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PERSPECTIVES FROM A PILOT STUDY OF FARM PRODUCTION, MARKETING
SERVICES AND AGRICULTURAL SYSTEMS IN THE EASTERN CARIBBEAN

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ABSTRACT

A pilot-exploratory study involving the selected islands of Dominica, Montserrat, St. Kitts, St. Lucia, and St. Vincent was conducted during 1985/86. This study focused upon the components of agricultural marketing communication infrastructure and on the organizational and specialization technologies employed by the farmer sector. Data collected were analyzed to assess the extent of production-market development, the patterns of development needs in production and marketing among the selected islands, and factors which could support or inhibit the introduction of service and/or system change.

Primary data were collected via surveys and interviews with representatives of government agencies, corporations, private agencies, field experts, and individual farmers. The analysis employs a social network perspective as an overlay for discussing agronomic practices, processing, marketing, and sector services in the context of existing and potential operation models.

INTRODUCTION AND BACKGROUND

The acknowledgement of problems pertaining to agricultural production and marketing in the Eastern Caribbean is neither new nor unique. In 1975, a regional effort was instituted to develop "a specific plan for the increase of food production, including fish, in the entire Caribbean Community Area designed to achieve the greatest possible measure of food self-sufficiency in the Region" (Regional Food & Nutrition Strategy, Vol. I., p. 3). The "Strategy" set forth six major problems in production and marketing and identified nearly 40 activities necessary for attaining planned improvement objectives. In 1981, the regional strategy was formalized. The strategy "texts" (5 volumes) synthesize the rudimentary areas of needed attention in terms of specific operational and technological functions, or subjective fields of expertise... a logical and practical means of addressing the problem issues.

However, recent studies of the region's agricultural and economic development efforts portrait some major obstacles which observers claim will prevent the realization of the "regional strategy" objectives (Bonnick, 1985; Long, 1985; Axline, 1986). In effect, these works point to problems in both politics/policies and finance structures that depict the scenario for failure in the regional effort. Works documenting the counter scenario are basically nonexistent. There is little argument that the region needs to unite on specific fronts to establish a level of self-sufficiency and

a position in the world market, but there is little evidence that this will occur solely from a "top-down" approach.

What possibly could occur from the "bottom-up" in this "strategy" has not at all been established. Unquestionably, those producer units (farmers & suppliers) need assistance in many forms, and this study assumes that these units could provide some direct assistance of their own if given certain guidance, opportunities and local support.

Our pilot study of selected islands in the Eastern Caribbean was intended to acquire an overview of the production and marketing problems, conjure a non-economic judgement with regard to the extent of progress being made under the auspices of the "regional strategy" and identify specific problematic areas which might serve as linkages between our institution and the Eastern Caribbean agricultural community. Secondly, expectations were to discover some "bottom-up" factors which could facilitate the achievement of the objectives of the "regional strategy".

STUDY APPROACH

To accommodate the exploratory nature and limited scope of this study, a simple approach was chosen. Basically, two concepts were gleaned from the "regional strategy". These concepts or "target activities," 1) communication infrastructure, and 2) technological status, were considered important structural components of the production and marketing systems in the region. In addition, they are dynamic components that can be influenced at any point within a system, and can be fairly well examined without elaborate analytical techniques. One other very important feature of these selected factors includes their propensities to expose exogeneous or intervening variables during the course of examination.

In order to acquire an overview of the communication infrastructure and organizational/specialization technologies on the selected islands, respondents were asked general questions concerning their operational environments in the context of their role as both producers and consumers of information and technologies. In addition, their needs for information and/or communication systems were explored. Secondary data, examples of published communication documents and resource/reference schematics, were also collected for content analysis.

A. Components of Agricultural-Marketing Communication Infrastructure: The components of agricultural-marketing communication infrastructure provide a non-economic indicator of sorts from which basic assessments can be drawn. Production and market-related information systems may be viewed as measures of adopted technologies and/or measures of adequacy/appropriateness for specific situations. The fundamental premise that "information is a form of power" applies. However, the term "power" in this application should not connote a conscious effort for dominant relationships; rather, it should be viewed as a "power-of-means" or resource to strengthen and maintain an interdependent system.

