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February 5, 1974

OBSERVATIONS ON AGRICULTURAL AND FOOD MARKETING IN THE DOMINICAN REPUBLIC WITH SOME IMPLICATIONS FOR DEVELOPMENT PLANNING AND RESEARCH

A Report

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About the Report

The purposes of this report are (1) to provide observations which may contribute to the Agricultural Sector Assessment by the Dominican Government; (2) to provide observations which may be helpful to the USAID Mission in assessing the agricultural marketing situation and related programs with emphasis on major commodities for domestic consumption;and (3) to suggest elements of a program of marketing system analysis and activities designed to contribute to improved performance of the Dominican food and agricultual ~~system~~ sector.

Marketing in this context refers to both the coordination of economic activity within the food and agricultural sector of the economy and the systems of distribution of agricultural inputs, agricultural commodities and food products. Emphasis in this report will be on the

problem of economic coordination rather than on the problems of physical distribution.

The observations of this report are necessarily tentative. They are based upon information and assessment during a very brief time period. We pose every statement about the Dominican economy as a hypothesis. The report makes no attempt to be comprehensive. It does make some preliminary diagnostic observations and suggests some possible directions of analysis which appear to be fruitful. And consideration is given to some of the issues of organizing a program of analysis and action designed to contributing to the achievement of goals established by the Dominican Government.

The report is a list of observations. No attempt has been made to impose an organization on them.

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Planning, Policy and Economic Analysis for the Food and Agriculture Sector

It is recommended that a unit be established within the current structure of the agricultural agencies to provide the basic economic analysis required for effective planning and policy formation for the food and agricultural sector. This unit would combine planning functions, policy initiation and evaluation, basic economic analysis and specific "fomento" activities related to the sector. The unit would be responsible for devising the development strategy for the food and agricultural sector and for "fomenting" (or encouraging implementation of) the policies and activities related to that strategy.

We believe it would be a mistake to establish a separate unit limited to analysis and programming for agricultural marketing. The agricultural sector must be understood as a system. It is a highly interdependent set of activities. The effective coordination of this system requires effective coordination of the economic research, planning and policy for the sector.

We do believe that a significant component of the proposed unit would be concerned with food and agricultural marketing. But agricultural marketing and farming can not be separated. A major purpose of altering the market system is to improve the allocation of resources in farming, farm input supply, and food processing as well as to improve the distribution of products.

The unit would be responsible for an ongoing sector assessment. The sector assessment is useful only if it identifies specific actions which can be taken ~~which~~ to improve the performance of the sector.

It is suggested that the following are elements in the process of effective sector planning: description, diagnosis, prediction, perscription, action and evaluation.

Description of the food and agricultural system is essential. But information is expensive. Designing the data system for agriculture would be an important function of this unit. While many agencies are appropriately involved in the collection and analysis of information about food and agriculture one agency needs to be concerned with the development of the data system. A brief investigation of the existing data system for food and agriculture indicates that the data essential for agricultural planning and policy is not systematically collected and presented in a useful form. Participants in the market need market information to operate effectively and systematic information is required to evaluate market performance.

Descriptive information should be collected and presented for a purpose. It needs to be designed to provide an understanding of the descrepancy between the performance of the sector as it currently operates and the performance which is potentially possible. This is the diagnostic function of the proposed unit.

The unit should be responsible for making projections. The question is -- what will be the situation based upon current policies and practices

and how would this be altered by changes in policies and programs designed to change practices.

Based upon ~~the~~ such analysis the planning and analysis unit would prescribe or recommend policies and programs as part of coordinated agricultural development strategy.

However, making recommendations to other agencies and private individuals is not enough. A significant "fomento" activity should be built into the analysis and planning activity. The ideas must be sold to be useful.

It is realistic to expect many mistakes in development policy and programming. And the essence of development is change. Thus there is a need for continuous monitoring of the sector and constant evaluation of existing policies and programs.

As we see it the analysis and planning unit would strive to identify barriers to improved performance of the food and agricultural sector, to identify unexploited economic opportunities and to promote policies and programs to improve performance based upon these analyses.

Much of what follows are observations about the possible activities of an analysis and planning unit. The observations are a combination of diagnostic impressions, ideas about useful analysis and comments related to specific policies and programs based upon information gathered in the Dominican Republic and experience in other developing countries.

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The Agricultural Problem and the Planning Function

The development of the Dominican food and agriculture sector will require an extraordinary investment in research and planning. Substantial Government intervention in the sector will be required to meet the goals of the Government.

The following facts need to be considered. While this is a small country there are great variations in conditions which effect the capacity to produce specific commodities. For example, the "Proyecto Diversificación y Aumento de la Producción Agrícola en El Valle del Cibao" estimates there are 30 zones in the Cibao valley which effect optimum cropping patterns. These zones are based upon classification of slope of land, moisture, soil texture and salinity. This study involves an area covering only about 29,000 farms in a single region. The number of economically significant production zones for the country is not known but must be large. Unique agronomic and economic analysis is required for each economically significant zone if optimum cropping patterns are to be identified.

The market for most agricultural commodities ~~are~~ is very uncertain. ~~And~~ The domestic food market is very narrow and thus subject to great price uncertainty. This is especially true of the fruits and vegetables. Only

a small change in the acreage planted to a particular commodity can significantly effect prices. In many cases the price fallls below the level of the cost of harvesting and distribution and commodities are not harvested. Thus agricultural resources are wasted in a country of hungry people. When market prices are uncertain producers are reluctant to produce them and are even more reluctant to invest in factors specialized to the production of the commodity. Thus increased production of many commodities depends upon the development of more reliable markets.

A large part of the population consumes a diet which is deficient not only in many of the vitamins and minerals but also in protein and calories.

Urban unemployment is high and underemployment in both rural and urban areas is very high. Transforming this underutilized resource into physical and human capital which will result in sustained growth is a major development problem. The population is expanding much faster than the economy has been able to expand employment opportunities, given the structure of the economy. The employment effects of every policy and program must therefore be considered.

The majority of the population is traditional in view point. That is, many behavior patterns are based upon custom. Traditional attitudes are a barrier to the adoption of new production and marketing techniques, the adoption of new diets, the adoption of birth control measures and to innovations in public policies. This is not true of the whole of the population. Some farmers and firms are highly responsive to changes in economic incentives.

Very substantial differences exist in the levels of income, wealth, power and priviledge. It is probably true that policy options are significantly restricted by the ability of people of priviledge and power to influence policy in their favor. For example, it is argued that the power of the taxi drivers is a significant barrier to the introduction of a public bus system in the capital.

These facts about the Dominican economy are well known. Any realistic analysis and planning must be within the context of this reality.

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Population

Any agricultural sector assessment must start with the facts of life which dominate the Dominican situation. The country has a very high population growth rate. The economy is agriculturally based. The agricultural resources are limited. Nutrition is currently a serious problem. A large part of the population is too poor to obtain adequate diets, given the existing organization of the economy. Unless a significant reduction is made in the population growth rate a large portion of the population will almost certainly continue to live at the edge of subsistance. Increases in agricultural production are possible, but are limited. A ~~3.5~~ 3.4% annual increase in production is literally consumed by the increased population.[1] And a long run growth rate in agricultural productivity greater than ~~3.5~~ 3.4% is optimistic for the Dominican Republic. The possibility of short run gains in agricultural output in excess of ~~3.5~~ 3.4% appear good. Coupled with a substantial decline in birth rates this could provide the basis for the transition to a more productive economic system. Thus a very high priority must be assigned to programs designed to reduce population growth if the other goals set by the Dominican Government are to be achieved. Ultimately the effective marketing of the means for birth control will probably be more important than the marketing of food.

1 Based upon data from the Population Reference Bureau, Inc.

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Nutrition, Agricultural Production and Planning

In the long-run improved nutrition and improved levels of living for the majority of the population of the Dominican Republic is dependent upon the control of population growth. Without population control all efforts to increase food production simply delay the time when population will outrun the available food supplies. At the present time population growth is apparently restricted by the limited supply of food available to the lower income portion of the population. This is indicated by the very high infant mortality rate of about 110 per 1,000 births. Specialists have indicated that a large part of this mortality is due to nutritional deficiencies. No estimates are readily available on the number of children surviving to an age when they can enter the work force.

