Organization and Competition in the Dairy Industry." The dates of many of the research studies used as references for this book make one wonder if our dairy marketing research is keeping up with the changes in the industry. Although general relationships existing in the early 1960's may still hold today, I don't think we can be sure.

Three of the more significant recent changes in the dairy industry—growth of large regional farmer cooperatives, concentration of dairy product sales through retail food stores, and diversification by the large dairy companies—are well documented. The book thoroughly discusses the regional cooperatives as they represent farmers as sellers of milk, but it gives only limited attention to their role as buyers and manufacturers of milk and the accompanying effect on market structure. Currently, many mergers and acquisitions of dairy firms are by producer cooperatives, as the large dairy companies are moving into nondairy activities.

This book goes one step beyond the Food Commission dairy study by presenting an evaluation of the performance of dairy marketing. (The general report of the Food Commission, "Food From Farmer to Consumer," made an overall appraisal only of the performance of food marketing firms in general.) The authors, recognizing the value judgments involved, measure the performance of the dairy industry in relation to (1) technological efficiency and progressiveness, (2) margins and profits, and (3) sales promotion costs. The use of Stigler's survivor technique to estimate optimum plant size is unique to a dairy marketing study. In the early 1960's, a relatively low portion of plants were of optimum size; more current data would probably show an increasing proportion. The book suggests that, on the whole, dairy marketing has been progressive, and that gross margins, level of profits, and sales promotion expenditures in general have not been excessive when compared with other food products and industries.

In perhaps the most important chapter of the book (entitled "Some Implications"), the authors present a thought-provoking discussion of the implications of changes in the dairy industry for producers, cooperatives, handlers, institutions, retailers, consumers, labor, and government. The chapter raises many questions regarding the future of the industry—its control, the changing concept of a market, its attitude toward the public interest, the impact of substitutes, government controls, and the role of cooperatives, to list a few. These are significant signposts for the future direction of dairy marketing research.

This book very effectively brings together a vast amount of information about the changes taking place in the Midwest and U.S. dairy industries since World War II. Anyone involved with the dairy industry—student, researcher, marketer, Government worker, farmer—would benefit from reading this book.

Robert R. Miller

Economics and the Environment: A Materials Balance Approach

By Allen V. Kneese, Robert U. Ayres, and Ralph C. D'Arge. Resources for the Future, Inc., Washington, D.C. 120 pages. 1970. \$2.50.

I would like to commend the authors on a much needed book on the development of a systematic and analytic way in which to study the interactions of the environment with economic activities. I say this because heretofore a large majority of the writings on the problems of the environment have been descriptive and have not dealt with the problems in the more meaningful, systematic way.

The book is divided functionally into four main sections as reflected in the four chapter headings. Chapter 1 gives an overview of the "residuals" problem. That is, it seeks to account for the overall pervasiveness of noxious externalities (pollution, etc.) in a developed economy. Chapter 2 is mainly descriptive in its discussion of the residuals or wastes that result from man's economic activities: Personal consumption (solid and liquid wastes); power generation (thermal and chemical pollution); transportation (air pollution); and industrial production (air and water pollution). Chapter 3 is a theoretical chapter in which the notion of the environment is incorporated explicitly in the Walras-Cassel general equilibrium model. Chapter 4 suggests ways in which to make the preceding analysis useful for regional environmental management, as well as suggesting needs for future research and improved data availability.

The authors emphasize that externalities such as pollution residuals are an intricate and pervasive part of the economic production and consumption processes. For example, there is no such thing as "consumption" really. Nothing is consumed or destroyed. It is merely transformed into another form (except waste or scrap residuals). Hence the notion of "materials balance," since in the absence of anti-matter nothing is destroyed but is merely changed. Heretofore, economic models, if they took pollution or residuals formation into account at all, have treated pollution in an "added on" fashion, and usually have treated the environment as an inexhaustible "sink" for residuals.

