BOOK REVIEWS

Behavioral Change in Agriculture—Concepts and Strategies for Influencing Transition

Edited by J. Paul Leagans and Charles P. Loomis. Cornell University Press, Ithaca, N.Y. 14850. 506 pages. 1971. $12.50.

The thread tying together the diverse presentations in this symposium is the concept of the change agent system and the change target system. The change agent is the person or organization attempting to introduce or effect a change; the target is the group or individual at which the change is aimed. The problem is how to establish linkage between these two in the context of a total social system.

An effective extension education system is described by one author as but one requisite of agricultural modernization, whose "specific role is to orchestrate physical, biological, technological, economic, social, and political resources so as to reduce dissonance between the status quo and desirable new economic and social conditions."

The place of agricultural development in the total national economy is discussed. Three broad categories of activities and influences required for agricultural development, as seen by one writer, are farming itself, agri-support activities, and agri-climate, involving many people besides farm operators or even rural people as a whole. In this view, a single approach to the problem of accelerating agricultural expansion and development is not adequate. It is considered a "systems problem," one with many facets, multiple complementarities, essential requisites and sequences, and many feedbacks. Another view, looking at the components of innovation, modernization, and change, states the central question as: What kind of people with what kinds of habits are engaged in agriculture, and what, if anything, can change how many of their habits at what speed?

A writer who says that the concept of agricultural development makes sense only if it is understood as part of a concept of national development also says it is an integral part of a national process of economic transformation and growth. This is essentially a revolutionary process of social change, implying new social, economic, and political processes, new institutional structures, and changed relationships among social groups, especially those regulating the distribution and uses of wealth, power, and status.

Several papers focus on the importance of freedom of choice for farmers and others and of the national will to develop. If it is accepted that peasant farmers act in an economically rational manner, more than economic analysis is needed to bring about behavioral change in agricultural development. Theoretical formulations must include institutional factors such as major reforms and correlative shifts in power, the role of education and public administration, the strategic influence of transport facilities, and social overhead capital.

The central issue from the perspective of economics is the establishment in an underdeveloped country of an environment conducive to achieving the behavioral patterns required by modern agriculture. This is the achievement of a system of agricultural economy with the capacity to support development, using the potentialities of science, technology, division of labor, exchange, and investment. When these development functions are converted to behavioral functions, we have investors, entrepreneurs, laborers, marketing agents, consumers, public officials, and civil servants.

The issue of behavioral change in agricultural development must take into account the need to modify the antecedent system of the developing country and the consequences of the choices made about the nature of the system. Since the services and functions of the state are so crucial in national economic development, agriculture cannot be developed very far until the state becomes a stable and serviceable institution.

Concerning developmental administration, attention is given to types of control and aspects of power. Overall administrative problems are complex in developing societies because the various historic types of control are barely integrated. The most critical problem in analyzing power relations is locating and measuring it—who has it, over whom, of what kind, and how much. Various systems of measuring power include use of such indicators as wealth, status, and formal authority; tracing the decisionmaking process; employing a sociometric picture of the power structure of a unit or the concept of a power base.

A caveat by one author is that consultants cannot assume, on the word of the national leadership, that policies that would be feasible in their own countries are acceptable in another society. The ultimate target of government agricultural policy in the underdeveloped

countries is the majority of its own citizens, who must be led, aided, and motivated to make choices favorable to their national goals. Developmental administration and agricultural economics are finding a need to be as experimental and creative in adapting their own scientific roles as they expect central and local governments, the private sector, and farmers to be in confronting the demands of modernization.

In the study of society, sociologists tend to use one of two approaches: study of processes (forms of interaction) or study of social systems (component groups and their subsystems). While not rejecting these styles of inquiry, one author suggests social relationship as the analytic unit because of its specificity and because as a model, the analyst can elaborate it toward social action or the social systems level. Changes occurring in the relationships among groups and the various subsystems of society, based on the social relationship paradigm, provide systematic indexes of societal change. Development is thus viewed as a process, of which societal change is an important ingredient.

It is further pointed out that the analysis of social relationships in the context of social systems is useful because it places the relationships in their structural setting; permits inventorying related social relationships in a systematic frame of reference; and helps make judgments about the relative importance of the various relationships involved in making specific behavioral changes. However, the author says that better concepts are needed to systematically analyze development phenomena over time and across national boundaries.