B. Organizational and Specialization Technologies Employed by the Farmer Sectors: Organizational and specialization technologies that are employed in any given production-marketing sector provide an indication of

the diffusion of operational and maintenance concepts. Organization infers a specific approach to resolving problems, instituting change, or accomplishing common tasks. Fundamentally, the organization represents a concentration of power entrusted to make decisions in order to achieve these certain purposes. The structural and functional format of an organization represents its own level of technology or complexity. In the context of the study, organizationa are viewed as vehicles which are employed to enhance production and/or marketing of agricultural goods and services.

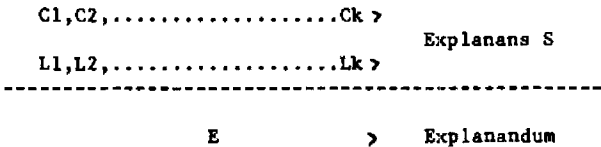
The specialization factor represents the degree of concentration or exclusiveness an individual or group selects to achieve production and/or marketing objectives. Specialization may be determined by internal and external forces, and offers a relatively good means to assess the condition of an agricultural economic sector. To a degree, measured specialization can indicate levels of development, and/or a multitude of problem which tend to restrict development.

LEVEL OF ANALYSIS

As a pilot-exploratory study, it should be noted that the analysis is limited in both scope and specific detail. At best, the synthesis of data collected will set forth some generalizations or hypotheses which should undergo more rigorous testing in future studies. Without doubt, there are significant variables (particularly economic) which require study before any concrete conclusions can be drawn.

Data of the nature collected in this study is primarily qualitative. The analysis involved the listing of responses to survey items and the synthesis of item responses into general descriptive statements. A deductive-nomological or "pattern" model of analysis provides the rudiments of evaluation and a limited opportunity for explanation of a problematic phenomenon.

"The deductive-nomological model of explanation has the following structure:



The C1,C2,...Ck refer to the characteristics or facts of the particular situation and L1,L2,...Lk refer to certain laws of strictly universal form. These laws state that every time some particular set of phenomena (C1,C2,...Ck) occurs then some other phenomenon (E) will also occur. Together, the characteristics and the laws jointly make up the explanans... The D-N model suggests that to scientifically explain a phenomenon is to deductively subsume the phenomenon under a set of laws and, therefore, to show that the phenomenon could be expected to occur" (Hunt, 1976; p. 27).

SUMMARY OF SELECTED CASES

Dominica: Dominica represents an island which is concentrating a great deal of effort and planning into its agricultural sector. The thrust of agricultural-production development is aimed at the attainment of maximum self-sufficiency and commercial export expansion.

The organization of the overall Dominican development effort has been quite comprehensive. Governmental, quasi-governmental, private organization, and commodity-type associations concerned with the welfare of the development and maintenance of agriculture are diffuse and recognizable. These entities constitute a foundation to provide existing or potentially-effective vehicles for viable information exchange in both production and marketing. The concept of commodity specialization organizations has definitely been introduced, and there appears to be some promise of their worth in terms of strengthening the local propensities for export markets. Facilitating examples of such organizations would include the operations of WINBAN, the varieties of specific grower cooperatives, governmental price regulations for livestock products, and the operation and management of the Central Market. Agricultural extension services to the farming community are fundamentally established. In general, production and marketing information systems appear to be emplaced and in fairly good order, and the quality of information disseminated (with respect to production and marketing topics) seemingly is having a positive impact on those in the agricultural sector who accept external guidance media and advice.

In the domain of technologies, Dominica presents situations of both dire needs for new technologies, and examples of appropriate interim alternative measures for existing circumstances. The lack of a basic feeder transportation infrastructure has generated a problematic scenario for the development of market-oriented technologies. For example, the lack of feeder roads in the hinterlands limits the "real" demand of certain post-harvest technologies. If the quality of produce is reduced due to its initial transportation handling, there is little that can be done to reinstate a higher quality in the product at a point further along in the processing system. Thus, if adequate road systems did exist, emphasis would be focused on other factors of quality standards, such as storage and processing. Presently, the promotion of such management practices as minimum harvesting (on-demand harvesting), which allows for "natural" storage and presents limited stress on transport systems, makes good sense.