Second, the authors wish to emphasize that there are numerous tradeoffs between pollution types. For example, air pollution controls often utilize a technology that increases water pollution and vice versa. This is again consistent with the authors' materials-balance concepts. Hence, they see it as vastly inefficient to have separate groups engaged in air or water pollution control. A general environmental agency (such as has recently been formed) is necessary.

Third, using an "environment extended" Walras-Cassel model, they establish the Pareto optimum conditions for production and prices. If information on utility functions of individuals, production functions of firms, etc., were costless, the authors establish what would be the optimum consumer taxes and/or producer taxes needed in order to "force" the system to its Pareto optimum, given that the environment is not a costless or free "good" to the firm, and that the environment gives utility (or disutility) to the individual consumer. Their main point here is that everyday economic decisions could remain decentralized and still the economy (model) would reach Pareto optimum if the "rules of the game" (taxes, for example) were made such that environmental degradation costs had to be borne by the producers (via increased costs) and/or the consumers (via increased prices).

Fourth, the notion of "second best" is discussed as an optimization possibility, since the gains from perfect optimality when including the environment might be easily offset by the costs of gathering perfect and complete information. But this method also has its problems since the "second best" solution is indeterminate in the absence of complete information on utility functions, production capabilities, and private-social cost discrepancies.

Fifth, the authors conclude, therefore, that the "best" solution might be not to try for perfect optimality. (Given the model's restrictive assumptions, that is not possible, using this model, in the real world, anyway.) It might be best, rather, to try, in a consistent materials-balance way via such means as tax policy, to partially offset the private-social cost discrepancies and thus at least inch closer toward real optimality.

My criticisms of the book and the model lie mainly in the authors' presentation of the mathematics. In general, they have limited verbal explanation and justification of the equations. Equation 5b (page 78) is an example. Only when I added four or five steps of my own did this equation seem justified. Also, the precise notion and meaning they have given for recycling (the gamma γ introduced on pages 80 and 81) is confusing to me. I feel that the summation variable in equation 5a (page 78) should be M , not N ; and I have some doubts about the direction of the inequality in equation 21.3 (on page 90).

But generally I find the book to be an excellent thrust toward the theory of the integration of economics and the environment. Because of this, I will be very interested in seeing some of the current work on this environmental issue going on at Resources for the Future as was indicated in several of the footnotes.

Daniel G. Williams

Benefits and Burdens of Rural Development

By Iowa State University Center for Agriculture and Economic Development. Iowa State University Press, Ames. 311 pages. 1970. \$5.95.

This book is a comprehensive assortment of papers by economists and sociologists on various advantages and problems associated with rural development. These writings are useful in highlighting and explaining the specific problems of our rural economy, and particularly the complexity of the U.S. farm program; but unfortunately one finds little in the way of concrete suggestions for resolutions to the problems.

It has been known for some time that most of the direct benefits from the Government farm program accrue to the large commercial farmers. The \$30 billion spent from 1933 to 1966 to support farm income bypassed the marginal farmers. Even benefits from research and education in land grant universities have mostly flowed to the large commercial farmers, thereby increasing the inequity of income between the small and large farmers. This predicament is due to the fact that program benefits continue to be distributed in proportion to production. Program benefits are becoming increasingly concentrated because farm production is becoming concentrated on about one-third of all American farms. To further aggravate the situation, the operation of the program has little flexibility. G. E. Brandow states that although the normal current cost of the farm program to the Government is about \$5.3 billion, not more than one-fourth of the Government expenditure can directly absorb resources which can have alternative production uses.

Since the marginal farmer cannot compete with the commercial farmer, he is forced to earn a large proportion of his income in the nonfarm sector. J. Patrick Madden points out that there are still 2 million farm residents existing below the poverty level. Accordingly, off-farm work has been the most important variable in reducing short-run poverty in agriculture.