Given the uncertainty of domestic and international food supplies over the next several decades it is not clear that a policy of increased food production and nutrition is the most humane one, if in fact the increased food supplies are simply converted into increased population. However, assuming a program to reduce population growth rates, nutrition becomes a salient issue in planning for the food and agriculture sector. A study of a sample of Dominican families of low and medium income indicated that an average intake of about 75% or less of recommended allowances for protein and calories and 14 nutrients. Since this is an

average many of those in the sample received a diet significantly more deficient than these numbers indicate. Problems of nutrition are apparently even worse for small children. We believe the nutritional problem is documented sufficiently to accept it as a major consideration in food and agricultural sector planning. A useful input to the sector planning would be a better understanding of the relationship of food supplies and nutrition and birth rates in this culture. In some cultures the incentive to have a large number of children is related to the child as an economic resource, especially in old age. Reducing death rates among children through improved nutrition and providing a more secure food supply may reduce the incentive to have children. In this case improved nutrition will reduce rather than increase population growth rates.

Given the level of knowledge and incomes of a large part of the population, nutrition must be treated as a "public good". A public good is one which will not be produced at appropriate levels if left to market transactions. The benefits of improved nutrition accrue to the society at large in terms of improved future productivity and to individuals at a future time. The individual who needs improved nutrition will not invest in it either because of lack of knowledge or lack of access to capital to invest in a better diet. Marketing policy includes identifying needed modification in the economic system in order to improve the allocation of resources.

We recommend a major analysis designed to evaluate alternative means of improving diets of both rural and urban consumers. However, this

analysis should be an integrated part of the analysis and planning activity not as an independent study.

An evaluation of means for improving diets would include the following considerations:

1. Studies of agronomic and farm management data for significant production zones to determine the potential for altering cropping patterns to increase the available food nutrients.

2. Analysis to tentatively identify the components of minimum cost adequate diets. ~~Use~~ data from farm management and marketing studies would be used. Either simple nutrient budgets could be used or with sufficient resources a constrained liner programming model could be used to identify a variety of diets meeting various criteria. (Such as the model developed by Dr. Victor Smith for Nigeria.)

3. Identify improved distribution channels for the commodities in the low cost diets. Test ways to cut costs of distribution.

4. Identify barriers to the adoption of any new or infrequently eaten foods in the diet. It may be necessary to abandon some technically feasable commodities due to consumer attitudes. Experiment with promotion and other programs to change dietary practices in the diffusion of the minimum cost diets.

5. Evaluate costs and effects of price policies on the production and prices of components of practical minimum cost diets. For example, a subsidy may be the most economical means of both creating incentives to produce a commody and to eat it. Also price ~~police~~ policies may stimulate

the production of ~~competitive~~ desired commodities by providing price certainty or other incentives, ~~thus making the low cost diet less feasible.~~

6. Evaluate practices and policies related to the distribution of farm inputs for the production of the components of the diet. What changes could be introduced in the input supply system and use of inputs to reduce costs or increase production of ~~xx~~/the desired commodities?

7. Assess the extent of the market at particular points of time for components of the diets. Identify means to avoid production beyond that which will be demanded by the market at prices which meet costs, or costs plus some acceptable subsidy.

This brief sketch of components of an analysis designed to assist in planning to improve nutrition suggests some of complexity of the problem. It suggests to us that a considerable advantage would accrue from an integrated economic analysis and planning unit of the nature previously suggested.

It is not suggested that the nutrition problem be isolated from the total process of analysis and planning. ~~There are~~ Planning must consider a number of objectives and problems. All objectives must be considered in the analysis and planning process.

Nor are we suggesting that a massive short-term study be mounted to deal with the critical problem in nutrition. Obtaining some of the required data will require a considerable length of time. Rather we suggest that it is important to have a long-range research program contributing to the ongoing planning process. And to build the organization capable of dealing with this and related problems over time.

Hypotheses which appear to offer possible quick and relatively inexpensive contributions should be tested and, where the evidence warrants, programs implemented.

Some of the commodities which seem to warrant early investigation for their potential to contribute to a solution to the nutrition problem are discussed below.

Rice - The Government has a substantial program to encourage rice production. The substitution of rice for yucca and platano in diets would improve nutrition. There are reports that the International Rice Institute has developed a variety of rice with 9% protein as contrasted to 7% in current varieties.

The adoption of the new variety is not likely to happen without Government intervention. Neither farmers nor consumers are likely to perceive an advantage in the new variety. Consumers cannot see the added protein nor do many recognize its value. If investigation proves that the new variety produces more nutrition per dollar of real costs, then a program designed to introduce the new seed would be appropriate. A study of seed distribution methods would be required to determine the most appropriate method of introducing the new variety.

Note that the analysis and planning unit appropriately seeks to identify situations where substantial public advantage results from modifying the normal market behavior.

Sweet potatoes and yams - The substitution of sweet potatoes and yams for yucca and platano would significantly improve diets. Sweet

implement an extra vegetable crop. This may require the development of custom suppliers of land preparation services or some cooperative arrangements. The Experiment Station in Puerto Rico has some interesting work in vegetable adaptation to tropical climates and problems of disease control, which should be applicable to some of the Dominican ~~conditions~~ major production zones.

Milk, meat and poultry - Addition of some milk and meat to diets would substantially upgrade them. However, these are relatively expensive commodities. Nonetheless they should not be dismissed. Much of the land in the Dominican is useful only as pasture. The economics of labor intensive improved pasture management with fertilizer, etc., needs to be investigated. Some high level pasture management was observed in the country.

Poultry and egg production may be expanded by expanded feed production. The expansion of sorghum production in areas and times of year when other crops fail due to low moisture seems to offer an unexploited economic opportunity. The feed grain-poultry sub-sector needs to be examined as a system.

Our observations indicate that the marketing of meat and milk could be significantly improved. A discussion of a possible program to improve the milk marketing system follows.

Beans and Soybeans - Both beans and soybeans are high quality foods compared to the typical diets. Both are adapted to some of the production zones of the country. Since both have growing periods of about 90 days they offer potentials for addition to cropping patterns.

Developing a reliable market with reasonable prices is a major factor in the expansion of production of these commodities. Controlled temperature storage is required for beans to expand their availability during the year. Good data and analysis of projected seasonal price variations under different supply conditions would be required to determine the economic feasibility of investing in storage facilities. Analysis of the soybean potential would have to include consideration of processing facilities and potential consumer acceptance of soybean products.

Some special attention needs to be given to the development of an infant food acceptable to mothers of small children. A product containing soybeans should be considered.

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Employment

Sector planning must be concerned with employment effects of policies and programs. Since the economy is heavily oriented toward agriculture, it is reasonable to search for agriculturally related enterprises.

Among the commodities which might appropriately be evaluated is cotton, including a cotton cloth and clothing industry. Cotton appears to be adapted to some of the country's production zones. It would have to be examined in terms of the cropping patterns and commodities it would replace in production. An added incentive for cotton production would be the production of cotton seed oil and meal which would add to food supplies.

The Agricultural Bank recently announced its intention to promote the production of cotton. This announcement points up the need for the integrated economic analysis and planning unit. The aggregate effects of expanded cotton production requires an analysis of the effect it will have on other crop production, nutrition and employment. It may be ~~profitable~~ desirable only if a minimum scale in production and processing is achieved.