The strategy for introducing innovations in developing countries, from the viewpoint of social psychology, involves introduction by the change agent of new concepts and new connections among concepts, but must also weaken connections of certain concepts to each other. In other words, a farmer must unlearn some things as well as learn new ones, which may cause some anxiety and disorientation. The writer says efforts should be made in the direction of adapting innovations to the subjective culture, personality, and social system of farmers.

A respondent on the matter of concepts in the social sciences says that the building of concepts is good, and their elaboration is necessary for discipline building, but probably not for developmental change. Needed are developmental change concepts from sociology and social psychology that the change agent can incorporate into his developmental skill and that will increase his creativity. He will then shape his tools to the extent that he understands the concepts and how to use them.

In a paper on the social sciences, the author says that the concept of the social system enables the analytical observer to move from a given subsystem to the larger system and back again, whether these systems are change agent, change target, or any other system. Elements of the social system described are status role, rank accorded by the system, power or capacity to control others' beliefs or sentiments, or other means used within the system to attain the members' ends. The norms of the social system are rules prescribing what is acceptable or nonacceptable. The end, goal, or objective is another element of the social system and represents the change (or retention of the status quo) that members of the system expect to accomplish through appropriate interaction. Ends must become motivating forces within the change targets, so the actors can more effectively satisfy their physiological, social, and moral needs, thus activating self-fulfillment. Policy and strategy must deal with all sectors of the total system and its subsystems that affect the producer.

Referring more specifically to the agricultural sciences, another author emphasizes the need for an interdisciplinary approach in developing countries, a theme which runs throughout this book. He says, in its earliest stages, all science had practical purposes, but pure science is now rated higher. This has led to greater specialization and fragmentation, making synthesis more difficult and an interdisciplinary approach more essential in both pure and applied science, and especially in agriculture. In planned and directed agricultural change, innovations must be supported by change in the economic, social, legal, and political fields as well. Indeed, changing agriculture in developing countries is often a matter of changing the very structure of society itself.

This reviewer has not done justice to the substantial contributions in this book, since it was possible only to touch on some of the highlights. The editors have done a useful service to readers with introductions to the various sections, and the last chapter contains an excellent résumé. For its many insights, the book should be "must" reading in the field of foreign technical assistance.

Helen W. Johnson

Farming and Food Supply: The Interdependence of Countryside and Town

By Sir Joseph Hutchinson. Cambridge University Press, 32 East 57th Street, New York 10002. 146 pages. 1972. $11.

A view frequently expressed nowadays is that agriculture is a declining industry whose impact on society is rapidly lessening. The author believes otherwise and

presents a thesis to show that agriculture has been an essential element in urban growth and has always made impressive achievements in promoting human welfare. The rising standard of living is largely attributable to the ability of agriculture, because of the benefits from increased technology, to depend on fewer farmers to produce more, thus channeling much manpower into the industrial sector.

The author, Sir Joseph Hutchinson, is a noted British agriculturist and the book in an elaboration of a series of lectures on comparative agriculture given at Cambridge University.

The lectures are an extensive documentation of the historical evolution and development of agricultural systems. As agriculture spread throughout the world, farming communities grew in diverse locations. The history of agriculture shows the ability of agrarian development to adapt to local circumstances and the interactions between agriculture and other sectors of the economy. Consequently there is an interdependence between farming and industry. In essence, the relationship between rural and urban occupations is one of complementarity and mutual stimulus.

The application of technology to agriculture was greatly accelerated by the industrial revolution. The pattern of modern agriculture, to a great degree, is the consequence of the demands on agriculture of an increasingly urban society, and the technological inputs that urban society makes possible.

The author uses excellent examples to denote diversities in agrarian development. Britain, India, and sub-Saharan Africa illustrate contrasting stages of change and different rates of development. The book therefore would be profitable to persons interested in studying stages of economic growth.

Jack Ben-Rubin

Water Rights Laws in the Nineteen Western States

By Wells A. Hutchins. Completed by Harold H. Ellis and J. Peter DeBraal. Volume I. U.S. Department of Agriculture, Miscellaneous Publication No. 1206. U.S. Government Printing Office, Washington, D.C. 20402. 650 pages. 1971. $4.

