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A Framework for Analysis of Agricultural Marketing Systems in Developing Countries

By Norris T. Pritchard

Many developing countries urgently need improvements in their agricultural marketing systems to keep pace with expansion in agriculture and industry. The changes intechnology, consumer demand for farm products, farmer demand for farm supplies, and the growing interdependence of farming and marketing during development are other stimuli for modernization. Although modernization and expansion of agricultural marketing systems are now underway in developing countries, progress generally is slow. It is visible mainly as small, but important, islands of modern marketing in the midst of now antiquated systems inherited from past generations.

Accordingly, many developing countries are eager to hasten expansion and change in their agricultural marketing systems. But to formulate effective improvement programs they need comprehensive economic analyses of agricultural marketing in the context of economic growth, as well as studies of specific marketing operations. The purpose of this paper is to outline some of the broad elements in such an analytical framework. Atotal-systems research approach can help policy and program officials to identify present and emerging marketing problems and to understand the intricate, changing linkages binding agriculture and marketing together. It will further aid in setting policy priorities, selecting areas for specific action, and hastening agricultural and general economic development.

The Research Framework

A comprehensive analysis of agricultural marketing systems requires a broad analytical framework to supply essential operational research questions and to indicate appropriate research methods. A key element in this construction is the theory of market structureconduct-performance analysis, using a broad definition of structure. A second major part of the framework is a set of widely known economic theories relevant to marketing. These include the principles of consumption, demand, production, economies of scale, pricing, marketing information, firm behavior, and business management. A third key feature is the theory of effective competition as a dynamic process. A fourth major element is the general theory of economic growth. Growth concepts are especially important because the research, by definition, encompasses agricultural marketing in growing economies now in early stages of development. The main thread binding the theories into a useful framework is the concept of agricultural marketing as an organized. operating behavior system within the national economy. Completion of the analytical framework further requires definition of agricultural marketing, and recognition of basic economic. technological, and social restraints in the environment in which marketing systems function and change.

Definition of Agricultural Marketing

Agricultural marketing is defined here as agriculturally oriented marketing. It embraces all operations and institutions involved in moving farm products from farms to consumers, in providing production and consumption incentives to producers, marketing firms, and consumers, and in distributing farm supplies—feed, seed, fuel, fertilizer, and machinery—to

farmers. Thus, agricultural marketing covers ssembling, transporting, processing, storing, ackaging, wholesaling, financing, retailing, market information, pricing, market organization, competitive relationships, bargaining, selling, procurement, product and process innovation, and exporting of products of farm origin. It also covers the similar counterflow of farm supplies to farmers. Accordingly, this concept of agricultural marketing embraces the whole of the food, feed, seed, and livestock industries. However, for such other agriculturally oriented industries as textiles, tobacco, chemicals, and farm machinery, the need for holding the research program to manageable size requires restriction of the concept to those marketing operations that involve these other industries in direct contact with farmers as first sellers or final buyers.

Market Structure Analysis

For a comprehensive analysis of agricultural marketing systems in the context of economic growth, market structure analysis is a valuable, but often neglected, research tool. Whereas much of economic theory abstracts from marketng, market structure analysis postulates causal relations running from industry and market structure through the conduct of marketing firms to their performance, and, at times, from performance back to structure.2 Market structure analysis is problem oriented. It may be positive or predictive in purpose and either static or dynamic in nature. It is compatible with other economic theory and, in empirical studies, either a broad or a narrow concept of structure may be used. These are important advantages of the theory for studies of marketing in developing countries where (a) industry and market structures are changing and (b) governments are seeking to improve market performance by making specific changes in market organization.