It may be argued that if a cotton textile industry were economically viable that it would be developed by private industry. Unfortunately this is not necessarily true. The uncertainty of the economic climate may discourage foreign investors and there may be no domestic entrepreneures who would undertake such ~~interpose~~ enterprises without substantial incentives. And private enterprise does not take into

account the social benefits of expanded employment. There are substantial economies of scale, externalities and coordination economies involved in starting a new industry. It most likely would have to be the result of a planned effort on the part of the Government. This does not mean that it should be a Government enterprise, but rather that policy and programs fostering the industry development would be required. At the same time analysis might indicate that the employment and other benefits of developing such an industry would not be worth the opportunity costs of foregoing food production and other costs. Cotton is used as an example of analysis appropriately conducted by the sector economic analysis and planning unit. Note that it combines activities often identified as both farm management and agricultural marketing.

While increasing employment is an important goal it must be considered in a broader system context than is often applied. For example, it is sometimes argued that machinery which potentially displaces labor in agriculture should not be allowed to be imported. It is generally uneconomic to replace labor with imported machines. However, in the Dominican situation careful analysis is required to evaluate this kind of policy. Land preparation is critical for some production zones and commodities. The strategic use of machinery may make an extra crop possible or make it possible to produce a higher valued crop. If a third or forth crop can be added by use of machinery, not only will food production be increased but total annual employment may also be increased by the extra crop. Thus careful analysis and an import control policy based upon such analysis is important.

Similarly programs leading to lower cost food distribution systems may be criticized because they require less labor than more costly ones. Again,careful analysis is required to arrive at appropriate policy. In the Dominican situation food prices are relatively high and a part of the high price is due to inefficiencies in food distribution. This has an effect on nutrition, and on farmers' and consumers real incomes. In addition, we observe that the very small scale of retailing and fragmented wholesale system result in poor system coordination. Again, the cost and benefit must be estimated and policy decision made on the basis of the facts of the analysis.

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CHANNELING FOOD TO URBAN AND RURAL CONSUMERS

Introduction

At present nearly 50% of the Dominican population resides in urban areas -- about one fourth in the two largest cities. Their food supplies must obviously be produced and brought to them by others. Urban population growth continues at a rapid rate (5 - 6% per year). It is estimated that in 6 short years the Santo Domingo population will increase by 50% to over 1.2 million inhabitants. Those urban inhabitants spend 40 - 50% of available incomes for food -- and as much as 50% of that goes for marketing services. Thus, market system performance is important to urban consumers.

On the other hand, that half of the population residing in rural areas is fairly heavily specialized by region in the production of one or two agricultural products. Certainly farmers do produce some additional foods at certain times of the year for home consumption, especially yucca and platano. But during a good part of the year most rural people are dependent on the local retailers to supply some of their basic food needs.

At present the food assembly and distribution system serving both urban and rural consumers is a highly fragmented, complex, and poorly coordinated ad hoc system of truckers, processors, several levels of wholesalers, and several types of retailers. There are thousands of farmers

producing most food crops. They sell to hundreds of independent truckers and processors who in turn sell to large numbers of wholesalers. In many cases several layers of intermediaries lie between the farmer and retailer. Finally thousands of small retailers, usually located within walking distance of their clientele, act as the final link in the complicated channel. The large numbers of small scale, completely independent farmers and businessmen with limited marketing knowledge and skills and operating in a relatively "thin" market produces very drastic price and supply fluctuations. Market gluts and scarcities are commonplace. Seasonal gluts and scarcities are an annual occurence for many products. Yet uncertainty of supply of any single product and its substitutes plus shortage and cost of storage for non-perishables and cost of processing for perishables seems to prevent businessmen from storing products to even out supplies and stabilize prices. Strong Government policies and programs designed to curb "speculators" who store products in expectation of higher prices is another factor discouraging private product storage. INESPRE's price stabilization activities sometimes end up creating market uncertainties for storing firms. For example, since there is no available public information on stocks in storage, INESPRE must prepare its own estimates of supplies and market its stocks or import supplies as indicated by their crude estimates. But those businessmen and farmers holding supplies in expectation of higher seasonal prices may see their storage justifying price differential cut away by INESPRE's market intervention.

As a consequence of this kind of complex organization and lack of information in a very thin market, prices are highly variable and uncertain. There is an urgent need to find ways to build in more coordination in the production and marketing system. This will probably require more coordinated planning of production acreage perhaps through cooperatives, credit agencies, the Secretary of Agriculture or marketing agencies. It will also require some similar market planning by marketing firms. Reliable public information on crop forecasts, stocks on hand, and current prices are also indispensable in order to bring about improvements in production and market coordination and to reduce market uncertainties.

It appears that most Dominican families are already deeply involved in the exchange process. The recent survey of farm families should provide fairly complete information on this subject. That data should be analyzed carefully to determine (1) how much and what type of food produced on the farm is being consumed by the farm family; (2) how much (in quantity and value) and what foods are being purchased by farm families; (3) through what channels do farm families market their excess production.

Unfortunately the survey does not provide information on place of purchase, frequency of purchase, distance and method of travel to that place and conditions of purchase. Neither does it provide any information on seasonal variation in production for home consumption and market purchase patterns. Perhaps some consideration should be given to obtaining such information in future surveys.

If in fact rural families are purchasing as much as 25 - 50% of their foods, then poor performance of the retail wholesale system supplying those needs will have a direct and probably significant impact on the rural family's wellbeing. In the remainder of this section we will make some observations on present organization and performance of the distribution system for food products (i.e., the dispersion of products to rural and urban consumers). We will briefly examine the operations of rural assembling and processing truckers, intermediaries, wholesalers, and retailers -- noting two common problems throughout: (1) lack of planned arrangements or coordination, and (2) deficiencies in managerial practices. Then we will examine what appear to be major transportation problems having a direct impact on the performance of the marketing system.

Marketing channels and practices vary depending on the type of product. For convenience we can divide agricultural products into several groups. The products within each of those groups are generally marketed through similar types of marketing agents with more or less common marketing practices. The groups are:

(1) Industrial or export crops -- such as sugar, peanuts, cacao, coffee, processing tomatoes -- these markets usually reflect the highest degree of coordination, planning and economic performance. Coordination is imposed either by export market requirements or by large scale buyers for processing. Market prices are reasonably stable.

(2) Specialty export crops -- such as fruits and processed fruit products, cucumbers, eggplant, okra, peppers, yucca. These specialty

export products usually face a somewhat unstable export market and continued sales are highly dependent on level of prices in export markets. In many cases Dominican markets are thin and internal sales opportunities are quite limited.

(3) Cereal products -- such as rice, beans, corn, sorghum. These market channels usually include local grain assembly buyers, millers or feed processors and then distribution in the case of human food products through a system of large scale wholesalers (almacenistas) who resell to smaller scale wholesaler-retailers for distribution to small retailers.

(4) Beef and pork -- These channels include live animal buyers at the farm, live animal intermediaries who have animals custom slaughtered in public "Mataderos" or private mataderos and meat processors who buy live animals, process the meat and distribute through supermarkets, colmados, or specialized meat stores (carnicerías).

(5) Poultry and eggs-production is increasingly concentrated in the hands of relatively few large producers who market through supermarkets, colmados, and market plaza distributors (in the case of eggs). Small amounts of live poultry are still marketed in public market plazas throughout the country.

(6) Tubers, plantains, bananas, vegetables and fruits -- These products are marketed through a system of independent truckers who usually buy on their own account or lease their transport services to an intermediary who purchases at or on a road near the farm. Occasionally farmers either

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Some argue that elimination of such intermediaries will automatically ~~reduce~~ reduce marketing costs. That is not always true. Each case must be analyzed individually. ~~to determine~~ on the case where wholesalers buy from truckers it may be less costly to pay them a small margin for their time than to pay the ~~cost~~ opportunity cost of an expensive vehicle sitting idle as well as the time of the driver and his assistant.

pay for transport services and go along to the market to sell their products or pay the trucker a combined transport and marketing commission to sell their products for them. These truckers have semi-regular routes for product collection with substantial seasonal variation reflecting product harvest patterns. Similarly they tend to travel regularly to the same markets, though market conditions may cause some variation. These truckers usually go to the public markets in towns and cities where they either sell directly off the truck in "large" quantities (i.e., 1,000 units or 1-2 sacks or boxes) to other wholesalers who may stack the product in an area near the truck and proceed to sell in smaller quantities to anyone who will pay his price. The trucker tries to sell his product as quickly as possible (usually in 3 - 4 hours) while the market wholesaler is willing to stay in the market all day -- every day.