When Wells A. Hutchins died on September 19, 1970, he left unfinished a manuscript of a three-volume expansion of his "Selected Problems in the Law of Water Rights in the West," which was published in 1942. Two of his colleagues in the U.S. Department of Agriculture completed the manuscript, and the volume under review is the first of the three volumes to appear in print.

This volume follows the pattern of the earlier authoritative treatises on water rights by Clesson S. Kinney and Samuel C. Wiel and concentrates on those of the Western States, with the addition of a description of the water rights laws of Alaska and Hawaii. It differs in this respect from the more comprehensive, multivolume "Water and Water Rights," now being published under the editorship of Robert Emmet Clark of the University of Arizona. This companion treatise includes Eastern water law as well as Western.

Volume I of "Water Rights Laws in the Nineteen Western States" is organized somewhat differently from the "Selected Problems." Its nine chapters deal in succession with State water policies; classification, definition, and description of available water supplies; characteristics of watercourse; navigable waters; property nature of water and water rights; water rights systems pertaining to watercourses; appropriation of water; appropriative right and the exercise of the appropriative right. Like its predecessor, it is problem centered, functional rather than expository.

Considerable space is devoted to a description of the riparian and appropriation doctrines. In considering the origin of the former, the author notes that the contention of an American genesis advanced by Wiel has been challenged, but he does not choose sides. In reviewing the controversial origins of the appropriation doctrine he is more positive; he concludes that the California miners played a major role, that the contributions of the Spanish antecedents in the Southwest are "questionable," and those of the Mormons in Utah minimal.

One-third of the treatise is devoted to a consideration of the nature of the appropriative property right and the manner of its exercise. Hutchins emphasizes its measure, beneficial uses, alienation, and the relative rights of senior and junior appropriators. Nor does he neglect problems arising from the conveyance of water in natural channels, rotation in the use of water, and changes in point of diversion.

Succeeding volumes will treat ground-water rights, the adjudication and administration of the appropriative right, the pueblo water right, the ancient Hawaiian water rights, Federal-State relations, interstate dimensions of water rights, and the international law affecting water rights.

When completed, these three volumes will become the standard legal reference devoted exclusively to the laws governing the use of water in the 19 Western States.

Robert G. Dunbar

Economic Development in Iran, 1900-1970

By Julian Bharier. Oxford University Press, 417 5th Avenue, New York 10016. 314 pages. $9.

Anyone who musters the courage and energy to undertake a study of a country's total economy over a span of its most significant economic development—in this instance, ranging over two-thirds of this century—deserves praise. Anyone who has done such a remarkable job of research and of assembling so many figures, and assessing their value and accuracy, deserves double praise. Julian Bharier, lecturer in economics at the University of Durham, has done such a job.

The book is divided into four parts. Part 1 discusses the economy of Iran as of 1900; part 2, consisting of five chapters, deals with the human resources, Iran's economic structure and growth up to 1970, its fiscal and monetary policies, the State and development, and Iran's foreign trade and balance of payments. The third part consists of six chapters which cover agriculture, forestry, and fishing; mining and the oil industry; manufacturing and industry; transport and communications; other infrastructure sectors; and banking and services. The last part is devoted to projections of the economy in the 1970's. A substantial bibliography is included.

The author uses and analyzes material dating from as far back as the late 19th century.

The work shows that there is much statistical material available on Iran. While much of it is open to question, it is there and even if not all accurate, at least it offers a trend.

The author has done such a thorough job that he even informs us that "in Teheran there was only one car in 1910 and not more than ten in 1920." The work is heavily footnoted, which is helpful to a reader who wants to seriously explore a particular aspect of the Iranian economy. There are many statistical tables and charts which permit quick reference to detail on the subject the author is discussing. In addition, he tells us of the reliability of the tables.

Iran has changed much during the last 70 years. Particularly significant is that at the turn of the century, agriculture contributed 80 to 90 percent of the GNP. During the 1930's and 1940's, the share was reduced to 50 percent and now it is under 20 percent. Conversely, mining (including oil) and manufacturing, which were insignificant in 1900, contributed about 40 percent to GNP in 1970, with the major percentage increases occurring since 1950.