In recent years, market structure has become more and more narrowly defined as "those characteristics of the organization of a market that seem to influence strategically the nature of competition and pricing within the market."3 The strategic characteristics most emphasized are the degree of seller (buyer) concentration as measured by numbers and size distributions of firms, the degree of product and service differentiation among sellers, and the conditions of entry into an industry and its markets.4 This narrow concept of market structure, however, seems unsatisfactory for agricultural marketing studies in developing countries. The emphasis on only three of the many elements of market structure influencing conduct and performance reflects a consensus on the critical policy issues in marketing in advanced market economies. Indirectly, it suggests that acceptable solutions have been found for the many excluded, more elementary, structural problems of these highly developed marketing systems.5 But in developing countries, agricultural marketing, like almost everything else, is in early stages of development. The important structural problems are often not well known. They are more numerous, and more elementary. For example, development of a system of uniform weights and measures and a body of law on contracts and business organization may have far more importance for market performance than action to reduce market concentration in economies with fragmented market structures, Also, the limited degree of product differentiation in a developing economy, with its limited outputs of goods and low effective demand, may be less important than deficiencies in structure that reduce productivity.

Although market structure analysis becomes more difficult and complex as the definition of

⁴Clodius and Mueller, op. cit.

¹ W. F. Mueller. Some Market Structure Considerations in Economic Development. Jour. Farm Econ. 41(2), May 1959.

² J. S. Bain. Industrial Organization. John Wiley and Sons, New York, 1959. Also R. L. Clodius and W. F. Mueller. Market Structure Analysis as an Orientation for Research in Agricultural Economics. Jour. Farm Econ. 43(3), August 1961.

³J. S. Bain. Barriers to New Competition. Harvard Univ. Press, Cambridge, 1962, p. 7.

⁵ A few examples of these excluded structural elements include the many organizational variables often referred to as "rules of the game," set by law and business custom; formal and informal contractual arrangements among business firms; the structures of closely related industries such as agriculture; and some basic economic and technological features of products and processes. In all cases, the key requirement is significant influence on business behavior and performance.

structure is broadened, there are offsetting advantages. Chief among these is improvement in the odds for correctly identifying urgent and emerging structure-performance problems and determining causal relationships. These are essential first steps to finding practical means for improving market structures and performance.

Market conduct is "the patterns of behavior that enterprises follow" in marketing. 6 Conduct is what businesses do; it is their policies and strategies. Market performance is the results of market conduct. These include prices, profits and losses, product and service volumes and qualities, product innovation, technical and economic progress, diffusion of benefits of progress, and other events. In market structure analysis these performance variables are related to observed conduct and structural variables to determine lines of causation. 7 The next step, with great interest for developing countries, is estimation of potential improvements in industry and market performance resulting from a specific change in structure, such as a new food processing plant, an improved system of weights and measures, new grading standards, or land reform in agriculture.

Relevant Economic Theory

Agricultural marketing has no distinct body of theory of its own. Therefore, analytical frameworks for marketing studies are sets of relevant theories drawn from general economics.⁸ These

⁶ Bain, op. cit., p. 9.

include the well-known theories of consumer demand, production, pricing, farmer deman for inputs, market information, behavior of the firm, innovation, storage, transportation, competition, countervailing power, and others. Among these, the theories of consumer and farmer demand for farm products, inputs, and marketing services are especially useful for explaining and predicting how and why the structures of these demands change during development.9 The theory of production is important since most marketing operations involve the production of goods and services. They require inputs of productive factors. With technological advance in marketing, rising wages, and increases in market size during development, analyses of economies of scale and changes in substitution relationships among productive factors acquire great importance in marketing studies. Economic-engineering analyses, based on the theories of production, firm behavior, and demand, are particularly valuable for estimating the feasibility of the new marketing facilities needed for modernization of agricultural marketing systems in developing countries.

From national income accounting and inputoutput analysis come useful concepts and in formation for study of a major growth phenomenon. This is the changing structure of linkages among agriculture, marketing, and other economic sectors. Increasing interdependence of economic sectors, such as agriculture and marketing, is a hallmark of economic development. Other useful economic concepts may be drawn from welfare theory, macroeconomic analysis, and the theory of international trade.

Finally, useful analogies may be drawn from the history of agriculture and agricultural marketing in the developed countries. By current standards all of these countries once were seriously underdeveloped. They also were predominantly agricultural until quite recently. 10 Moreover, some of the advanced

⁷ In practice, it is often both difficult and unnecessary to distinguish between conduct and performance. In these cases, market structure analysis seeks to determine direct structure-performance relationships. Frequently, too, the nature of the conduct variable is obvious from the performance. For example, a firm that markets many new products probably has a strategy of product innovation and a substantial product research and development program. Similarly, it may be as difficult as it is unimportant to distinguish sharply between a market strategy of low prices and the prices.

