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ACCELERATING EXPORTS OF DOMINICAN PRODUCTS

REPORT TO
US AGENCY FOR INTERNATIONAL DEVELOPMENT
DOMINICAN REPUBLIC

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SANTO DOMINGO - DOMINICAN REPUBLIC

February 6, 1967

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I. INTRODUCTION

One of the immediate needs of the Dominican Republic is to save or earn foreign currency and increase employment. The objective of this study is to orient those concerned with promotion of economic growth in the Dominican Republic as to what opportunities exist for meeting this need through promoting specific Dominican products. The program comprised selecting and ranking present and potential Dominican products according to three criteria: (1) balance of payments effects; (2) employment impacts; and (3) immediacy of implementation.

Based on a review of product availability obtained through field work in the Dominican Republic and utilizing the judgement of a number of people in our organization who have experience with producing and marketing the products concerned, we have forecast the probable impact of development of that product utilizing the three criteria above. For those products which appear to represent a real promotional opportunity we have outlined an approach to how they should be promoted.

Extensive field work was carried out in the Dominican Republic, Puerto Rico and the United States in discovering and evaluating major product opportunities.

~~While it has not been possible to obtain sufficient information within the time and budget allowed to suggest a detailed program, we are~~ confident that the products we have identified and rated include a high proportion of the real opportunities confronting the Dominican Republic. A promotional program based on this list should represent a sound use of funds and human resources available.

We acknowledge with gratitude the considerable efforts of the AID Industrial and Agricultural Divisions and of the Texas A&M task force in supplying product ideas and information. Many of the projects discussed in this report are already underway because of their initiative. It has been our role to review product ideas on the basis of immediately available supporting information (often superficial and unsubstantiated) and to utilize our collective judgement to establish certain short range priorities which can be useful in promoting exports.

II. APPROACH

As a way of looking at the problem of finding foreign exchange improvement possibilities for the Dominican Republic, we adopted a strategy of trying to find the net quick assets which could be disposed of in the world market place to enable the economic core of the country to survive and later grow profitably. This meant that we could not suggest any short-range steps which would damage the economy in the long run. Our criteria were as follows:

1. Production should be capable of a rapid acceleration (e.g. crops, existing mines, existing livestock inventory, forest resources, existing manufacturing capacities).
2. Drastic short range increase in exports should not harm the economy in the long run. (e.g. marketing too many cattle can reduce the national herd to the danger point in terms of local food supply).
3. Concentrate where possible on large projects, since the total management effort to promote and establish a \$1 million dollar export business is no less than that required for a \$10 million dollar export business.

At an early stage in our study we learned that import substitution programs are already underway in the key opportunity areas of food production (beans, tomatoes, garlic, potatoes, onions, rice, peanuts and dairy products), and petroleum. We concluded that there is relatively less opportunity for important promotional programs in this area, and have devoted our efforts to export promotion opportunities. Our analysis of import substitution opportunities is shown in Appendix A.

40 mill.

III. OBSERVATIONS

Before presenting our findings we wish to point out that rarely have we encountered in Latin America as difficult a situation with respect to promotional capability as in the Dominican Republic. The major problems of political instability, lack of trained people, lack of institutions and ~~institutional loyalty~~, and lack of any history of development of such trained people or institutions which would have provided a background of available information to help us in our study has made it quite difficult for us to predict the future.

It is difficult enough for a relatively advanced nation to embark on a program of exports of agricultural products and manufactured goods. Most of the elements of training and institutional development must be relatively advanced before a well-managed and promoted export program has any reasonable chance of success.

Here we are dealing with two sets of unknowns: the data from which to work, and the human resources which can take the programs resulting from our analyses and put them into action.

Accordingly, in our view, the goals we have established as reasonable for 1970 in the various products we have selected for promotion are those which can be realized only by an energetic emergency program which has the sustained full support of the Dominican Government.

IV. CONCLUSIONS

A. PRODUCTS

We have discovered twelve projects which we believe should form the basis of a Dominican export promotion program, and have estimated the export volume for each product as well as the employment generated by the year 1970 as shown in Table I.

Among the high and medium probability projects are a total of \$23 million of new exports, and employment for 2,400 persons.

All of the projects listed should be promoted. We have dropped a number of other products after investigation; those on which information was obtained which might be useful in the future are included in the text.

B. PROMOTION

Each of the products has its own promotion program described in the body of the report. Some of these programs are complementary and should be handled together, while others bear little relation to the rest. However, all promotion programs would benefit from efforts to reduce tariffs and transportation costs and most would benefit from continued agricultural research:

1. Tariffs - The Dominican Government should attempt to obtain temporary or permanent tariff concessions from the United States on agricultural products and manufactured and semi-manufactured goods. For a number of products the tariff represents the difference between an ordinary profit and a real development incentive. For others, it is the difference between profit and loss.
2. Transportation - Of absolute necessity to any Dominican export program is an increase in the efficiency of delivery of goods, especially to Puerto Rico and the U.S. Mainland. It should be possible to expand the weekly containership service already available from Puerto Rico to Santo Domingo. Expansion should include frequent overnight service in both directions between Santo Domingo and San Juan, as well as additional service from Santo Domingo to the East Coast United States.

Special concessions and subsidies to keep freight rates down and increase frequency of service should be considered.

T A B L E I

PROJECTS FOR PROMOTION

	<u>Projected Exports, 1970 \$ MM</u>	<u>Projected Employment 1970</u>
<u>High Probability</u>		
Fruits and vegetables	10	800
Grain sorghum	4	300
Manufactured goods	3	1000
	<hr/>	<hr/>
	17	2100
	<hr/>	<hr/>
<u>Medium Probability</u>		
Cattle, feedlot	2	100
Swine	2	100
Poultry	1	50
Candy	1	50
	<hr/>	<hr/>
	6	300
	<hr/>	<hr/>
<u>Low Probability</u>		
Cattle, oxen	4	50
Tobacco	5	0
Bauxite	4	50
Gypsum	3	0
Salt	1	50
	<hr/>	<hr/>
	17	150
	<hr/>	<hr/>
<u>TOTAL</u>	40	2550
	<hr/>	<hr/>

3. Agricultural Research - Both the long range program to build agricultural education and institutions and a short range program to accelerate exports should be supported.

C. PRE-REQUISITES FOR EXPORT DRIVE

Before any export promotion can be undertaken, in the field recommended by us, certain pre-requisites must be met and certain steps must be taken at the highest level of government.

1. Policy Statement

- a. The Government must declare that it is willing to make an all out effort to increase exports and provide more employment by means of export manufacturing and that it is willing to simplify procedures and cut red tape, to achieve this.
- b. Short term, export targets must be established.
- c. Recognizing the need for foreign assistance in the export drive, the Government must define the forms which this cooperation might take, especially in State enterprises. These forms of cooperation might fall into any of the following groups or might be achieved through a combination of them:
 - i. Fully foreign-owned enterprises.
 - ii. Joint ventures.
 - iii. Leases.
 - iv. Management contracts.

The need for foreign assistance might be politically difficult to press in an open policy statement. A definition is necessary, however, even if this is done in a private communication, say between the Presidency and the Corporación de Fomento Industrial.

2. General Measures

- a. Appoint a Director of Export Trade, who will be a general expeditor and whose job will be to help cut red tape. This man should be appointed by the President and should have direct access to him. He should be a generally respected,

well-known person of executive capacity, perhaps a top businessman. Preferably he would be non-political. There is no need to create a new institution for this, he could be attached to the Presidency and the whole office need not consist of more than one man and 3 secretaries.

- b. Expedite Industrial Promotion Law, remembering that under Dominican conditions it is better to have a simple and automatically operating law than one which is more sophisticated and requires judgment on the part of the officials concerned.
- c. Establish export incentives with simple procedures. The Dominican Republic needs export incentives for two reasons: first, because everybody else has them and the Dominican Republic must be competitive; secondly, because in a country where export is a new and therefore risky activity, special incentives must be given to persuade people to enter into this new activity. In particular, four types of incentives are required:
 - i. Tax exemption on sales abroad.
 - ii. Drawback.
 - iii. Export credits.
 - iv. Export insurance.
- d. Existing staff (e.g. in the Corporación de Fomento Industrial) should be trained in identifying export opportunities and in the promotion of such projects.
- e. In a parallel manner, financial and accounting staff should be trained for quick evaluation of export projects.

3. Specific Measures

Establish machinery, through the Export Trade Director, for fast enactment of rulings and legislation required for specific export projects, (e.g. purchase of local sugar at world prices in order to export candy).

Establish a coordinated program combining a small promotional staff, literature, information services, and possibly New York and San Juan promotional offices under a single management.

V. SORGHUM GRAIN, LIVESTOCK AND POULTRY

The discovery that good sorghum yields can be obtained and its use for an expanded livestock and poultry production program in the Dominican Republic could be one of the most important agricultural developments in the Caribbean in this century. Traditionally, the Caribbean has depended on the United States middle west or South America for feed grains. However, available data strongly suggests that the sorghum production program which has now reached a level of 2,500 acres, can be profitably expanded. The present program is going well; prices are favorable, yields have been excellent, known disease and insect problems have been effectively controlled; additional suitable lands are available for growing it on an extensive scale using modern equipment and technology and the time appears favorable for substantially increasing production. A new low-cost grain source in the Dominican Republic creates an opportunity to significantly increase Dominican foreign exchange earnings by exporting the sorghum to other grain deficient countries and/or by using it to produce in unusual quantities of poultry, swine and cattle for export.

Dependable long-term statistical data which are normally used for guidance in making projections are not available in the Dominican Republic; there has been no recent agricultural census and only rough estimates of livestock numbers and production in the Dominican Republic are available. Crop production records, soil tests, land capability surveys, accurate rainfall records and other pertinent data are not available. Therefore, it is not surprising that estimates of the rate at which Dominican grain-sorghum production can grow vary considerably among competent agriculturalists. Since all of these factors are inter-related, it is difficult in the absence of such information for us to do more than make an order-of-magnitude estimate on the volume of exports to be realized and on the time which will be required for these exports to reach significant levels. For purposes of establishing a promotional program, however, we have used the data available to us and our best judgement based on limited observations to estimate the rates at which the following opportunities can be realized:

A. SORGHUM GRAIN EXPORTS

1. Production Capability

a. Present and Potential Volume

The yield of sorghum grain from some of the better irrigated land in the Dominican Republic is estimated to be from 1½ to 2 tons per crop per acre, and at least 2 crops (and sometimes 2½ crops) can be grown each year. Thus, the overall yield on the best irrigated land is of the order of 3 to 4 tons per year. With this kind of yield sorghum would be a very

profitable crop to produce and there are thousands of acres now being used to produce marginal crops, rice and sugar cane that could profitably be used to grow sorghum. On non-irrigated land, available experimented data indicates one crop per year can be obtained with an estimated yield of 1 to 1.5 short tons per acre. The White Report of March 1966 suggested there are approximately 500,000 acres of unused non-irrigated land which could be used to produce approximately 750,000 tons per year of sorghum grain. At a conservative \$36 per ton farm price this would provide a farm income of \$27 million per year.

For promotional purposes, it should be pointed out that there is adequate suitable land available for greatly increasing sorghum production in the Dominican Republic, and in view of the world population explosion and a world-wide growing demand for feed grains there is an unlimited market. Moreover, over the short run, there is an unusually favorable market in nearby areas, such as Puerto Rico, where it appears a transportation advantage over any possible competitor may exist.

b. Quality

The several varieties now under test in the Dominican Republic are all good quality feed grains with a feeding value for livestock and poultry roughly equivalent to that of corn. It will be important for export purposes, however, that the number of varieties of sorghum be reduced to a minimum as soon as practicable so that a consistent quality of export grain can be maintained. Buyers of grain who mix animal feeds want their feed formulas to stay as constant in quality as possible, and therefore favor procurement sources that furnish grains of dependable quality.

c. Price

Grain prices in the Caribbean can be related to the price of sorghum at U.S. Gulf ports, which in January 1967 was selling about \$50 per short ton on a spot basis. Purchasers of this grain in the Caribbean could protect themselves against any wide variations in their procurement cost through the purchase and sale of futures in the Chicago commodity market. The price of feed grain in the Dominican Republic is quite high currently, about \$3.00 per cwt. On the other hand, the estimated cost of sorghum production in the Dominican Republic is low thus, it should be possible to fill internal feed grain needs at a big cost saving. It is estimated by current growers that the average cost, not including the use of land or depreciation in equipment to produce one short ton of sorghum grain will be about \$20. The average price currently being paid by Puerto Rico for grain sorghum is \$49 a ton f.a.s. the U.S. Port of embarkation. Thus, the margin that would be available to a Dominican producers for U.S. tariff, land use, depreciation and profit should be of the order of \$15-\$25/ton depending on the costs of handling and transportation, which in turn relate to their investment in silos, driers, trucks and bulk handling equipment at ports.

2. Market Possibilities

a. Volume

The most attractive market for Dominican sorghum grain appears to be Puerto Rico where we estimate the short range market potential for Dominican sorghum should be approximately 100,000-150,000 tons yearly. This estimate is based on 1965 U.S. corn and sorghum import data which we have shown in Table II. It will be noted that the imports of bulk feed corn and sorghum grain into Puerto Rico in 1965 totalled 159,000 tons. In addition, the grain-sorghum equivalent of additional dairy-feeds and poultry feeds imported already mixed, or partially mixed, was an additional 26,000 tons. However, it is unlikely this latter potential can be realized until feed mixing in Puerto Rico replaces the prepared feed imports. Nevertheless, the animal feed requirement of the Puerto Rico market is expected to continue expanding and the proximity of the Dominican Republic, to Puerto Rico makes it very attractive as a short-term market opportunity.

The sorghum grain market potential which we have interpreted to be feed corn plus sorghum imports from the U.S. in the rest of the Caribbean area amounted to about 100,000 tons in 1965 and it seems reasonable to believe a major part of this market might be obtained because of proximity and transportation cost advantages.

Furthermore, there is a very large market in Europe for sorghum grain which we have also shown in Table II. Traditional Dominican trading partners, the Netherlands and Belgium, consumed about 1,650,000 tons of U.S. sorghum exports in 1965 valued at over \$70 million. With low costs of production and delivery, the Dominican Republic should be able to compete effectively in Europe and capture a significant share of this \$100 million dollar market.

b. Marketing Factors

The principal obstacle to the development of a grain sorghum export business with Puerto Rico is the United States tariff which applies in Puerto Rico. There is no quota limitation on the amount which may be imported, but imports of grain sorghum from the Dominican Republic would be subject to a U.S. tariff of \$8 per short ton. Thus, while it appears Puerto Rico would be an attractive market because of proximity and probable lower transportation costs, the projected gross profit margin for the Dominican farmer of \$15-25 per ton would be very adversely affected by this \$8 per ton tariff. Accordingly, it is suggested that the Dominican Republic make efforts to obtain a special tariff concession from the United States on grain sorghum to reduce or eliminate the existing tariff, for sales to Puerto Rico. If this should fail, then the prime market would probably be the Netherlands and Belgium in competition with U.S. exporters.

T A B L E I I

POTENTIAL SORGHUM GRAIN MARKET
(Based on U.S. Exports, 1965)

	<u>Sorghum Grain</u>		<u>Corn</u>		<u>Sorghum Grain Equiv. of Prepared Poultry and Dairy Feeds*</u>		<u>Total</u>	
	<u>M</u>	<u>MM</u>	<u>M</u>	<u>MM</u>	<u>M</u>	<u>MM</u>	<u>M</u>	<u>MM</u>
	<u>Tons</u>	<u>Dlls.</u>	<u>Tons</u>	<u>Dlls.</u>	<u>Tons</u>	<u>Dlls.</u>	<u>Tons</u>	<u>Dlls.</u>
<u>CARIBBEAN</u>								
Puerto Rico	33	1.4	126	5.8	26	1.1	185	8.3
Jamaica	6	0.3	23	1.3	11	0.5	40	2.1
Trinidad	8	0.5	14	0.8	5	0.2	27	1.5
Colombia	3	-	-	-	-	-	3	-
Venezuela	-	-	59	3.4	1	-	60	3.4
Netherlands Antilles	-	-	-	-	5	0.2	5	0.2
Barbados	-	-	-	-	3	0.1	3	0.1
TOTAL CARIBBEAN	50	2.2	222	11.3	51	2.1	323	15.6
 <u>EUROPE</u>								
Netherlands	1040	46.65						
Belgium	607	27.17						
W. Germany	254	11.35						
United Kingdom	187	8.43						
Other	<u>292</u>	<u>12.29</u>						
TOTAL EUROPE	2380	105.89						

* (0.6) x dairy feeds plus (0.8) x poultry feeds.

Source: U.S. Department of Commerce: Exports.

Other important elements that must be given consideration in planning a marketing program are: the organization of a collecting or assembly system; facilities for drying, storing and handling grains in bulk; the transportation to a seaport; and arranging for bulk ocean transportation. The possibility of using existing bulk loading devices now handling exports of raw sugar, for grain, should be explored because the more efficient the handling and storage system can be made, the greater the possibility that the Dominican Republic will be able to achieve profitable exports of sorghum grain.

3. Short Range Income and Employment Potential

a. Estimated Dollar Value in Prime Markets

On the basis of the apparently great market potential for grain sorghum, and assuming that the grain sorghum program in the Dominican Republic can be pushed at a high rate, we believe it is reasonable to expect that sorghum exports in 1968 could reach 50,000 tons and 100,000 tons by 1970. Using a very conservative price of \$40 per ton f.a.s. port in the Dominican Republic, foreign exchange earnings would be \$2 million in 1968 and \$4 million in 1970.

b. Employment

The production of feed grains in the United States in 1962 required about 4 man-hours of labor per ton; it is difficult to know just how efficient production under Dominican conditions can be, but we have assumed that large contiguous tracts of land can be made available for sorghum grain production and that an extensive highly mechanized system of farming would be used; under these circumstances labor requirements would be similar. In addition to production labor, additional man-hours will be required for the storage, handling and shipping, as well as administration and sales. We estimate 2,400 hours of man labor per year would be needed to produce about 500 tons of sorghum grain. Therefore, the employment required to produce 50,000 tons of grain in 1968 would be about 200 persons, and to produce double this amount by 1970 would be about 400 people.

4. Promotion Program

To achieve the production goals we have established will require an effective promotion program. Ideally it should include the following:

- 1) A U.S. tariff reduction that would enable grain sorghum to move into Puerto Rico at little or no tariff.
- 2) An accelerated government extension program which will implement and support the Texas A&M program aimed at multiplying the production of grain sorghum in the Dominican Republic as rapidly as possible.
- 3) Establishment of infrastructure support such as sorghum drying, storage, and transportation facilities.
- 4) A program to encourage the participation of entrepreneurs with capital, know-how and an interest in growing grain sorghum on an extensive scale. Entrepreneurs experienced in the dry land farming of grain sorghum can be found in Texas, New Mexico, Arizona or California, and can probably be reached through the Grain Sorghum Producers Association, at Amarillo, Texas, whose secretary is Mr. William Nelson.
- 5) An action program designed to make available on reasonable terms unused lands controlled by the Dominican Sugar Company and other government controlled corporations.
- 6) A list of current importers in Puerto Rico, other Caribbean locations, and Europe, which will show their interest and willingness to purchase Dominican sorghum.
- 7) The Dominican diplomatic corps should be asked to explore the possibility of trade agreements or tariff concessions in the various countries which might in their own interest support an additional source of supply.

Some members of the Texas A&M team are excellent sources of information on grain sorghum and should be asked to provide continuing data to entrepreneurs as the project develops.

With the exception of a few large farm operators and possibly the sugar companies, we question whether there are other indigenous entrepreneurs who could quickly put together the capital and know-how required to effectively produce grain sorghum. Therefore, the quick and effective launching of this project will require that management and risk-taking capability be imported to work with the few local producers. The Texas A&M organization can provide some assistance in identifying and attracting these risk-takers, but this action should probably be made part of the business of the Corporación de Fomento and an organized promotion program of contacting and following through with potential investors should be established. As

part of this promotion program, it would be desirable to have an investment brochure that would reflect the probable profit potential from such a farming enterprise. This program should be related to the investment attraction efforts made for the livestock and poultry purposes described below. The sorghum production capability is essential to the further development of cattle and swine and boiler production, and we expect that frequently the same entrepreneur would be in more than one operation; thus the program of attracting entrepreneurship should cover not only grain, but also the livestock possibilities, and the Fomento organization responsible for sorghum promotion should act accordingly.

B. BEEF CATTLE

1. Production Capability

a. Present and Potential Volume

There has been no recent census of the cattle population in the Dominican Republic and the exact number of cattle is unknown. It has been estimated, however, that there are over 1 million head of cattle on farms in the Dominican Republic, including some 300,000 brood cows. The estimated annual beef consumption is between 20,000 and 25,000 tons which, assuming an average carcass weight of 400 pounds would indicate an annual slaughter of about 125,000 animals. This slaughter represents only 10% of the herd per year, compared with the annual slaughter in the U.S. of some 40% of the herd per year which suggests that major improvements need to be made in the Dominican livestock industry. While there are currently some very good cattle raising operations (e.g. the Viyella operation at Higüey where 3,000 animals are pastured on 5,000 acres of land), the overall yield of Dominican cattle is very low. The reasons for this appear to be as follows:

- i. A significant portion of the herd are oxen used as work animals in the sugar industry. These animals consume substantial quantities of feed materials but use the energy for work and not for production of meat.
- ii. The annual calf crop from brood cows is estimated at 40% whereas it has been demonstrated that under good management it could be 75-80%. The low calf crop is largely attributable to poor nutrition, the high incidence of contagious abortion and other diseases, and poor livestock management.

- iii. Nutrition is poor; calves grow slowly, and it takes 3 or 4 years for an animal to reach a market weight of 800 pounds which under good management and some supplemental feeding should be possible in 2 years or less. It is a common practice in the U.S. to market 1000 lb. animals in less than 2 years and in a recent Texas A&M experiment, a 1,000 lb. animal was marketed at an age of 365 days.

The quality of the Dominican herd is surprisingly good overall and we believe that with proper feeding, a typical Dominican calf fed out on good improved pasture plus a minimum amount of supplemental feed during dry periods could achieve a marketable weight of about 800 pounds at two years of age.

Alternatives for improving the nutrition of Dominican cattle are many, and include the use of improved Pangola grass pastures, the use of feed supplements utilizing molasses from local sugar mills and imported urea, the use of sorghum forage (the total plant), and the supplemental feeding of sorghum grain during the dry period with possible use of such forage as cane tops and leaves and bagasse.

We believe there are two principal potential sources for a rapid increase in meat exports from the Dominican Republic; these are: (1) the placing of selected herds on an improved management and nutrition program, including the use of improved pastures and supplemental feeding to get marketable animals in 2 years instead of 3, which would mean that within 2 years of when the program was implemented two calf crops could be marketed in that year instead of one, and (2) the replacement of a large number of the existing work oxen with tractors. The purpose of the following sections is to present on semi-quantitative basis the additional export earnings that would become available from the adoption of such a program.

2. Rapid Program for Pasture Improvement and Supplemental Feeding Operations

There are very great short-term advantages to a development effort in beef production. For each one hundred brood cows, it should be possible to double the beef carcass yield in the second year with nutrition improvement alone, because two calf crops would be available for marketing that year (the two year old animals on the proposed accelerated growth program and the normal crop of 3 year old animals). Production could be increased by another 50% by improving the calf crop yield. The installation of a supplementary feeding program adds a more modest increase in yield for the third year and beyond, although its cost of production will undoubtedly be lower and quality higher. Also, the carrying capacity of the range will be higher because the forage needed for the maintenance of the animals, over the one year period will be eliminated.

be higher because the forage needed for the maintenance of the animals over the extra 1 years period will be eliminated. However, a substantial 50% permanent improvement in yield beyond three years occurs if the calf crop can be raised from 40% to 80%.

An important reduction of time to market beef occurs if a supplemental feeding program is instituted. For each 100 mother cows put into this improvement program, about 16,000 pounds of additional beef worth about \$6,400 (at \$0.40 a pound) would become available at the end of the second year. This additional meat which would be available only in that year could be exported to improve the foreign exchange position of the Dominican Republic.

3. Replace Oxen

For every ox which can be replaced with tractors, the yield of canner and cutter grade beef would be about 378 pounds (0.17 metric tons), based on a 44.5% yield of retail beef per pound of live weight and an average weight of 850 pounds.