Since the end of World War II, the service sector—which includes agriculture, mining, and manufacturing—expanded from contributing 10 to 20 percent of GNP to about 50 percent. This growth resulted from the fact that such services as banking and insurance, power supply, telephone communication, and a series of other private and public services, were insignificant with respect to GNP at the turn of the century, but had become very substantial by the late 1940's.

With regard to these changes, the author states that "from a traditional agricultural status, Iran has therefore been transformed into one in which no single sector has great predominance over the others." This is interesting inasmuch as most of us think about Iran only in terms of oil. And certainly, the dominance of oil in the export field is absolute.

The author also states that as the importance of agriculture in the economy declined, so did the unequal distribution of income. And as the land reform program came into being—in the 1960's—and industry expanded, a broadening band of middle-income earners was created. This suggests to Bharier that income in Iran is now more evenly distributed than in 1960. But this is difficult to prove since there are no adequate income statistics. There is little question that the land reform was a political success and the economy has shifted away from agriculture, but the income gap between the well-off and the poor has probably not narrowed and it may even have grown wider.

Iran has come a long way in its development since 1900. Yet, real development has only taken place within the last 15 years, largely because of oil revenues but also because of the land reform which has helped move Iranian agriculture forward, although not as much as hoped and planned for.

The question for Iran in the 1970's and beyond is whether the rich get richer and the poor get poorer. Much of the progress that has taken place in Iran has benefited the "haves." This of course is true not only for Iran but for most developing nations and, on second thought, for the developed nations as well.

Like other countries possessing an exhaustible product—oil—Iran must look to a future without this commodity. Natural gas is an alternative which apparently Iran has much of. But in the very long run, Iran (and all oil-producing countries) must find and develop alternatives to continue its economic life. The country needs to build its industry and agriculture and the infrastructure that goes with these enterprises. Iran seems to be well on its way toward that undertaking.

It can be concluded from this work that the major progress in Iran during the recent past has come about with the strong hand of the Shah. This progress has not come easily, and certainly has taken place at some cost: An assassinated prime minister, attempts on the Shah's

life, and guerrilla activities are only some of the reactions to the push forward by Iran. But the economy is getting stronger and the GNP continues to make substantial gains, second only to Japan's. With this progress, Iran has become an attractive country for outside investment and Japan, the United States, and European countries are taking advantage of this situation. At the same time, Iran is emerging as a powerful force in the Middle East and is moving toward the goal of reestablishing some of the greatness of its long and rich past.

Michael E. Kurtzig

What's Wrong With Economics?

By Benjamin Ward. Basic Books, 10 East 53rd St., New York 10022, 273 pages. 1972. $695.

Economists have failed to integrate their microeconomic and macroeconomic theories in any effective manner.

Economists have failed to develop any satisfactory theory of imperfect competition compatible with a general equilibrium framework. They have no scientifically acceptable method of appraising the interaction of large-scale economic organizations with the rest of the environment.

Economists have failed to adequately account for the costs of making decisions in their theories. By and large, the impact of information, knowledge, and understanding on the economic process has been disregarded.

Economists have failed to recognize some of the limitations of mathematical economics. There seems to be an upper bound to the productivity of added data in improving the quality of econometric studies. This limit seems to be at a level of accomplishment not much better than that reached by a well-informed intuitive observer. The quality of many mathematical economic studies has been defined in terms of mathematical instead of economic standards, thereby raising questions of scientific relevance. Mathematical economics has been theorem seeking rather than truth seeking.

Economists have failed to make much progress in handling externalities. The interaction of economic with noneconomic variables has received minimal attention.

Economists have failed to recognize the restrictive nature of their marginalist orientation. They are primarily concerned with the preservation of the basic structure of society and with the process of control and adjustment of that society. Even if economics is the most highly developed policy science, the insistence on scientific procedures ensures that to study any dramatic change in society is unscientific.

Economists have failed to rid themselves of the myth of economics as a value-neutral science.