⁸ Relevance is largely determined by the economic functions performed in a marketing system, the nature of the specific marketing problem under study, and the economic forces and restraints in agricultural markets.

⁹ The static nature of the theory is a complicating factor but does not bar its use.

¹⁰ P. T. Bauer and B. S. Yamey. The Economics of Under-Developed Countries. Nisbet and Co., Herts, England, 1963, p. 47.

countries have current growth rates and pontials for future growth so high that they may in this sense be considered relatively undeveloped countries. 11

Concepts of Effective Competition

The theory of effective competition as a dynamic process is a third major element of the analytical framework. 12 For comprehensive analyses of agricultural marketing systems in developing economies it has several advantages. Its basic assumptions are more realistic than those of pure competition. As a result, they provide more useful, although less precise, guidelines for empirical study. Unlike the theory of pure competition, the theory of effective competition attempts to establish attainable. as well as desirable, standards of industry and market performance. In view of the high importance of improving market performance in developing countries this realism has great value for researchers, policy officials, and others. Furthermore, it enhances the usefulness f market structure analysis with which the eory of effective competition is highly compatible. 13 Another advantage of the theory is that it expressly allows for dynamic economic conditions by viewing competition as a dynamic process rather than as a static, equilibriumseeking activity. The main disadvantage of the theory of effective competition as a guide to empirical research is its lack of refinement and precision. Its main principles cannot be expressed in the language of mathematics. As a result, quantitatively precise research results are not easily generated. Nevertheless, in the

11 Students of marketing are also aware that useful insights on marketing systems and operations can be gained from several other disciplines. These include geography, political science, philosophy, sociology, anthropology, and social psychology. Economics, of course, remains the foremost discipline necessary for marketing studies, including comparative analyses of marketing systems. See: David Carson. International Marketing: A Comparative System Approach. John Wiley and Sons, New York, 1967, p. 495.

13 Clodius and Mueller, op. cit.

resulting choice between more realism with less precision and the opposite, pragmatism strongly favors realism.

Theory of Economic Growth

Economic growth is a major national goal in all countries and a significant fact of modern life. It may be defined as a significant, sustained increase in real output per capita, or in total, as measured in national income accounts. 4 Growth always involves sweeping changes in technology, economic and social institutions, structures of production, industries, markets and demand, and modes of life and work. 5 Significant increases in real output per capita are on the order of 15 percent, and more, per decade. Sustained growth is expansion of real outputs and consumption over long time periods, usually several decades, with allowance for short-run variations in rates. 16

In recent decades, many attempts have been made to develop mathematical models of the growth process. So far, however, the models are not particularly useful for empirical studies of development. Most are far too simple in design, with only one or two independent variables, for a process as complex as economic growth. More importantly, the basic assumptions built into the models have little relevance to the real world.¹⁷ As a result, the research

¹² For a detailed discussion of the theoretical concepts see: J. M. Clark. Competition as a Dynamic Process. The Brookings Institution, Washington, D.C., 1961.

¹⁴ Simon Kuznets, Modern Economic Growth, Yale Univ, Press, London, 1966.

¹⁵ The increases in population that usually accompany economic growth probably are not an essential condition.

¹⁶ National income accounting generally understates true increases in levels of living during growth. No values can be given to the increases in leisure time, the reduced drudgery of work, the greater economic freedom provided by rising incomes, and the improvements in product quality, health, and nutrition not fully reflected in their costs.

¹⁷ F. H. Han and R. C. O. Matthews. The Theory of Economic Growth: A Survey. Surveys of Economic Theory, vol. II, Macmillan Co., New York, 1966. The authors reviewed growth models developed since the late 1930's. More specifically, Schultz writes:

"... growth economists have been producing an abundant crop of macro-models that are ... neither relevant ... nor useful in examining the empirical behavior of agriculture as a source of growth." T. W. Schultz. Transforming Traditional Agriculture. Yale Univ. Press, New Haven, 1964.

economist must be content with some qualitative concepts of the development process.