(7) Milk -- There are four distinct market channels for milk. Four milk pasteurizing plants purchase about 15% of the nation's milk supply for pasteurization and distribution through home delivery and retail stores. Large numbers of independent intermediaries purchase raw milk direct from producers and distribute to urban households. Two or three large milk manufacturing plants purchase milk direct from farmers to produce and distribute powdered milk, condensed milk, cheese, butter and ice cream. Finally, small cottage industries (especially in small rural communities) buy milk from farmers to be processed into cheese and butter or farmers themselves produce those products for local sales through public market stalls or retail stores.

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Rural Assemblers and Processors

It appears that with the exception of industrial and export crops (where large processors coordinate and assemble supplies from farmers) that rural assemblers and/or relatively small millers or processors are the rice, bean, corn, and sorghum producer's main link to the marketing system. In some cases these assemblers or processors enjoy near monopoly power either because they are the only buyer (or one of few buyers) in the area or because of credit arrangements with producers. But for the most part each assembler or processor operates without benefit of market information or analysis. He never knows what to expect in terms of total production, imports, etc. Thus, he is not able to provide much certainty to his suppliers. Nevertheless given that these products are storeable, that fixed assemblers provide some degree of market planning and that there is a government support ~~price~~ program for these products, the market channels are reasonably well coordinated. Commodity sub-sector studies for each of the products could be undertaken to determine where unexploited opportunities lie and to formulate policies and programs to improve the performance (i.e., lower production and marketing costs, and reduce market uncertainty through improved planning and coordination). In addition, efforts (discussed below) to improve wholesale and retail coordination and performance will have direct positive effects on assemblers, processors, and ~~though~~ through them, on the farmer.

Trucker-Intermediaries - As we noted earlier, trucker-intermediaries provide the main market linkage for producers of tubers, plantains, bananas, vegetables and fruits. Since plantains, yucca, yautia, yams and batata are the basic staples in the Dominican diet -- supplying ~~24%~~ about 35% of the caloric intake, the performance of the distribution system for those products must be considered important. And the biggest single problem in the marketing of these products is the market instability and uncertainty brought on by the fragmented structure of the market, lack of production and price information, acreage and yield variability, and deficiencies in managerial practices of intermediaries. Confusion, congestion and disorganization in markets where truckers must sell their products is ~~one~~ an additional condition contributing to high marketing costs and uncertainty. A surprisingly large number of cities and towns have relatively newly constructed market facilities. But every public market that we observed was poorly utilized, disorderly and congested. That includes Mercado Nuevo, Villa Consuelo and Mercado Modelo in Santo Domingo, Mercado Central and Hospedaje in Santiago, and public markets in San Cristóbal, Baní, Villa Altagracia, La Vega, Bonao, and Moca.

Wholesalers - By wholesalers we mean intermediaries who purchase either from processors (domestic or foreign), rural assemblers, or truckers in "large" quantities for resale to other wholesalers or retailers. It should be recognized that in the Dominican food system there is a lot of

overlap in functions by different types of intermediaries. That is, truckers may occasionally sell directly to retailers or consumers, processors quite frequently sell directly to larger retailers, and wholesalers often sell both to retailers and consumers.

This overlapping of marketing functions contributes to the problem of poor coordination since everyone is uncertain as to who will be able to supply him and who are his competitors. There are few cost reducing routinized supply and distribution arrangements. Each small purchase must be individually inspected and personally negotiated by the owner or manager of each party in the trade. This requires enormous amounts of managerial time and transport costs. Once again this part of the marketing system suffers from lack of effective coordination mechanisms to permit businesses to rationally plan their activities.

There are basically three types of wholesalers involved in distribution of food products in the Dominican Republic. The largest, best financed and probably most profitable wholesalers are the importer-wholesalers. They deal primarily in imported foods (sometimes as exclusive agents for U.S. food manufacturers) and in non-perishable food items such as sugar, cooking oil, beans, rice, salt, etc. They buy in large quantities for resale to other wholesalers or large retailers. They handle relatively few products and often move products direct from their suppliers to their customers without holding it in their own warehouse. In other cases they purchase large quantities for storage in rented space or in their own warehouses. There are approximately 50 such large importer-wholesalers

in the Santo Domingo Dominican Republic according to their trade association the Asociación de Almacenistas - Importadores.

The second type of wholesaler is the wholesaler-retailer. He normally purchases in wholesale lots (i.e., several bags, cans or boxes) from importer-wholesalers or processors and resells them by the box or in smaller units to retailers or to consumers who will go to the ~~xxxx~~ trouble of coming to his business to make their purchases. The wholesaler-retailer handles a fairly broad line of food and household ~~C~~onsumer goods. Virtually all wholesaler-retailers sell cooking oil, sugar, beans, salt, rum, tomato paste and similar staples. Most handle ~~f~~ potaotes, onions, and garlic and beyond that the wholesaler -- retailer handles those products ~~for~~ which he has found a clientele. ~~for~~. Since the retailer can never be sure that any wholesaler ~~one~~ can supply all his needs and in order to "keep them competitive" he will frequently purchase from several different wholesaler-retailers. Normally the retailer goes personally to the different wholesalers to make his purchases. Depending on his personal preferences, capital availability, credit rating, etc., he will purchase every 4-5 days, once a week or once every 2 weeks. The wholesaler-retailer occasionally fills orders by phone. The wholesaler may also have salesmen who call on retailers periodically. And in all these cases the product may be delivered by the wholesaler-retailer in his own vehicle, sent to the retailer in a rented vehicle by the wholesaler-retailer with the retailer paying transport costs or picked up by the retailer in his own or a rented vehicle. There are about 130 wholesaler-retailers in the "Asociación de Mayoristas" of Santo Domingo. And most other cities and towns have several such wholesaler-retailers.

The third type of wholesaler is the fresh fruits and vegetable wholesaler. He (or she) may be located in a market stall in the municipal market, in a permanent location near the market, on the ground or in the street near the market. They are usually specialized in one or two products. Their major functions are short-term storage (4 - 24 hours) and break-bulking. Retailers must come to them and personally inspect and transport each purchase. There are probably thousands such wholesalers in the various markets of the Dominican Republic.

It should be noted here that in addition to the above wholesalers -- there are specialized distributors of meat, fish, poultry, eggs and milk products. Thus the retailer who would handle a broad line of food products must deal personally with a minimum of 20 - 25 suppliers in some cases weekly or less often, but in many cases every single day. He must take the time to personally inspect the merchandise, negotiate the price, arrange transportation and take it back to his place of business. The whole process is time consuming and costly in terms of opportunity,costs, transportation, spoilage and theft losses. Thus, retailers tend to specialize in a limited line of products in order to handle the complex procurement problems. ~~that each feels he will be able to keep himself supplied considering his time limitations~~. The typical product groupings of retail food stores are staple non-perishables, fruits and vegetables, meat, poultry-eggs, fish, and milk. Retailing remains a one man operation or a family business. Margins must be kept high on the few products handled in order to eke out a living.

Management practices remain traditional. Because of the fragmented wholesaling structure and practices there is little incentive or likelihood that the retailer alone can make any significant cost reducing changes in his own procurement patterns, product line or management practices. There are a few supermarkets and colmados who handle a complete line of food products. But they do so in order to attract upper income consumers ~~with~~ who desire the convenience of one stop shopping. The high margins that upper income consumers are willing to pay on "luxery type" items makes it possible for such retailers to ~~sell~~ sell at or below normal margins on staple foods in spite of the same supply problems mentioned earlier. The apparent profitability of a few ~~U.S. type~~ large supermarkets serving upper income consumers, tends to give the impression that such stores spread throughout the country would be profitable and would lower marketing costs. Such is not the case. The significant economies in food retailing and wholesaling (especially in supplying food to the masses) can only be achieved by re-structuring the present system in order to rationalize the supply channel. Retailers need to be able to depend on a wholesaler to regularly supply them with good quality merchandise and service at low margins -- without ~~have~~ having to bargain or shop around on every purchase. Order procedures and delivery need to be routinized in order to bring costs down. Wholesalers and retailers need to be able to concentrate on servicing their customers rather than ~~choosing~~ going all over to obtain supplies. They need to focus on improved storage,

handling, inventory control, accounting, store layout, and personnel relations in order to employ methods that have been proven to be less costly. In many cases the retailer, the wholesaler and the wholesaler's supplier must work together to simultaneously introduce cost reducing innovations. They need to see themselves as a team working together to reduce costs, improve service to the consumer and improve their profits.