The Government program, which has largely ignored the marginal farmer, has also paid little attention to the plight of the rural nonfarm population. The large farmers are cared for; the urban population is cared for; but those in between—as Earl O. Heady notes—do not receive the benefits of programs and aid. Those persons comprise no small number in our economy. They have been growing more rapidly than the Nation as a whole as outmigration from the farms increases from year to year. In 1960, there were 41 million rural nonfarm persons, or one-fourth of the national population. Significantly, Conrad Taueber explains that only one out of four of these persons lives in small towns; the remaining 30

million live in what is classified as "open country": crossroad settlements, developments along the highways—places where there is no clear delineation. This phenomenon gives evidence to Bruce Gordon's thesis that farm labor is much more mobile than had been generally believed, and thus suggests that it may no longer be wise to treat the welfare of farmpeople as an independent problem for which special kinds of public policies are required.

Jack Ben-Rubin

A Century of Russian Agriculture: From Alexander II to Khrushchev

By Lazar Volin. Harvard University Press, Cambridge. 644 pages. 1970. \$18.50.

Lazar Volin spent most of a lifetime studying Soviet agriculture. Perspectives gained from a 40-year career devoted to his subject are contained in this volume. Students of Soviet agricultural matters, the Soviet economy, and Soviet affairs in general are richer to have available these perspectives—for which most of us strive, but which not all of us attain.

A Century of Russian Agriculture is an excellent economic history of the rural sector and of agricultural organization and production in 19th-century Russia and in the USSR. Despite the price, it should be on the reference shelf of the specialist on the Soviet economy or the historian of Soviet political affairs. The book is comprehensible and should be read, at least in part, before being placed on the shelf.

The usefulness of this economic history of Russian and Soviet agriculture should not be limited to the Soviet specialist. The Soviet Union has emerged into the industrialized world more recently than the United States and most countries of Western Europe. Although still behind the United States, it has achieved a higher average level of material well-being than most countries of Africa, Asia, or Latin America. For these and other reasons, many consider its experience more relevant to the central economic issue at this time in the world—the economic development of the nations, regions, and groups that have been left behind. Development economists will find much to enlighten them in this detailed account of Soviet policies toward the rural sector and the shortcomings and strengths of these policies.

Although the Soviet Union has joined the ranks of industrialized countries, it remains much more heavily agricultural than the United States. The share of rural population is much greater than for most other countries possessing a similar level of per capita GNP. There are

still more farmers in the USSR than anywhere in the world, except China and India.

Equally important, the USSR is the second-leading agricultural producer in the world; the closest rival to American agriculture in terms of total output. The student of American agricultural affairs may find Volin's study an extremely interesting source for comparison.

Part 3, entitled "Collectivized Agriculture Under Khrushchev," provides a good account of agriculture in recent years, and may be read separately, although the previous parts place the recent situation in much better perspective. The reader will have to look elsewhere, however, for an analysis of the current situation in Soviet agriculture. Volin mentions in part 3 the beginning of the policy changes under the current Soviet leadership, headed by Brezhnev, but the full meaning of these reforms and the results of these changes could not yet be analyzed when he wrote this book. The agricultural policies of the post-Khrushchev regime from 1965 through 1970 were the most dynamic of any in the Soviet economic area.

The book has one other flaw as a reference work. It does not contain statistical tables giving the long historical series on most major agricultural variables and relationships. One cannot find even a table presenting the production data on a major agricultural commodity such as grain. Nowhere can the reader evaluate for himself the changes in output attained by the agricultural plant. These data are available and, despite Volin's misgivings about their reliability, would have made a very useful contribution to his work.

Despite this lack, Volin's work is the most comprehensive, yet readable, study of Soviet agriculture available today.

David M. Schoonover

The Negev: The Challenge of a Desert

By Michael Evenari, Leslie Shanan, and Naphtali Tadmor. Harvard University Press, Cambridge. 1971. \$15.