Economic growth has many origins. The obvious sources are increases in the supply of productive resources -- labor, land, and investments in human and physical capital. But in most countries, the primary source of economic growth per capita is improvements in the quality of resources, 18 Quality means efficiency in terms of output per unit of input. Increases in efficiency come mainly from technological advance in production, marketing, and business management, from improvements in resource use through changes in industry structure, and from increases in scale of economic units. Scientific research, education, and communication are the foundation of technological advance. Indeed, a hallmark of modern economic growth is the increasing application of science and technology to production, marketing, and business management. Increases in scale of economic units are made both necessary and possible by advances in technology and in the economic size of markets. Changes in industry structure that increase efficiency include transfer of labor out of agriculture, increases in the size of businesses, and decreases in most types of self-employment.

Economic growth is a pervasive force. This is assured by intricate economic linkages among sectors and industries, by the nearly universal nature of science, knowledge, technology, and management, and by other socioeconomic forces. Except in primitive societies, all economic sectors are so interdependent that a change originating in one, sooner or later, induces changes in others. For example, an increase in farm outputs usually expands volumes of products moving through marketing channels. This affects costs, prices, incomes, and employment in assembly, processing, transportation, and distribution. There are also third and fourth order impacts on suppliers of fuel, packaging materials, and capital goods.

Improvements in the quality of the products of one industry often increase efficiency in others, especially when the outputs of one are the inputs of others. Examples include the farm and food machinery industries, transportation, communication, business machine packaging, and others. The "spin-off" of civilian products and processes from military and space research has received much publicity. Moreover, as economic growth moves the economy toward ever more specialization and commercialization, the interdependence of economic sectors and the pervasiveness of growth forces become more intense. Increasing interdependence during growth is especially pronounced in agriculture and agricultural marketing. 19

In a growing economy, consumer demand rises and its structure changes significantly. Pronounced shifts in consumer expenditure patterns result mainly from important differences in income elasticities of demand for different goods and services, 20 For example, food expenditures, even in low income countries, rise in value but fall as a share of consumer incomes because of generally low income elasticities of food demand. Among foods, income elasticity differences promote continuing change in food consumption patterns. Also during growth there is an expansion of knowledge which brings an awareness of new things and new concepts of living. New products give consumers more consumption alternatives and the growin economy becomes increasingly market oriented. These changes have high significance for agriculture, agricultural marketing, and national policy for food and agriculture.

On the supply side, economic growth is marked by significant increases in the economy's productive capacity and by equally important changes in the structure of production, industries, and markets. Technological advance provides more efficient production and marketing processes and new products. These are needed to satisfy consumer demand for greater diversity in consumption and to stimulate demand enough to assure full use of the economy's

¹⁸ E. F. Denison. Why Growth Rates Differ. The Brookings Institution, Washington, D.C., 1967.

¹⁹ A. R. Ayazi. Interrelationships Between Agriculture and Other Sectors and Their Implications in Terms of Planning. FAO, Monthly Bul. Agr. Econ. and Statis., October 1968, Rome, p. 1-9.

²⁰ Price elasticities among different goods and services also vary greatly. During growth technological progress and rising wages alter relative production and marketing costs and prices of most things. Thus, price elasticities may accentuate, or offset, income effects on consumption.

expanding capacity to produce. Most new technology reduces the need for unskilled labor, raises demands for skilled workers, scientists, and executives, decreases the drudgery of work, and permits real wages to rise. It makes old plants and equipment obsolete, increases capital investments per worker, raises the scale of producing and marketing units, increases the share of fixed costs in the cost structures of most firms, makes production and marketing more complex, and lengthens production planning periods. Numbers of large production and marketing organizations increase while many small, family enterprises disappear.