We believe this meat can be sold at about 30¢ per pound f.a.s. Dominican Republic which would give a return of \$113 per head when exported. Currently there is a tariff of 3¢ per pound of meat imports to Puerto Rico and the United States, which would have to be deducted from this price if sold in that market. The volume of meat imports to Puerto Rico in fresh form in 1964 was about 6,700 metric tons; an additional 5,300 metric tons was imported in tins for a total of 12,000 metric tons valued at \$8.8 million. These imports represent the equivalent of all 70,000 Dominican oxen. There are also large quantities of this type of cutter and canner beef imported into the United States each year for hamburger use. Currently these imports come largely from Australia. Of course, this resource is non-renewable and it is likely the tractor substitution program will take several years to carry out; moreover, the cost of importing tractors must be deducted in determining the foreign exchange benefits, but this opportunity to net a total of \$2.3 million during the next three years should not be overlooked. There should be no difficulty in finding a market for this meat in either Puerto Rico or the United States.

a. Quality

It is expected that through the use of improved nutrition and supplementary feeding animals will be ready for market at a much younger age and the meat will be more tender and of improved quality. Instead of all canner and cutter grade production, it is expected that with improved nutrition, much of it will grade out at U.S. Good, and sell at a higher price. With respect to the older oxen which have been used for work in the sugar cane fields, the likelihood is that the beef will be canner and cutter grades.

b. Price

Cattle ranching has not been a very profitable enterprise in the Dominican Republic. A Texas A&M team has been studying the cost of typical livestock operations including those of small ranches, operating on range lands. Their research showed that one small rancher obtaining a calf crop of 60% was losing \$12 per brood cow, whereas with a calf crop of 80% he could obtain a profit of \$5 per mother cow. There is evidence that the average small rancher is not getting a fair price for his calves. Currently he is paid about 16¢ per pound live weight but he needs about 18¢ per pound to pay for the costs of his operations. Presently no beef is being exported from the Dominican Republic but we know the price of beef for export depends upon the grade and competition in existing markets. In 1964 Puerto Rico paid an average price of 58¢ per pound f.a.s. East Coast U.S. for fresh and frozen beef and veal. This corresponded roughly to the wholesale market price in the United States for U.S. Choice grade during that year. At the same time Puerto Rico paid 33¢ for canner and cutter grade beef imported largely from Central America. Current prices appear to be of that order of magnitude.

c. Sale of Beef Vs. Sale of Live Cattle

It has been suggested that the Dominican Republic should consider shipping live cattle instead of beef because of the proximity of Puerto Rico, a major market, and the availability of regular ship service by Sealand. However, we have concluded this would not be practicable for the reasons discussed below:

(1) Live Cattle

Shipment of live cattle to the United States is limited to special ports of entry where 30 day quarantine facilities exist. Currently the only such facilities in the Caribbean area are at Miami, Florida; thus, Dominican cattle would have to be shipped to Miami for a 30-day period of quarantine and then reshipped to Puerto Rico.

One of the reasons why the shipment of live cattle was considered was because of the political situation in Puerto Rico where cattle and swine raisers tend to resist the influx of foreign products. Also there is capacity in the existing government-owned slaughter house at Caguas, Puerto Rico for slaughtering additional livestock. This facility currently has a capacity of 200 head of cattle per day plus 200 swine, plus 7,000-8,000 chickens. It is currently operating at a level of 40 cattle, 70 swine and 3,000-4,000 chickens, so it is apparent that there is excess capacity for use in slaughtering additional imported animals. However, we have been

advised by shippers that the transportation cost for live animals would average about \$40 per head whereas the cost of transporting the meat would only be about \$6 per head thus, the transport of live animals does not appear practicable at this time.

(2) Beef Exports

In order to export beef to the United States, a country must be willing to meet sanitary standards established by the U. S. Department of Agriculture with respect to the slaughter houses in which the animals are killed and it must permit open inspection at any time by the U.S. Department of Agriculture of such facilities. Currently the following countries have approved slaughter houses which cover the killing of cattle, calves, swine, goats and lambs:

<u>Country</u>	USDA <u>No. of Approved Slaughter Houses</u>
Mexico	20
Costa Rica	6
Honduras	5
Nicaragua	4
Guatemala	2
Panama	2
Haiti	1 (Haitian American Meat & Provision Co., Damien)
Salvador	None
Dominican Republic	None

We understand that the existing slaughter house in Santo Domingo is currently attempting to re-establish USDA approval which at one time it had. It would be important that the new slaughter house at Higüey also be approved by the USDA, and we strongly recommend that plans for any new packing plants be approved by the USDA before construction starts so that costly errors can be avoided in design and construction.

We understand that the new slaughter house at Higüey has a capacity of 300 cattle per 8-hour day, and this together with the existing Santo Domingo slaughter house and the other smaller plants in the Dominican Republic, have adequate capacity to supply local as well as export needs. If additional capacity were needed on a temporary basis, these plants could

put on second and third shifts. The form in which the meat will be processed for shipment, carcass beef, boned, etc., will of necessity have to be determined by shipping costs and market demand.

(3) Market Possibilities

i. Market Size by Prime Markets - Table III shows the size of the market in 18 key countries for live cattle and beef. Table IV shows the 1964 market in Puerto Rico, which totalled some 20,000 metric tons in all forms and was worth over \$19 million.

It appears evident that there is an ample market for all the beef production the Dominican Republic can spare for export.

ii. Marketing Factors - The 3¢ per pound U.S. tariff on beef which is worth less than 30¢ a pound, constitutes a barrier for the Dominican Republic, but not an unsurmountable one since currently a large part of the Puerto Rican market is supplied over this barrier from Central America. However, if possible, the Dominican Republic should try to get some special tariff concession made at least for the Puerto Rico market.

To properly evaluate the competition, information regarding the amounts, quality, regularity of shipments, freight costs and similar data needs to be developed. However, our preliminary inquiries indicate there is a definite transportation advantage which the Dominican Republic would have by using Sealand service in transporting meats to Puerto Rico over the air freight costs which Haiti and Central America now pay.

(4) Short-Range Income and Employment Potential

i. It is very difficult to estimate the dollar value of meat imports which would be possible by the adoption of the program we have suggested during the next three years, because of the absence of accurate data on cattle numbers. However, if we assume 50,000 of the 300,000 brood cows in the country were participating by the end of 1967 and put into the improved management and supplemental feeding program we have suggested, the additional meat products available for sale at the end of 1969 would be approximately 1500 metric tons. Depending somewhat on quality, this beef could be sold in the range of \$900-\$1,100 per metric ton and provide an additional \$1.5 million of new export earnings in 1970.

With respect to oxen, if we assume that some 30,000 oxen could be replaced over the next 3 years by tractors and the beef sold at \$113 per animal, another \$4.0 million of exports would be possible.

T A B L E I I I

ESTIMATED 1964 IMPORTS OF CATTLE AND BEEF IN 18 KEY COUNTRIES
(Thousand Dollars)

	<u>Live Cattle</u>	<u>Beef</u>
Canada	8,267	6,295
U. S. A.	48,157	228,940
SUB-TOTAL NORTH AMERICA	56,424	235,235
Iceland		
Sweden	208	6,454
Norway		1,148
Denmark	71	59
United Kingdom	131,898	239,791
Ireland	24,184	
Holland	29,805	19,841
Belgium-Luxemburg	20,011	16,514
France	4,092	76,894
West Germany	79,225	77,875
Austria	316	4,162
Switzerland	8,155	33,432
Spain	605	11,281
Portugal		6,190
Italy	123,906	230,661
Greece	1,129	16,001
SUB-TOTAL EUROPE	423,605	740,303
TOTAL 18 COUNTRIES	480,029	975,538

SOURCE: Arthur D. Little de México, S. A. Tradestat Program.

T A B L E I V

PUERTO RICO BEEF IMPORTS - 1964

	<u>Metric Tons</u>	<u>Million Dollars</u>	<u>\$/Metric Ton</u>
<u>Beef & Veal, Fresh or Frozen</u>			
From U. S.	7,000	8.98	1,280
From Foreign	6,700	4.96	740
	13,700	13.94	
 <u>Canned Beef & Veal</u>			
From U. S.	3,600	3.16	880
From Foreign	1,700	1.18	700
	5,300	4.34	
 <u>Cured, Pickled, or Other</u>			
From U. S.	1,000	0.60	600
From Foreign (Est.)	500	.40	800
	1,500	1.00	
 TOTAL BEEF	 20,500	 19.28	 940

Source: External Trade Statistics
1964
Commonwealth of Puerto Rico

ii. Employment - It is difficult to estimate the effect on employment until a detailed analysis of how an improved pasture and supplemental program would be carried out. The production labor cost of producing meat in the United States in 1963 through the wholesale level was about 5% of wholesale sales (note this covers the entire meat industry and is not restricted to just beef). We would estimate this cost would be as large or larger in the Dominican Republic.

(5) Promotion Program

We have previously discussed a number of prerequisites that are essential to an effective promotion program but we want to emphasize that, if possible, the import tax on beef into the United States should be eliminated or reduced, and that action should be taken to get Dominican slaughterhouses approved by the U. S. Department of Agriculture. This means that the Dominican Republic would have to authorize the on-site inspection of its slaughterhouses by USDA approved inspectors.

Where - The most promising export market appears to be Puerto Rico where sales of beef could be made to meat importers or supermarket chains who do their own wholesale buying.

Export possibilities to Europe and to the United States appear to be very large and there appears little question but what adequate outlets could be found. Perhaps this could best be carried out at the initial stage through regular diplomatic channels asking the Commercial Attachés of Dominican Embassies in the countries concerned, to investigate the local market and submit a report on who the buyers are, what the price is, what the quality and packaging requirements are, and finally, the tariff and transportation situation.

The supply of management talent for raising cattle is a critical factor, especially in view of the management required to produce high quality pastures and the use of feed supplements. In view of this need and the urgency to accomplish its job fast, it may be useful to attract entrepreneurs already skilled in livestock management, to carry out a few extensive cattle raising operations in the Dominican Republic. We have discussed the cattle raising opportunities with some cattlemen in Arizona and California and found a strong willingness on their part to consider the possibility, providing financing and know-how if guarantees of repatriation of capital are obtained. As a part of the promotion program it would clearly be useful to explore with several experienced cattlemen from sorghum grain areas, their appraisal of the Dominican Republic situation, and to obtain their ideas on what kinds of incentives they would require to make a cattle operation in the Dominican Republic attractive to them.

C. SWINE AND PORK PRODUCTS

1. Production Capability

a. Present and Potential Volume

The hog population of the Dominican Republic is thought to be just over 1 million. However, the estimated annual slaughter is only 8,000 metric tons, or about 10% of the hog population. By comparison, the United States annually slaughters 150% of the number of hogs on farms as of January 1. The problem seems to be primarily nutritional since the hog reaches marketable weight in some 15 months in the Dominican Republic in comparison with 5 months in the United States. The average litter per year in the Dominican Republic is only 2, while the current U.S. average is 7-1/4.

It has been demonstrated, however, that improved feeding could dramatically increase the number and yield of marketable hogs in the Dominican Republic.

In fact, we were told of one operation in the Dominican Republic (Mr. Frank Brown) who markets 100 pound hogs at 7 months of age, and also gets an average of about 7 pigs per litter.

The Texas A&M advisory group have recommended the extensive production of hogs on a large number of small operations because it would give employment and upgrade the capability of farmers throughout the Dominican Republic and because in small scattered operations, the disease risks in which there is little experience (or help available) is much less than in large concentrated operations. Although we recognize the risk of bringing together large numbers of hogs in a tropical climate, it has been demonstrated to be practicable in other countries where good sanitation practices are followed and we strongly recommend that consideration be given to growing large numbers of hogs in a confined housing program. The implementation of such a program could take place quickly and obviate the necessity for a large training program since relatively few entrepreneurs would be involved. Slaughter house capacity does not appear to be limiting in this case, at least in the short run, and it now appears that low cost sorghum grain will be available in large quantities, thus the major limiting factor appears to be finding entrepreneurs with the necessary capital and know-how.

b. Quality

The quality of the basic swine stock in the Dominican Republic is fairly good but because of poor nutrition the finish on the animals is poor and this leads to a down-grading of the slaughtered animal.

c. Price

Assuming good management, proper nutrition and dependable source of competitively prices grain, the cost of producing swine should be no higher than in the United States; proximity to markets such as Puerto Rico with possible low cost transportation suggests a return for swine and pork products that would be attractive. There is a tariff of 1.25¢ per pound on swine carcasses, 2¢ per pound for fresh pork hams and bacon, and 3¢ per pound for cured hams and bacon which could offset cost advantages of production and transport, and a tariff concession for pork shipments to Puerto Rico and the United States should be attempted.

2. Market Possibilities

a. Market Size by Prime Markets

Table V shows the import market in 1964 for 18 key countries and covers live swine, pork products and bacon. In addition to these countries there are many Caribbean and South American countries who import substantial quantities of pork products. Table VI shows the Puerto Rico market in 1964 where imports of more than 30,000 metric tons were made valued at more than \$20 million in that year.

The size of the markets available suggests marketing would not be a limiting factor at this time. However, as increased quantities of pork and pork products become available, considerable additional detailed information on the exact nature of the market for each of the principal products would be necessary. For example, it is known that the presence of Cholera in Dominican swine would preclude exports of fresh pork to many importing countries.

b. Marketing Factors

The U.S. tariff mentioned above is a definite obstacle to the development of swine exports and it is strongly recommended that an attempt be made to eliminate or reduce it.

3. Short-range Income and Employment Potential

a. Income Potential

A significant expansion of swine production in the Dominican Republic should be easy to achieve if a few good sized confined housing operations can be established. However, if we assume that progress is slow and the present

T A B L E V

ESTIMATED 1964 IMPORTS OF SWINE AND PORK PRODUCTS IN 18 KEY COUNTRIES
(Thousand Dollars)

	<u>Live Swine</u>	<u>Pork Products</u>	<u>Bacon</u>
Canada		11,520	2,420
U. S. A.		14,169	4,831
SUB-TOTAL NORTH AMERICA		25,689	7,251
Iceland			
Sweden		6,493	1,559
Norway		2,333	52
Denmark		171	
United Kingdom	79	7,312	314,328
Ireland	1,110		
Holland		7,705	186
Belgium-Luxemburg	720	12,413	199
France	30,163	78,857	3,387
West Germany	13,386	12,362	1,013
Austria	4,539	1,213	
Switzerland	256	11,812	493
Spain		68	73
Portugal		2,652	
Italy	764	20,452	209
Greece		768	
SUB-TOTAL EUROPE	51,017	164,611	321,499
TOTAL 18 COUNTRIES	51,017	190,300	328,750

SOURCE: Arthur D. Little de México, S. A. Tradestat Program.

T A B L E VI

PUERTO RICO PORK PRODUCTS IMPORTS - 1964

	<u>Metric Tons</u>	<u>Million Dollars</u>	<u>\$/Metric Ton</u>
<u>Pork, Fresh or Frozen</u>			
From U. S.	9,500	7.36	770
From Foreign (neg- ligible)	—	—	
Total fresh or frozen	9,500	7.36	
<u>Hams, Shoulders, Cured or Cooked, and n.e.c.</u>			
Fresh from U. S.	4,800	3.79	790
Canned from U. S.	1,900	2.03	1,070
Canned from Foreign	1,450	1.65	1,140
Total hams, shoulders	8,150	7.47	
<u>Bacon</u>			
From U. S.	325	.32	980
<u>Pickled, Salted, Cured, n.e.c.</u>			
Fresh from U. S.	11,000	4.00	365
Canned from U. S.	1,570	1.64	1,040
Total pickled, salted	12,570	5.64	
<u>Other</u> (Estimated)	930	0.45	480
TOTAL MEAT	31,475	21.24	675
<u>Lard</u>			
From U.S.	30,800	8.29	269
GRAND TOTAL INCLUDING LARD	62,000	29.5	

Source: External Trade Statistics-1964. 25
Commonwealth of Puerto Rico

slaughter rate of 8,000 metric ton per year is only doubled by 1971, the extra production is available for export and would still provide more than \$3.3 million of foreign exchange earnings.

<u>YEAR</u>	<u>EXCESS PRODUCTION METRIC TONS LIVE WEIGHT OVER 1966</u>	<u>VALUE AT 19¢ PER LB. ESTIMATED EXPORT PRICE</u> (Thousand Dollars)
1967	500	210
1968	1,500	630
1969	3,500	1,470
1970	6,000	2,520
1971	8,000	3,360

This amount would not come close to satisfying the pork demand of Puerto Rico alone in 1970; thus, it is clear that the limiting factor in the development of this enterprise will be the rate at which commercial swine operations can be established.

There appear to be many advantages both from an employment and financial basis to exporting grain sorghum in the form of pork, therefore, every effort should be made to accelerate the rate of establishment of commercial swine operations and to assist farmers to improve their feeding and management practices.

b. Employment Potential

It is difficult to estimate the increase in employment which would result from accelerating the production of swine. In the United States the labor cost for all meat raising operations through the wholesale stage is estimated to be about 5% of gross sales and for the type operation we are recommending it should be about the same in the Dominican Republic.

4. Promotion Program

a. Prerequisites

Promotion efforts should be directed toward getting a program of commercial swine operations going through establishing a program of attracting foreign investors and training, financing, and selecting possible Dominican operators in cooperation with an experienced animal feed manufacturer.

More detailed research than was possible in this report should be made of the Puerto Rican, United States, and other probable markets in a fashion similar to that described under cattle. Also, a similar promotion program directed to importers should be instituted.

D. POULTRY

1. Production Capability

a. Potential Volume

There are few, if any, commercial broiler operations in the Dominican Republic. However, the potential sales volume is very large if market outlets can be properly organized. Broilers make very efficient use of feed (2.5 pounds of feed yields 1 pound of meat). The production of commercial broilers is a highly mechanized operation with low labor requirements. For example there is a commercial operation in Texas which regularly produces about 5 million broilers per year and it is operated by 10 people.

The production of commercial broilers is a highly technical operation requiring considerable knowledge and training in nutrition, disease control, marketing, and other specialties. However, there is no reason why poultry men of the Dominican Republic could not become major producers of broilers, chickens, turkeys and eggs with a little training and supervision.

2. Market Possibilities

a. Market Size by Prime Markets

Imports of killed poultry in 18 key countries in 1964 are shown in Table VII. Puerto Rican imports are shown in Table VIII. The average price paid by Puerto Rico for broilers was 28.5¢ per pound in 1964, f.a.s. East Coast United States.

b. Marketing Factors

The production of poultry is an area where the U.S. tariff is of major importance. The tariff on imports of poultry into the United States and Puerto Rico is 3¢ a pound for whole birds which have been plucked only, 5¢ per pound if they have been eviscerated but not cut into pieces, and 10¢ per pound if they have been cut into pieces.

T A B L E VII

ESTIMATED 1964 IMPORTS OF KILLED POULTRY IN 18 KEY COUNTRIES
(Thousand Dollars)

	<u>Killed Poultry</u>
Canada	3,554
U. S. A.	
SUB-TOTAL NORTH AMERICA	3,554
Iceland	
Sweden	605
Norway	91
Denmark	
United Kingdom	7,369
Ireland	
Holland	1,186
Belgium-Luxemburg	250
France	268
West Germany	126,418
Austria	6,553
Switzerland	15,202
Spain	545
Portugal	
Italy	2,785
Greece	2,676
SUB-TOTAL EUROPE	163,948
TOTAL 18 COUNTRIES	167,502

SOURCE: Arthur D. Little de México, S. A. Tradestat Program.

T A B L E VIII

PUERTO RICO POULTRY AND EGGS IMPORTS - 1964

	<u>Metric Tons</u>	<u>Million Dollars</u>	<u>\$/Metric Ton</u>
(All U.S. Source)			
Broilers	14,300	8.99	630
Chickens	350	.24	690
Turkeys	520	.49	940
Poultry n.e.c.	<u>1,220</u>	<u>.91</u>	750
	16,390	10.63	650
Eggs	9.1 million dozen	2.77	30 ¢/Dozen

Source: External Trade Statistics- 1964
Commonwealth of Puerto Rico.

This means that without any substantial labor advantage (since so few people are used), the Dominican Republic must be 2 cents to 4 cents per pound more efficient than the U.S. industry which is currently the most efficient in the world. Part of this efficiency may come by reason of geographic location and reduced transportation costs of the broilers themselves. Another part may come from lower cost grain sorghum resulting from its transportation advantage. Nevertheless, it will in our opinion take considerable ingenuity for the Dominican Republic to obtain a large share of the broiler market in Puerto Rico unless a special tariff concession is obtained. We do not have much cost or price information on other Caribbean and Latin American markets but we do know large quantities of U.S. poultry are shipped to those markets and the Dominican Republic may have a transportation advantage that would make these markets attractive.

3. Short Range Income Potential

Even a 10% share of the Puerto Rican broiler market represents about 1 million dollars in sales (1,600 m. tons of meat). This quantity of meat would require approximately 4,400 short tons of feed to produce and would require a very substantial investment in broiler cages and processing equipment. Under the circumstances, broilers cannot be regarded as major market for sorghum grain, yet they provide a very interesting income potential.

4. Promotion Program

Effective promotion of this program would involve the following:

- i. A feasibility study on broiler operation in the Dominican Republic which would include a marketing review in Puerto Rico, Latin American, and perhaps one or two European countries.
- ii. If the market outlook appears good an effort should be made to establish some good sized broiler operations possibly in connection with an animal feed industry.

It shouldn't take more than a few months to do the feasibility study and analyze the market information needed to determine if commercial broiler operations dependent on export markets could be profitably established. This means that before the end of 1967 a decision could be made whether to get into this enterprise on a substantial basis and if it is feasible. The income to the Dominican Republic from installation of broiler operations could thus be anywhere from 0 to more than \$5 million by 1970. If it should be possible to obtain tariff concessions from the U.S. for Dominican poultry, the result could be very favorable. We have concentrated on reviewing the broiler possibilities since there appears to be the prime export opportunity for this product in Puerto Rico. However, it should be noted that chickens, turkeys and eggs are all purchased by Puerto Rico, and may represent similar although smaller opportunities.

VI. FRESH FRUITS AND VEGETABLES

A. BASIS FOR SELECTION

The list of produce from which our selections have been made is shown in Table IX. On the basis of dollar earning potential and the lead time necessary for developing the enterprise, we eliminated those which appear to be either small from a cash generation point of view, or which would require more than two years to give a financial return, or both.

B. UNITED STATES PRODUCE IMPORTS VS. DOMINICAN EXPORTS

Table X shows United States imports of selected fresh fruits. Oranges, strawberries, cantaloupes and canned pineapple, account for 58% of total imports worth \$36.9 million in 1965, of which Mexico supplied \$21.3 million.

Dominican exports of fresh fruits are shown on Table XI. The only significant product in this list is bananas which accounted for \$5.2 million out of a total exports in 1964 worth about \$7.5 million, but which has since declined rapidly. West Germany and the Netherlands were the major customers.

United States imports of selected fresh vegetables are given in Table XII. Garlic, peppers, onions, cucumbers and tomatoes, account for \$42.6 million, or 88% of total imports worth \$48.4 million in 1965. During the same year, Mexico exported \$40.6 million of the total, and \$36.8 million out of \$42.6 million worth of the above mentioned group of vegetables.

Table XIII shows Dominican exports of fresh vegetables totaling \$390 thousand out of which \$126 thousand were beans.

From these numbers it is evident that the Dominican Republic is not taking advantage of the considerable markets that the United States offers for several crops that reportedly can be produced at a relative advantage with a very short lead time in the Dominican Republic.

C. SELECTION OF EXPORTABLE CROPS

The expected lead time required to have exportable production of the selected crops has been estimated by the Texas A&M group and is shown in Table XIV.

From a timing point of view, the most promising crops are: avocados, black beans, tomatoes, cantaloupes, squash, cucumbers, peppers, lettuce, white onions, strawberries, watermelons and coconut.