Driving through the Negev, it is hard to believe that anything can survive or that people lived there for thousands of years. The Negev is arid, bleak, foreboding, and yet beautiful. But life exists, as is illustrated in this work. In fact, life is ubiquitous. For thousands of years traders have crossed from the Mediterranean coast near Gaza to the barren deserts of Arabia to the Far East. The Nabateans and Nazarinis survived in the desert as is noted in the scrolls found in the desert caves and sand. And what is this Negev? How did the ancient people survive? And how will modern Israel adapt the desert for its population?

This book, which is a culmination of a long effort to study this unique part of the world, examines the many facets of life in the desert as it was and as it is today. It is a carefully considered work, well written and concise, presenting sound analyses. It is approximately half narrative: the remainder consists of numerous photographs, maps, charts, and diagrams of all kinds. The theme of this work is that life in the desert is a matter of searching for water. The kinds of animal and vegetable life which survive in the desert have done so by adapting their physiological makeup to the changing temperatures and rainfall of the desert. The people who lived there (and those who still inhabit the desert) found water even during the most severe droughts. If the water did not come from above, it came from below, from wells. The book presents elaborate diagrams, photographs, and sketches of the many water systems used in the Negev and gives an excellent account of the ingenuity of the inhabitants in finding water for themselves, their flocks, and their agricultural crops. Here lies the interest for the agriculturists.

To study the crops and to try and duplicate the life of the ancient people, two farms were established; one was near Avdat, approximately 20 miles south of Beersheba. Crops known to have been grown 2,000 years ago were planted, and the cultivation methods used were those described in the scrolls. Wheat, for instance, did quite well. A variety called Nanasit yielded 65 bushels per acre. The authors state that this compares favorably with yields obtained in the rest of Israel. (This is an understatement. This yield is more than twice the average obtained in Israel.) The average yield for barley planted by the Bedouins is 8 to 11 bushels per acre; the experimental farm yielded 90 bushels, with just the available water and good cultivation practices. In this low-rainfall area, different crops were tried and most proved successful. However, summer crops such as sesame, cotton, and sorghum failed. Asparagus, artichokes, and perennial crops were quite successful. While extensive research was performed on plant life, animal life was also investigated. It was found that many animals exist under these dry conditions. Land snails were found in huge numbers clinging to the tops of dwarf bushes. Animals were also found underneath stones where there was protection from solar radiation, relatively low soil temperatures, and reduced evaporation. The desert is a classical habitat of spiders, centipedes, scorpions, fishtails, and many other invertebrates. It is also a refuge for reptiles, especially snakes and lizards. The chapters on life in the desert give an excellent account of the adaptation of the systems to the desert life. There are 18 chapters in this work which can be considered a text on the Negev ecology. A discussion of the geological history of the Negev is

included, and a discussion of the Nitzana papyri which offer many clues to the Negev's past.

In the epilog, the authors note some of the shortcomings of the study and some of the work yet to be done. "How did evolution work in the desert in developing plants and animals with such intricate and complicated survival mechanisms as those we have described?" Are there still untapped water resources in the desert? And can man return to the desert and live there again, as his ancestors did, working in harmony with the desert and making it green again? These and other questions are still to be answered by future students. The authors do point out that if man is to survive in the desert, he must work with it—not against it. This is a good maxim for our world today. For any student of the desert, this is an excellent account of desert survival, as well as an insight into the way early man lived and survived in this desert known as Negev.

Michael E. Kurtzig

African Food Production Systems: Cases and Theory

Edited by Peter F. M. McLoughlin. The Johns Hopkins Press, Baltimore. 318 pages. 1970. \$12.50.

This book presents a dramatic and poignant plea for in-depth case study analyses of African countries' food production problems. It fills a void in African food supply research. Seven case studies on food production in Africa are presented and analyzed in depth, focusing on the food problem in an African environment.

The authors attempt to find solutions to the following questions: (1) How should the problem of Africa's food supply be studied? (2) What are the similarities and differences among the diverse African societies? (3) What general theories about traditional and tribal society, and agricultural development, are applicable in the African context?