Emphasis on marketing increases in growing economies. Profitable utilization of larger producing and distributing units depends on high sales volumes. Accordingly, marketing firms have increasing need for influencing consumer behavior and for control over supplies of basic products. Farmers come under increasing pressure to improve delivery schedules and the level and uniformity of quality of outputs. The multiple, circular flows of goods, services, and credits linking agriculture, agricultural marketing and other sectors become stronger and more complex during growth. There are also rising pressures on national governments for effective policies of full employment and economic stability to maintain consumer purchasing power, enterprise profits, and a satisfactory rate of economic growth. Growth further stimulates urbanization of the population, places greater demands on capital and product markets, and induces significant changes in educational and political institutions and in ways of living.²¹

Special Conditions in Agriculture

The facts of economic development differ markedly among countries, regions, and economic sectors but the fundamental nature of the growth process is universal. The basic socioeconomic trends in all growing economies are strikingly similar.²² These facts largely

²¹ Kuznets, op. cit. Clark, op. cit. Also: J. K. Galbraith. The New Industrial State. Houghton Mifflin Co., Boston, 1967.

explain the absence of special theories of growth for agriculture, marketing, and economies in early stages of development. Nevertheless, there are important practical reasons for considering the development of agriculture and agricultural marketing as distinct fields of study linked to the study of economic growth.

First, agriculture in nearly all countries is the largest industry. In developing countries this superiority is overwhelming. In many, agriculture requires more than half of the total labor force and food expenditures are more than half of all consumer expenditures. Much of industry and commerce is strongly oriented to agriculture as a source of raw materials and as a market for manufactured products. For example, in most developing countries, from half to two-thirds of all manufacturing involves the processing of farm products.²⁴ Commerce probably is even more dependent on agriculture. Thus, the development of agriculture and its marketing system, in developing countries, is at the heart of the growth process.

Second, agricultural production is almost exclusively a biological process. From this fact flows a variety of special technological, educational, and economic problems important to agricultural and marketing development. Third, most farm products are subject to much lower income and price elasticities of demand than most nonfarm products and services. Accordingly, general economic growth means that a declining share of the national income is spent for food and that the share of the gross domestic product originating in agriculture falls. From this comes the necessity to transfer resources, especially labor, out of agriculture. Fourth, this essential outmigration of people is fraught with more complexities, hardships, and restraints of an economic, technical, educational, social, and political nature than those prevailing in most nonfarm sectors of the economy. Finally, agriculture, more than any other economic sector, is the bastion of small-scale, family enterprise. This has much importance for methods and problems of stimulating and

²² The growing volume of literature on agricultural development and general economic growth continues to confirm this universality.

^{23&}quot; There are no special economic theories or methods of analysis fashioned uniquely for the study of the underdeveloped world, "Bauer and Yamey, op, cit., p, 8,

²⁴ FAO. Agriculture and Industrialization. The State of Food and Agriculture 1966, Rome, 1967. pp. 75-121.

sustaining growth and adjustment in agriculture and marketing.

The Functionally Complete Structure

At this point the research framework lacks the appearance of the functionally complete theoretical structure that is desired. It seems more like a collection of essential building materials and tools that clearly are relevant to analysis of agricultural marketing systems and operations in developing countries. Relevance, however, is one of the basic tests of a useful theory. The other requirement is enough consistency among the several elements of the framework to provide, in a practical sense, a coordinated, if not actually an integrated, analytical framework.25 This essential coordination is provided by several strong threads that, although not immediately obvious, link the several theories into a loosely fitted, but workable, research framework.

First, there is the economist's basic concept of the economy as an organized, operating behavior system. Agricultural marketing, as defined above, is an important subsystem in the economy. Like all operating systems it has institutions, participants, functions, inputs, outputs, behavior patterns, and complex linkages among the variables. This concept of a functioning system in the process of growth naturally leads to substantial synthesis of the principles of growth, changing structure-conduct-performance relationships, dynamic competition, and changing inputs, outputs, functions, and technology.26 That is, the basic concept of agricultural marketing as a functioning system provides needed unity to the research framework and, therefore, to the empirical research it serves as an analytical tool.