T A B L E IX

LIST OF PRODUCTS CONSIDERED

Artichokes	Guavas
Avocados	Lettuce
Black Beans	Mangoes
Broccoli	Okra
Brussels Sprouts	Peppers
Bulbs	Pigeon Peas
Cabbage	Pineapple
Canteloups	Potatoes
Carrots	Spinach
Citrus	Squash
Coconut	Strawberries
Cauliflower	String Beans
Cucumbers	Tomatoes
Cutflowers	Watermelon
Garlic	White Onions

U. S. FRESH FRUITS IMPORTS
(Millions of U.S. Dollars)

	<u>1960</u>		<u>1961</u>		<u>1962</u>		<u>1963</u>		<u>1964</u>		<u>1965</u>	
	<u>Mex.</u>	<u>Tot.</u>	Mex.	Tot.	Mex.	Tot.	Mex.	Tot.	Mex.	Tot.	Mex.	Tot.
<u>CITRUS</u>												
Oranges	0.7	1.0	0.6	0.8	1.0	1.1	1.7	2.1	4.7	5.5	3.3	4.0
Oranges, except mandarines packed in airtight containers												
Limes, natural or in brine	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.6	0.2	0.5
Other citrus fruits	---	---	---	---	---	---	---	---	---	---	---	---
SUBTOTAL	0.9	1.3	0.9	1.1	1.3	1.4	2.0	2.4	5.1	6.1	3.5	4.5
<u>BERRIES</u>												
Strawberries, natural, etc.	0.04	0.06	0.11	0.14	0.14	0.16	0.2	0.3	5.6	5.8	7.8	8.1
SUBTOTAL	0.04	0.06	0.11	0.14	0.14	0.16	0.2	0.3	5.6	5.8	7.8	8.1
<u>MELONS</u>												
Watermelons	2.2	2.2	1.1	1.1	1.1	1.1	1.0	1.0	1.3	1.3	1.3	1.3
Melons, other	0.4	1.6	0.3	1.1	0.2	1.1	0.1	0.9	0.1	1.6	0.2	1.8
Melons, fresh, except cantaloups and watermelons												
Cantaloups	4.0	4.0	3.9	3.9	4.4	4.4	4.8	4.8	6.7	6.7	7.4	7.4
SUBTOTAL	6.6	7.8	5.3	6.1	5.7	6.6	5.9	6.7	0.1	1.6	0.2	1.8
<u>PINEAPPLE</u>												
Pineapple not in bulk	0.4	0.4	0.4	0.5	0.7	0.7	0.7	0.7	0.9	1.2	0.8	1.1
Pineapple canned	2.1	10.8	2.3	11.8	2.4	11.7	1.4	8.2	2.5	14.7	2.5	17.4
SUBTOTAL	2.5	11.2	2.7	12.3	3.1	12.4	2.1	8.9	3.4	15.9	3.3	18.5
<u>GUAVAS</u>												
Citrons, ligs, guavas, prunes, etc.	-	-	-	-	-	-	-	-	1.0	1.3	0.7	1.0
SUBTOTAL	-	-	-	-	-	-	-	-	1.0	1.3	0.7	1.0
TOTAL	10.4	20.36	8.11	19.64	10.24	20.56	10.20	23.1	23.3	38.70	24.2	42.6

T A B L E X I

DOMINICAN EXPORTS OF FRESH FRUITS

<u>COMMODITY</u>	<u>DESTINATION</u>	<u>1 9 6 3</u>		<u>1 9 6 4</u>	
		<u>Tons</u>	<u>M.Dlls.</u>	<u>Tons</u>	<u>M.Dlls.</u>
<u>Oranges and Tangerines</u>		<u>1,060</u>	<u>36.2</u>	<u>507</u>	<u>8.5</u>
	United States	180	20.8	1	0.1
	Netherlands Antilles	873	15.1	497	8.2
	Virgin Islands	4	0.1	4	-
	Puerto Rico	3	0.1	5	0.2
<u>Grape Fruit</u>		<u>44</u>	<u>1.0</u>	<u>75</u>	<u>2.7</u>
	United States	-	-	1	0.1
	Netherlands Antilles	43	0.8	56	1.1
	Virgin Islands	1	0.2	2	-
	Puerto Rico	-	-	16	1.5
<u>Bananas</u>		<u>119,642</u>	<u>8,611</u>	<u>68,707</u>	<u>5,187</u>
	United States	17,820	1,244	1,314	87
	Netherlands Antilles	1,639	52	1,308	40
	Virgin Islands	10	-	4	-
	Puerto Rico	-	-	3	-
	West Germany	58,619	4,246	48,353	3,746
	Netherlands	26,228	1,967	15,311	1,112
	Norway	2,032	152	-	-
	United Kingdom	516	48	1,070	97
	Sweden	12,777	901	1,343	105
<u>Plantain</u>		<u>107</u>	<u>7</u>	<u>370</u>	<u>20</u>
	United States	104	7	368	20
	Netherlands Antilles	1	-	2	-
	Virgin Islands	2	-	-	-
<u>Other Fresh Fruits n.e.s.</u> (i.e.Canteloups,Pineapples)		<u>2,677</u>	<u>209</u>	<u>973</u>	<u>36</u>
<u>Mango</u>		<u>344</u>	<u>7</u>	<u>363</u>	<u>6.5</u>
	United States	-	-	9	0.4
	Netherlands Antilles	337	6.7	353	6.0
	Virgin Islands	7	0.3	1.	0.1
<u>Pineapple</u>		<u>2,079</u>	<u>191</u>	<u>308</u>	<u>10</u>
	United States	-	-	205	5
	Martinica	2,056	189	92	4
	Netherlands Antilles	11	1	10	1
	Virgin Islands	1	-	-	-
	Puerto Rico	10	1	-	-
<u>Papaya</u>		-	-	-	-
	United States	-	-	-	-
	Netherlands Antilles	-	-	-	-
	Puerto Rico	-	-	-	-
<u>Coconut</u>		<u>234</u>	<u>16</u>	<u>72</u>	<u>2.5</u>
	United States	189	14	21	1.0
	Netherlands Antilles	45	2	51	1.5

Source: Comercio Exterior de la Rep. Dominicana

T A B L E XII

U. S. FRESH VEGETABLE IMPORTS
(Millions of U.S. Dollars)

COMMODITY	1 9 6 0		1 9 6 1		1 9 6 2		1 9 6 3		1 9 6 4		1 9 6 5	
	Mexico	Total	Mexico	Total	Mexico	Total	Mexico	Total	Mexico	Total	Mexico	Total
<u>GARLIC</u>												
Garlic	1.3	2.5	0.7	1.9	1.4	2.7	1.2	2.8	0.8	2.5	0.9	2.1
	---	---	---	---	---	---	---	---	---	---	---	---
SUBTOTAL	1.3	2.5	0.7	1.9	1.4	2.7	1.2	2.8	0.8	2.5	0.9	2.1
<u>PEPPER</u>												
Peppers, fresh	2.3	2.3	1.3	1.3	1.8	1.8	2.0	2.0	1.54	2.36	2.0	2.7
	---	---	---	---	---	---	---	---	---	---	---	---
SUBTOTAL	2.3	2.3	1.3	1.3	1.8	1.8	2.0	2.0	1.54	2.36	2.0	2.7
<u>ONIONS</u>												
Onions, except onion sets	1.0	1.1	1.4	2.1	2.7	3.0	1.4	1.8	1.7	2.3	2.1	2.7
	---	---	---	---	---	---	---	---	---	---	---	---
SUBTOTAL	1.0	1.1	1.4	2.1	2.7	3.0	1.4	1.8	1.7	2.3	2.1	2.7
<u>CUCUMBERS</u>												
Cucumbers	0.7	2.7	0.6	1.8	0.9	2.3	1.1	2.1	1.3	4.7	2.8	5.2
	---	---	---	---	---	---	---	---	---	---	---	---
SUBTOTAL	0.7	2.7	0.6	1.8	0.9	2.3	1.1	2.1	1.3	4.7	2.8	5.2
<u>TOMATOES</u>												
Tomatoes, natural state	20.4	23.8	11.6	12.9	17.3	17.5	19.5	19.6	27.3	27.6	29.4	29.9
	----	----	----	----	----	----	----	----	----	----	----	----
SUBTOTAL	20.4	23.8	11.6	12.9	17.3	17.5	19.5	19.6	27.3	27.6	29.4	29.9
<u>VEGETABLES</u>												
Vegetables, fresh n.e.s.	0.1	1.1	0.1	0.9	0.2	0.8	0.3	0.6	3.3	5.5	3.8	5.8
	---	---	---	---	---	---	---	---	---	---	---	---
SUBTOTAL	0.1	1.1	0.1	0.9	0.2	0.8	0.3	0.6	3.3	5.5	3.8	5.8
TOTAL	25.8	33.5	15.7	20.9	24.3	28.1	25.5	28.9	35.64	44.96	40.8	48.4

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SOURCE: U.S. Imports of Merchandise for Consumption - US Dept. of Commerce - Bureau of the Census - FT 125

T A B L E XIII

DOMINICAN EXPORTS OF FRESH VEGETABLES

<u>COMMODITY</u>	<u>DESTINATION</u>	<u>1 9 6 3</u>		<u>1 9 6 4</u>	
		<u>Tons</u>	<u>M.Dlls.</u>	<u>Tons</u>	<u>M.Dlls.</u>
<u>Avocados</u>		<u>215</u>	<u>9</u>	<u>230</u>	<u>12</u>
	United States	5	1	6	1
	Netherlands Antilles	207	8	205	9
	Virgin Islands	3	-	-	-
	Puerto Rico	-	-	18	2
<u>Beans</u>		<u>654</u>	<u>116</u>	<u>642</u>	<u>126</u>
<u>Dry Beans</u>		<u>39</u>	<u>6</u>	<u>-</u>	<u>-</u>
	Puerto Rico	7	0.7	-	-
	Venezuela	31	5	-	-
<u>Bell Peppers</u>		<u>139</u>	<u>12</u>	<u>417</u>	<u>29</u>
	United States	10	1	50	4
	Netherlands Antilles	0.4	0.01	0.1	0.01
	Virgin Islands	0.08	0.06	-	-
	Puerto Rico	127	10	367	25
<u>Lettuce</u>		<u>3</u>	<u>0.3</u>	<u>0.2</u>	<u>0.06</u>
	Puerto Rico	3	0.3	0.2	0.06
<u>Cucumbers</u>		<u>-</u>	<u>-</u>	<u>49</u>	<u>2</u>
	United States	-	-	49	2
	Puerto Rico	-	-	0.3	0.08
<u>Tomatoes</u>		<u>27</u>	<u>3</u>	<u>216</u>	<u>15</u>
	United States	-	-	4	0.3
	Netherlands Antilles	3	0.2	0.8	0.06
	Virgin Islands	0.8	0.07	-	-
	Puerto Rico	23	3	212	14
<u>White Onions</u>		<u>0.3</u>	<u>0.03</u>	<u>-</u>	<u>-</u>
	Netherlands Antilles	0.3	0.03	-	-
<u>Peas</u>		<u>221</u>	<u>8</u>	<u>285</u>	<u>14</u>
	Leeward Islands (Sotavento)	-	-	0.7	0.06
	Netherlands Antilles	203	8	152	6
	Virgin Islands	17	0.8	7	0.3
	Puerto Rico	-	-	125	8
<u>String Beans</u>		<u>0.05</u>	<u>0.003</u>	<u>-</u>	<u>-</u>
	Netherlands Antilles	0.05	0.003	-	-
<u>Vegetables n.e.p.</u>		<u>17</u>	<u>2</u>	<u>10</u>	<u>1</u>
	United States	3	0.2	4	0.6
	Netherlands Antilles	-	-	0.1	0.1
	Puerto Rico	14	1	6	0.8
<u>Vegetables for Human Consumption n.e.p.</u>		<u>940</u>	<u>57</u>	<u>2,198</u>	<u>118</u>
		<u>2,913.65</u>	<u>252.70</u>	<u>5,254.40</u>	<u>390.43</u>

Source: Comercio Exterior de la República Dominicana

T A B L E X I V

LEAD TIME BEFORE PRODUCTION OF FRESH FRUITS & VEGETABLES

<u>CROP</u>	<u>PRODUCTION EXPECTED BY</u>
Avocados	1969
Mangoes	1972
Pineapple	1972
Black Beans	1968
Red Beans	Deficit
Tomatoes	1968
Cantaloups	1967
Squash	1968
Cucumbers	1967
Peppers	In production
Lettuce	In production
Garlic	Deficit
White Onions	1967
Strawberries	1967
Watermelons	1967
Coconut	In production
Citrus	1971

Source: Texas A&M Team Estimates

Based on the market size and dollar earning potential, the produce we have selected for promotion as the most promising are: cantaloupes, strawberries, peppers, onions, cucumbers, tomatoes, and black beans.

This group of selected products represents a total potential market of more than \$55 million, out of which Mexico presently enjoys a share of over 90%.

We believe a reasonable goal would be the substitution of a 20% of Mexico's market share three years from now and that Dominican exports of the selected products should increase from a negligible figure to about \$10 million in that time period.

D. SELECTED PRODUCTS

1. Strawberries

a. Production Capability

(1) Volume, Present and Potential

Strawberries have not been grown on a large commercial scale in the Dominican Republic prior to 1967. However, plantings under similar environmental conditions in the Bahamas suggest large profitable yields could be obtained.

Nebraska Agricola Dominicana planted approximately 200 acres of strawberries this year on its farm near Monte Cristi. The plants are growing well and seem healthy; however, it is too early to tell how productive the plants will be. If we assume an average yield close to that of Mexico (3,500 pounds per acre), the production could reach 700,000 pounds in 1967. However, on the basis of recent observation, this appears to be somewhat optimistic.

If the goal of substituting 20% of the Mexican exports of \$7.8 million or 52 million pounds of frozen strawberries is reasonable, this will mean exports of 10 million pounds of strawberries valued at \$1.6 million can be made in 1969. Assuming a yield of 3,500 pounds per acre, Dominican producers will need to plant about 3,000 acres of strawberries by 1969.

Reportedly, it is possible to achieve such a goal, since Nebraska alone would consider using 3,000 acres of its land for strawberries between now and 1969 if the crops turn out to be as profitable as expected.

(2) Quality

We have no accurate way to evaluate the preserving quality of Dominican strawberries, since no crop has been harvested yet. However, there seems every reason to believe it should be equal to that of the Mexican, Florida or California product.

(3) Price

Auction prices for strawberries are shown in Table XV for 1965.

Mexican producers are getting about \$0.15 per pound for frozen strawberries and we believe growers in the Dominican Republic should get about the same. The Texas A&M estimated Dominican production costs at about \$700 per acre, or \$0.20 per pound of strawberries, which is high compared with Mexico, but lower than the cost of Florida and California producers.

On the other hand, the Dominican Republic has an important advantage in freight rates to the north and southeastern United States compared with Mexico which could largely offset a production cost disadvantage and permit it to profitably compete for this market.

b. Market Possibilities

(1) Market Size by Prime Markets

Table XVI shows rail and truck unloads of strawberries in major north and southeastern cities of the United States for the years 1961-1965.

(2) Marketing Factors

The best time of the year for strawberry sales is the first half, with May and June being particularly good months, both from the point of view of demand and selling price.

Conference shipping rates from Santo Domingo to New York for refrigerated fruits are approximately \$40 a short ton. Present Sealand service calls for one ship stop in Santo Domingo every Friday, and charges are \$35 per short ton freight Santo Domingo-New York in minimum shipments of 30,000 pounds.

AVERAGE PRICES OF STRAWBERRIES AT LEADING SHIPPING POINTS

EACH MONTH BY DESCRIPTION OF SALE 1965

(Prices in this Table are simple averages of the mid-points of the daily range and are only for months during which market news stations were in operation in the specified districts. All sales f.o.b. shipping point, unless otherwise stated.)

<u>SHIPPING POINT AND DESCRIPTION OF SALE</u>	<u>JAN.</u>	<u>FEB.</u>	<u>MARCH</u>	<u>APR.</u>	<u>MAY</u>	<u>JUNE</u>	<u>JULY</u>	<u>AUG.</u>	<u>SEPT.</u>	<u>OCT.</u>	<u>NOV.</u>	<u>DEC.</u>
<u>Arkansas:</u>												
<u>Auction sales</u>												
<u>16-quart crate, U.S. No. 1</u>												
<u>Bald Knob Area</u>												
Blakemore	-	-	-	-	4.82	-	-	-	-	-	-	-
Tennessee Beauty	-	-	-	-	5.38	-	-	-	-	-	-	-
<u>Marshall Area</u>												
Blakemore	-	-	-	-	6.09	-	-	-	-	-	-	-
Tennessee Beauty	-	-	-	-	6.14	-	-	-	-	-	-	-
<u>California:</u>												
<u>Central (Coastal Points)</u>												
Various varieties, 12-pint tray	-	-	-	-	3.24	3.18	3.00	-	-	-	-	-
<u>Southern (Orange County)</u>												
Various varieties, 12-pint tray	-	-	4.49	3.29	2.99	-	-	-	-	-	-	-
<u>Florida:</u>												
<u>Delivered sales shipping point basis 12-pint flat</u>												
Various varieties, per pint	.34	.32	.25	.24	-	-	-	-	-	-	-	-
<u>Delaware:</u>												
<u>Laurel Area, Auction sales</u>												
Various varieties, 16-qt.crt.	-	-	-	-	5.61	4.39	-	-	-	-	-	-
<u>Maryland:</u>												
<u>Eastern Shore, Auction sales</u>												
<u>Salisbury Area</u>												
Various varieties 16-qt.crt.	-	-	-	-	5.54	4.22	-	-	-	-	-	-
<u>Michigan:</u>												
<u>Benton Harbor</u>												
<u>Cash market growers' sales</u>												
Various varie. m 16-qt. crt. & 2-8 qt. flat	-	-	-	-	-	5.99	-	-	-	-	-	-
<u>Alpena District, Auction sales</u>												
<u>16 quart crate</u>												
Various varieties	-	-	-	-	-	6.68	6.48	-	-	-	-	-

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Arthur D. Tittle, Inc.

<u>SHIPPING POINT AND DESCRIPTION OF SALE</u>	<u>JAN.</u>	<u>FEB.</u>	<u>MARCH.</u>	<u>APR.</u>	<u>MAY</u>	<u>JUNE</u>	<u>JULY</u>	<u>AUG.</u>	<u>SEPT.</u>	<u>OCT.</u>	<u>NOV.</u>	<u>DEC.</u>
<u>New Jersey:</u>												
<u>South New Jersey Points, Auction sales Hammonton Area 16-quart crate</u>												
Various varieties	-	-	-	-	5.59	-	-	-	-	-	-	-
<u>Virginia:</u>												
<u>Eastern Shore, Auction sales Exmore Area, 16-quart crate</u>												
Various varieties, mostly Dixieland & Pocahantas	-	-	-	-	6.50	-	-	-	-	-	-	-

T A B L E XVI

FRESH STRAWBERIES UNLOADS IN MAIN NORTH AND SOUTH EASTERN CITIES

	<u>1962</u>			<u>1963</u>			<u>1964</u>			<u>1965</u>		
	<u>MEXICO</u>	FOREIGN	TOTAL	MEXICO	FOREIGN	TOTAL	MEXICO	FOREIGN	TOTAL	MEXICO	<u>FOREIGN</u>	<u>TOTAL</u>
Boston			359	1	2(Canada)	341		9(Canada)	436	1	9(Canada)	340
Providence			49			48			18			10
New York	4		1023	19		897	19	2(Canada)	1196	26	4(Canada)	1056
Philadelphia	1		532			500			533	2		414
Baltimore			211			219			216			216
Washington			153			107			175	2		154
Albany		2(Unknown)	70			63			58			60
Buffalo		4(Canada)	120		1(Canada)	53	1	6(Canada)	96	3	3(Canada)	88
Pittsburgh	1	2(Canada)	283	7	2(Canada)	292	8	6(Canada)	364	18		272
<u>TOTAL NORTH EASTERN CITIES</u>	6	8	2800	27	5	2520	28	23	3092	52	16	2610
42 Atlanta	5		85	8		98	8		132			
Birmingham			42	1		54	1		71			
Columbia, S.C.			8			14			185			
Miami			192			128			46			
<u>TOTAL SOUTH EASTERN CITIES</u>	5		327	9		294	9		434			
<u>TOTAL EASTERN CITIES</u>	11	8	3127	36	5	2814	37	23	3526	52	16	2610

Source: USDA - Consumer & Marketing Service - Fresh Fruit & Vegetable Unloads - 1965

The time lag between shipments in the present schedule is too great to effectively market the proposed 10 million pounds of strawberries and some arrangements will have to be made to get a schedule that will permit the more frequent shipping of the proposed 10 million pounds of strawberries during the period from January to June to the Atlantic ports of the United States. The shipping company has indicated a willingness to expand its service, reduce shipping costs, share in the marketing risks and take other helpful action if the volume of produce shipments justify it.

Check out - why?

The present United States tariff schedule for Dominican strawberries is 0.5¢ per pound if entered during the period from June 15 to September 15, inclusive, in any year, and 0.75 ¢ per pound if entered at any other time.

c. Short Range Income and Employment Potential

(1) Estimated Dollar Volume

If Dominican producers can substitute 20% of Mexican exports, by taking over part of the north and southeastern U.S. markets, an income of \$1.6 million can be obtained from strawberry shipments by 1969.

(2) Employment

This is a particularly attractive crop, because it is high value and labor intensive. Experience elsewhere indicates it will take approximately 70 man-hours per acre of pre-harvest labor and 120 man-hours per acre of harvest labor. Labor requirements if 3,000 acres are harvested are as follows:

<u>Preharvest</u>		<u>Harvest</u>		<u>Total</u>	
man-hours	man-days*	man-hours	man-days*	man hours	man-days*
210,000	21,000	360,000	36,000	570,000	57,000

* 10 man-hours per man-day

In other words, there would be 300 days of work for 190 men.

2. Cantaloupes

a. Production Capability

(1) Volume, Present and Potential

No cantaloupes are being grown commercially for export in the Dominican Republic at the present time. However, production will be started in 1967 by

the Dominican Fruit Co., Nebraska Agricola Dominicana, and two other unidentified producers. The total harvested area is expected to be approximately 1,000 acres with an expected yield of 12,600 pounds per acre or a total of 12.6 million pounds of cantaloupes.

The Mexican export market in the U.S. totaled approximately 73,000 tons or \$7.4 million in 1965. If we assume Dominican growers can capture 20% of this market, about 30 million pounds of cantaloupes will be grown and sold for \$1.4 million. To achieve this goal, Dominican producers will have to plant approximately 2,400 acres by 1969, or about double the area they have planted in 1967. The achievement of this goal should not be a problem because adequate land will be readily available if the market is as attractive as it now appears.

(2) Quality

Our observations indicate that the quality of locally grown melons is excellent.

(3) Price

Mexican producers are getting about \$0.05 per pound for the cantaloupes they export to the U.S. A breakdown of marketing costs per package of cantaloupes, from harvest at Culiacán, Mexico, to Nogales, Arizona in 1966 is given in Table XVII. Although no cost figures are available as yet for Dominican production, Texas A&M researchers have estimated that it will average around \$.02 per pound, which after paying freight costs of \$.02 per pound, should make it competitive with Mexico and leave a good profit margin.

Average prices for cantaloupes at leading shipping points are shown in Table XVIII for 1965. Wholesale prices of cantaloupes at New York and Chicago are given in Table XIX.

b. Market Possibilities

(1) Market Size by Prime Markets

Table XX shows cantaloupes rail and truck unloads in the main north and southeastern cities of the United States, for the years 1962-1965.

T A B L E XVII

1/2/
MARKETING COSTS PER CRATE FOR CANTALOUPS,

FROM HARVEST AT CULIACAN, MEXICO TO NOGALES, ARIZONA

1966

<u>ITEM</u>	<u>CANTELOUPS</u>
Costs, from loading in Mexico to arrival at Nogales, Arizona	(88 lb. crate) US \$ equiv.
Assn. dues (CAADES & UNPH)	0.07
Sinaloa Production Tax	.08
Export Duty, Mexican	.40
Freight, Culiacan to Nogales	.98
Ice	.28
Custom Brokerage (US & Mex.)	.04
Import Duty, US <u>3/</u>	1.40
Grade Inspection	.03
Miscellaneous	.22
	<hr/>
TOTAL	3.51
	<hr/>

1/ 88 lb. crate. Type of transportation: Railroad car. Packages per load: 325.

2/ Costs for picking through loading were based on 1964/65 figures, and would average slightly higher for the 1965/66 season. The selling commission is 10 to 15% of the f.o.b. Nogales, Arizona price. This commission includes unloading and reloading of trailers and some supervision on growing and packing in Mexico.

3/ Duties: 35% ad valorem, September 16 - July 31, with f.o.b. value assumed at \$4 per crate.

Source: U.S. Department of Agriculture.
Foreign Agricultural Service
Survey of Mexican Vegetable and Melon Production
FAS-M 178, July 1966.