The problems and needs in production and marketing as expressed by respondents are relatively consistent. Issues concerning the need for local transportation systems (feeder roads and/or transport services), export transportation systems (international airport and port facilities) were cited most often by the agricultural experts and technical support service personnel, than they were by the farmer respondents. In addition, the non-farmer respondents identified the need for better quality control (post-harvest) systems, and attributed this problem to poor transport measures, lack of farmer interest, inadequate storage and packing standards, and a general absence of quality demand placed on the producers by the market. Farmers tended to express concern on issues involving the high costs for feeds (livestock and poultry producers), fertilizers, and pest controls, and the low prices they receive for their production. Most farmers indicated an awareness of local market information, information sources,

and technical/extension services, but felt that their problems could be best solved through increased direct governmental supports (capital improvements, price guarantees, direct services) and better access to other trade areas (U.S. and Europe).

Montserrat and St. Kitts: Agricultural production on the islands of Montserrat and St. Kitts is small in scale and traditional in nature. From an economic perspective, agricultural development on Montserrat does not represent a very high priority. Nevertheless, it is recognized that improvements in local farming practices could contribute positively to a generally improved standard of living, and concomitantly, to a stronger economic structure. St. Kitts, on the other hand, has attempted to emphasize agricultural development as a priority and viable potential for economic growth.

The local organizational infrastructure concerned with agriculture on Montserrat and St. Kitts is quite limited in size and scope. There are some market-related cooperatives which offer export outlets, a small extension service, a United Nations Development Program association (on Montserrat which provides guidance and training for young aspiring farmers) and a governmentally-sponsored scholarship program (on St. Kitts which supports advanced technological training of local personnel). In general, the organizations provide information and services to the extent of their capacities, but the general scarcity of resources and available expertise prevent the full range of functions needed to enhance agricultural production and marketing. Further, the primary concern of the organizations on Montserrat and St. Kitts has been in the area of marketing, which has left somewhat of a gap in attention to needs in the areas of production.

The utilization of technologies in the production and marketing sectors is at a basic-to-none level. Simple hardware and tools are difficult to secure and relatively expensive for the independent farmer. Some production concepts (e.g., small farming systems, and intercropping) are being introduced. There is no coordination or common facilitation of marketing processes. There is some general awareness (and limited practice) concerning the propensities of commodity specialization, but tradition and the lack of an existing demand-oriented marketplace has inhibited any great change.

The problems and needs that emerged from the survey indicate a specific emphasis on transportation, post-harvest technologies, local market instability, labor shortages, and export trade opportunities. The present scale of agricultural production on the islands makes public investments for capital improvements a very risky issue. Farmer and non-farmer respondents felt that general improvement of extension services/production training could significantly improve the local market situation. The farmers on St. Kitts expressed and exhibited a great deal of interest in adopting various production technologies, but also indicated a strong tendency to compete aggressively among themselves (a factor which they and the non-farmer respondents recognize as an existing problem in organized marketing efforts).

St. Lucia: The development of agricultural production and export marketing is a primary objective in the overall economic development strategy of St. Lucia. This dynamic objective, as generated by the

governmental sector, has instituted a great deal of emphasis on the organization of service-related entities. The establishment of the Marketing Board as the principal agency for export trade and price regulation has created a focal point for all commercial agricultural interests. The government and various commodity-related associations provide a broad array of goods and services to producers and marketers. In addition, the government has strongly supported higher degrees of agricultural specialization, and has established some incentive programs to the farm sectors.

St. Lucia is a relatively rugged island and unsuited for the utilization of a great deal of the existing large-scale farming technologies. However, examples of new appropriate practices in production and marketing systems (in particular) are evident. Storage facilities and some quality control programs for specific commodities are emplaced. Local market research has enabled significant improvements in the supply and delivery of produce to point sources, and limited joint-ventures with other islands in the Eastern Caribbean have stimulated an increase in exports within the region. Radio broadcasting of market and technical information to the farming sector has been effective as is the comprehensive local publication network. Since bananas are the principal cash crop of St. Lucia, WINBAN plays a key role in providing production goods and services. Overall, there are a number of agriculturally-related organizations that can be identified on the island. Some are relatively successful in terms of their functions to serve the industry, others are experiencing levels of difficulty which respondents basically attributed to "cultural norms of independence".

As previously mentioned, the ruggedness of the island poses acute local transportation problems for both the producers and those individuals who provide services to producers. This problem was recognized by an overwhelming majority of the survey respondents. Non-farmer respondents tended to associate the transportation problems and farmer-culture bias to the overall lack of produce quality whereas, farmer respondents tended to associate the overall lack of produce quality to a shortage of storage, processing, and packaging facilities. Other problems cited by respondents included stiff competition from other islands and Latin American products, prevention from access to U.S. markets, and the lack of a subsidy program for producers. There was a rather strong attitude by many of the respondents that access to U.S. markets will remove a large obstacle in the path of local agricultural development.