Food production is the most critical problem facing African societies and nations. Agricultural production is not only the dominant economic activity in Africa south of the Sahara, but it permeates every aspect of life—social, political, economic, and cultural.

The food production systems for five African tribes are studied in detail: the Haya in Tanzania, the Karimojong in Uganda, the Zande in Sudan, Congo, and Central African Republic, the Yalunka in Sierra Leone, and the Diola in Senegal.

African population has doubled in this century and the rural economy has fed this population; however, what about the next 30 years? There will be twice again as many to feed in the year 2000. Can the agricultural

sector more than double its food output over the next generation? The problem cannot be solved by merely expanding farmland. The best farming areas are presently overcrowded. In many places, cash crops often compete with food crops for space on the same farm. To feed itself, Africa must raise its yields per acre. Different agricultural systems exist in Africa under contrasting ecological, demographic, social, political, and economic conditions. Each of these systems is unique and requires individual research and policy formulation for development.

This book is also concerned with the means whereby technological change may be introduced into African food production systems. Agricultural change requires improved farm technology and a farmer or herder willing to adapt to these new changes and supply the necessary farm management. The central theme throughout the book is that African subsistence agriculture is not directed toward economic growth but toward a prestige-oriented economy where surplus produce is converted as soon as practicable into items that bring prestige—large numbers of cattle, many wives, tribal status, and command over people. This has resulted in social development but not in economic growth. Economic goals are secondary to political and sociological ones.

Special attention is given to the role of economic incentives because of the failure to recognize the importance of psychological, philosophical, sociological, and anthropological factors involved with African subsistence farmers. The creation of an incentive for economic gains is an essential step needed to bring about agricultural development in Africa. There is really little incentive for a farmer to get ahead, because of close tribal and family connections. The problem is how to get the African subsistence farmer to grow more food crops and improve his yields.

This study should prove valuable as a benchmark for future research in food production systems in African societies.

Carey B. Singleton, Jr.

Agriculture and Related Industries in Pakistan

By F. Kahnert, C. Carmignani, H. Stier, and P. Thomopoulos. Development Center of the Organization for Economic Cooperation and Development (OECD), Paris. Paperback, 452 pages. 1970, \$5.50.

A reader would expect this book to be primarily about agricultural production, including associated product and factor industries. However, the title is misleading in this respect. The book really is the report

of a study of requirements for a 5-year plan for food self-sufficiency. In it the authors move the analyses in the direction of an overall 5-year plan for Pakistan's agriculture. In fact, the last chapter, chapter VI, of the volume is entitled "A Suggested Action Programme for Agricultural Development." Food self-sufficiency became a secondary consideration as the need grew for examination of the direction and depth of general agricultural development.

Viewed in this broader context, the book is an addition to our knowledge of agriculture in developing countries. In particular, Pakistan's economic growth is reviewed and agriculture's role is highlighted. The various components needed for increasing the rate of development are fairly well stated and projected through 1975. Such projections are always subject to certain limitations; data credibility and methodology, for example. However, given the fairly good statistics of that country and the methodology used, I would be inclined to accept the authors' prognosis. However, this is true only in the technical sense. That is, one can be fairly sure that, in words of the authors, "technical means for overcoming food shortages are available"; that "advances in agricultural technology will be able to provide the breathing space" needed for other programs.

Yet having recognized the above point, this reviewer is not inclined to be over-optimistic about the reality of the situation. And the authors, having made their optimistic bow in the direction of Pakistan's "determination to tackle" deficiencies and flaws and to come up with needed remedies, proceed in their conclusions to list a number of policies and issues which have to be resolved if that country is to achieve its food production and agricultural development objectives. When one studies these policy and program issues (assuming the authors have properly identified them) and questions whether they will be faced and resolved, one can only conclude: well, *maybe*.

Students of developing economies, particularly those with agricultural interests, will find this book rewarding. It is a recommended addition to the growing volumes of country and sector development studies.