AVERAGE PRICES OF CANTALOUPS AT LEADING SHIPPING POINTS - 1965

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
<u>Arizona:</u>												
<u>Yuma District</u>												
Vine ripened, jumbo crt., 36s	-	-	-	-	-	7.11	-	-	-	-	-	-
<u>California:</u>												
<u>Vine ripened, jumbo crate, 36s</u>												
Blythe Dist. (Palo Verde Valley)	-	-	-	-	-	6.75	-	-	-	-	-	-
El Centro (Imperial Valley)	-	-	-	-	-	7.28	-	-	-	-	-	-
West Side District	-	-	-	-	-	-	5.42	4.09	4.08	3.77	-	-
Wheeler Ridge Section	-	-	-	-	-	-	6.00	-	-	-	-	-
<u>Delaware</u>												
<u>Laurel Area, Auction sales</u>												
Loose, each	-	-	-	-	-	-	.11	.11	.09	-	-	-
<u>Texas</u>												
<u>Lower Rio Grande Valley</u>												
<u>Vine ripened</u>												
Jumbo crate, 36s	-	-	-	-	9.56	6.86	-	-	-	-	-	-

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Source: U.S. Department of Agriculture - Consumer & Marketing Service - Statistical Bulletin No. 373 - April 1966

WHOLESALE PRICES FOR CANTALOUPS AT NEW YORK AND CHICAGO

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
<u>New York:</u>												
<u>Jumbo crate - 36s--</u>												
Ariz.	-	-	-	-	-	8.50	8.75	-	-	-	-	-
Calif.	-	-	-	-	-	9.42	8.67	7.00	7.62	8.38	6.84	-
Mexico	-	22.00	16.80	11.75	13.12	12.85	-	-	-	-	-	-
 <u>Chicago:</u>												
<u>Jumbo crate - 36s--</u>												
Ariz.	-	-	-	-	-	9.62	7.88	-	-	-	-	-
Calif.	-	-	-	-	-	9.00	8.31	6.62	6.69	6.75	6.58f*	-
Texas	-	-	-	-	-	8.58	-	-	-	-	-	-
Mexico	-	-	14.58	12.56	12.31	12.50	-	-	-	-	-	-

*f - Few

Source: U.S. Department of Agriculture - Consumer and Marketing Service - Statistical Bulletin No. 373
April 1966

T A B L E XX

FRESH CANTALOUPE UNLOADS IN MAIN NORTH AND SOUTH EASTERN CITIES

	<u>1962</u>			<u>1963</u>			<u>1964</u>			<u>1965</u>		
	<u>MEXICO</u>	FOREIGN	TOTAL	MEXICO	FOREIGN	TOTAL	MEXICO	FOREIGN	TOTAL	MEXICO	<u>FOREIGN</u>	<u>TOTAL</u>
Boston	146		923	171		1009	191		846	167	2	803
Providence	18		121	16		130	18		108	9		68
New York	896		4140	850	10	4158	1080	19	4015	1167	11	3790
Philadelphia	199		1527	230	5	1533	250		1356	234	1	1231
Baltimore	63		723	124		844	91		769	105		722
Washington	26	2	475	24		478	47		445	45		467
Albany	5		175	35		166	21		166	26		154
Buffalo	50		369	46		328	61		308	54		317
Pittsburgh	137		823	134		842	173	2	772	159		739
<u>TOTAL NORTH</u>												
<u>EASTERN CITIES</u>	1540	2	9276	1630	15	9488	1932	21	8785	1966	14	8291
Atlanta	70		637	72		632	51		588			
Birmingham	11		184	15		247	22		243			
Columbia, S.C.	30		417	19		465	37		458			
Miami	49		397	41		284	35	3	259			
<u>TOTAL SOUTH</u>												
<u>EASTERN CITIES</u>	160		1635	147		1628	145	3	1548			
<u>TOTAL</u>												
<u>EASTERN CITIES</u>	1700	2	10,911	1777	15	11,116	2077	24	10,333	1966	14	8291

SOURCE: United States Department of Agriculture - Consumer and Marketing Service -
Fresh Fruit & Vegetable Unloads - 1965

(2) Marketing Factors

Cantaloupes are sold throughout the entire year, but both demand and selling price are best in May, June and July.

The present United States tariff schedule for Dominican cantaloupes is 20% ad valorem if entered during the period from August 1st to September 15, inclusive, in any year, and 35% ad valorem if entered at any other time.

c. Short Range Income and Employment Potential

(1) Estimated Dollar Volume

We have estimated that an income of \$1.4 million can be generated by Dominican cantaloupe sales by 1969. This assumes Dominican producers can capture the equivalent of 20% of Mexican exports which were worth \$7.4 million in 1965, by taking the northeastern and southeastern markets, where there is definite freight advantage for Dominican produce.

(2) Employment

Available data indicates a need for 50 man-hours per acre of pre-harvest labor and 65 man-hours per acre of harvest labor. On this basis the labor needed for 2,400 acres would be as follows:

<u>Preharvest</u>		<u>Harvest</u>		<u>Total</u>	
Man-hours	Man-days*	Man-Hours	Man-days*	Man-Hours	Man-days*
120,000	12,000	156,000	15,600	276,000	27,600

* 10 man-hours per man-day.

In other words, 92 men could be employed 300 days.

3. Cucumbers

a. Production Capability

(1) Volume, Present and Potential

Nebraska Agricola Dominicana and Dominican Fruit have plans for harvesting a total of 400 acres of cucumbers in 1967. To date, however, there has been no commercial production of cucumbers in the Dominican

Republic, and therefore reliable yield figures are not available. However, the estimated yield based on results of previous experimental plantings is 5 million pounds of cucumbers or 12,500 pounds per acre.

If the projected U.S. market share of 20% of present Mexican exports of 39 million pounds worth \$2.8 million is obtained, the Dominican production of cucumbers would be about 8 million pounds. To obtain this volume of produce an estimated 640 acres should be planted by 1969. This represents an increase of only 240 acres over present planting and should not be the cause of any major problems if the crop proves profitable.

(2) Quality

Available data indicate Dominican cucumbers should be equal to those obtained by Mexican or American producers.

(3) Prices

Wholesale prices for cucumbers at New York and Chicago, by origin and by month are shown in Table XXI for 1965.

Average prices at leading shipping points are shown in Table XXII for 1965.

We know that Mexican producers in late 1966 were getting about 7.2¢ per pound for cucumbers, and that marketing costs of Mexican cucumbers, from harvest at Culiacán, Mexico to Nogales, Arizona were \$2.43 per 50 pound crate or 4.9¢ per pound, as shown in Table XXIII.

Dominican production costs are estimated by Texas A&M research agronomists to be about \$250-300 per acre, or about \$0.02 per pound. Marketing costs are expected to be about the same or slightly less than Mexican cucumber which indicates a good profit margin.

b. Marketing Possibilities

(1) Market Size by Prime Markets

Table XXIV shows cucumber unloads in main United States north and southeastern cities for the years 1962-1965.

(2) Marketing Factors

Cucumbers are sold throughout the entire year; however, the best months on the basis of import demand and price are during the first quarter.

T A B L E XXI

WHOLESALE PRICES FOR CUCUMBERS AT NEW YORK AND CHICAGO

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
<u>New York:</u>												
<u>Bushel basket--</u>												
Fla.	7.31	9.75	11.50	6.88	4.88	-	-	-	-	4.04	4.58	5.50
N. C.	-	-	-	-	-	3.50	2.88	-	-	-	-	-
N. Y., L. I.	-	-	-	-	-	-	2.75	3.69	-	-	-	-
S. C.	-	-	-	-	5.75	3.95	-	-	3.25	3.79	-	-
British West Indies	8.34	8.69	11.00	-	-	-	-	-	-	-	-	-
 <u>Chicago:</u>												
<u>Bushel basket--</u>												
Fla.	6.50	-	12.00	7.19	4.85	-	-	-	-	3.98	4.02	5.35
Ill.	-	-	-	-	-	4.00	3.04	3.38	4.94	-	-	-
Mexico	6.62	7.67	10.10	7.50	-	-	-	-	-	-	-	-

SOURCE: United States Department of Agriculture - Consumer & Marketing Service
Statistical Bulletin No. 373 - April 1966.

T A B L E XXII

AVERAGE PRICES FOR CUCUMBERS AT LEADING SHIPPING POINTS - 1965

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
<u>Florida:</u>												
<u>Ft. Myers-Immokalee Section--</u>												
Bu. bkt. & 1-1/9-Bu. crt., waxed	-	-	-	5.09	3.11	-	-	-	-	-	3.04	4.10
<u>Pompano Beach Section & Nearby Points</u>												
Bushel basket, waxed	6.25	-	9.60	5.38	-	-	-	-	-	-	-	4.46
Imports packed locally, bu. bkt. & 1-1/9 bu. crt., waxed	6.60	7.89	9.66	-	-	-	-	-	-	-	-	5.70
<u>Michigan:</u>												
<u>Michigan Points</u>												
<u>Bushel basket, washed, waxed--</u>												
Slicers, U.S. No. 1	-	-	-	-	-	-	-	4.04	-	-	-	-
<u>New Jersey:</u>												
<u>New Jersey Points</u>												
<u>Sales f.o.b. shipping point and delivered sales shipping point basis--</u>												
Bushel basket, waxed, repack	-	-	-	-	-	-	2.77	-	-	-	-	-
<u>Virginia:</u>												
<u>Eastern Shore Points</u>												
<u>Sales f.o.b. shipping point and delivered sales shipping point basis</u>												
Bushel basket, waxed	-	-	-	-	-	-	-	-	3.90	-	-	-

SOURCE: United States Department of Agriculture - Consumer & Marketing Service
Statistical Bulletin No. 373 - April 1966.

T A B L E XXIII
1/2/
MARKETING COSTS PER CRATE OF CUCUMBERS,
FROM HARVEST AT CULIACAN, MEXICO TO NOGALES, ARIZONA
1966

<u>ITEM</u>	<u>CUCUMBERS</u>
Costs from loading in Mexico to arrival at Nogales, Arizona	(50 lb. crate) US \$ equiv.
Assn. dues (CAADES & UNPH)	0.03
Sinaloa Production Tax	.06
Export Duty, Mexican	.17
Freight Culiacan to Nogales	.60
Ice	.00
Custom Brokerage (US & Mex.)	.01
Import Duty, US ^{2/}	1.50
Grade Inspection	.01
Miscellaneous	.05
	<hr/>
TOTAL	2.43
	<hr/>

- 1/ 50 lb. crate. Type of transportation: Railroad car.
- 2/ Costs for picking through loading were based on 1964/65 figures, and would average slightly higher for the 1965/66 season. The selling commission is 10 to 15% of the f.o.b. Nogales, Arizona price. This commission includes unloading and reloading of trailers and some supervision on growing and packing in Mexico.
- 3/ Three cents per pound March 1 - June 30 and Sep. 1 - Nov. 30 and 2.2 cents per pound Dec. 1 - last day of February.

Source: U.S. Department of Agriculture.
Foreign Agricultural Service
Survey of Mexican Vegetable and Melon Production
FAS-M 178, July 1966.

T A B L E XXIV

CUCUMBER UNLOADS IN THE MAIN NORTH AND SOUTH EASTERN CITIES

	<u>1962</u>			<u>1963</u>			<u>1964</u>			<u>1965</u>		
	<u>MEXICO</u>	FOREIGN	TOTAL	MEXICO	FOREIGN	TOTAL	MEXICO	FOREIGN	TOTAL	MEXICO	<u>FOREIGN</u>	<u>TOTAL</u>
Boston	1	61	912	1	54	941		47	909	1	69	1036
Providence			143			134		6	166			163
New York		92	2004	9	144	2338	46	113	2482	128	91	2569
Philadelphia		70	810	5	54	857		41	802	11	66	878
Baltimore		3	252		17	271	1	27	282		29	302
Washington		10	199		13	207		11	214		18	815
Albany		4	118		8	154		9	186		12	146
Buffalo		1	173		1	228		2	232		1	227
Pittsburgh		32	466	3	50	617	4	53	653	10	41	685
<u>TOTAL NORTH</u>												
<u>EASTERN CITIES</u>	1	273	5077	18	341	5747	51	309	5926	150	327	6221
Atlanta			120			133		3	145			
Birmingham			66			94			69			
Columbia, S.C.		1	179			168			191			
Miami			71			90	1		74			
<u>TOTAL SOUTH</u>												
<u>EASTERN CITIES</u>		1	436			485	1	3	479			
<u>TOTAL</u>												
<u>EASTERN CITIES</u>	1	274	5513	18	341	6232	52	312	6405	150	327	6221

SOURCE: United States Department of Agriculture - Consumer & Marketing Service -
Fresh Fruit & Vegetable Unloads - 1965

The cost and availability of transport for cucumbers would be the same as strawberries and the comments made in our discussion of them also apply to cucumbers.

Present United States tariff schedule for cucumbers is 2.2¢ per pound if entered during the period from December 1, in any year to the last day of the following February, inclusive; 3¢ per pound if entered during the period from March 1 to June 30, inclusive, or the period from September 1 to November 30, inclusive, in any year, and 1.5¢ per pound if entered during the period from July 1 to August 31, inclusive, in any year.

c. Short Range Income and Employment Potential

(1) Estimated Dollar Volume

If the projected market for 8 million pounds can be realized in 1969 by capturing markets in the northeastern and southeastern cities of the United States from Mexico, about \$0.6 million of foreign exchange income will be obtained from cucumber sales.

(2) Employment

Available data indicates 50 man-hours of preharvest labor per acre and 80 man-hours of harvest labor per acre will be required. On this basis the following labor will be needed if the planned 2,400 acres are harvested:

<u>Preharvest</u>		<u>Harvest</u>		<u>Total</u>	
man-hours	man-days*	man-hours	man-days*	man-hours	man-days*
120,000	12,000	192,000	19,200	312,000	31,200

* 10 man-hours per man-day

In other words, 104 men could find 300 days of work.

4. White Onions

a. Production Capability

(1) Volume, Present and Potential

There is no production of white onions in the Dominican Republic because local market demand is only for red onions. However, Dominican Fruit plans to produce about 10 million pounds of white onions later this year. On the basis of available experimental data they believe yields of 20,000 pounds per acre can be obtained and they expect to plant 500 acres.

Mexico exported 39 million pounds of white onions worth \$2.1 million to the United States in 1965. Thus, the expected production of Dominican Fruit is equivalent to about 25% of Mexico market share and would provide foreign exchange earnings of about \$0.5 million.

Further increases in exports will depend on the Dominican growers' ability to compete with Mexican producers which might be more difficult in markets further removed from the Eastern United States.

(2) Quality

Experimental planting indicates quality will be good.

(3) Price

Wholesale prices at New York and Chicago are given in Table XXV for 1965.

Average prices at leading shipping points for 1965 are shown in Table XXVI.

Mexican producers are getting about \$0.05 per pound of white onions.

Dominican production costs have been estimated by Texas A&M agronomists to be about \$0.02 per pound.

b. Market Possibilities

(1) Market Size by Prime Markets

Table XXVII shows dry onions unloads in the main North and South-eastern cities of the United States, for the period 1961-1965.

T A B L E XXV

WHOLESALE PRICES FOR DRY ONIONS AT NEW YORK AND CHICAGO

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
<u>New York:</u>												
<u>50-lb. sack--</u>												
Ida. Ore, Yellow Spanish, large	3.52	2.88	3.31	4.00	-	-	-	2.85	2.56	2.48	2.30	2.25
Mich., Yellow Globe type, medium	2.21f	2.08	-	-	-	-	-	-	-	-	-	-
N.Y. West Sect., Yellow Globe, medium	1.90	1.75	1.78	2.08	-	-	-	2.10	-	-	-	-
Yellow Globe, large	2.42	2.14	2.08	2.41	-	-	-	2.74	2.05	-	1.40	1.48
Texas, Yellow Granex, medium	-	-	2.95	2.65	3.46	4.05	-	-	-	-	-	-
Yellow Granex, large	-	-	-	2.37	3.34	-	-	-	-	-	-	-
<u>Chicago:</u>												
<u>50-lb. sack--</u>												
Idaho, Yellow Spanish, large	3.08	2.45	2.94	3.35	-	-	-	2.40	2.18	2.04	2.04	1.91
Midwestern, Yellow Globe, medium	1.84	1.58	1.37	1.40	-	-	2.75	2.24	1.78	1.58	1.36	1.16
Texas, Yellow Granex, medium	-	-	2.40	2.41	3.31	3.25	-	-	-	-	-	-
Yellow Granex, large	-	-	-	2.24	3.00	4.25	-	-	-	-	-	-

f - Few

SOURCE: United States Department of Agriculture - Consumer & Marketing Service
Statistical Bulletin No. 373 - April 1966.

T A B L E XXVI

AVERAGE PRICES FOR DRY ONIONS AT LEADING SHIPPING POINTS - 1965

Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec.

Arizona:

Phoenix & Central Arizona Points

U.S. No. 1, 50-lb. sack--

Yellow Granex, medium

Yellow Granex, large

-	-	-	-	3.34	2.56	-	-	-	-	-	-
-	-	-	-	-	3.05	-	-	-	-	-	-

California:

Stockton District

U.S. No. 1, 50-lb. sack--

Stockton Yellow Globe, medium

Stockton Yellow Globe, large

-	-	-	-	-	2.50	2.47	-	-	-	-	-
-	-	-	-	-	3.52	2.84	-	-	-	-	-

Colorado:

Arkansas Valley Points

Sales f.o.b. shipping point and delivered sales shipping point basis

U.S. No. 1, 50-lb. sack--

Spanish type, 3-in. up

-	-	-	-	-	-	-	-	-	1.52	1.45	1.26	-
---	---	---	---	---	---	---	---	---	------	------	------	---

Idaho-Oregon:

Western Idaho-Malheur County Oregon

U.S. No. 1, 50-lb. sack--

Yellow Spanish, 2-3 in.

Yellow Spanish, 3-in. & larger

1.16	.82	.75	-	-	-	-	-	-	.98	1.00	.90	.74
2.06	1.46	2.04	-	-	-	-	-	-	1.20	1.13	1.06	.98

Michigan:

Michigan Points

U.S. No. 1, 50-lb. sack

Yellow Globe, 70-80%, 2-in. & lgr.

1.34	1.12	.96	-	-	-	-	-	1.47	1.24	1.05	.86	.76
------	------	-----	---	---	---	---	---	------	------	------	-----	-----

New Jersey:

New Jersey Points

Sales f.o.b. shipping point and delivered sales shipping point basis

50-lb. sack--

Yellow Globe, medium

-	-	-	-	-	-	-	2.38	-	-	-	-	-
---	---	---	---	---	---	---	------	---	---	---	---	---

T A B L E XXVI (Cont.)

Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec.

New York:

Western & Central New York Points
Sales f.o.b. shipping point and
delivered sales shipping point basis
U.S. No. 1, 50-lb. sack--
 Yellow Globe, 70-80%, 2-in. & lgr.

1.65 1.38 1.48 1.80 - - - - 1.12* 1.00* .84* .87*

Texas:

Lower Rio Grande Valley
50-lb. sack--
 Yellow Granex, medium
 Yellow Granex, large
 Yellow Grano, medium
 Yellow Grano, large
 Whites, medium
 Whites, large

- - 1.54 1.55 - - - - - - - -
 - - 2.04 1.51 - - - - - - - -
 - - - 1.44 - - - - - - - -
 - - 2.61 2.16 - - - - - - - -
 - - 2.18 1.80 - - - - - - - -
 - - 2.72 2.33 - - - - - - - -

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Texas:

Winter Garden-Eagle Pass District
50-lb. sack--
 Yellow Granex, medium
 Yellow Granex, large
 Yellow Grano, medium
 Yellow Grano, large
 Whites, medium

- - - - 2.76 - - - - - - -
 - - - - 2.86 - - - - - - -
 - - - - 2.70 - - - - - - -
 - - - - 3.09 - - - - - - -
 - - - - 2.92 - - - - - - -

* 60-80%, 2-inch and larger.

SOURCE: United States Department of Agriculture - Consumer & Marketing Service
 Statistical Bulletin No. 373 - April 1966.

T A B L E XXVII

DRY ONION UNLOADS IN THE MAIN NORTH AND SOUTH EASTERN CITIES

	<u>1962</u>			<u>1963</u>			<u>1964</u>			<u>1965</u>		
	<u>MEXICO</u>	FOREIGN	TOTAL	MEXICO	FOREIGN	TOTAL	MEXICO	FOREIGN	TOTAL	MEXICO	<u>FOREIGN</u>	<u>TOTAL</u>
Boston	3	61	1378	1	27	1384	1	14	1294		5	1335
Providence			224			208			169			114
New York	10	658	4365	3	202	4052	2	273	4406	1	214	4400
Philadelphia	4	57	2458	2	12	2573	1	17	2483		9	2371
Baltimore		32	866	1	2	847	1	1	892			896
Washington		19	593	1		608	1		620			641
Albany		4	197			180			198		3	231
Buffalo	1	6	337			271	1	2	305	2	1	331
Pittsburgh	13	20	904	12	9	946	13	17	916	9	17	951
<u>TOTAL NORTH EASTERN CITIES</u>	31	857	11,322	20	252	11,069	20	324	11,283	12	249	11,210
60 Atlanta	59	12	892	66	2	894	52	3	871			
Birmingham	18		80	27	1	373	16		356			
Columbia, S.C.	2	2	464	3	3	419	3	1	450			
Miami	1	5	529	3	2	556			484			
<u>TOTAL SOUTH EASTERN CITIES</u>	80	19	1965	99	8	2242	71	4	2161			
<u>TOTAL EASTERN CITIES</u>	111	876	13,287	119	260	13,311	91	328	13,444	12	249	11,210

SOURCE: United States Department of Agriculture - Consumer & Marketing Service
Fresh Fruit & Vegetable Unloads - 1965

(2) Marketing Factors

Onions are sold in about even quantities year round, reaching a peak in June. Prices are at their best during the second quarter.

Transport cost and availability have already been discussed.

The present United States tariff schedule for dried Dominican onions is 35% ad valorem.

c. Short Range Income and Employment Potential

(1) Estimated Dollar Volume

If 10 million pounds are exported by 1969, to the North and South-eastern United States, about 0.5 million can be generated.

(2) Employment

Based on 65 man-hours of preharvest labor, and 75 man-hours of harvest labor, the following labor will be needed for 500 acres:

<u>Preharvest</u>		<u>Harvest</u>		<u>Total</u>	
man-hours	man-days*	man-hours	man-days*	man-hours	man-days*
32,500	3,250	37,500	3,750	70,000	7,000

* 10 man-hours per man-day.

In other words, 23 men could find about 300 days of work.

5. Peppers

a. Production Capability

(1) Volume, Present and Potential

Pepper production is being carried out at scattered locations throughout the country. Dominican exports of peppers in 1964 to the United States and Puerto Rico totalled 784 tons and were valued at 54 thousand dollars.

In 1965 Mexican exports of peppers to the United States amounted to 17.6 million pounds worth \$2 million. If, as we have assumed, the Dominican Republic can capture the market for 20% of those exports, it will need to produce and export about 4 million pounds of peppers by 1969 which would generate about \$0.4 million of income.

Yields of about 1,500 pounds per acre also can be obtained, thus about 2,700 acres would need to be harvested to obtain the necessary production.

(2) Quality

Dominican peppers are already being exported to the United States and Puerto Rico, and it is known that the quality is good.

(3) Price

Wholesale prices at New York and Chicago, by origin and by month are shown in Table XXVIII for 1965.

Average prices at leading shipping points are shown in Table XXIX for 1965.

Mexican producers are getting about \$0.114 per pound for peppers. Marketing costs per package of Mexican peppers from harvest at Culiacán, Mexico to Nogales, Arizona, for 1966 are given in Table XXX.

b. Market Possibilities

(1) Market Size by Prime Markets

Table XXXI shows peppers unloads in main United States, Northeastern and Southeastern cities for the years 1962-1965.

(2) Marketing Factors

Transportation costs and availability comments made regarding vegetables previously in this report also apply here.

Peppers are sold year round, however, demand reaches a peak during the months of June, July and August. Prices are the highest in March, April and May.

The present United States tariff for Dominican peppers is 2.5¢ per pound.

WHOLESALE PRICES FOR GREEN PEPPERS AT NEW YORK AND CHICAGO

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
<u>New York:</u>												
<u>Calif. Wonder type, bushel</u>												
<u>basket</u>												
Fla., Large	4.09	3.75	6.00	8.19	7.25	4.84	-	-	-	-	-	-
N.J., Large	-	-	-	-	-	-	3.92	1.98	2.34	2.45	-	-
<u>Chicago:</u>												
<u>Calif. Wonder type, bushel</u>												
<u>basket</u>												
Fla., Large	4.44	3.66	7.38	6.84	7.25	5.25	-	-	-	-	-	7.25
Texas, Bushel basket, med.-lge.	-	-	-	-	7.50	5.25	-	-	-	3.70	4.42	5.08

Source: U.S. Dept. of Agriculture - Consumer & Marketing Service
Statistical Bulletin No. 373 - April 1966.

T A B L E XXIX

AVERAGE PRICES FOR GREEN PEPPERS AT LEADING SHIPPING POINTS - 1965

Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec.