St. Vincent: The island of St. Vincent is currently dedicating a large amount of attention to its agricultural development. The overall economy of the island requires a minimum maintenance of viable agricultural production for local consumption and exportation, and new plans and projects are being implemented to enhance these efforts.

The organization of agricultural development on St. Vincent involves a variety of local and external entities. The primary coordinating institution for development is the government, but direct service relating to production and marketing rests with various quasi-governmental agencies and cooperatives. Systematic provisions for market information to the farmer sector is not formal or consistent. The primary links for information and transactions between the producer and the market are the "hucksters"

(middlemen) except for direct trades with local outlets. Extension services are provided by the government agency, however, it is felt that the resources are inadequate to serve the entire needs of the farm community.

St. Vincent is being exposed to a great deal of new technologies, particularly those which are appropriate to the small farming system concepts. A range of organizations from U.S.A.I.D. to the Organization for Rural Development is actively introducing new procedures for farm production and working on new means to access export markets. Information dissemination technology is not readily evident, nor was it expressly desired.

In terms of expressed problems, farmer and non-farmer respondents indicated difficulty in transporting produce from the farm to the central marketplace. The transportation factor was also cited as one reason for the poor quality of the produce. Although a new port facility provides easy-accessible export trade services, several respondents pointed out that there were no adequate shipping containers (causing extensive losses in produce) and that the loading/shipping personnel were not careful in their handling of produce. Storage and processing were also mentioned as significant problems as was the loss of market outlets due to new trade restrictions, and the common dilemma to trade with countries that are consistently delinquent in payments.

CONCLUSIONS

The two primary findings of this study, 1) communication infrastructures, and 2) technological status, can be summarized succinctly. Basically, the analysis of information collected points to adequacy, or at least "foundational" patterns of activities throughout the island samples. This is not to say that needs for improvements which could positively impact production and marketing in the agricultural community do not exist. However, it does suggest that these factors are not the "key" factors associated with dysfunction or failure in the production and marketing systems.

On the other hand, the analysis of information in relation to the study factors disclosed what are believed to be relatively important generic problems. The most obvious and significant issues raised by a large majority of respondents on every island studied involved transportation and post-harvest technologies (as they relate to quality control). From the deductive-nomological perspective, transportation would have to be considered the single most important characteristic problem in the systems of production and marketing, on/and between geographic sites. The history of agricultural development and theories of economic development set forth the magnitude of importance of transportation systems in growth and improvement of the production sectors.

According to the theoretical model, the "law" of economic development (E) requires infrastructural facility improvements, of which, transportation systems (T) are an integral part of the structure; and together, these changes will either "push" or "pull" some other phenomenon such as: produce quality improvements (P):

T1,T2,.....Tk>

Sector growth/improvements

E1,E2,.....Ek>

P >

Post-harvest technologies

The disclosure of the findings in this study tends to raise more questions than supply concrete answers or viable options. First, is enough emphasis being placed on transportation systems within the region? Although the "regional strategy" cites "improvement in the transportation system for food commodities such as the provision of a weekly intraregional refrigerated shipping service, and improved feeder roads and internal transportation facilities" (Vol. 1, p. 43) as a target activity, the strategy itself requires only minimum involvement of transportation ministries as "executing agencies".

Second, would the investment of local-study funds to determine cost-benefit, cost-recovery, or cost-effectiveness analyses for transportation improvements actually affect the level of development commitments by government or other capital investors? Transportation infrastructural development is highly competitive with other economic sectors, and justification for costly resource investments to serve the agricultural sectors requires fiscal, as well as policy supports.

Third, are the limited measures that are currently being taken on various islands to improve transportation systems within the region having a positive impact, or are other factors like trade barriers or "tradition practices" negating the investment outcomes?

In sum, this study suggests that the key "target" problem in agricultural production and marketing development on the "lesser-sized" islands in the Eastern Caribbean region are basically associated with transportation. In addition, the major reason that transportation is such a problem is because the existing system is no longer appropriate to the development objectives the islands have identified for themselves. Improved transportation systems will not only provide the stimulus for new development, but it will also provide the means for new systems of information and technology exchange, and most importantly, the catalyst for improvement in produce quality levels... a necessary condition for establishing the kind of international trade that the islands are strongly seeking.

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