In other countries where this need has been recognized three types of institutional relationships have evolved -- all centered around significant changes at the wholesale level. The first is a privately owned and controlled chain of traditional retail stores supplied by a single warehouse. The second is a cooperative arrangement among independent retailers for the purpose of organizing a procurement and warehousing operation to serve them exclusively. The third is a voluntary supply arrangement between independent retailers and an independent wholesale supplier. In all cases the basic objective is to coordinate supplies, permit longer term planning of procurement decisions, and facilitate joint assistance in the introduction of improved management practices. There is no doubt that such arrangements can reduce marketing costs and improve market coordination thereby reducing costly uncertainties in the marketing system. And retailers and wholesalers need not be the only beneficiaries. Stimulation of a healthy competitive atmosphere will go a long way toward assuring that consumers benefit by lower food prices and that producers receive just and stable prices for their products. In addition, public regulation and intervention

can be used where necessary to protect the public interest. But public regulations and interventions must be carefully planned so as not to "kill the goose that lays the golden eggs".

DRAFT:KHarrison:mf
Feb. 6/74

Transportation

Given the degree of product specialization by region and the percentage of the population living in urban places, the economic performance of the transportation system ~~must have~~ has an important impact on the whole food related portion of the economy. Farmers are simultaneously dependent on the transport system to move the products of their labor to markets and to deliver to local retailers at least a significant portion of their daily food needs as well as the technical inputs required in advanced agricultural management practices.

The transportation system in the internal market is basically a highway vehicle system. For conceptual purposes it is useful to look at three aspects of the system. First, the infrastructure, i.e., the adequacy of penetration roads, highways and streets. Second, the operating equipment, i.e., the types of vehicles available and related problems. And finally, the institutional arrangements for operating the vehicles to deliver efficient transport services.

We have made no effort to carefully analyze the road system. On cursory observation it appears that the country has a reasonably ~~good~~ good and in some cases very good major highway system linking major cities. Secondary, roads appear to link other towns to major highways. They are not well maintained however. And there are obvious places ~~where~~ where secondary roads will soon be needed. Perhaps the greatest need at this

time is for additional penetration roads and improved maintenance. There appear to be many productive agricultural areas that are essentially left out of the economy for lack of roads. Also urban streets in many secondary cities are in very poor condition. In some cases vehicles are unable to travel at more than 10 miles per hour due to very deep holes in the pavement.

With respect to operating vehicles we have little basis to evaluate the adequacy of the truck fleet in relation to food transportation needs. That should be done as a part of on-going research and planning for market system development. Repair parts seem to be very difficult to obtain -- and the efficiency of the transport system is consequently impaired. We suggest an examination of the possibility of limiting the makes of trucks which may be imported and requiring dealers to carry fairly complete spare parts inventories. (This same policy needs to be examined for major farm equipment.)

It seems fairly obvious that the country cannot continue to depend on the automobiles in its "público" system as the only form of passenger transportation. It should be possible to operate buses for about 1/5 the cost of automobiles. A ~~public (it could be privately owned as in other Latin countries)~~ private or government owned bus system for rural and urban areas would improve mobility of low income people who can least afford "público" travel. It should give them access to additional market facilities making it possible for them to shop at more distant markets or stores when economically advantageous. Regularly scheduled bus service in rural areas connecting towns and cities would make it possible for retailers to more economically travel to and from their supply points. In several Latin countries

combination bus trucks economically move both passengers and their small amounts of freight.

In terms of institutional arrangements several alternatives should be studied. Some kind of coordinating mechanism is needed to improve utilization of privately owned and independently operated transport vehicles. Transporter cooperatives might be one possibility. Another would be regularly scheduled common carrier transport companies. A third possibility would be a loose knit truck brokerage system.

Recommendations with Respect to Urban and Rural Food Distribution

Earlier in this report, we recommended an ongoing market research planning and action program. As part of that program we recommend for consideration the following kinds of action programs. Each would need to be analyzed and planned.

1. A municipal market planning, organization and management program. Initially the emphasis would be on studying existing markets to determine what administrative changes and regulations could be instituted to make existing public markets function more efficiently and to work with municipal governments in explaining and eventually implementing those changes. An effort should be made to assure that future public investments in market plas be cleared by the specialized marketing staff of the Secretary of Agriculture. By so doing it should be possible to develop a small staff with a good understanding of municipal market problems and requirements in order to plan functional and economical physical market facilities. (See Costa Rican Municipal market case studies and policy guidelines prepared by the MSU/PIMA staff).

Efforts to improve municipal market performance should include such things as traffic regulations around the market, use of space around the market and even transportation arrangements to and from the market. The latter would include both passanger and cargo transportation.

2. An effort to encourage organization of cooperatives, producer marketing associations, commodity oriented development boards, and even innovative private marketing firms. The objective would be to find ways to introduce improvements in market coordination arrangements to the benefit of producers.

3. Develop a program of supervised credit for retailers and wholesalers

(including working capital where justified) as a way to encourage adoption of cost reducing innovations. The supervised credit should be accompanied by a management training program. It should be used as a device to help retailers and wholesalers in the organization of the three types of closely coordinated wholesale-retail supply programs that will improve coordination and reduce uncertainty for wholesalers, retailers and their suppliers. In addition, the technical assistance, credit and training should be coordinated to stimulate improvements in operating efficiency through better management and increased constructive competition (reductions in margins where justified).

4. A "pick and shovel" penetration road construction program should be considered. Heretofore, decisions on penetration road construction have not included systematic analysis of agricultural production potentials or other market considerations. Often the decisions have been largely politically motivated. Certainly political motivations will continue to play a significant role. But perhaps some systematic planning taking into account agronomic potentials, economic effects and even social factors could be mixed with political criteria in arriving at decisions on road construction. By using underemployed or unemployed rural labor from the area where a road is to be constructed, several additional benefits can be achieved. First, public funds that would have been invested in the importation of and operation of equipment are distributed to the rural poor. This ~~inspection~~ injection of wealth should give the rural economy a significant boost. Second, people in the community are given an opportunity to develop a sense of pride in their own workmanship. They will have an opportunity to see how working together for a common community

goal is beneficial to all. The long term impact could be to stimulate other self-help programs. Finally, once constructed by this method it would be easier to arrange for continued local maintenance of the road.

DRAFT:KHarrison:mf
Feb. 6/74

Dairy Sub-Sector

It is difficult to neatly separate beef production statistics from dairy production statistics in the Dominican Republic. A significant percentage of the cattle herds have been dual purpose. This is particularly true of smaller herds. It appears, however, that there has been a significant tendency toward more specialization in recent years.

Rough milk production estimates show that total output of milk has been increasing rapidly since 1967. Still during that period a significant volume of processed dairy products was imported annually. Table 1 shows the raw milk equivalent of dairy product imports and their value. The Dominican Republic has been spending significant amounts of foreign earnings for dairy products.

Milk consumption is extremely low in the Dominican Republic. It is estimated that per capita consumption in 1973 was 154 grams per day or about a half a glass of whole milk per person. Given nutritional deficiencies -- that is, an extremely ~~low~~ low figure.