California:

Salinas-Gilroy, Hollister, San José, King City Districts

Calif. Wonder type--

Approx. 30-lb. carton

- - - - - - - 2.84 3.77 - -

Fresno-Central San Joaquin Valley

Calif. Wonder type--

30-lb. carton, large

- - - - - 3.22 - - - - -

Florida:

Plant City, Auction sales

Bushel hampers--

Calif. Wonder type, large

- - - 7.17 5.38 - - - - -

Pompano Beach Section & Nearby Points

Bushel basket & 1-1/9 bushel crate--

Calif. Wonder type, large

3.36 2.94 7.66 6.75 - - - - -

New Jersey:

Auction sales

Calif. Wonder type, bushel basket--

Vineland Area

- - - - - 2.69 1.74 1.63 1.92 - -

Texas:

Lower Rio Grande Valley

Cartons, approx. 30-lbs.--

Calif. Wonder type, med.-lge.

- - - - - - - - - - 3.70 4.04

SOURCE: United States Department of Agriculture - Consumer & Marketing Service
Statistical Bulletin No. 373 - April 1966.

T A B L E XXX

MARKETING COSTS PER CRATE^{1/2/} FOR PEPPERS,

FROM HARVEST AT CULIACAN, MEXICO TO NOGALES, ARIZONA

1966

| <u>ITEM</u> | <u>PEPPERS</u> |
|-----------------------------------------------------------------|-------------------------------|
| Costs harvesting at Culiacan,
Mexico through loading: | (30-16 crate)
US \$ equiv. |
| Picking and hauling | 0.12 |
| Packing and container | .55 |
| Precooling | .03 |
| Loading | .02 |
| | <hr/> |
| TOTAL | 0.72 |
| | <hr/> |
| Costs from loading in Mexico
to arrival at Nogales, Arizona: | |
| Assn. Dues (CAADES & UNPH) | 0.02 |
| Sinaloa Production Tax | .03 |
| Export Duty, Mexican | .07 |
| Freight, Culiacán to Nogales | .32 |
| Ice | .08 |
| Custom Brokerage (US & Mex.) | .02 |
| Import Duty, US ^{3/} | .75 |
| Grade Inspection | .02 |
| Miscellaneous | .08 |
| | <hr/> |
| TOTAL | 1.39 |
| | <hr/> |

1/ 30-16 lb. crate. Type of transportation: Railroad car.

2/ Costs for picking through loading were based on 1964/65 figures, and would average slightly higher for the 1965/66 season. The selling commission is 10 to 15% of the f.o.b. Nogales, Arizona price. This commission includes unloading and reloading of trailers and some supervision on growin and packing in Mexico.

3/ 2.5 cents per lb.

Source: U.S. Department of Agriculture.
Foreign Agricultural Service
Survey of Mexican Vegetable and Melon Production
FAS-M 178, July 1966.

T A B L E XXXI

PEPPERS UNLOADS IN MAIN NORTH AND SOUTH EASTERN CITIES

| | <u>1962</u> | | | <u>1963</u> | | | <u>1964</u> | | | <u>1965</u> | | |
|---------------------------------------|---------------|----------------|--------------|---------------|----------------|--------------|---------------|----------------|--------------|---------------|----------------|--------------|
| | <u>MEXICO</u> | FOREIGN | TOTAL | MEXICO | FOREIGN | TOTAL | MEXICO | FOREIGN | TOTAL | MEXICO | <u>FOREIGN</u> | <u>TOTAL</u> |
| Boston | | | 832 | 2 | | 846 | | | 757 | 1 | | 789 |
| Providence | | | 133 | | | 142 | | | 146 | | | 147 |
| New York | 1 | 26 | 2742 | 1 | 32 | 2922 | | 24 | 2892 | 1 | 25 | 2947 |
| Philadelphia | 2 | | 1019 | 1 | | 1019 | | | 949 | | | 927 |
| Baltimore | 1 | | 240 | | | 261 | | | 250 | | | 260 |
| Washington | | | 162 | | | 170 | | | 160 | | | 161 |
| Albany | | | 126 | | | 140 | | | 156 | | | 147 |
| Buffalo | | | 139 | 1 | | 193 | | | 171 | | | 179 |
| Pittsburgh | 1 | | 459 | 1 | | 581 | 1 | | 562 | 1 | | 562 |
| <u>TOTAL NORTH
EASTERN CITIES</u> | 5 | 26 | 5852 | 6 | 32 | 6274 | 1 | 24 | 6043 | 3 | 25 | 6119 |
| 66 Atlanta | | | 159 | | | 170 | | | 170 | | | |
| Birmingham | | | 89 | | | 117 | | | 81 | | | |
| Columbia, S.C. | | | 119 | | | 108 | 1 | | 116 | | | |
| Miami | | | 111 | | | 122 | | | 108 | | | |
| <u>TOTAL SOUTH
EASTERN CITIES</u> | | | 478 | | | 517 | 1 | | 475 | | | |
| <u>TOTAL
EASTERN CITIES</u> | 5 | 26 | 6330 | 6 | 32 | 6791 | 2 | 24 | 6518 | 3 | 25 | 6119 |

SOURCE: United States Department of Agriculture - Consumer and Marketing Service - Fresh Fruit and Vegetable Unloads - 1965

c. Short Range Income and Employment Potential

(1) Income

If our suggested goal is achieved, about \$0.4 million of foreign income will be generated, by substituting 20% of Mexican exports to the United States mainly in Northeastern and Southeastern cities.

(2) Employment

On the basis of 120 man-hours per acre of preharvest labor and 85 man-hours of harvest labor, the following labor will be needed for 2,700 acres:

| <u>Preharvest</u> | | <u>Harvest</u> | | <u>Total</u> | |
|-------------------|-----------|----------------|-----------|--------------|-----------|
| man-hours | man-days* | man-hours | man-days* | man-hours | man-days* |
| 324,000 | 32,400 | 229,500 | 22,950 | 553,500 | 55,350 |

* 10 man-hours per man-day

In other words, 184 men could work 300 days.

6. Tomatoes

a. Production Capability

(1) Volume, Present and Potential

There are no accurate data showing the current volume of tomato production which is scattered throughout the country in small plots to supply local market needs.

Mexico exported 265.4 million pounds or \$29.4 million of tomatoes to the United States in 1965. If 20% of this export market is to be obtained, Dominican production for export in 1969 must be above 53 million pounds which would generate about \$5.9 million of income.

Yields of about 18,000 pounds per acre are considered realistic for the Dominican Republic which means at least 3,000 acres of commercially grown tomatoes would need to be produced by 1969 to fulfill the planned market quota.

(2) Quality

Dominican tomatoes are of good quality and should be able to meet the competition in this respect.

(3) Price

Table XXXII gives wholesale prices at New York and Chicago by origin for 1965.

Average prices at leasing shipping points are shown in Table XXXIII for 1965. Mexican producers are getting about \$0.11 per pound of tomatoes. Marketing costs from harvest at Culiacán, Mexico to Nogales, Arizona for 1966 are given in Table XXXIV.

Texas A&M researchers have estimated Dominican tomato production costs to be \$800 per acre or \$0.044 per pound.

b. Market Possibilities

(1) Market Size by Prime Markets

Tomatoes unloads in main United States, Northeastern and Southeastern cities are given in Table XXXV for the years 1962-1965.

(2) Marketing Factors

Comments made previously in this report about transportation costs and availability also apply here.

Tomatoes are sold year-round, but unloads show a peak during the months of May, June, July and August. Prices are higher in November and December, but also good in April, May and June compared with the rest of the year.

The present U.S. tariff on Dominican tomatoes is: 2.1¢ per pound if entered during the period from March 1 to July 14, inclusive, or the period from September 1 to November 14 inclusive, in any year; 1.5¢ per pound if entered during the period from July 15 to August 31, inclusive, in any year, and, 1.5¢ per pound if entered during the period from November 15 in any year to the last day of the following February, inclusive.

T A B L E XXXII

WHOLESALE PRICES FOR TOMATOES AT NEW YORK AND CHICAGO

| | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. |
|-------------------------------------------------|------|------|------|------|------|------|------|------|-------|------|------|------|
| <u>New York:</u> | | | | | | | | | | | | |
| <u>Street Sales</u> | | | | | | | | | | | | |
| Fla.,8-lb. flat,ctn.
vine ripe, lge. | 1.84 | 1.48 | 2.75 | - | - | - | - | - | - | - | - | 2.62 |
| N.J., 12-qt.bkt.,
vine ripe, med. | - | - | - | - | - | - | 1.74 | 2.20 | 2.00 | - | - | - |
| Ohio,8-lb.bkt.,green-
house, U.S.No.1 medium | - | - | - | 3.75 | 3.00 | 2.88 | 2.70 | - | - | 3.02 | 2.84 | 3.25 |
| <u>Chicago:</u> | | | | | | | | | | | | |
| <u>Green, Ripes and Turning</u> | | | | | | | | | | | | |
| Fla.,40-lb. carton,
6x6 & lgr.* | 6.10 | 5.34 | - | - | 8.58 | 7.00 | - | - | - | - | - | 8.44 |
| 8-lb.flat ctn,vine
ripe, lge | 1.82 | 1.48 | 2.32 | 2.55 | 2.50 | - | - | - | - | - | - | 2.68 |
| Illinois,8-qt.bkt.,
vine ripe,med.-lge. | - | - | - | - | - | 1.75 | 1.44 | 1.18 | 1.40 | - | - | - |
| Midwestern,8-lb.ctn.
greenhouse,med.lge. | 1.95 | - | - | 3.29 | 2.61 | 2.13 | 1.58 | 1.58 | - | 2.46 | 2.57 | 2.68 |
| S.C.,40-lb.ctn.,6x6&
lgr.* | - | - | - | - | - | 4.50 | - | - | - | - | - | - |
| Texas,40.lb.ctn. 6x6
& lgr.* | - | - | - | - | - | 5.50 | - | - | - | - | - | - |

* 85% or more U.S. No. 1,quality.

Source: U.S. Department of Agriculture - Consumer and Marketins Service - Statistical
Bulletin No. 373 - April 1966

AVERAGE PRICES FOR TOMATOES AT LEADING SHIPPING POINTS - 1965

Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec.

California:

Cutler-Orosi District-Central San Joaquin Valley

Pinks, 2-layer flats

5x6 & lgr. - - - - - - 2.83 - - - - -

El Centro (Imperial Valley)

85% or more U.S. No. 1 quality

Green, unwrapped, loose, 40-lb. carton

6x6 & lgr. - - - - - 6.00 - - - - -

6x7 - - - - - 4.00 - - - - -

Pinks, 2-layer flats

5x6 & lgr. - - - - - 4.26 - - - - -

Merced District-Central, San Joaquin Valley

85% or more U.S. No. 1 quality

Green, unwrapped, 40-lb. carton

6x6 & lgr. - - - - - 4.16 - - - - -

6x7 - - - - - 3.38 - - - - -

Gonzales-King City District, Salinas

85% or more U.S. No. 1 quality

Loose, approx. 40-lb. cartons & crates

Green, unwrapped

5x6 & lgr. - - - - - - - 3.17 3.62 3.51 - -

6x6 - - - - - - - 2.74 3.22 3.22 - -

6x7 - - - - - - - 2.02 2.68 3.14 - -

Pinks, 2-layer flats

5x6 & lgr. - - - - - - - 2.46 2.82 - - -

N. San Joaquin Valley, Stockton

85% or more U.S. No. 1 quality

Green, unwrapped, loose, 40-lb. cartons & crates

5x6 & lgr. - - - - - - - - 4.25 - -

6x6 - - - - - - - - 4.08 - -

6x7 - - - - - - - - 3.81 - -

Pinks, 2-layer flats

5x6 & lgr. - - - - - - - - 2.74 - -

Florida:

Dade County Points

85% or more U.S. No. 1 quality

Green, unwrapped, 40-lb. carton

6x6 & lgr. 4.25 4.06 - - - - - - - 7.80* 5.80

6x7 3.22 3.31 - - - - - - - 5.60* 3.16

* 70-80% U.S. No. 1 quality

70

Arthur D. Little, Inc.

| | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. |
|----------------------------------------------------|------|------|------|------|------|------|------|------|-------|------|------|-------|
| <u>Florida: Continued</u> | | | | | | | | | | | | |
| <u>Ft. Myers-Immokalee-Ft. Pierce Section</u> | | | | | | | | | | | | |
| <u>85% or more U.S. No. 1 quality</u> | | | | | | | | | | | | |
| <u>Green, unwrapped, 40-lb. carton</u> | | | | | | | | | | | | |
| 6x6 & lgr. | - | - | - | 7.76 | 6.56 | - | - | - | - | - | 8.78 | 8.25* |
| 6x7 | - | - | - | 5.16 | 4.25 | - | - | - | - | - | 7.12 | 5.06* |
| <u>Florida West Coast Section</u> | | | | | | | | | | | | |
| <u>85% or more U.S. No. 1 quality</u> | | | | | | | | | | | | |
| <u>Green, unwrapped, 40-lb. carton</u> | | | | | | | | | | | | |
| 6x6 & lgr. | - | - | - | 7.59 | 6.92 | - | - | - | - | - | - | - |
| 6x7 | - | - | - | 5.05 | 4.62 | - | - | - | - | - | - | - |
| <u>Pompano Beach Section & Nearby Points</u> | | | | | | | | | | | | |
| <u>Vine ripe, 8-lb. carton</u> | | | | | | | | | | | | |
| <u>Wrapped, stake grown</u> | | | | | | | | | | | | |
| Medium-large without stems | 1.15 | .93 | 1.74 | - | - | - | - | - | - | - | - | 1.86 |
| <u>New Jersey</u> | | | | | | | | | | | | |
| <u>Swedesboro Area, Auction sales</u> | | | | | | | | | | | | |
| <u>Pinks</u> | | | | | | | | | | | | |
| 12-quart climax bkt., med.-lge. | - | - | - | - | - | - | 1.88 | 1.67 | - | - | - | - |
| <u>New York</u> | | | | | | | | | | | | |
| <u>Western & Central New York Points</u> | | | | | | | | | | | | |
| <u>Sales f.o.b. shipping point and</u> | | | | | | | | | | | | |
| <u>delivered sales shipping point basis</u> | | | | | | | | | | | | |
| <u>Green, waxed, U.S. No. 1, 40-lb. carton</u> | | | | | | | | | | | | |
| 6x6 & lgr. | - | - | - | - | - | - | - | - | 3.76 | - | - | - |
| <u>Ohio</u> | | | | | | | | | | | | |
| <u>Cleveland-Northern Ohio Districts</u> | | | | | | | | | | | | |
| <u>Greenhouse grown, U.S. No. 1 8-lb. basket</u> | | | | | | | | | | | | |
| Medium | - | - | 3.68 | 3.16 | 2.60 | 2.29 | 1.86 | - | - | 2.38 | 2.38 | 2.83 |
| <u>Pennsylvania</u> | | | | | | | | | | | | |
| <u>East Pennsylvania Points</u> | | | | | | | | | | | | |
| <u>Sales f.o.b. shipping point and</u> | | | | | | | | | | | | |
| <u>delivered sales shipping point basis</u> | | | | | | | | | | | | |
| <u>Green, 40-lb. carton, U.S. No. 1 quality</u> | | | | | | | | | | | | |
| <u>Southeast Area</u> | | | | | | | | | | | | |
| 6x6 & lgr., 85% or better | - | - | - | - | - | - | - | 3.27 | - | - | - | - |
| <u>Northeast Area</u> | | | | | | | | | | | | |
| 6x6 & lgr., 85% or better | - | - | - | - | - | - | - | 3.06 | - | - | - | - |
| Vine ripe, 10-lb. ctn., 80-85%, med. | - | - | - | - | - | - | - | .96 | - | - | - | - |
| <u>Texas</u> | | | | | | | | | | | | |
| <u>Lower Rio Grande Valley Points</u> | | | | | | | | | | | | |
| <u>Green, unwrapped, U.S. No. 1, 40-lb. carton</u> | | | | | | | | | | | | |
| 6x6 & lgr. | - | - | - | - | - | 4.24 | - | - | - | - | - | - |
| 6x7 | - | - | - | - | - | 2.94 | - | - | - | - | - | - |

* 75% or more U.S. No. 1 quality

Mexico

West Mexico District, Nogales, Ariz. (Port of Entry)

Duty and crossing charges extra

Green, 85% or more U.S. No. 1 quality

40-lb. carton

6x6 & lgr.

| Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. |
|------|------|------|------|-----|------|------|------|-------|------|------|------|
| 2.92 | - | 5.48 | - | - | - | - | - | - | - | - | - |

Duty and crossing charges paid

Vine ripe, 2-layer flats

5x6 & lgr.

| | | | | | | | | | | | |
|------|------|------|------|------|---|---|---|---|---|---|---|
| 3.18 | 2.93 | 3.90 | 4.50 | 4.84 | - | - | - | - | - | - | - |
|------|------|------|------|------|---|---|---|---|---|---|---|

Source: U.S. Department of Agriculture - Consumer and Marketing Service - Statistical Bulletin No. 373
April 1966

T A B L E XXXIV

1/2/
MARKETING COSTS PER FLAT OF TOMATOES,

FROM HARVEST AT CULIACAN, MEXICO TO NOGALES, ARIZONA

1966

| <u>ITEM</u> | <u>TOMATOES</u> | |
|-----------------------------------------------------------------|--------------------------------------------|---------------------------------------------|
| | <u>(11 lb.flat)</u>
<u>US \$ equiv.</u> | <u>(22 lb. flat)</u>
<u>US \$ equiv.</u> |
| Costs, harvesting at Culiacan
Mexico through loading: | | |
| Picking and hauling | 0.19 | 0.14 |
| Packing and container | .55 | .43 |
| Precooling | .03 | .03 |
| Loading | .02 | .02 |
| TOTAL | 0.79 | 0.62 |
| | | |
| Costs from loading in Mexico to
arrival at Nogales, Arizona: | | |
| Assn. Dues (CAAPES & UNPH) | 0.02 | 0.02 |
| Sinaloa Production Tax | .03 | .03 |
| Export Duty, Mexican | .03 | .03 |
| Freight, Culiacan to Nogales | .28 | .33 |
| Ice | .00 | .00 |
| Custom brokerage (US & Mex.) | .01 | .02 |
| Import Duty, US ^{3/} | .36 | .46 |
| Grade Inspection | .01 | .01 |
| Miscellaneous | .02 | .02 |
| TOTAL | 0.75 | 0.92 |

1/ 11 and 22 lb.flat. Type of transportation: Railroad car

2/ Costs for picking through loading were based on 1964/65 figures, and would average slightly higher for the 1965/66 season. The selling commission is 10 to 15% of the f.o.b. Nogales, Arizona price. This commission includes unloading and reloading of trailers and some supervision on growing and packing in Mexico.

3/ 2.1 cents per pound March 1 - July 14, and 1.5 cents per pound Nov. 15 - last day of February.

Source: U.S. Department of Agriculture
Foreign Agricultural Service 73
FAS-M 178, July 1966.

T A B L E XXXV

FRESH TOMATO UNLOADS IN THE MAIN NORTH AND SOUTH EASTERN CITIES

| | 1962 | | | 1963 | | | 1964 | | | 1965 | | |
|---------------------------------------|--------|---------|--------|--------|---------|--------|--------|---------|--------|--------|---------|--------|
| | MEXICO | FOREIGN | TOTAL | MEXICO | FOREIGN | TOTAL | MEXICO | FOREIGN | TOTAL | MEXICO | FOREIGN | TOTAL |
| Boston | 85 | | 2110 | 132 | | 1976 | 47 | | 1768 | 39 | 1 | 1802 |
| Providence | 2 | | 159 | 3 | | 145 | | | 160 | 1 | | 164 |
| New York | 129 | 18 | 5471 | 191 | 4 | 5243 | 192 | 1 | 5413 | 216 | 15 | 5333 |
| Philadelphia | 167 | 19 | 2596 | 151 | 5 | 2498 | 117 | 7 | 2412 | 62 | 10 | 2242 |
| Baltimore | 91 | | 1073 | 77 | | 1099 | 52 | 2 | 1029 | 24 | | 1160 |
| Washington | 27 | 6 | 610 | 22 | 2 | 538 | 29 | | 741 | 22 | | 766 |
| Albany | | 91 | 282 | | 111 | 298 | 4 | 119 | 286 | 9 | 121 | 298 |
| Buffalo | 26 | | 411 | 27 | | 378 | 19 | 1 | 411 | 8 | | 395 |
| Pittsburgh | 62 | | 1213 | 45 | | 1381 | 42 | | 1312 | 79 | 2 | 1359 |
| <u>TOTAL NORTH
EASTERN CITIES</u> | 589 | 134 | 13,925 | 648 | 122 | 13,556 | 502 | 130 | 13,532 | 460 | 149 | 13,519 |
| 74 Atlanta | 47 | 7 | 1211 | 28 | | 1279 | 18 | 3 | 1306 | | | |
| Birmingham | 26 | 23 | 944 | 10 | | 962 | 10 | 1 | 798 | | | |
| Columbia, S.C. | 3 | 1 | 1194 | | 1 | 1473 | | | 1512 | | | |
| Miami | 3 | | 591 | 3 | | 597 | 4 | | 622 | | | |
| <u>TOTAL SOUTH
EASTERN CITIES</u> | 79 | 31 | 3940 | 41 | 1 | 4311 | 32 | 4 | 4238 | | | |
| <u>TOTAL
EASTERN CITIES</u> | 668 | 165 | 17,865 | 689 | 123 | 17,867 | 534 | 134 | 17,770 | 460 | 149 | 13,519 |

SOURCE: United States Department of Agriculture - Consumer and Marketing Service - Fresh Fruit and Vegetable Unloads - 1965

c. Short Range Income and Employment Potential

(1) Income

If our suggested goal of capturing the equivalent of 20% of the Mexican export market to the United States is achieved, about \$6 million of foreign income will be generated.

(2) Employment

On the basis of 70 man-hours per acre of preharvest labor, and 120 man-hours per acre of harvest labor, the following labor will be needed in 3,000 acres:

| <u>Preharvest</u> | | <u>Harvest</u> | | <u>Total</u> | |
|-------------------|-----------|----------------|-----------|--------------|-----------|
| man-hours | man-days* | man-hours | man-days* | man-hours | man-days* |
| 210,000 | 21,000 | 260,000 | 36,000 | 570,000 | 57,000 |

* 10 man-hours per man-day

In other words, 190 men could find 300 days of work.

PROMOTION PROGRAM

a. Prerequisites

To attract foreign entrepreneurship and capital to the Dominican Republic which will be needed to quickly obtain the production goals we have suggested, it will probably be necessary to provide them with assurance that:

- (1) Land needed for the project will be available.
- (2) They will be protected against nationalization and expropriation.
- (3) Repatriation of the funds invested in projects will be permitted.
- (4) Export incentives will be provided.
- (5) Adequate transportation will be available.

- (6) The Government will authorize inspection on the island by the United States agricultural authorities in order to avoid quarantine problems and the possibility of losses.
- (7) Assistance will be provided to assure adequate irrigation, packing, storage and freezing facilities.

b. Program

To assist in the development of agri-industries we recommend that the Government establish a promotional agency that will collect pertinent information; make this information available to potential investors, and help them with any necessary negotiations with various governmental departments. This agency should initiate a program of contacts with large grower-processor organizations which have established markets to attract them to the Dominican Republic.

7. Black Beans

There is no production of black beans in the Island, mainly because Dominicans do not like them. However, there is evidence that they are better suited for the Dominican soil and climate than many other varieties now being grown. Yields as high as 2,000 pounds per acre, have been obtained which have about double red beans yields and they are much more disease resistant.

The cost to produce black beans has been estimated by Texas A&M researchers to be about \$50 per acre. Production could be started immediately. Although markets in the United States are small, there is a large market for black beans in Venezuela and possibly in other areas of the Caribbean.

In 1965 Venezuela imported 16,000 metric tons of beans of which about 13,000 tons were black. Of the latter, 7,000 tons came from Mexico and 6,000 tons from the U.S. The U.S. export price was about 10¢ per pound. Capturing half of Venezuelas' 1965 imports would mean export income of \$1.4 million to the Dominican Republic.

8. Watermelons

Growers Marketing Services, a Florida enterprise, planted 400 acres of watermelons in Azua this year, and will produce 4,000 metric tons for exports to the United States. This is already 12% of Mexican exports of 32,000 metric tons in 1965 worth \$1.3 million.

9. Alfalfa

Some 10,000 tons of alfalfa meal and pellets were imported into Puerto Rico in 1965, and about 13,000 tons into Venezuela. The possibility of raising this alfalfa in the Dominican Republic should not be overlooked.

10. Other Fresh Fruits and Vegetables

Many of the produce items that we had in our original list have not been discussed specifically in this report because the lead time required to get them on the market was too long, or the expected dls. volume was too small or both.

Since some of the produce items not considered suitable for immediate development show an interesting potential in the long run, we decided to include a brief discussion of each of them.

Table XXXV-A shows the total and foreign number of unloads of these produce, along with their average wholesale price at New York for 1965.

a. Avocados

Avocados are grown in scattered locations all over the country. The only kind being harvested is of the West Indies variety that cannot stand refrigeration.