John H. Southern

Towards Full Employment

A program for Colombia prepared by an Interagency Team. International Labor Office, Geneva. 471 pages. \$4.

The International Labor Organization (ILO) launched a world employment program in 1967 under which special studies were to be made of unemployment in selected countries. Colombia requested that it be the first country to be studied, and ILO organized a large

team which visited Colombia in early 1970 and prepared the report being reviewed.

The studies were to be made in particular types of countries. Colombia represented a country with serious unemployment that showed a secular uptrend during the decade of the 1960's. The threat of even higher rates of unemployment during the 1970's loomed, although a slight reduction in unemployment occurred in 1969 and 1970 as economic recovery was strengthened by soaring prices for coffee, Colombia's principal export.

The ILO team estimated that at least one out of six persons in the active urban labor force was seeking work but unable to find it, and that probably as many again would like to work if jobs were available. No recent estimates of rural unemployment were available, but the general idea that open unemployment was not high but that underemployment was serious was confirmed in a subsequent survey by the Colombian national statistics agency (DANE).

No quick solution for the serious unemployment situation seemed feasible. The team decided that it would take about 15 years to reach a full-employment solution, given the high initial rate of unemployment in 1970 and the expected 3.5-percent average annual rate of growth in the labor force. Accordingly, a full-employment model was developed for 1985 and the measures required and the growth rates implied were detailed and analyzed for feasibility and consistency.

To achieve the 1985 goal of full employment, the total number of jobs would have to increase at a 4.8-percent rate from 1964 to 1970. A preliminary step was to calculate whether all the jobs could be found outside of agriculture, as Lachlin Currie had proposed in a widely publicized plan. They concluded that such a plan was not feasible for Colombia. Agriculture would need to provide jobs at a rate of 1.8 percent annually, compared with a growth rate of 1.4 percent in the past. This would leave a requirement that nonagricultural jobs increase 7 percent annually, more than double the rate of increase in recent years. To find so many jobs, it would be necessary to provide some shift toward labor-intensive and capital-saving types of production, so that output per person employed in nonagriculture would slow to 1.3 percent annually for the 15-year period, from 2.5 percent in the past several years. It is interesting that agricultural output per man would have to increase to 3.5 percent annually compared with 2.0 percent annually in the past, primarily to meet the demand for food and raw materials in a full-employment economy.

The team contrasted the employment or job model with the usual growth model focusing on total output or GNP. Nevertheless, the result and the recommendations were not so very different. For example, the GNP

growth rate required was 8.1 percent annually—not a bad growth target—compared with around 5 percent in the past. Included in the recommendations are two in which Colombia has made slow progress in the past. The team stresses that much faster progress in land reform is essential to achieve the growth target as well as for equity reasons. Tax rates will have to be increased and collections will have to be improved to provide some of the saving required for investment. The equity of introducing progressiveness in taxation is stressed as one means of reducing the inequality in income distribution.

Many of the other recommendations are the same as those made by "maximum growth" economists—realistic exchange rates, higher interest rates (especially for savings), restraint in the rise of wages in the modern sector, and rural and small city development. Some of them go further in tipping the scales toward substitution of labor-intensive methods—discouragement of supermarkets, computers, and imported capital equipment. Finally, a few of the suggestions for improved agricultural productivity are long-term aims toward which progress has been disappointing in Colombia. A major role is envisioned for cooperatives and farmers' organizations, similar to the successful Japanese and Taiwanese farmers' organizations. Training centers on a practical farm are suggested as a more effective way to diffuse modern commercial practices to small farmers.

This careful study has wide application for the great number of developing countries struggling with unemployment, rapid population increase, and inadequate output growth. There is clearly some compromise between a maximum growth rate and a full-employment solution, but either goal makes a strong contribution to the other. Meanwhile, the continued rapid population growth adds a sense of urgency.

L. Jay Atkinson

Regional Economic Development: The River Basin Approach in Mexico

By David Barkin and Timothy King. Cambridge University Press. London and New York. 262 pages. 1970. \$10.50.