On the other hand there is significant potential to increase milk production. According to a recent farm survey by the Secretariat of Agriculture, ~~annual~~ production per cow per lactation is about 2700 lbs. But given pasture conditions and management practices most cows are not kept in production more than about seven months, or 4 litres per day. ~~per year.~~ That is an average of less than ~~4 litres per day.~~ 6 quarts or 13 lbs/per cow per day. Inman observed that given improved management practices production per cow could be doubled ~~in a very short time~~ within 3 years. In addition, research at the University

TABLE 1

WHOLE MILK EQUIVALENT AND VALUE OF MILK PRODUCT IMPORTS IN THE DOMINICAN REPUBLIC - 1969-1971

	1969		1970		1971	
	Whole Milk Equiv. M.T.	Value F.O. RD	Whole Milk Equiv. M.T.	Value F.O.B. RD	Whole Milk Equiv. M.T.	Value F.O.B. RD
Powdered Milk	80,503.07	4,247,752	76,190.95	4,391,895	82,414.38	5,865,993
Cheese	1,830.92	112,565	1,849.20	126,130	1,559.31	130,587
Butter	630.27	13,190	880.73	20,596	328.05	25,682
Canned Milk	11,224.08	1,160,246	13,006.06	2,069,426	8,170.17	595,995
Total	94,188.97	5,533,753	91,927.48	6,608,047	92,472.36	6,618,257

Source: Oficina Nacional de Estadistica

of Puerto Rico, where climatic and soil conditions are very similar, shows that significant potential exists to increase the average carrying capacity of land. Also, it is apparently feasible to utilize steep lands heretofore believed inappropriate for pastures. It would require some investment in land clearing and pasture improvement. ~~Also~~ Producers would need to adopt improved managerial practices. But in the longer run (say 5 years) milk production could probably be increased by an additional 25 - 50% especially if low cost feed supplements can be made available. Our conclusion is that the Dominican Republic can easily be self-sufficient in milk and milk products. Moreover, potential exists to increase per capita consumption significantly and simultaneously to export some milk products under appropriate world market conditions.

Several factors will interact to determine whether domestic per capita milk consumption can be increased. Obviously there must be a potential to increase production. Second, adequate assembly, processing and distribution capacity must be provided. Third, consumer purchasing power must be such as to permit consumers to increase milk consumption. Finally, all these must be done at reasonable costs so that consumers can afford to buy more milk products.

In preceding paragraphs we concluded that the potential to increase milk production appears to be quite good. Improvements in productivity (i.e., production per cow and production per acre) could easily lead to

reductions in production costs per unit and hence retail prices per unit over the longer run. But in order to accomplish that, marketing costs per unit would have to remain constant or decline. There is some evidence that marketing costs could be reduced.

During the past 3 to 4 years there has been a rapid expansion in milk processing capacity. Three new pasteurizing plants have opened since 1971 and at least two milk product manufacturers opened during that period. We estimate that milk pasteurizers are currently processing about 52 million quarts or 51,000 metric tons per year. Their maximum capacity is apparently about 8 - 10 times that amount. With current pasteurizing capacity the country's entire milk production could be pasteurized without major additional investments.

In addition to available pasteurizing capacity there are two large commercial processors of milk products. CODAL (a Nestlé subsidiary) produces powdered milk, condensed and evaporated milk. Sosua produces butter and cheese. And there are 10-15 reasonably important small other processors. In addition, there is an unknown number of small cheese and butter producers. In some cases, individual farmers process their own and neighbor's milk into cheese for sale ~~and sell~~ in local markets.

At present income levels and milk price relationships consumers are obviously not able to consume large quantities of milk and milk products. But the production potential is there. And it appears that production costs and prices can be reduced over time with better farm management practices, improved market coordination and greater efficiency in performing marketing functions.

We, therefore, suggest that a careful dairy sub-sector study be undertaken to identify public measures that would stimulate improved performance in the dairy industry. In addition, to verifying the tentative conclusions of this report the study should carefully examine alternatives for improving market coordination. The following are some suggestions that should be considered.

1. At the present time milk prices at the farm are apparently fixed by the Government at 10¢ per quart for processing milk and 19¢ per quart for Grade A whole milk for pasteurization. There is no provision for seasonal price variation to reflect seasonal shortages and excesses. Milk pasteurizers have steady supply agreements with milk producers. That portion of the producers output which cannot be sold as pasteurized milk is directed to the CODAL processing plant and the farmer is paid 10¢ per quart. Some seasonal variation in milk prices at the farm level might encourage producers to improve management practices in order to smooth out production volumes through the year.

2. Very rough estimates based on sketchy data are that about 8% of the milk production is being pasteurized; about 25% is consumed on farms or processed into home made cheese for local sale; 30% is processed into cheese, powdered milk, canned milk and butter, and 37 % is distributed as raw whole milk either by farmers or more commonly by special intermediaries. Raw whole milk distribution is carried out under extremely unsanitary conditions. In addition, there is evidence to suggest that intermediaries add as much as 25 - 30% water in

order to increase their profit margins. The adulteration problem is especially acute in the season of milk scarcity. The raw milk distributors assemble their supplies in milk cans -- buying from farmers as near to their market as feasible. They deliver direct to homes, small retail stores, or small food manufacturers. The milk is ladled out of the can into the purchaser's own container. These raw milk distributors handle small volumes at very high marketing costs per unit. Without adding water they would find it difficult to sell milk at prices competitive with pasteurized and powdered milk. At present, their prices delivered to the consumer are about 22 - 24¢ per quart in comparison to 28¢ per quart for pasteurized and bottled milk. But that price applies to the 25% water as well. If we make a 25% adjustment in price to account for the adulteration, the real price per quart of raw milk is about the same (28¢) as pasteurized milk. And it definitely is an inferior product. It, therefore, should be possible to switch over to all pasteurized whole milk without affecting consumer prices. The pasteurizing capacity is in place. In order to accomplish the change-over a law would be required to prohibit sale of raw milk. The idea should be tried first in the Santo Domingo market. Pasteurizers would have to develop a much more complete distribution system than they now have. In order to assure low income areas milk supplies at the lowest possible price, pasteurizers might be encouraged (and permitted by change of laws) to market a low fat milk (say 2% butterfat) at a lower price. To be successful the pasteurizers would probably need

to develop some innovative and lower cost ways of packaging and delivering milk for sale in low income areas. Alternatives might be polyethelene bags or a scheme for delivering milk in bulk (10 gallon cans) to retailers in low income areas for transfer to consumer containers at the store.

Given nutritional deficiencies, the Government might even wish to permit discriminatory pricing -- i.e., permit the processor to sell cartoned and bottled 3.5% milk, at much higher prices (and margins) than the specially packaged low fat milk. Another alternative would be for the Government to subsidize the low fat milk sold to low income consumers.

DRAFT
KHarrison/JShaffer:mf
February 5, 1974

Cucumber Case Observation

Cucumbers are a commodity produced by members of the Cooperativa Agropecuaria "El Roblegal" under contract with the cooperative and the cooperative contracts in turn with Saludo of America for export. Farmers are paid $2.25 per cwt. for those cucumbers meeting grade specifications. The problem with the contract from the growers' point of view is that the buyer determines those cucumber which meet grade requirements. The percentage meeting grade specifications depends upon market conditions in the U.S. Since Dominican Republic cucmbers are shipped by air at high transport cost they are probably a residual quantity in the winter market in the U.S. The buyer will find it profitable to import only at times when U.S. prices are extraordinarily high. At the time of the case study (about Feb. 1, 1974) the market was not strong in the U.S. Because the market is supplied by Mexican producers, predicting supplies is unusually difficult. Because of predicted U.S. market conditions, the buyer was grading at a high discord rate. Visual observation indicated that between 40 and 50% were being discorded. Had the U.S. market been strong perhaps 15% would have been discorded due to significant defects or size. Thus in this type of export enterprise both the exporting firm and the grower have substantial risks. The contract does not shift the risk of the uncertain market to the contractor because of his discretion in determining grading percentages. At the same time the contractor-

exporter has significant fixed costs and may lose money on any shipment to the U.S. market. It is a highly speculative enterprise. The increased cost of air transportation is likely to make it even more speculative.