Since the markets are better during the winter, and refrigeration will be needed to transport the product from the Dominican Republic to the Eastern United States, the only way to export is to start planting the winter varieties that will make exports possible year round under refrigeration. Production could start in 1970 with yields up to 4,000 pounds per acre, of a good quality product.

The California avocado is losing the preference of the American public in view of its high fat content and it might be possible to interest CALAVO come to the Dominican Republic. Another possibility which we did not check is the European market, now controlled by Israel.

b. Artichokes

About three years of further experimentation is required to determine the feasibility of this crop.

c. Broccoli and Brussels Sprouts

The only location in the Dominican Republic where suitable yields of these crops have been obtained is the Constanza Valley. However, this contains a total area of only 2,500 acres of which about 80% are in garlic which is probably a higher value crop. The Dominican Republic is a net importer of garlic, and since this is a very profitable crop and it would be unwise to change to another crop.

d. Bulbs and Flowers

No figures are available as to production or costs. Reportedly, some 30 acres of gladiola bulbs will be planted this year for exports to Florida by air.

TABLE XXXV-A

SELECTED PRODUCE UNLOADS ON THE UNITED STATES EAST COAST

| <u>Produce</u> | <u>1965</u> | | <u>Wholesale Prices in
New York & Chicago</u> |
|--------------------|--------------|----------------|-------------------------------------------------------|
| | <u>Total</u> | <u>Foreign</u> | |
| Artichokes | 395 | -- | -- |
| Asparagus | 1,244 | -- | 9.10 Pyramid Crate |
| Avocados | 134 | 30 | .80 flats approx. 13 lb. |
| Beans (Lima) | 4,811 | 14 | 3.70 Bushel Hamper |
| Broccoli | 1,205 | -- | 4.16 (14 bunches) |
| Brussels Sprouts | 186 | 4 | .23 (10 oz. cup) |
| Cabbage | 12,454 | 87 | 3.00 (1-3/4 bushel crate) |
| Cauliflower | 2,368 | -- | 4.12 cartons film wrpd 12 |
| Garlic | 322 | 202 | -- |
| Green Peas | 322 | -- | 4.81 bush. basket |
| Lettuce Romaine | 24,326 | 4 | 3.38 (24 heads carton) |
| Mangoes | 101 | 50 | -- |
| Mixed Citrus Fruit | 1,621 | -- | -- |
| Okra | 124 | -- | -- |
| Peas | 83 | 35 | -- |
| Pineapple | 1,704 | 1,626 | -- |
| Potatoes | 52,141 | 838 | 4.20 (50 lb. sack) |
| Spinach | 1,560 | 54 | 1.60 (bushel, basket crate) |
| Squash | 2,502 | 3 | -- |
| Watermelons | 12,615 | 22 | .0402 per pound |

Source: USDA - Consumer and Marketing Service - Fresh Fruit and Vegetable Unloads - 1965

e. Cabbage

The most promising market for cabbage would be Puerto Rico, but it is served by American producers, with whom Dominican producers probably cannot compete because this is a very low cost production item in the U.S. and yields there are very high.

f. Carrots

They can be produced year round in highly efficient mechanized and low cost operation in Texas, and we do not believe Dominican producers could compete with them.

g. Citrus

There are no commercial plantings. Citrus growth is in small plantations scattered throughout the country and is not of the required quality for export. The types grown are of mixed variety and uncontrolled quality, and most of the production is consumed locally although small amounts are exported.

The program now under way to improve Dominican citrus quality could result in the production of exportable products about 5 years from now at which time they might get a share of the United States market.

h. Coconut

Dominican producers are already exporting 80-90,000, 150-pound bags at \$3 per bag f.o.b. Santo Domingo. Around 90% is exported to the United States and 10% is shipped to Europe.

i. Cauliflower

The same comments made under Broccoli apply here.

j. Guavas

There is no commercial production of this crop. Reportedly, wild guavas are abundant in the Dominican Republic, but no commercial harvest can be expected before 1970. On the other hand, guava markets are small and the main possibility is to sell it as guava pulp in England and Puerto Rico.

l. Lettuce

The market is small, but 2,700 tons could be produced in the acreage available at the Constanza Valley to supply the Puerto Rican market.

1. Mangoes

The variety being produced is not good for exports because reportedly, the fruit is small and is not of dependable uniform quality.

m. Okra

Although okra grows very well in the Dominican Republic, United States consumption is very small during the winter and the rest of the year producers in Georgia, Alabama, California, Florida and Texas are capable of supplying the U.S. market.

n. Pigeon Peas

The only export markets are Puerto Rico and New York to supply the Puerto Rican population. However, these markets are said to be diminishing.

o. Pineapple

Exports in small amounts could be started about 5 years from now at the earliest. To succeed, competition with highly mechanized production in Puerto Rico, Hawaii and Florida must be met.

The United States market for fresh pineapple is small although the market for canned pineapple is big (more than \$17 million in 1965). Therefore, some consideration should be given to the possibility of exporting the canned product in the 1970's.

p. Spinach

Since United States producers in Southern Texas have large enough capacity to serve the markets year round in highly mechanized, low cost operations, we do not believe Dominican producers will be able to compete with them on a cost basis.

q. Squash

The type of squash consumed in the United States is not grown in the Dominican Republic, and therefore, experimentation will have to be done before starting any planting. However, the market is small from a dollar income point of view and squash is a bulky low-cost item that probably could not bear the shipping costs.

r. String Beans

This crop can be produced in highly efficient, mechanized and low cost operations in Texas year round, with which Dominican producers cannot compete.

VII. EXPORTS OF MANUFACTURED AND SEMI-MANUFACTURED GOODS

A. FINISHED GOODS

The opportunity for exporting finished manufactured goods which have a high labor content and face a relatively low tariff into the United States should be examined by the Dominican Republic. U.S. imports in 1965 of goods which had a labor content equivalent to 50% or more of their U.S. manufacturing cost and an ad valorem tariff generally below 25%, amounted to \$1 billion dollars, as shown in Table XXXVI and detailed in Appendix B.

A total of 155 specific finished products offering opportunities for manufacturing in the Dominican Republic are listed in Appendix B along with details of their 1965 U.S. imports and country of origin. Table XXXVII shows the sources of this \$1 billion dollars of U.S. 1965 imports. Japan with over 40% of the total dominates the list. Japan and Hong Kong taken together account for about half of the total. However, Europe is a very substantial supplier, with Italy, the leading country, accounting for about 10% of U.S. imports of labor intensive manufactures, followed by West Germany and the United Kingdom. Thus, the market potential for Dominican exports to the United States in this category is very large. The competition is not wholly from the Far East but from many countries in Europe as well. It is notable that no Latin American country has exports large enough to appear on the list. The East Coast U.S. market for these imports probably amounts to \$500 million.

B. SEMI-MANUFACTURED GOODS - THE TWIN PLANT CONCEPT

In addition to the high labor content finished goods described above, there is a substantial market for high labor content semi-manufactured goods. In general, U.S. tariffs on partly finished goods are considerably lower than those on finished goods. Access to the U.S. market for semi-manufactured goods is available to the Dominican Republic through Puerto Rico. In 1963, Puerto Rico produced \$1.5 billion worth of industrial products, of which about half was shipped to the United States. Key areas of export to the United States were: food products (\$200 million), apparel (about \$150 million), and electrical machinery (\$80 million). Labor costs in these industries in Puerto Rico have grown rapidly. The proximity of the Dominican Republic and its lower wage scale suggest that the Dominican Republic can offer to carry out certain labor-intensive operations for Puerto Rico to improve Puerto Rico's production cost position. The fact that apparel and electrical machinery are also opportunity areas for finished goods reinforces our contention that this possibility should be considered.

1965 U.S. IMPORTS OF SELECTED MANUFACTURED GOODS^{1/} (MILLION DOLLARS)

| <u>ITEM</u> | <u>TOTAL</u> | | | | | | | | | | | |
|------------------------------|--------------|-------------------|----------------|--------------------|--------------|--------------|--------------|---------------|-------------|------------|--------------|--|
| 1. Electronic Apparatus | 296 | Japan
230 | W. Germ.
16 | H. Kong
13 | Canada
12 | Others
25 | | | | | | |
| 2. Garments | 264 | Japan
70 | H. Kong
65 | Italy
27 | Phil.
14 | France
10 | U.K.
7 | W. Germ.
7 | Taiwan
5 | Korea
4 | Others
55 | |
| 3. Office Machines | 136 | W. Germ.
33 | Italy
20 | Nether-lands
16 | U.K.
11 | Canada
10 | Japan
9 | Others
37 | | | | |
| 4. Footwear | 119 | Italy
52 | Japan
26 | U.K.
9 | Spain
6 | France
5 | Others
21 | | | | | |
| 5. Sewing Machines | 71 | Japan
38 | U.K.
15 | W. Germ.
8 | Italy
4 | Others
6 | | | | | | |
| 6. Rubber & Plastic Products | 70 | Japan
34 | W. Germ.
7 | H. Kong
7 | Others
22 | | | | | | | |
| 7. Furniture, Wood | 43 | Yugos.
7 | Den-mark
6 | Italy
5 | Japan
5 | Canada
3 | Spain
3 | Others
14 | | | | |
| 8. Sporting Goods | 18 | Japan
11 | U.K.
3 | Belgium
1 | Others
3 | | | | | | | |
| 9. Electric Motors | 9 | U.K.
6 | Yugos.
1 | Japan
1 | Others
1 | | | | | | | |
| 10. Electric Shavers | 7 | Nether-lands
5 | Others
2 | | | | | | | | | |
| TOTAL | 1,033 | | | | | | | | | | | |

^{1/} Having in general a labor content of 50% or more of U.S. manufacturing cost and a U.S. Tariff barrier of 25% or less ad valorem.

TABLE XXXVII
SOURCES OF 1965 U.S. IMPORTS OF SELECTED^{1/}
MANUFACTURED GOODS

| <u>Source</u> | <u>Selected Imports</u>
<u>(Million Dollars)</u> |
|----------------|-----------------------------------------------------|
| Japan | 424 |
| Italy | 108 |
| Hong Kong | 85 |
| West Germany | 71 |
| United Kingdom | 51 |
| Canada | 25 |
| Others | 269 |
| | <hr/> |
| T O T A L | 1,033 |

^{1/} Having in general a labor content of 50% or more of U.S. manufacturing cost and a U.S. Tariff barrier of 25% or less ad valorem.

SOURCE: U.S. Imports of Merchandise for Consumption - U.S. Dept. of Commerce Bureau of the Census - FT 125

Typical of such operations on semi-manufactured goods would be cut and sew operations in garment manufacturing, the assembly of electronic components into sub-assemblies, the preparation of data for data processing, the manufacture of wrought iron shapes for garden furniture and gates.

Of particular interest with respect to production of semi-manufactured goods in the Dominican Republic is the "twin-plant concept". Under this plan, two plants, one in the Dominican Republic and the other in Puerto Rico, operate under a single management; the Dominican plant being utilized for labor-intensive operations and the Puerto Rican plant for technological, capital-intensive, or finishing operations. The proximity of the Dominican Republic to Puerto Rico and the developing link with containerships for fast freight service, suggest that this is a real possibility. Furthermore, the key element in the development of twin plants, namely management, can have ready access to plants in both Puerto Rico and the Dominican Republic because of the excellent air service already available.

C. POSSIBLE MARKETS FOR FINISHED AND SEMI-MANUFACTURED GOODS

The following table shows the relative product in these key industries during 1963 for the Dominican Republic and Puerto Rico, and the corresponding payroll in Puerto Rico in that industry.

| | \$ M M | | |
|-----------------|-----------------------|----------------|------------------------|
| | Product 1963 | | Payroll
Puerto Rico |
| | Dominican
Republic | Puerto
Rico | |
| Leather & Shoes | 5 | 62 | 16 |
| Apparel | 6 | 180 | 51 |
| Electrical | 1 | 90 | 17 |
| | 12 | 332 | 84 |

In these three industries alone, it may well be possible by 1970 to carry out labor intensive operations in the Dominican Republic equivalent to 3% of the Puerto Rican payroll in 1963, or about \$2.5 million. An additional \$500,000 of product could be developed in finished goods shipped directly from the Dominican Republic to the U. S. in the apparel and electrical industries. Thus, a projected total of \$3 million of manufactured and semi-manufactured exports could reasonably result. By 1980 this figure could grow tenfold.

Of course, the long-range impact of a program which relates Dominican exports of manufactured goods to the U.S. market with existing Puerto Rican plants and management can be much larger than the short-range forecast implies. Puerto Rico can be regarded as a source of a continuing supply of trained managers who are at home in the Dominican culture and who represent a considerable body of industrial know-how. Utilizing this management pool in the development of Dominican industry should be encouraged; the twin plant concept allows such encouragement.

In terms of direct employment, this project will probably have the greatest effect over the three year period of any in this report. We estimate that some 1,000 people would obtain direct employment as a result of development of the twin plant idea.

D. PROMOTION

Perhaps the best way to promote twin plants is to introduce the Dominican and Puerto Rican manufacturers in each key industry. A suitable program would be as follows:

1. For each industry establish a separate contact and information program (this is to avoid the time-wasting that frequently occurs when industrialists from different industries get together in large groups). In order to assist in this we have prepared in Appendix C a listing by Standard Industrial Classification Number, of the important Dominican plants and those in Puerto Rico.
2. Prepare a brief review of each industrial sector in the Dominican Republic and a cost factbook for the Manufacturer. While there is general information on matters of interest to all industry which should be made available, Dominican manufacturers should be encouraged to make available specific information on their industry to the Puerto Rican manufacturers.
3. Invite the Puerto Rican manufacturers to a carefully prepared seminar in Puerto Rico or the Dominican Republic, on their industry's opportunities, including a full discussion of the twin plant idea.
4. Be prepared to spend time and effort answering questions and developing further information as may be needed by the manufacturers concerned.

The goal of the above is to try to arrange either "maquila" contracts or joint ventures, or investment on the part of the Puerto Rican manufacturers in the Dominican Republic.

E. BONDED MANUFACTURING ZONE - INDUSTRIAL PARK

For the purpose of promoting the twin plant idea, it may be useful to consider the establishment of a bonded manufacturing zone in the Dominican Republic. This is an enclosed industrial area under customs control, similar to a U.S. Foreign Trade zone such as the one located in Mayaguez, Puerto Rico. Imports of raw and semi-manufactured materials from anywhere in the world may be made without payment of duties. Products manufactured in the zone may be exported without payment of Dominican duty. Raw materials from third countries can be transported to the zone in bond. The bonded manufacturing zone would be designed and operated to encourage the rapid movement of goods across the national frontier, and across the boundaries of the zone itself. Within each bonded manufacturing zone, an industrial park could be established which offers general-purpose light manufacturing type buildings for lease up to ten years. The industrial park could be supplied with all important services such as water, sewage, electricity, telephone and fuel, and would in addition include expediting services supplied by the Dominican Government to aid manufacturers in solving problems, as well as to help them in liaison with government agencies. The possibility that pre-inspection of selected shipments from a bonded zone within the Dominican Republic could be made by U.S. customs officials (provided they were given access to the Dominican Republic for this purpose), might save time and money on Dominican exports to either Puerto Rico or to the U.S. mainland.

VIII. MINERALS

A. BAUXITE

1. Production Capability

Bauxite is mined by Alcoa Exploration Company. Exports go to the United States and have increased from 426 metric tons in 1959 to 1.2 million tons in 1965. The material appears to be of similar quality to Jamaican bauxite. Estimated reserves are 40 million tons.

From U.S. import statistics it appears that the CIF value of Dominican bauxite in 1965 was \$11.7 million or \$9.80 per long ton.

The Dominican Government in its contract with Alcoa has recently extended its option to buy (at international prices) 850,000 tons for processing into alumina.

A suggestion has been made by economist Bernardo Vega in a book published in October 1966: "La República Dominicana ante el Proceso de Integración en Latinoamérica", that the Government should take up the option or agree with Alcoa to build a 100,000 ton alumina plant. With alumina prices ranging from \$63 to \$75 per short ton CIF, a 100,000 ton plant might produce exports valued at \$6 to \$7 million. The United States at present has suspended import duties on alumina but as these might be reintroduced, the Dominican Republic could protect itself by joining LAFTA. It would then be the only other alumina producer in Latin America (the first being Brazil) and could ship alumina on an almost exclusive basis to Mexico, Venezuela, Colombia and Peru; these countries' estimated demand for alumina in 1970 is about 100,000 tons.

To substantiate the claim that a 100,000 ton plant is feasible, economist Vega lists 29 plants in 15 countries with capacities below 165,000 short tons.

We do not believe that a 100,000 ton alumina plant is viable. The minimum economic capacity under today's conditions is 400,000 tons, with an investment of between \$60 and \$70 million. Small plants do still operate, but are competitive only because they are totally depreciated. They would not be economical if built now. Moreover, the prices shown by Vega are high and probably refer to spot prices whereas the bulk of alumina shipments is made under long-term contracts and prices are in the \$50 to \$60 per metric ton range.

This leaves the possibility of increasing bauxite exports. In fact, a 50% increase in Dominican bauxite exports would produce almost as much foreign currency (about \$5 million) as the hypothetical alumina plant, with greater employment at a much smaller investment.

The viability of such an expansion depends on the market potential but chiefly on negotiations with Alcoa.

2. Market Possibilities

In 1965 the United States imported 12.7 million long tons of non-calcined bauxite for a total of \$143 million. Out of this, Jamaica supplied 7.6 million long tons and the Dominican Republic 1.2 million long tons.

Whereas a market for bauxite exists, the possibility of expanding the Dominican Republic share will depend on whether Alcoa finds it profitable to do so in the face of alternative sources of supply.

3. Promotion Program

The essential first step is to establish informal contact with the president of Alcoa. This should not be done through diplomatic channels, but by a personal representative of the Minister concerned. The interview should elucidate what Alcoa's plans are in the Dominican Republic and under what condition they would consider expanding their operations in the Dominican Republic.

B. GYPSUM

1. Production Capability

a. Volume, Present and Potential

Present production is about 1,000 metric tons per day, down from 3,600 tons per day in 1958-1959. With the purchase of the following equipment, the mine could again produce at the former level in the opinion of the mine administrator: One 2.5 cubic yard excavator; Two hydraulic Caterpillar D-8 tractors; Two pneumatic perforators, and Four twenty ton trucks.

A geological survey made not long ago shows the gypsum deposit to be about 12 kilometers long, 2 to 4 kilometers wide, and 800 feet deep.

b. Quality

The product is 94% or more gypsum, 3% humidity and less than 3% impurities.

c. Price

Cost of production is \$2 to \$2.50 per metric ton according to the Administrator, and the price is \$3 per metric ton f.a.s. Barahona.

Gypsum is selling for \$3.30 per metric ton f.o.b. plant in the United States.

2. Market Possibilities

a. Market Size in Prime Markets

Present sales are to Ferre Enterprises for cement production in Puerto Rico; Guanon for cement production in Panagua; and Fábrica Dominicana de Cemento.

United States imports of gypsum, plaster rock and gypsum cement totalled \$11.9 million in 1965, of which \$9.5 million came from Canada, \$1.5 million from Mexico, \$0.6 million from Jamaica, and \$0.2 million from the Dominican Republic.

The main markets in the U.S. for gypsum are:

- Wall-board and lath production, which accounts for more than 80% of gypsum consumption.
- Cement production that accounts for 3 million metric tons of gypsum consumption in the United States, and 60,000 tons in Puerto Rico.
- Agricultural uses which are small and decreasing.

Gypsum board price index, production and capacity is shown in the following table:

| Year | PRICE INDEX | | SHIPMENTS
(millions of sq.ft.) | | | Estimated
Capacity
(millions of
sq.ft.) | Apparent
Operating
Rate
(%) |
|----------------|-------------------------|------------------------------|-----------------------------------|-------|-------|--------------------------------------------------|--------------------------------------|
| | LATH
(1957-59 = 100) | WALLBOARD
(1957-59 = 100) | LATH | BOARD | TOTAL | | |
| 1960 | 101.5 | 101.7 | 1,910 | 6,072 | 7,982 | 8,600 | 93 |
| 1961 | 102.8 | 102.7 | 1,646 | 6,162 | 7,808 | 9,200 | 85 |
| 1962 | 104.6 | 104.1 | 1,585 | 6,867 | 8,452 | 9,800 | 86 |
| 1963 | 104.6 | 104.1 | 1,549 | 7,357 | 8,906 | 10,500 | 85 |
| 1964 | 108.0 | 106.6 | 1,495 | 7,795 | 9,290 | 11,200 | 83 |
| 1965
(est.) | 102.0 | 102.0 | 1,400 | 8,200 | 9,600 | 12,000 | 80 |

Source: Price index & shipments, U.S. Department of Commerce.
Capacity index and operating rate, Arthur D. Little, Inc. estimates.

The distribution of gypsum products is given in the following table (percent):

| | 1960 | | 1961 | | 1962 | | 1963 | |
|------------------------------------------------------|------|-------|------|-------|------|-------|------|-------|
| | TONS | VALUE | TONS | VALUE | TONS | VALUE | TONS | VALUE |
| Uncalcined
Gypsum | 28 | 4 | 29 | 4 | 29 | 4 | 28 | 4 |
| Industrial
Gypsum | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Building Products
(plasters, roof
decks, etc.) | 17 | 13 | 16 | 12 | 14 | 11 | 14 | 10 |
| Wallboard & Lath | 53 | 81 | 53 | 82 | 55 | 83 | 56 | 84 |
| TOTAL | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |

Source: U.S. Department of Commerce

The critical cost factor in the manufacture of gypsum wallboard is the handling and processing of the low value crude ore. For this reason, virtually all gypsum board plants are located either at gypsum mines or on deep water, where crude gypsum can be shipped in readily. Approximately one third of the U.S. gypsum plants are on deep water, generally in the East, and use crude gypsum generally imported from Canada.

Probably the best way to sell the 1 million metric tons that can be produced if the mine is working at capacity is to establish long term contracts with one or more gypsum products plants in the United States. The gypsum market for cement production is small and very fragmented which creates not only a sales problem but also a distribution problem. However, cement producers located near deep water on the East coast can be approached as potential buyers. Also present Caribbean and European users should be approached.

b. Marketing Factors

Steady supply is of paramount importance to a producer of gypsum board.

Insuring that the transportation of gypsum to the United States is on a regular schedule that fits the needs of the gypsum board plant is important. The United States tariff for raw unground gypsum is "Free". Ground or calcined gypsum carries a tariff of \$1.19 per ton.

3. Short Range Income and Employment Potential

a. Estimated Dollar Volume in Prime Markets

If the total output of 1 million metric tons of gypsum from the Dominican mine is sold to 1 or 2 gypsum products plants in the East Coast of the United States, at the present price of \$3.30 per metric ton, total income can be of \$3.3 million dollars by 1969. A similar income can be obtained by selling the same amount for cement production in the United States and Puerto Rico.

b. Employment

The mine can produce 1 million tons of gypsum with the same number of workers that it now has (266).

4. Promotion Program

a. Pre-requisites

- Guarantee an adequate supply of a good quality product on time.
- Ability to sell at competitive prices.

b. Program

- Contact the U.S. producers of gypsum board listed on Table XXXVIII and sell them the idea.

For information, a brief discussion of each company listed follows:

The United States Gypsum Company, with 1965 sales of \$304 million, is the giant of the gypsum industry and produces almost half of the board products made in the United States. Other U.S. Gypsum products include hardboard insulation materials, metal lath, paints, roofing materials, and gypsum specialty products. U.S. Gypsum also owns six paper plants which make the paper facings for its gypsum board, although some gypsum board paper is sold on the open market. Approximately 60% of United States Gypsum Company sales are directed to the housing market, with another 15% going to non-residential construction, and over 10% to industrial markets. United States Gypsum Company also owns mines and board-producing facilities in Canada.

The National Gypsum Company, with annual sales in 1965 of \$259 million, is the second largest producer of gypsum board in the United States. National Gypsum also has a large interest in the cement industry through the recent acquisition of the Huron and Allentown cement companies. Cement and gypsum operations together account for approximately 70% of sales, with the balance made up of insulation products, ceramic and quarry tile, roof deck, metal lath, paper, and paint. National Gypsum has recently entered the gypsum board market on the West Coast. The company also manufactures its own paper and operates gypsum and board producing facilities in Canada.

Bestwall, formerly a division of Certain-Teed Products, is now a division of the Georgia Pacific Company. In the past few years, Bestwall has built two new plants, and there are indications that under Georgia Pacific management, Bestwall will continue to expand in this market.

Kaiser Cement and Gypsum Company, originally located only in the West, is one of the fastest growing gypsum companies. It has recently completed (or is building) two plants, each with an annual capacity of 180 million square feet. The plants are located in Jacksonville, Florida and in southern New Jersey.