This book packs a great deal of information into a relatively short space. Based largely on two doctoral dissertations, it is similar in organization to a thesis. The major objective of the book is to evaluate the river basin commission as an instrument for achieving regional development. It begins with a capsule review of the objectives of regional and national economic development and the major theories explaining regional growth, followed by a general discussion of the history

and problems of regional development in Mexico. The case-study method is used to assess the performance of the Tepalcatepec River Basin Commission. The Tepalcatepec experience provides much of the basis for the authors' evaluation of the strengths and weaknesses of river basin planning as a means of regional development, although several other river basin efforts are described in less detail.

Regional development projects in Mexico date back to the early years of independence from Spain, when the new government attempted to colonize some of the sparsely populated areas. Most of the early colonization efforts were at best ineffective and, in some cases, actually detrimental to national welfare. More recently, Mexico has been concerned with regional development as a step toward more complete integration of backward areas into the national political and economic scene. Since 1946, river basin projects have been used to stimulate economic activity in areas outside the Mesa Central. Four of these projects constitute the bulk of the post-World War II regional development efforts.

The Tepalcatepec River Basin Commission administered one of these projects from 1947 until its absorption into the larger Balsas River Basin Commission in 1960. Irrigation was the most important component of the commission's program, but a substantial portion of the government's total investment was for road construction. Large-scale irrigation and the associated improvements in management transformed subsistence farming into a commercial agricultural industry where cotton, melons, lemons, and other cash crops are produced for export. One of the strong points of the development from a national standpoint is its contribution to foreign exchange. Foreign capital has been attracted to the area, releasing some of the Mexican Government funds for investment in other parts of the country. The regional economy also has gained from the sale of inputs such as fertilizer and pesticides, and from processing of farm products. Substantial gains have been recorded in public health, education, and other measures of personal well-being.

While progress has been generally satisfactory, the authors' analysis reveals that some of the developmental objectives had not been achieved when their study ended in the early 1960's. Some of the changes in land use and farm production might have occurred in the absence of the project through land reform and other institutional adjustments. From the standpoint of regional economic development the area continues to be dominated by agriculture, and broad diversification of the economy has not been attained. Total population has risen

rapidly, but the more remote areas of the basin have not shared in the increase.

The authors conclude that "a more positive strategy than river basin schemes is needed to achieve the development of lagging regions." They point out that in the Tepalcatepec, and in other basins as well, the projects made little progress in decentralizing economic activity or stemming the flow of migration to crowded urban areas. They suggest that government may have to limit investment in the more developed regions and go further in stimulating private investment in the underdeveloped areas. The results of the studies in Mexico may apply in more highly developed nations in addition to those in the earlier stages of development.

William H. Heneberry

Food Consumption Statistics, 1960-68

By Organization for Economic Cooperation and Development, Paris. 296 pages. 1970. \$19.

The OECD has fulfilled the need for the consolidation of annual food consumption statistics for several countries into a central source document with this update of a volume published in 1968 (see the January 1971 issue of this journal for a review). The new edition contains some revisions, but of course it contains preliminary data for 1967 and 1968. Those interested in the most recent developments, 1969 and 1970, will have to go elsewhere. However, the OECD statistics are much more current than the comparable FAO data which are published only about every 3 years.

The format is the same: (1) Separate chapters for each of 20 countries, (2) tables for each of 40 to 60 commodities, (3) nutrient value per 100 grams, (4) total nutrient availability, (5) supply, use, and per capita consumption for each commodity. With fewer years to cover, this volume is 100 pages shorter than the earlier one (welcome news for those with limited file space) despite the inclusion of Finland and Yugoslavia for the first time.

Apparently inflation is rampant in OECD, because the price of the volume has risen from \$12 to \$19, more than an 80-percent increase in cost per page. As a result, this is a valuable publication, monetarily and statistically. It is one of the more expensive statistical publications available. We hope the rate of increase will not continue for future editions.

Hazen Gale