The 40% as 50% of the cucumbers not meeting grade were returned to the cooperative members to do with as they wished. Some attempt was made to sell a few in the domestic market. But it was clear under current conditions it would not pay to ship but a very few into the domestic market. Most were used simply as an animal feed.

About 90% of those culled from the export shipment were as good as those cucumbers ~~xx~~ in the domestic market based upon casual observations. On the Feb. 1 wholesale prices for cucumbers were observed at 30 to 40¢ per dozen ~~xxx~~ (3 - 3 1/2 each) and $1.50 per 140 (1.1¢ each) in the major wholesale market in Santo Domingo - Mercado Nuevo. The 1.1¢ was paid by a buyer for a non-traditional retailer and was probably the largest single buyer in the market that day. He said he expected to sell them at about 3¢ at retail.

Retail prices observed on cucumbers on the 1st. and 2nd. of February were all 5¢ each (without apparent regard to quality). These observations were make at a retail stall in Mercado Nuevo, Santo Domingo, at a neighborhood store in Santo Domingo and at market stalls in Bonao and La Vega.

On February 4 cucumbers sold at city market stalls in Santiago at 5¢ for small and 10¢ for large size. These had been purchased at wholesale for an average of about 60¢ per day (5¢). ~~xxxxxxxx~~ Few cucumbers were being sold in the market.

The following may be noted:

1. Most importantly the domestic market is very thin for a large number of products. The product of a very small quantity of land can result in a price drop to salvage value as feed.

2. Traditional retailers and wholesalers do little to exploit any potential which might exist expanding the market for a product in temporary excess supply. Traditional retailers did not buy in large quantities, at advantageous prices, reduce their margin or promote the commodity.

3. The non-traditional retailer responded to some extent to the excess supply situation by expanding purchases and lowering prices. He put much more pressure on the traditional wholesaler or toucher to get a price consistant with the excess supply that was true of the traditional retailers.

4. Considerable potential exists for improved coordination in agricultural production and marketing through contracts, but contracts leaving the grading decision exclusively to the contractor do not releave the farmer from much of the uncertainty of the market.

5. The export market for speciality crops is uncertain and needs to be carefully evaluated before investing in programs to supply it.

6. A factor to be considered in investing in support of an export enterprise is the compatibility of the commodity with the domestic market. Cucumbers are currently a commodity with slight domestic demand. The domestic consumer benefits little from the increased capacity to produce

cucumbers or from additional cucumbers being available at low prices as a by-product of the export enterprise.

7. Production-marketing commodity specialists could understand the production-distribution system for specific commodities with relatively low investments and could contribute to the improved coordination of the commodity system by communicating informations about changing conditions and potentials for improved performance to participants in the system and to policy makers.

DRAFT:JShaffer:mf
Feb. 6/74

Price Policy

Price policy for food and agriculture is very important and complex. The system of relative prices represents the major coordinating mechanism of the economy. The Dominican Republic has both a price control policy, applying to commodities identified as commodities of prime necessity, and a price stabilization program applied in practice to several important agricultural commodities including rice, beans and corn. Other commodities may be supported in response to special needs.

These two price policies are operated by separate agencies. The policies are theoretically coordinated through a technical commission but ultimate decisions in each case lie with the separate agencies. Failure to coordinate these policies could cause serious problems in the future.

It is difficult to assess either the effectiveness or effects of the price control program. Items under control keep changing. The agency seems to respond to political situations. Some retailers have difficulty reporting the current control price on some items they sell. The fact that price controls are uncertain and apparently introduced with relatively little economic analysis, and therefore without predictability, may introduce more uncertainty into the market and discourage economical storage and perhaps production.

The price control may add to the costs of food and may have a serious side effect. The problem is typified by an observation by a food retailer

that "the price inspector has difficulty seeing my prices when he is looking at a peso". The cost of retailing is increased by the extent that bribes and fines become part of the cost of doing business. More importantly in the long-run is the effect such practices have on the attitude of people toward the law and their government. The extent of pay off of inspectors is unknown. This is in no way to be taken as an aspersion on the administrators of the price control agency. Indications are that they try to do their job as best they can as they understand it. Data from the Director of Price Control indicates that a number of retailers are taken to court and fined each week. The usual fine is $25. However, given the number of food retailers, it would appear the probability of being fined is relatively small. A $25 fine would have a different effect on large and small retailers. One of the problems with price control is that it often disadvantages one class of retailers relative to another thus effecting the development of the food distribution system.

A symptom of the failure to coordinate programs between INESPRE and the Price Control Agency is shown by an example from rice. The Price Control Agency had decreed that it is illegal to sell graded rice. There is one price set for rice and it is for ungraded rice. The Director has complained that some merchants violate this rule. (It seems to be the rule that rice is sold by two or three grades). At the same time INESPRE, which is an exclusive seller of rice from the rice mills sells rice to wholesalers and wholesalers on a grade basis. The retailer must at least wonder about the rationality of government under this situation.

The objective of INESPRE is stablize prices. This is done by buying and selling commodities, including imported ones.

Predictable prices are very important to agriculture producers. Predictable prices above the cost of production tend to stimulate production. Investments are avoided where price risks are high. Therefore to be effective the price stabilization program should announce price support levels before planting.

There is some evidence that the behavior of INESPRE is percived to be unpredictable. In this case they may be introducing uncertainty rather than reducing it.

A program of forward prices or minimmm price guarantees can contribute to increased production and efficiency of agriculture if it is conducted properly. Proper operation requires careful economic analysis. Any time relative prices are affected, resource allocation is affected. And reducing the price risk of one commodity stimulates production of that commodity relative to one not guaranteed.

It should be noted that a price stabilization program which supports average prices above market levels in order to transfer income to farmers results in a major transfer to large farmers who are relatively wealthy and very little transfer to small poor farmers.

Market Price Information

The Department of Agriculture collects market price data and quantities ~~in these markets~~ on 90 products from the municipal markets in 5 cities. Observations of prices are made at both the wholesale and retail level.

This program needs to be carefully reviewed in respect to the method of reporting and use by market participants and in regard to its ~~the~~ accuracy and use for market research. The methodology for sampling prices takes into consideration grades and time of day. However before the data are used for research ~~the~~ an examination of comparability through time and among cities should be made. The data are published in newspapers but do not seem to be in a form easily used by market participants. Product prices for a particular day are simply listed. No trends or seasonal comparisons are given. A marginal investment should make the information much more useful than it now appears to be.

There is no evidence that the data have been used for research purposes. If the data prove to be reliable several types of useful analysis are suggested. Quantities in these market is also reported but further research would have to be done on the data ~~its self~~ to determine the relationship between total quantities marketed and the quantity delivered to these specific markets, before the quantity date is used.

1. Analysis of daily price variations. Is there a pattern which would suggest gluts and scarcities on particular days of the week.

2. Identification of seasonal price patterns. For storable commodities such information would be useful as an aid in making economic feasability studies of storage. The information would also be useful in determining optimim cropping patterns for the various production zones. However, care must be taken in use of the data. These markets are very thin and relatively small changes in quantities during any season would alter the seasonal price patterns.

3. If both price and quantity data are ~~formed~~ found to be reliable for some products some idea of demand elasticities could be determined. Such estimates would be very useful in operating the price stabilization ~~program~~ program.

4. A comparison of the difference in prices between cities should give some idea if the national market is efficient in allocating commodities among areas. If price differences are consistently greater than the cost of transportation a problem exists in market organization or structure.

There is some evidence that these data are more reliable for the Santo Domingo market than for some of the other markets. If investigation determines that the data are not sufficiently reliable for these types of analysis then the procedures should be improved or the resources diverted to the collection of other data.

Storage

It appears that an economic analysis of storage should be made. We know that substantial variations in seasonal prices exist for many commodities.

This suggests to some that it would be economically feasable to invest in storage and processing facilities. However a fairly complex analysis is required to determine the validity of this conclusion.