TABLE XXXVIII

U. S. PRODUCERS OF GYPSUM BOARD

| <u>MANUFACTURER</u> | <u>No. of
Board
Plants</u> | <u>% of U. S.
Gypsum Board
Production</u> | <u>% of Company Sales
Represented by
Gypsum Board</u> |
|--------------------------------------------|------------------------------------|---------------------------------------------------|---------------------------------------------------------------|
| U.S. Gypsum Company | 26 | 46 | 60 |
| National Gypsum Company | 16 | 27 | 45 |
| Bestwall (Div. Georgia Pacific
Company) | 9 | 9 | 6 |
| Kaiser Cement & Gypsum Company | 7 | 7 | 27 |
| Fibreboard Paper Products Corp. | 3 | | |
| Flintkote Company | 3 | 8 | n.a. |
| Calotex Corporation | 3 | | |
| Grand Rapids Gypsum Company | 2 | | |
| Barrett (Div. Allied Chemical Co.) | 1 | 3 | n.a. |
| Others | 4 | | |
| | <hr/> | <hr/> | |
| T O T A L | 74 | 100 | |
| | <hr/> | <hr/> | |

Source: Arthur D. Little, Inc., estimates.

Fibreboard, Flintkote, and Celotex are all relatively small factors, and gypsum board represents a relatively insignificant part in their total business. Grand Rapids Gypsum Company, which produces only gypsum, is centered in the Michigan area, but there are trade rumors that it is contemplating building a gypsum board plant in the greater New York City area.

The Barret Division of Allied Chemical has one relatively small plant in New Jersey and has recently cancelled plans for a second plant. It has attempted to develop panel systems using gypsum board and other materials such as urethane foam, but so far has been relatively unsuccessful.

There are several other scattered gypsum board manufacturers including Ruberoid with one plant; Dierks Forest, a previously all wood producing company, with one plant; and a number of small independent operations.

Only U.S. Gypsum and National Gypsum manufacture their own paper; the balance of the industry purchases from these manufacturers or from the many paper companies.

C. SALT

1. Production Capability

a. Volume, Present and Potential

Salt reserves seem to be large. In 72 drillings 600 feet deep made at 150 meter intervals, nothing but salt was found. An exploration company looking for oil, drilled a well 15 kilometers from the mine and went down 11,000 feet, finding only salt.

The salt mine has been closed during the last three years, but the mining equipment is kept in working conditions and with some minor additions the mine could produce 800-1000 tons per day, or 300,000 tons per year.

b. Quality

The product has a minimum 94% content of sodium chloride, but usually has 95-96%. Humidity is about 3%, and the rest are impurities. On shipment to New York humidity goes up to 5-8%.

c. Price

Production costs are around \$4-\$6 per metric ton (or \$4.25-\$6.40 per metric ton on a 100% sodium chloride content basis).

Salt for ice control is sold in the United States for \$6-\$7 a ton or \$6.60-\$7.70 per metric ton f.o.b. U.S. mine with +99% of sodium chloride.

2. Market Possibilities

a. Market Size by Prime Markets

Up to 1959, this mine shipped 100,000 metric tons of salt a year to New York for ice control at \$4.50-\$5.00 per metric ton f.a.s. Barahona.

The United States imported \$6.5 million, or 624 thousand tons of salt in 1965, of which \$4 million came from Canada and \$1.3 million from Morton Salt in the Bahamas. In our opinion, the principal opportunity for this lower grade Dominican salt is for ice control in Northern United States and Canadian cities, since it cannot meet specifications for industrial use and human consumption.

b. Marketing Factors

Transportation of 300,000 metric tons of salt in bulk during the year must be arranged to supply the Northern United States.

The present United States tariff on imports of bulk salt is 37.5¢ per metric ton.

3. Short Range Income and Employment Potential

a. Estimated Dollar Volume in Prime Markets

If the Dominican mine sells 300,000 metric tons of salt for ice control in the Northern United States and Canada, income will be about \$1.8 million.

b. Employment

The mine administrator thinks that if the salt mine is reopened, 50 new permanent jobs will be created.

4. Promotion Program

a. Pre-requisites

- Availability of transportation.
- Competitive price.
- Reopen the mine and buy whatever is necessary to produce 800-1000 metric tons per day. (Most of the machinery is 15-20 years old, but said to be operable).
- Creation of export tax incentives.

b. Program

Contact the Morton Salt Co., Diamond Crystal Co., or International Salt Co. in the United States; or Canadian Salt Co., Ltd. and Swifto Salt Ltd. in Canada.

If the salt companies show no interest, develop a marketing group within the Dominican Salt Company to enter competitive bids as northern municipalities buy their salt requirements.

IX. OTHER PROJECTS

A. HARD CANDY

1. Production Capability

According to 1963 statistics, 460 tons of candy valued at \$244,000 was produced in 5 establishments employing a total of 49 people. Neither product quality nor packaging was up to export standard, and the price was too high.

Nevertheless, there is no reason why a modern candy industry cannot be established in the Dominican Republic to utilize part of the surplus sugar potentially available at low prices. We understand that a local cookie manufacturer plans to produce candy in the Dominican Republic. While it is not realistic to convert and export the entire 25,000 tons of surplus raw sugar now available, we believe there exists an opportunity to export about 2,500 tons of candy per year in the immediate future. A plant producing 5 million pounds a year of hard and filled candy would require a fixed investment of about \$250,000 and employ 50 people.

2. Market Possibilities

The World market for hard and filled candies exceeds \$30 million a year. A great part of this market is in the United States where per capita consumption is approximately 1.7 pounds.

In 1965, the United States imported 56 million pounds of hard candy valued at almost \$16 million. The market for these candies is extremely sensitive to cost rather than to brand identification. If candies can be produced in the Dominican Republic for less than 20¢ per pound, a substantial portion of the U.S. market, perhaps as much as 5 million pounds per year, can be acquired. The ability of the Dominican Republic to develop this market will depend not only on low sugar cost, but efficiency in manufacture and marketing.

Demand is also strong for these candies in West Germany and Canada. Colombian candies are now being imported into both of these countries as well as into the United States.

Any supplier of candy to the United States must comply with the requirements of the Food and Drug Administration. Some problems may exist in regard to the use of artificial colors and flavors, but these

can be resolved. The majority of common artificial flavors are cleared for use. All natural flavors are permitted. Correct packaging is a vital factor in successful candy operations.

While in the past package design was primarily oriented towards product protection, marketers now look to the package to perform vital merchandising functions in addition to the protection requirement.

Competition for the hard and filled candy market can be expected from both U.S. and European sources. For example, Motta, an Italian manufacturer of confections has a well established distribution system throughout the world for all its products, including hard candy. In the United States, E. J. Brach Company produces a large part of the hard candies sold. There are numerous other processors throughout the world which distribute their candy through major outlets in the United States as well as another consuming countries. However, those countries which produce sugar at reasonable costs can exploit this advantage in the World market. Sugar-producing countries also enjoy the competitive possibility of producing quality candy from some intermediate sugar products, i.e. sugar in some form short of refined grade, such as low cost clarified raw syrups.

The major outlets for hard candy products in the United States are such distribution chains as A&P, Kroger, Safeway, Jewel Tea, F. W. Woolworth and others. The majority of candy manufacturers use brokers for distribution. Traditionally, the candy broker has been the most important link in the distribution of candy. In recent years, however, many food brokers have taken on candy lines. The traditional candy jobber very often buys selected items from individual manufacturers in bulk, and packages them under his own label. There are approximately 300 such operations in the United States. Import duties into the United States are 14% ad valorem.

3. Short Range Income and Employment Potential

We believe that a Dominican candy manufacturing plant may produce exports of up to \$1 million by 1970 and would employ about 50 people.

4. Promotion Program

a. Pre-requisites

For successful exporting the manufacturer must be certain that he will always obtain his principal raw material at competitive prices. For this reason we recommend that the Government make arrangements for all export candy manufacturers to obtain sugar at world export prices.

b. Promotion

A first step in the promotion of this project will be a feasibility study sufficiently detailed to establish a manufacturing program and costs of the final products. On the basis of the study personal contact should be established with: a) large retail chains, b) food brokers, c) candy brokers, (in that order) to test the market and, if possible, obtain expression of interest in regular supplies under contract. It may be advisable to go into joint partnership with an organization which has established experience in the market.

B. TOBACCO

1. Production Capability

a. Volume, Present and Potential

Of a total production of 50 million pounds, two thirds is "criollo" and the rest "negro" or "olor". Both kinds are dark. Total acreage used is 40,000.

Production can be doubled almost immediately, according to the large tobacco companies, but due to large stockpiles and low prices in world markets, there is a present tendency to lower production.

b. Quality

"Olor" quality is high but "criollo" is a low grade type. The qualities now being sold in the Dominican Republic are: FF, F, A, and "Picadura".

c. Price

Current selling prices for local consumption at Santiago are:

| | |
|----------|---------------------|
| FF | \$60 per 100 pounds |
| F | \$50 per 100 pounds |
| A | \$40 per 100 pounds |
| Picadura | \$25 per 100 pounds |

"Olor" is exported to the United States, Belgium and the Canary Islands in small amounts for about \$50 per 100 pounds f.o.b. Dominican Republic.

Low quality dark tobacco is being exported to Spain, France, Morocco and other countries that buy this kind of tobacco for about \$41 dollars per 100 kilos, or \$18.60 per 100 pounds f.o.b. Spain, in the case of "picadura".

2. Market Possibilities

With lower United States tariffs, similar to those allowed in the Philippines, Dominican producers could export about 10 million pounds of "olor" per year at about \$50 per 100 pounds f.o.b. Dominican Republic.

Puerto Rico imported in 1964 about \$3.3 million of Dominican tobaccos, for use in its \$50 million export of cigars to the United States in that year. Even if the U.S. tariff is not modified, it may be of interest to Puerto Rican purchasers to establish permanent preferred sources of tobacco in the Dominican Republic. This could occur with or without an accompanying joint complementary effort in cigar manufacture.

3. Promotion

Support joint efforts between Puerto Rican and Dominican tobacco manufacturers.

Attempt to get a special tariff concession from the United States.

C. CIGARS

1. Production Capability

a. Volume, Present and Potential

In 1963, Dominican producers manufactured about 32 million cigars of which 31 million were sold locally, and the rest exported to the United States for about \$14,000. Exports were \$11,000 in 1964, and in 1965-1966 exports reached the \$20 thousand level.

If United States tariffs were lowered, production could be immediately increased to export \$200 thousand of cigars to the United States.

b. Quality

Dominican cigars are of good quality, but have no established reputation in foreign markets.

c. Price

Dominican cigars are sold for about 30¢ apiece in the Dominican Republic, and equivalent cigars cost about the same in the United States.

2. Market Possibilities

a. Market Size by Prime Markets

The United States is the natural market for Dominican cigars, if tariffs are lowered.

b. Marketing Factors

This project is fully dependent on getting lower U.S. tariffs. The present tariff schedule follows:

| | | |
|---------------------|----------------|----------------|
| Cigars and cheroots | \$1.91 per lb. | +10.5% ad Val. |
|---------------------|----------------|----------------|

If cigars the product of the Philippines:

If Philippine articles:

| | | |
|-------------------------------------------------------------|----------------|---------------|
| -Within tariff-rate quota
(see foot note of this table)* | Free | |
| -Other | \$1.27 per lb. | +8.5% ad val. |

| | | |
|-------|----------------|----------------|
| Other | \$1.91 per lb. | +10.5% ad val. |
|-------|----------------|----------------|

* Cigars, which are Philippine articles, are entitled to admission free of duty under item 170.72 of this part if entered on or before December 31, 1973, but the total quantity of such cigars entered under this item during each calendar year shall not exceed:

- a) 160,000,000 cigars during calendar years 1963 through 1964.
- b) 120,000,000 cigars during calendar years 1965 through 1967.
- c) 80,000,000 cigars during calendar years 1968 through 1970.
- d) 40,000,000 cigars during calendar years 1971 through 1973.

Since the tariff is so high for everybody but the Philippines, Dominican cigars cannot compete.

3. Short Range Income and Employment Potential

a. Income

If United States tariffs are lowered for Dominican cigars, annual sales of \$200 thousand may be made in the short run.

b. Employment

If production were to be increased 50%, employment would grow 30%.

4. Promotion Program

- Obtain United States tariffs similar to those allowed to the Philippine producers.
- Get Dominican and Puerto Rican cigar producers together to establish joint ventures including twin plants if possible.

D. LOBSTER AND SHRIMP

Production of lobster and shrimp in the Dominican Republic appears to be well below the capacity of the seas surrounding the country. The export market for lobster and shrimp continues to grow as the price rises. The world market for shrimp exceeds \$500 million. One of the most recent developments in the field is the shipping of live langosta from Mexico to France by air at a premium selling price delivered of over \$3 dollars a pound.

While lobster supply may be limited, until the lobster areas are fished, this is not really known. It is suggested, therefore, that a budget be assigned for a visit to the Dominican Republic of one or two months duration for an expert in lobster and shrimp fishing, boat design and instruction of fishermen. A small exploratory team paid for mostly by the lobsters it finds, but possibly subsidized so that good records could be kept would be able to tell a lot about the potential for the Dominican Republic in a year's time. Such a project should be started immediately.

E. ARMS FACTORY

We understand that the Dominican Government owns a modern arms factory which represents an investment of more than \$30 million, and at one time employed over 2,000 workers. The plant is now closed.

We were unable to visit the plant or obtain details of the machinery and equipment it contains. Nevertheless, it is clear that an installation of this type, if in reasonable running order, presents a great potential for export manufacture.

An indispensable pre-requisite is the Government willingness to turn over the plant to whatever qualified enterprise is interested in using it for the manufacture of non-military products. There are many ways of entering into such an arrangement. A joint venture may be acceptable or a lease arrangement might be contemplated. Alternatively, the Government could retain full ownership and contract a competent management team.

In general terms, a modern arms plant can be adapted to the manufacture of a large number of products with considerable export potential, such as: typewriters, calculators, bicycles, sewing machines, baby carriages, toys, water meters, gas meters, electric meters, etc.

The processes of manufacturing these products are sufficiently labor-intensive as to show a cost advantage when produced in low labor cost countries.

On the assumption that the Government is willing to use the plant for export manufacture, the first step should be a study of the equipment available; of the principal products which could be manufactured there, and of manufacturing cost estimates for each product. The study would be followed by market research, chiefly in the United States, and by recommendations as to the most appropriate products to be manufactured. The most advantageous contracting arrangement with a manufacturer should be recommended. Finally, selected suitable manufacturers must be approached to begin negotiations.

APPENDIX A

IMPORT SUBSTITUTION POSSIBILITIES

We examined briefly opportunities for import substitution based on 1964 import data for products whose imports exceeded \$1 million as shown below.

DOMINICAN REPUBLIC IMPORTS EXCEEDING ONE MILLION DOLLARS - 1964

| <u>Item</u> | <u>Import Value</u>
(MM Dlls) |
|--------------------|----------------------------------|
| <u>Automotive</u> | 16.0 |
| Automobiles | 7.4 |
| Trucks | 4.3 |
| Pickup trucks | 2.0 |
| Tractors | 2.3 |
| <u>Petroleum</u> | 10.9 |
| Lube oil | 1.1 |
| Bunker fuel | 3.2 |
| Diesel fuel | 1.8 |
| Motor gasoline | 4.8 |
| <u>Tires</u> | 2.6 |
| Auto | 1.2 |
| Truck | 1.4 |
| <u>Food</u> | 24.6 |
| Peanut oil | 4.8 |
| Rice | 3.5 |
| Codfish | 2.9 |
| Beans | 2.1 |
| Condensed milk | 1.3 |
| Powdered milk | 2.5 |
| Sardines | 1.7 |
| Tomatoes | 1.1 |
| Wheat | 4.7 |
| <u>Fiber</u> | 11.4 |
| Carboard sheets | 1.2 |
| Jute sacks | 1.2 |
| Cotton textiles | 7.7 |
| Synthetic textiles | 1.3 |

| <u>Item</u> | <u>Import Value</u>
(MM Dlls) |
|-----------------------|----------------------------------|
| <u>Consumer Goods</u> | 2.7 |
| Radios | 1.3 |
| Refrigerators | 1.4 |
| <u>Other</u> | 5.8 |
| Galvanized sheet | 3.2 |
| Tallow, inedible | 1.6 |
| Tobacco, crude | 1.0 |

The automotive-petroleum-tire group at \$30 million is the most important followed by food \$25 million, and fiber at \$11 million. The list of million dollar items totals \$74 million or about 40% of the total imports of the Dominican Republic in 1964.

ANALYSIS

Petroleum.- Imports of \$11 million of petroleum products indicate possibility of a small refinery. Consumption was about 11,000 barrels/day in 1964 as follows:

| | <u>B/D</u> |
|------------|---------------|
| Bunker oil | 6,500 |
| Gasoline | 3,600 |
| Kerosene | 550 |
| Lube oil | 150 |
| Total | <u>10,800</u> |

Installation of a refinery would take about two years from the date of final decision to go ahead, and reaching that decision will take at least a year. Production should not be contemplated before 1970 hence income would not increase until four years from now. Meanwhile, during the two year construction period the import of capital equipment and services would amount to \$10-15 million - over and above the annual petroleum products imports of \$12-15 million.

Food.- Codfish, sardines, and wheat will continue to be imported (about \$10 million) but beans, tomatoes, and rice will be grown locally under programs now underway (about \$7 million). Reduction of imports of peanut oil and milk products can occur within two years (say from 1964 level of \$9 million down to \$4 million). Thus, food import savings of \$12 million per year appear possible through programs already established.

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Other.- While inedible tallow imports (\$1.6) may be reduced through increased cattle slaughter, the rest of the list does not appear of great interest. Auto assembly is not feasible. Refrigerator assembly will be done, but net saving in imports will be very small. Crude tobacco will continue to come in for cigar wrapper and cigarette blending. Radios and cotton textiles are probably of too great a variety for substitution.

Considerable attention has already been given to possibilities of import substitution. The major items of a petroleum refinery and substitution of food imports are already the subject of promotion and development programs.

Under the circumstances, the return on investment in promotion for further import substitution is likely to be low.

APPENDIX B

SELECTED U. S. IMPORTS OF MANUFACTURED GOODS, 1965

(With labor accounting for about 50% or more of
manufacturing cost and with U. S. import tariff
of 25% ad valorem or less)

MILLION DOLLARS

1. ELECTRONIC APPARATUS

| | <u>1965</u> | | <u>196</u> |
|-------------------------------------------------|-------------|-----------------------------------------------------------------------|------------|
| <u>7249120</u> | | <u>7249240</u> | |
| Telephonic apparatus &
instruments and parts | | Amplifier sets, electric,
sound head phones, etc.,
except parts | |
| Canada | 5.54 | Japan | 2.24 |
| West Germany | .91 | West Germany | .14 |
| Japan | 1.57 | Hong Kong | .21 |
| Sweden | 1.68 | Canada | .01 |
| France | .79 | Netherlands | .01 |
| United Kingdom | .17 | T o t a l | 2.98 |
| Netherlands | .19 | | |
| T o t a l | 11.70 | | |
|
 | |
 | |
| <u>7249210</u> | | <u>7241000</u> | |
| Microphones | | Television receiving sets | |
| Japan | 2.18 | Japan | 59.36 |
| West Germany | .49 | Canada | .16 |
| Austria | .21 | T o t a l | 59.52 |
| T o t a l | 3.10 | | |
|
 | |
 | |
| <u>7249220</u> | | <u>7242020</u> | |
| Loudspeakers | | Radio receiving sets,
transistor | |
| Japan | 4.83 | Japan | 84.09 |
| United Kingdom | .87 | Hong Kong | 12.71 |
| Ireland | .67 | Nan Islands | 2.61 |
| T o t a l | 6.76 | West Germany | 1.61 |
| | | Taiwan | 2.35 |
| | | Canada | 2.04 |
| | | T o t a l | 107.10 |
|
 | |
 | |
| <u>7249230</u> | | <u>7242040</u> | |
| Amplifiers, electric, audio-
frequency | | Radio receiving sets,
except transistor | |
| Japan | 2.04 | Japan | 15.18 |
| Canada | .18 | West Germany | 1.82 |
| United Kingdom | .70 | Canada | .34 |
| Netherlands | .07 | T o t a l | 17.90 |
| West Germany | .15 | | |
| T o t a l | 3.26 | | |

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Electronic Apparatus (Cont'd)

| | | | |
|-------------------------------------------------------------------|-------------|----------------------------------------------------------------------------------------|-------------|
| | <u>1965</u> | | <u>1965</u> |
| <u>7242060</u> | | <u>8911130</u> | |
| Radio phonograph combinations | | Dictation recording & transcribing machines, using a magnetizable medium | |
| West Germany | 3.62 | West Germany | 3.61 |
| Japan | 5.70 | Japan | .61 |
| Canada | 2.33 | Netherlands | .75 |
| T o t a l | 11.89 | T o t a l | 5.49 |
|
<u>7242080</u> | |
<u>8911140</u> | |
| Parts of radio apparatus | | Dictation recording and transcribing machines, using a non-magnetizable medium | |
| Japan | 5.93 | United Kingdom | .59 |
| Canada | 1.25 | West Germany | .01 |
| Ireland | 1.98 | T o t a l | .60 |
| West Germany | 1.36 | | |
| Denmark | .14 | | |
| United Kingdom | .24 | | |
| T o t a l | 11.49 | | |
|
<u>7249250</u> | |
<u>8911150</u> | |
| Parts for microphones, loudspeakers, amplifiers, headphones, etc. | | Tape recorders, using a magnetizable recording medium | |
| Japan | .42 | Japan | 44.10 |
| West Germany | .16 | West Germany | 1.02 |
| Denmark | .21 | Netherlands | 2.30 |
| United Kingdom | .06 | United Kingdom | 1.16 |
| Canada | .09 | T o t a l | 49.69 |
| T o t a l | 1.11 | | |
|
<u>8996100</u> | |
<u>8911160</u> | |
| Hearing aids and parts | | Tape recorders, using a non-magnetizable recording medium | |
| Denmark | .55 | United Kingdom | .00 |
| West Germany | .32 | T o t a l | .00 |
| Austria | .40 | | |
| United Kingdom | .33 | | |
| Switzerland | .25 | | |
| Netherlands | .07 | | |
| Spain | .12 | | |
| T o t a l | 2.12 | | |
| | |
		<u>8911240</u> | |
| | | Parts of tape recorders and dictation and transcribing machines, all recording mediums | |
| | | Japan | 1.45 |
| | | West Germany | .38 |
| | | United Kingdom | .17 |
| | | T o t a l | 2.25 |

2. GARMENTS

| | <u>1965</u> | | <u>1965</u> |
|-----------------------------------------------------------------|-------------|--------------------------------------------------------------------------|-------------|
| <u>8414432</u> | | <u>8411546</u> | |
| Dresses wool women's & girls knit, etc. | | Dresses, man-made fibers, women, girls, infants, not knit | |
| Italy | 3.16 | Hong Kong | 1.26 |
| Hong Kong | 1.29 | Phil R | .30 |
| France | .43 | France | .23 |
| T o t a l | 5.83 | Japan | .26 |
| | | T o t a l | 2.56 |
| <u>8414434</u> | | <u>8411548</u> | |
| Dresses of man-made fibers, women's, girls, & infant knit, etc. | | Dresses silk, women's, girls, infants, not ornamented, not knit, etc. | |
| France | .52 | Hong Kong | 1.03 |
| Italy | .33 | France | .22 |
| Belgium | .04 | Italy | .18 |
| United Kingdom | .13 | T o t a l | 1.60 |
| Portugal | .11 | | |
| T o t a l | 1.36 | <u>8414470</u> | |
| <u>8411542</u> | | Coats, wool over \$5 lb women's and girls, not ornamented, knitted, etc. | |
| Dresses, cotton, women's, girls & infants not knit, n.e.s. | | Italy | 2.28 |
| Phil R | 1.67 | Hong Kong | .15 |
| Japan | .85 | United Kingdom | .13 |
| Hong Kong | 1.00 | France | .05 |
| Portugal | .19 | Belgium | .17 |
| Italy | .30 | Switzerland | .13 |
| Finland | .21 | T o t a l | 3.35 |
| T o t a l | 5.14 | <u>8411512</u> | |
| <u>8411544</u> | | Coats, 3/4 and longer, cotton, women's, girls, & infants, not knit | |
| Dresses wool, women's, girls, infants, not ornamented, not knit | | Belgium | .65 |
| France | .30 | Canada | .77 |
| United Kingdom | .27 | Japan | .46 |
| Ireland | .13 | United Kingdom | .26 |
| Canada | .08 | Hong Kong | .35 |
| Italy | .12 | West Germany | .06 |
| T o t a l | 1.12 | Yugoslavia | .28 |
| | | Denmark | .14 |
| | | Portugal | .11 |