Second, there is the coordination provided by the primary purpose of the research and its pragmatic orientation. The research is concerned with identifying and evaluating practical means of modernizing (improving) functioning agricultural marketing systems in developing countries to meet their needs for expansion coupled with higher performance. The sole purpose of the analytical framework is to provide useful guidelines to empirical study. Accordingly, in practice, the purpose and orientation of the analytical framework and the research provide much needed unity of direction and content.

Finally, the principal elements of the theoretical structure have substantial mutual compatibility. Therefore, they are easily fitted together provided that the requirement for consistency is not applied too rigorously. For example, market structure analysis is easily harnessed with growth theory in developing useful research questions about the nature of the structural changes required in agricultural markets to promote growth and improved performance. The theory of effective competition as a dynamic process is closely related to, and even incorporates aspects of, market structure and growth theory. Even the normally static theories of consumer demand, production, price. and firm behavior can be used, with some difficulty, in harness with the other theoretical elements to provide useful research questions. In short, it seems evident that the set of relevant economic theories described briefly in this paper forms a loosely fitted, but functional, analytical framework for empirical study of agricultural marketing systems and operations in developing countries.

Some Further Observations

There are several reasons for thinking that the need for an analytical framework for study of agricultural marketing systems and operations may be even more urgent in developing than in advanced countries. These reasons include the more limited knowledge of marketing in developing countries, severe deficiencies in essential statistics, a paucity of published research, higher costs of conducting research, and more urgency for finding practical means of promoting improved marketing performance. For the marketing expert from a developed country the wide gulf between the system that is

²⁵ Wroe Alderson. Marketing Behavior and Executive Action. Richard D. Irvin, Homewood, Ill., 1957. ch. I.

²⁶ Ibid.

familiar to him and one in early stages of development is another compelling reason for an analytical framework that emphasizes basic theory. These factors, moreover, have significant impacts on the nature of the research approach and program and on research techniques.

Because so little is known about agricultural marketing systems and operations in most developing countries the first need is to describe accurately and meaningfully the systems that exist. Description must precede essential evaluation of marketing structures and performance, major forces responsible for changing structure-performance relationships during development, the changing strategic role of marketing during growth, the impacts of development on marketing, and related factors. These analyses are required for identification and evaluation of priorities among marketing problems and for subsequent determination of practical means for improving agricultural marketing systems and operations.

Given these research requirements, the limitations on essential information, and the qualitative nature of some key variables in marketing, much reliance must be put on description as the main research method. Descriptive research, unfortunately, has a strong tendency to be superficial although the need clearly is for analytical description. The difference is substantial. Analytical description is description at its best--rigorous and firmly grounded on, and guided by, relevant economic theory. That is, analytical description requires a carefully constructed theoretical framework.

For the marketing researcher from a developed country responsible for analysis of agricultural marketing in developing countries an analytical framework seems indispensable. There is a wide gap separating marketing systems in early stages of development and the complex, sophisticated system he knows so

well. Many familiar landmarks, the historical record, and the large body of completed research are generally absent. The developing marketing system functions in a different environment, must meet different standards of performance, and may be faced with rather elementary problems. These problems may even be unfamiliar to this marketing expert because they were reasonably well solved in his native land long before he began his career. As agricultural production experts have learned, the conditions and problem of a developing country's agriculture often differ so much from those in other developing and advanced countries that common ground is not established without returning to elementary principles. The difficulties of transferring marketing institutions. methods, and experience from one country to another generally are conceded to be even greater than those of transferring farming methods. Accordingly, research must start from a firm foundation of relevant theory. It is an incomplete, but essential, chart for sailing in unfamiliar waters. Later, as empirical studies develop essential statistics, other descriptive information, and analyses of marketing in developing countries, the research framework can be more explicit, complete, and otherwise improved.

Finally, analytical description is by no means the only suitable research technique for these analyses. Analysis of the marketing problems identified in the early stages of the studies may require, at one time or another, the whole range of research tools economists employ, including economic-engineering and econometric studies. But regardless of method, the major objective remains unchanged. It is to determine practical means of improving agricultural marketing structures and performance in developing countries in the larger interest of accelerating agricultural, marketing, and total economic development.