It was observed that dry storage and refrigerated storage in municipal market areas was going unutilized. If an inventory of storage facilities and the pattern of their utilization has not been done such a survey ~~should~~ should be conducted before more storage is built.

It was also observed that food processing plants capable of processing fruits and vegetables operate ~~for~~ far below capacity. This is true even though at times of the year some fruits and vegetable glut the market and are available at very low prices. The problem is thatcost of processing limits the market for processed products.

The market is limited for processed or stored products because there are many substitute products. Among poor people at least the ~~electricity~~ elasticity of substitution among commodities is high. The high seasonal prices may reflect the demand by a very small part of the population and the seasonal price differences would be greatly reduced with relatively small storage.

An alternative to some storage may be to program production to ~~the~~ take advantage of the differences in growing conditions throughout the country. Introducing new varieties may also extend the production period of a commodity. These alternatives may be more economical than storage.

Note that economical private storage may be discouraged by action of the price control and stabilization agencies. Private individuals will store only if they believe it to be profitable. Storage costs can be substantial, especially with high interest rates to farmers and traders.

The practice of importing or dumping products on the market to reduce the effects of speculation may discourage economical storage by private individuals. Storage may be more economical if done by farmers, traders and consumers. Thus the price agencies need to be sure that they manipulate prices in such a way as to reduce uncertainty and that those who do store have a chance to recover their cost. Failure to follow this policy has lead several contries to the need to invest in government storage facilities at the same time that large ~~volumen of~~ private storage facilities went unused.

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February 7, 1974

Technical Inputs

The production and distribution of technical inputs is a critical part of a modern agricultural system. Most of the technical inputs are imported. Dealers hadling technical inputs are accessable to most farmers. Those interviewed indicated that they perceived no great problems in the availability of technical inputs. Problems of quality specification in fertilizers was considered important.

Only two fertilizer mixer forms exist in the country. Costs of distribution and margins on technical inputs are unknown.

Most lacking is the distribution of technical knowlege associated with the use of those inputs. It is well known that optimum advantage from expenditures for these inputs depends on the adoption of a complementory package of inputs. Technical knowledge seems to be made available to the large farmers through the large suppliers and some other services. However the information about economic use of technical inputs is not available in a useable form to most small farmers. The extension service is very limited relative to the number of farmers and the variation in production requirements among the many production zones.

New institutions need to be examined as means of increasing the effectiveness of distributing the combination of inputs and knowledge about their use.

FETAB is experimenting with a program of technical assistance and credit. The credit is supplied primarily in the form of needed technical inputs. It is suggested that this program be examined as a possible model. Other models need to be evaluated as well.

DRAFTED BY:
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February 7, 1974

Some Concluding and Summary Observations

1. While solutions to agricultural sector problems are urgent it is our opinion that no obvious quick solutions exist. The Dominican agricultural system is very complex. Long run development will require a major investment in research and planning for the sector.

2. At this stage the further development of managerial and technical talent and institutional structures in the agricultural sector are much more critical than expanded physical facilities.

Many physical facilities in agricultrual marketing are currently under utilized or poorly used due either to poor planning or to lack of management talent applied to their utilization.

3. Without population control, or a technological miracle, development efforts are an exercise in ~~fertility~~ fertility.

4. Agricultural sector planning must deal with the related very serious problems of malnutrition, unemployment and the low income and low productivity of small farmers and other workers in the food and agricultural sector.

5. Technical resources are scarce and coordination among the many public agencies involved in the support and regulation of food and agriculture is a serious problem.

6. Marketing research, planning, and policy formulation activities, in order to be effective, should be part of the integrated agricultural sector analysis and planning. A certain amount of "fomento" activity will also be necessary in order to "sell" the ideas, plans, projects and policies formulated by the sector planning staff.

Other divisions of government e.g. the price control office, the penetration roads office, and similar offices in other secretariats of the government as well as the several autonomous agricultural agencies, should continue to implement sector development plans and policies. They would also participate in sector planning by offering ideas as to policies, projects, etc, for consideration in the planning process.

7. The major thrust in marketing system development should be in developing the human resouce base for analysis, planning and implementation of marketing system development activities. A team of professionals focusing on marketing issues should be developed as part of the sector analysis group. That group would not only function as part of the research oriented sector analysis group but would also have the responsibility of stimulating and coordinating the market system development activities of other secretariats and autonomous agencies.

8. We are not attempting to specify, at this point, the kinds of marketing research that should be undertaken. We have offered some observations in the body of our report on the kinds of research which might be needed. But we believe it should all be part of the sector wide research effort. And, at this point, it is too early to determine what specific direction that research should take.

9. The Dominican government should be provided support where necessary to obtain the following kinds of resources for the ongoing sector analysis effort:

a. The Texas A&M/AID project provided for training ~~of~~ of over 180 agricultural professionals. They are one of the country's

most valuable agricultural resouces at this point. Additional AID resources to continue to make this talent available, especially in the sector analysis and planning would be a good investment.

b. AID should consider providing technical assistance to help develop the ongoing sector analysis approach and to learn with the Dominican staff how to make the activity payoff in terms of sector development. The technical assistance could best be viewed as a combination of assistance in immediate problem solving and graduate training.

c. Specifically we would suggest at least one or two full time professionals with knowledge of agricultural marketing and planning to work with a team of Dominicans on marketing aspects of sector analysis. In addition it is recommended that substantial short term assistance of specialists be provided. The exact specializations to be worked out by the group to be assisted.

10. At this point we see ~~only two kinds~~ several of marketing projects that might require significant additional external financing. They are a supervised ~~agricultural~~ experimental programs of technical input and technical knowledge credit program for food retailers and wholesalers and a "pick and shovel" penetration road construction program. The first is probably a bit premature. That is, technical assistance and "fomento" activity is needed first to make retailers and wholesalers aware of the potential advantages of changes in food wholesaling. The Department of Special Studies in INESPRE has already begun efforts of this type and they should be encouraged and strengthened. The penetration road construction program would be dependent on interest in the office of penetration roads in the Secretariat of Obras Publicas.

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DRAFTED BY:
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February 7, 1974

We believe credit should be provided to experiment with alternative models for delivery of the combination of technical imputs, technical knowledge, and market imformation.

The role of the credit would be to finance the technical imputs and perhaps some of the technical assistance. In order to get effective assistance to small farmers means must be found to deliver the combination of technical imputs, technical and farm management knowledge, and knowledge or assurance of a future market. We propose the development of experimental programs using technical imput distributors, farm products, marketing firms and cooperatives as retailers of farm credit, technical imputs and technical information in a package. These organizations would be given technical assistance and incentives to also enter into contractural arrangements with farmers to provide a more reliable market for the farm products.

11. We have identified several kinds of immediate actions in the nature of "fomenting managerial changes and organizational changes leading to marketing. They include a municipal market planning, organization and management effort, an effort to stimulate organization of marketing cooperatives, etc, a training and technical assistance program for retailers and wholesalers leading toward improved retail procurement arrangements, and a market information and grade development project. We suggest that at least one "change agent" with marketing expertise be provided to work out the sector analysis office with the institution most interested in implementing each of the action recommendations. He should have counterparts to work with in each case.

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DRAFT:KHarrison:mf
Feb. 7/74

SHORT RUN TECHNICAL ASSISTANCE AND CREDIT

PACKAGE FOR POTENTIAL AID FINANCING

We are suggesting that AID include as part of its agricultural sector loan the following marketing inputs:

1. Two full time marketing experts for a period of 3 years to assist the Secretariat of Agriculture Planning Office sector analysis team in marketing, research and planning.

2. One full time marketing "change agent" to work out of the ~~xgxxxxxx xxxxx~~ Planning Office of the Secretariat for Agriculture with various governmental, autonomous and private sector agencies in the implementation of market system development plans and projects.

3. A loan fund of about RD$1 million to be used for experimental supervised credit and technical assistance available to agricultural marketing firms and cooperatives.

4. A loan fund of about RD$1 million to assist the Dominican Government in developing a "pick and shavel" construction program for rural penetration roads.