Economists have failed to develop a plausible decision model. Their decision models are seriously flawed because an interaction occurs between the decision criteria and the alternative choices during the decision process. This results in a high degree of interdependence among decisions. For example, the recognized phenomena of changes in preferences, attitudes, and values and such social factors as interpersonal utility comparisons have not been integrated in consumer decision theory.

Economists (neoclassical economists) have failed to incorporate the problem of income distribution into their theory. They "remain uneasily silent, fearing to transcend on the one hand the positivist norm of avoiding value-judgements, and unable on the other to think of anything interesting of a 'positive' nature to say" (p. 49).

These are some of the things Ward says are wrong with economics. The approach of the book is much more general than just the simple listing of the failings of economics. He starts with a broad outline of the development of neoclassical economics as a science. Ward shows that economics passes Kuhn's tests for the existence of a normally developing science. Economics researchers are widely scattered but form a cohesive unit based on common interests, shared commitments, and frequent interaction. They are concerned with solving problems about the behavior of nature, but typically work on problems of detail. Economists are in general agreement as to what problems are suitable for research and what general form the solution should take. Only the judgment of colleagues is accepted as relevant for defining both problems and solutions. On these grounds, economics can be classed a science.

Within this framework of a science, certain characteristics have caused economics to develop along a sharply restricted path. Economic scientists are concerned with a set of "puzzles"—problems of detail. In solving these puzzles, great use is made of "stylized facts." These are false or at least exaggerated assumptions about some of the facts of the situation being studied that are designed to direct attention away from some facts and onto others.

While economists are concerned with issues of the day, their insistence on framing these issues into this puzzle-stylized fact framework causes the issues orientation to lose relevance. This, coupled with the underlying value system economists have in common and the constraints imposed by power in the normal social science system and its environment, substantially reduces economics' importance to society.

Ward feels this positivistic, scientific orientation of economics is wrong. By our narrow focus, we have taken

the wrong path. We must break from the bounds of a positivist methodology and recognize the fiction of value neutrality. We must recognize the Velikovskyan nature of our world. It is continually changing and any attempt to find underlying laws of behavior is bound to fail. We must study the process of change rather than some sort of static norm. The emphasis of economics as a social science should be placed on social rather than science. By emphasizing science over social, we are moving down a blind alley. We need to recognize the artisan nature of economics.

No concrete solutions are offered to the problems of economics in Ward's book. The emphasis is on what we as economists ought not to do. But, as he indicates, the first step in correcting any error is recognizing that that error does exist. For this I think Ward can be commended. We do need reminding.

His positive recommendations can be summarized by the statement, "Look elsewhere." Economics should be less inner-directed. Other professions, particularly other social sciences, have much to contribute to the study of economic issues. We have much to learn from such areas as philosophy, psychology, history, communications, linguistics, and even Marxist economics. The problems, not puzzles, of economics need to be reformulated. Only by doing this is there hope for providing any basis for the development of theory to a point where formal empirical research can be expected to yield much fruit.

In reading this book, most will find arguments with which they disagree. But on more reflection I believe they will agree that the issues raised by Ward are important to the profession. In fact, most may agree with his recommendations for change. Agree in general, that is. The problem lies in implementing his suggestions.

They may not agree, however, with his somewhat pessimistic view of the value of economics as it is defined today. While the profession has a positivistic, quantitative, scientific bent today, I believe this is tempered by a good deal of pragmatism. It works. Maybe it is not the best. Maybe it is not the most efficient. But useful results are produced. If the economics profession is viewed as a young, immature, but growing profession on the road to maturity, I believe one will feel that it is not on the wrong road as Ward thinks; but it is plotting a sometimes erratic path down the rather wide, but correct, road.

If one views Ward's thesis as a directive to take bigger steps in a straighter line, I agree. But the profession is like a baby that still crawls. Walking is faster but we don't know how yet. So we keep crawling. And we should. But Ward is right in that we should not lose sight of the fact that we must try to do better. Even while crawling, we must spend some of our effort in learning to walk. This type of problem is the real danger economics faces. We must not forget that learning to walk is more important in the long run than crawling another 10 feet.

Ward's book is well worth reading because of its cogent, often lucid, commentary on the state of the art. His often wry and witty insight alone, whether one agrees or disagrees with his arguments, makes this book a pleasure to read.

William E. Kost

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