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Garments (Cont'd)

| | <u>1965</u> | | <u>1965</u> |
|-----------------------------------|-------------|-----------------------------------|-------------|
| 8411512 (Cont'd) | | <u>8411526</u> | |
| Taiwan | .16 | Coats, other, man-made fibers | |
| T o t a l | 3.67 | women's, girls, infants, not | |
| | | knit | |
| <u>8411515</u> | | Japan | 1.06 |
| Coats wool or man-made fibers | | Hong Kong | .06 |
| 3/4 and longer, women's, girls, | | France | .06 |
| infants, not knit | | West Germany | .08 |
| | | T o t a l | 1.37 |
| West Germany | 1.04 | | |
| France | .96 | <u>8414462</u> | |
| United Kingdom | .82 | Blouses, wool, women's, girls, | |
| Italy | .48 | & infants, knitted or crocheted, | |
| Austria | .27 | etc. | |
| Netherlands | .28 | Hong Kong | 1.82 |
| T o t a l | 4.62 | Italy | 1.63 |
| | | France | .14 |
| <u>8411522</u> | | Belgium | .49 |
| Coats, cotton, women's, girls, | | Canada | .15 |
| & infants, not knit, n.e.s. | | T o t a l | 4.68 |
| Japan | .31 | | |
| Portugal | .14 | <u>8411532</u> | |
| West Germany | .04 | Blouses, cotton, women's, girls, | |
| Hong Kong | .16 | & infants, not knit, etc. | |
| Canada | .09 | Japan | 10.98 |
| United Kingdom | .08 | Hong Kong | 6.58 |
| T o t a l | 1.19 | Nan Islands | 1.18 |
| | | Jamaica | .23 |
| <u>8411524</u> | | India | .95 |
| Coats wool n.e.s. women's, girls, | | T o t a l | 20.89 |
| & infants not ornamented, not | | | |
| knit | | <u>8411535</u> | |
| United Kingdom | .50 | Blouses wool or man-made fibers | |
| West Germany | .80 | women's, girls, infants, not knit | |
| France | .18 | Japan | 1.92 |
| Belgium | .12 | Hong Kong | .82 |
| Netherlands | .12 | T o t a l | 3.20 |
| Austria | .22 | | |
| Italy | .23 | | |
| T o t a l | 2.36 | | |

Garments (Cont'd)

| | <u>1965</u> | | <u>1965</u> |
|------------------------------------------------------------------------------------------|-------------|------------------------------------------------------------------------------------|-------------|
| <u>8411538</u> | | <u>8411568</u> | |
| Blouses silk, women's, girls, infants, not ornamented, not knit, etc. | | Trousers, etc. silk, women's, girls, infants, not ornamented, not knit, n.e.s. | |
| Italy | .16 | Italy | .10 |
| Hong Kong | .12 | T o t a l | .12 |
| Japan | .15 | | |
| T o t a l | .46 | | |
|
 | |
 | |
| <u>8411562</u> | | <u>8414450</u> | |
| Trousers, slacks and shorts, etc., cotton, women's girls, & infants, not knit | | Skirts, cotton, wool, & man-made fibers, women's, girls and infants, knitted, etc. | |
| Hong Kong | 9.73 | Italy | Omitted |
| Japan | 8.23 | Hong Kong | |
| Nan Islands | 1.09 | France | |
| T o t a l | 21.34 | United Kingdom | |
| | | T o t a l | |
|
 | |
 | |
| <u>8411564</u> | | <u>8411552</u> | |
| Trousers, slacks & outer shorts, wool, women's, girls, infants, not knit, not ornamented | | Skirts, cotton, women's girls, and infants not knit | |
| Italy | 1.32 | Portugal | .09 |
| Hong Kong | 1.26 | Japan | .06 |
| Japan | .41 | Hong Kong | .01 |
| West Germany | .28 | Italy | .02 |
| T o t a l | 3.63 | T o t a l | .29 |
|
 | |
 | |
| <u>8411566</u> | | <u>8411555</u> | |
| Trousers, slacks & outer shorts, man-made fibers, women's, girls, infants, not knit | | Skirts, wool or man-made fibers, women's, girls, infants, not knit | |
| Japan | 3.81 | United Kingdom | .44 |
| Hong Kong | .12 | Canada | .07 |
| Taiwan | .59 | Ireland | .09 |
| Austria | .22 | Italy | .15 |
| Kor Rep | .14 | T o t a l | .74 |
| T o t a l | 5.05 | | |

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Garments (Cont'd)

| | <u>1965</u> | | <u>1965</u> |
|-----------------------------------------------------------------------------------|-------------|---------------------------------------------------------------------------|-------------|
| <u>8411591</u> | | <u>8411166</u> | |
| Play suits, etc., cotton,
women's, girls, and infants,
not knit, n.e.s. | | Dressing gowns, robes, etc.
man-made fibers, men and
boys, not knit | |
| Japan | 1.26 | Japan | .10 |
| Hong Kong | .52 | Jamaica | .00 |
| Phil R | .45 | T o t a l | .12 |
| Taiwan | .10 | | |
| T o t a l | 2.54 | <u>8411162</u> | |
| <u>8411572</u> | | Dressing gowns, etc., cotton,
men and boys, n.e.s., not knit | |
| Robes, dressing gowns, etc.
cotton, women, girls and
infants not knit | | Jamaica | .01 |
| Japan | .85 | Japan | .28 |
| Hong Kong | .44 | Austria | .11 |
| Kor. Rep. | .11 | Portugal | .07 |
| Jamaica | .14 | T o t a l | .68 |
| T o t a l | 1.70 | <u>8411164</u> | |
| <u>8411575</u> | | Dressing gowns, etc., wool,
men and boys, not knit | |
| Dressing gowns, wool or man-made
fibers, women, girls and infants,
not knit | | United Kingdom | .25 |
| Japan | .16 | Japan | .15 |
| Phil R | .04 | T o t a l | .45 |
| Hong Kong | .10 | <u>8411122</u> | |
| T o t a l | .44 | Coats, suit type, wool, men
and boys, not knit | |
| <u>8411578</u> | | Italy | .05 |
| Dressing gowns, silk, women,
girls, infants, not ornamented,
not knit, etc. | | United Kingdom | .19 |
| Hong Kong | .26 | Hong Kong | .08 |
| Japan | .02 | Japan | .05 |
| T o t a l | .30 | Austria | .09 |
| | | T o t a l | .53 |

Garments (Cont'd)

| | <u>1965</u> | | <u>1965</u> |
|---------------------------------------------------------|-------------|-------------------------------------------------------------------------------------|-------------|
| <u>8411124</u> | | <u>8411336</u> | |
| Coats, separate other wool,
men and boys, not knit | | Shirts, dress, men and boys,
cotton, n.e.s., not knit | |
| United Kingdom | .92 | Japan | .53 |
| Italy | .72 | Hong Kong | 1.23 |
| West Germany | .59 | Mexico | |
| Austria | .70 | T o t a l | 2.16 |
| T o t a l | 3.34 | | |
| <u>8411126</u> | | <u>8411350</u> | |
| Coats, man-made fibers, men
and boys, not knit | | Shirts, work, men and boys,
cotton, not knit | |
| Japan | .84 | Br Hond | .30 |
| United Kingdom | .03 | Hong Kong | .05 |
| Hong Kong | .07 | T o t a l | .36 |
| Jamaica | .00 | | |
| West Germany | .07 | <u>8411361</u> | |
| T o t a l | 1.20 | Shirts, sport, men and boys,
corduroy, not ornamented or
knit | |
| <u>8411114</u> | | Japan | 1.97 |
| Coats suit type, etc., cotton
men and boys, not knit | | T o t a l | 2.62 |
| Spain | .22 | | |
| Japan | .63 | <u>8411363</u> | |
| United Kingdom | .30 | Shirts, sport, men and boys,
cotton, cotton gingham, not
ornamented, not knit | |
| Hong Kong | .12 | Japan | 2.23 |
| T o t a l | 1.61 | Hong Kong | 1.17 |
| <u>8411116</u> | | Jamaica | .98 |
| Coats cotton, men and boys,
n.e.s., not knit | | T o t a l | 4.60 |
| Japan | 1.55 | | |
| Yugoslavia | .39 | | |
| Spain | .64 | | |
| Canada | .21 | | |
| United Kingdom | .30 | | |
| T o t a l | 3.68 | | |

Garments (Cont'd)

| | <u>1965</u> | | <u>1965</u> |
|-------------------------------------------------------------------------------------------------|-------------|---------------------------------------------------------------------------------------------|-------------|
| <u>8411332</u> | | <u>8411365</u> | |
| Shirts, dress, men and boys,
poplin and broadcloth, not knit
not ornamented | | Shirts, sport, men and boys,
cotton flannel, not knit,
not ornamented | |
| Hong Kong | 5.42 | Hong Kong | .65 |
| Japan | 3.80 | Taiwan | .80 |
| T o t a l | 9.99 | Jamaica | .50 |
| | | T o t a l | 2.58 |
| <u>8411380</u> | | <u>8411367</u> | |
| Shirts, men and boys, wool
ornamented or man-made, not
knit | | Shirts, sport, men and boys,
cotton, not knit, n.e.s. | |
| Hong Kong | 1.17 | Japan | 1.93 |
| Japan | 1.39 | India | 1.40 |
| Kor. Rep. | .97 | Hong Kong | 1.75 |
| T o t a l | 4.05 | Jamaica | .34 |
| | | Belgium | .13 |
| | | West Germany | .24 |
| | | T o t a l | 6.53 |
| <u>8414312</u> | | <u>8411370</u> | |
| Shirts, except undershirts,
cotton, men and boys, knitted
or crocheted, not elastic, etc. | | Shirts, men and boys, wool,
not ornamented, not knit | |
| Hong Kong | 2.60 | Japan | 2.66 |
| Japan | 2.63 | Hong Kong | .44 |
| Pakistan | .28 | T o t a l | 3.53 |
| West Germany | 1.56 | | |
| France | .50 | <u>8414316</u> | |
| Italy | .33 | Shirts, except undershirts,
man-made fibers, men and boys,
knitted, not elastic, etc. | |
| T o t a l | 9.30 | Taiwan | .82 |
| <u>8414314</u> | | Hong Kong | 5.93 |
| Shirts, except undershirts,
wool, men and boys, knitted or
crocheted, not elastic, etc. | | Kor. Rep. | 1.09 |
| Italy | 1.63 | Japan | 2.37 |
| T o t a l | 1.82 | T o t a l | 10.77 |

Garments (Cont'd)

| | <u>1965</u> | | <u>1965</u> |
|----------------------------------------------------------------------------------|-------------|-----------------------------------------------------------------------------|-------------|
| <u>8411112</u> | | <u>8411420</u> | |
| Raincoats 3/4 and longer,
cotton, men and boys, not
knit, n.e.s. | | Pajamas, women's, girls and
infants, cotton, not knit,
not ornamented | |
| Japan | 1.64 | Hong Kong | 2.64 |
| Israel | .92 | Japan | .45 |
| United Kingdom | 1.37 | Malaysa | .74 |
| Spain | .64 | T o t a l | 5.07 |
| Nan Islands | .44 | | |
| Hong Kong | .55 | <u>8411310</u> | |
| Canada | .45 | Pajamas, men and boys, cotton
man-made, not knit | |
| T o t a l | 7.71 | | |
| | | Hong Kong | 2.50 |
| <u>8411142</u> | | Japan | .24 |
| Trousers, slacks, and shorts,
etc., cotton, men and boys,
n.e.s., not knit | | United Kingdom | .22 |
| | | Malaysa | .52 |
| Hong Kong | 9.35 | T o t a l | 4.03 |
| Japan | 5.44 | | |
| Taiwan | 1.06 | <u>8412300</u> | |
| T o t a l | 17.87 | Neckties, men and boys, not
knit, etc. | |
| | | | |
| <u>8411144</u> | | Italy | .42 |
| Trousers, etc., wool, men and
boys, not knit | | United Kingdom | .26 |
| | | France | .05 |
| United Kingdom | .72 | Ireland | .07 |
| Japan | .78 | T o t a l | .89 |
| Italy | .69 | | |
| Israel | .91 | | |
| T o t a l | 3.97 | | |
| | | | |
| <u>8411146</u> | | | |
| Trousers, slacks, shorts, etc.,
man-made fibers, men and boys,
not knit | | | |
| | | | |
| Taiwan | 1.71 | | |
| Japan | .58 | | |
| Kor. Rep. | 1.69 | | |
| T o t a l | 4.32 | | |

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3. ACCESSORIES

| | <u>1965</u> | | <u>1965</u> |
|---------------------------------------------------------------|-------------|----------------------------------------------------|-------------|
| <u>8413010</u> | | <u>8413050</u> | |
| Leather gloves, of horse of cow
hide, wholly of leather | | Leather gloves n.e.s., women
or children, lined | |
| Japan | .86 | Italy | 5.03 |
| Canada | .14 | France | 2.84 |
| T o t a l | 1.06 | Phil. R. | 1.84 |
| | | T o t a l | 11.10 |
|
 | | | |
| <u>8413015</u> | | <u>8413070</u> | |
| Leather gloves, of horse or cow
hide not wholly of leather | | Leather etc., gloves and
glove linings n.s.p.f. | |
| Canada | .12 | Japan | .02 |
| Hong Kong | .10 | Pakistan | .03 |
| Japan | 1.55 | United Kingdom | .01 |
| T o t a l | 1.97 | Phil. R. | .00 |
| | | Canada | .02 |
|
|  |  | Spain | .02 |
| <u>8413020</u> | | T o t a l | .12 |
| Leather gloves n.e.s. men, not
lined | | | |
| Phil. R. | .32 | <u>8413080</u> | |
| Italy | .26 | Leather belts, for use as
apparel | |
| West Germany | .09 | France | .20 |
| T o t a l | .85 | Hong Kong | .18 |
| | | Italy | .16 |
|
|  |  | West Germany | .12 |
| <u>8413030</u> | | T o t a l | .84 |
| Leather gloves n.e.s. mer. lined | | | |
| Phil. R. | 4.00 | <u>8413090</u> | |
| Italy | .85 | Leather, wearing apparel,
n.s.p.f. | |
| Spain | .20 | Spain | 1.06 |
| T o t a l | 5.45 | Italy | 1.39 |
| | | Israel | .80 |
|
|  |  | Belgium | .82 |
| <u>8413040</u> | | T o t a l | 4.92 |
| Leather gloves n.e.s. women or
children, not lined | | | |
| Italy | 4.52 | | |
| France | 3.56 | | |
| West Germany | 1.16 | | |
| Phil. R. | 1.43 | | |
| T o t a l | 11.25 | | |

Accessories (Cont'd)

1965

8414120

Gloves, etc. cotton knitted or
crocheted, not elastic, not
rubberized

| | |
|--------------|------|
| Phil. R. | 1.43 |
| Japan | .69 |
| Hong Kong | .88 |
| West Germany | .50 |
| Italy | .39 |
| T o t a l | 4.17 |

8414140

Gloves, etc. man-made fibers,
knitted or crocheted, not
elastic, not rubberized

| | |
|-----------|------|
| Japan | 3.15 |
| Phil R | 2.10 |
| Hong Kong | 1.42 |
| T o t a l | 7.38 |

8414160

Gloves, etc., textile materials
n.e.s., knitted or crocheted,
not elastic, not rubberized

| | |
|----------------|------|
| Japan | 1.23 |
| Phil R | .68 |
| Switzerland | .10 |
| United Kingdom | .11 |
| T o t a l | 2.54 |

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4. OFFICE MACHINES

| | <u>1965</u> | | <u>1965</u> |
|---------------------------------------------------------------------------------------------|-------------|---------------------------------------------------------------------------------------------------|-------------|
| <u>7141040</u> | | <u>7142010</u> | |
| Typewriters, non-automatic,
non-calculating, electric | | Calculating machines for multi-
plying or dividing, ten key,
keyboard printing | |
| West Germany | 6.08 | Italy | 11.54 |
| Sweden | .36 | Netherlands | 6.38 |
| Switzerland | .19 | T o t a l | 18.34 |
| T o t a l | 6.76 | | |
|
 | |
 | |
| <u>7141020</u> | | <u>7142020</u> | |
| Typewriters, portable, non-
automatic, non-calculating | | Calculating machines for multi-
plying or dividing, ten key-
board, not printing | |
| Netherlands | 7.32 | Sweden | .14 |
| Japan | 5.86 | West Germany | .56 |
| West Germany | 6.07 | Denmark | .04 |
| Italy | 5.01 | Italy | .06 |
| Spain | 2.40 | T o t a l | .82 |
| United Kingdom | 2.78 | | |
| Switzerland | 1.36 |
 | |
| T o t a l | 31.84 | <u>7142030</u> | |
|
 | | Calculating machines for multi-
plying or dividing, n.e.s.,
including rotary, full keyboard | |
| <u>7141060</u> | | West Germany | 3.02 |
| Typewriters, non-automatic,
non-calculating, non-electric | | United Kingdom | 1.29 |
| West Germany | 6.94 | Italy | .65 |
| Switzerland | .45 | Denmark | .38 |
| T o t a l | 8.45 | T o t a l | 5.43 |
|
 | |
 | |
| <u>7141080</u> | | <u>7142040</u> | |
| Typewriters, non-calculating,
n.e.s. and numbering, dating
and check-writing machines | | Cash registers | |
| Japan | .16 | Sweden | 6.64 |
| Italy | .03 | West Germany | 1.53 |
| West Germany | .04 | T o t a l | 8.62 |
| T o t a l | .25 | | |

Office Machines (Cont'd)

| | <u>1965</u> | | <u>196</u> |
|----------------------------------------------------------------------------------------|-------------|-----------------------------------------------------------------|------------|
| <u>7142050</u> | | <u>7149160</u> | |
| Adding machines, electric,
ten key keyboard | | Office machines, n.e.s.
including office copying
machines | |
| West Germany | 4.89 | West Germany | 1.37 |
| Sweden | 2.68 | Netherlands | 1.22 |
| Belgium | 1.63 | United Kingdom | .84 |
| Italy | .42 | Japan | .37 |
| Switzerland | .44 | Sweden | .31 |
| France | .83 | T o t a l | 5.47 |
| Japan | 1.08 | | |
| T o t a l | 12.43 | | |
| | | <u>7142070</u> | |
| <u>7142060</u> | | Adding machines, non-electric | |
| Adding machines, electric
n.e.s. | | Japan | 1.08 |
| United Kingdom | 1.68 | West Germany | .40 |
| Italy | .26 | Hong Kong | .16 |
| Sweden | .59 | T o t a l | 2.03 |
| France | 1.61 | | |
| Japan | .40 | <u>7142080</u> | |
| West Germany | .71 | Machines incorporating a
calculating mechanism, n.e.s | |
| T o t a l | 5.50 | West Germany | .30 |
| | | United Kingdom | .20 |
| <u>7149120</u> | | Austria | .20 |
| Duplicating machines, stencil
and spirit types, weighing under
3,500 pounds each | | Canada | .43 |
| United Kingdom | 1.61 | T o t a l | 1.21 |
| Italy | .02 | | |
| West Germany | .09 | <u>7143000</u> | |
| T o t a l | 1.73 | Accounting computing and other
data processing machines | |
| | | West Germany | .17 |
| <u>7149140</u> | | France | .78 |
| Addressing machines | | United Kingdom | 1.29 |
| West Germany | .77 | Canada | .26 |
| United Kingdom | .08 | Italy | .84 |
| T o t a l | .84 | Netherlands | .44 |
| | | T o t a l | 4.21 |

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Office Machines (Cont'd)

1965

7149220

Parts of duplicating machines

| | |
|----------------|------|
| United Kingdom | .67 |
| Austria | .15 |
| Denmark | .14 |
| T o t a l | 1.13 |

7149240

Parts of typewriters

| | |
|--------------|-----|
| West Germany | .20 |
| Netherlands | .03 |
| Italy | .04 |
| Japan | .04 |
| T o t a l | .43 |

7149260

Parts of office machines,
n.e.s.

| | |
|----------------|-------|
| Canada | 9.23 |
| Netherlands | .96 |
| United Kingdom | .33 |
| West Germany | 1.55 |
| France | 2.06 |
| Argentina | 1.06 |
| T o t a l | 20.64 |

5. FOOTWEAR

| | <u>1965</u> | | <u>1966</u> |
|--------------------------------------------------------------------------------------------------------------------------|-------------|-------------------------------------------------------------------------------------------------------|-------------|
| <u>8510130</u>
Zories or thonged sandals,
rubber | | <u>8510228</u>
Footwear, leather, welt, n.s.p.f.
for men, youths and boys, over
\$2 per pair | |
| Japan | 3.73 | United Kingdom | 5.21 |
| T o t a l | 3.89 | Switzerland | 1.51 |
| | | Spain | 1.20 |
| <u>8510170</u>
Footwear with supported vinyl
uppers n.e.s., except soft soles,
for males | | Italy | .49 |
| Japan | 4.73 | T o t a l | 9.13 |
| T o t a l | 4.83 | | |
| | | <u>8510217</u>
Footwear, welt, athletic,
except ski boots | |
| <u>8510180</u>
Footwear with supported vinyl
uppers n.e.s., except soft soles
for females, children and infants | | United Kingdom | .31 |
| Japan | 1.46 | Yugoslavia | .09 |
| T o t a l | 1.50 | West Germany | .04 |
| | | France | .04 |
| <u>8510190</u>
Footwear, uppers over 90% rubber
plastic, n.e.s. except soft
soles with vinyl supported uppers | | T o t a l | .56 |
| Japan | 1.88 | | |
| T o t a l | 2.01 | <u>8510223</u>
Footwear, leather welt, for
work, over \$2 per pair | |
| | | Canada | .74 |
| <u>8510205</u>
Huaraches and moccasins of
leather and leather footwear
with molded soles laced to uppers | | Czechoslovakia | .89 |
| Mexico | .38 | T o t a l | 1.76 |
| Canada | .14 | | |
| Italy | .06 | <u>8510240</u>
Footwear, leather, turn or
turned, for women and misses | |
| T o t a l | .61 | Italy | 5.26 |
| | | T o t a l | 5.48 |

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Footwear (Cont'd)

| | <u>1965</u> | | <u>1965</u> |
|-------------------------------------------------------------------------------------------------|-------------|----------------------------------------------------------------------------|-------------|
| <u>8510241</u> | | <u>8510251</u> | |
| Footwear, leather, athletic,
n.s.p.f. except turn or turned | | Footwear, leather, for infants
and children, n.s.p.f. | |
| West Germany | 1.46 | Italy | .25 |
| Japan | .12 | Spain | .52 |
| France | .57 | Canada | .16 |
| Austria | .22 | T o t a l | 1.11 |
| Canada | .19 | | |
| United Kingdom | .15 | <u>8510255</u> | |
| T o t a l | 3.07 | Footwear, leather soles, with
fiber uppers, for men, youths
and boys | |
| <u>8510244</u> | | Italy | .04 |
| Footwear, leather, for men,
youths and boys, n.s.p.f. | | Japan | .02 |
| Italy | 11.59 | T o t a l | .07 |
| Spain | 3.80 | | |
| France | 2.54 | <u>8510260</u> | |
| United Kingdom | 1.56 | Slippers socks with soles of
leather | |
| Czechoslovakia | 1.19 | Japan | .34 |
| Canada | .75 | T o t a l | .36 |
| T o t a l | 23.71 | | |
| <u>8510247</u> | | <u>8510265</u> | |
| Footwear, leather, n.s.p.f.,
soft sole and casual, for women
misses, children and infants | | Footwear, leather soles, with
fiber uppers, for women and
misses | |
| Italy | 20.37 | Italy | .86 |
| T o t a l | 21.52 | Japan | .17 |
| <u>8510249</u> | | Hong Kong | .27 |
| Footwear, leather, for women
and misses, n.s.p.f. | | Haiti | .03 |
| Italy | 12.79 | France | .07 |
| United Kingdom | 1.25 | T o t a l | 1.50 |
| France | .95 | | |
| Belgium | .82 | | |
| T o t a l | 18.24 | | |

Footwear (Cont'd)

19658510270Footwear, leather soles, with
fiber uppers for infants and
children

| | |
|-----------|-----|
| Japan | .06 |
| France | |
| T o t a l | .07 |

8510275Footwear, fabric uppers, at
least 10 PCT rubber or plastic
by weight

| | |
|-----------|-------|
| Japan | 12.90 |
| Hong Kong | 1.16 |
| Taiwan | 1.07 |
| Italy | .20 |
| Kor. Rep. | .63 |
| France | .42 |
| Belgium | .26 |
| T o t a l | 17.61 |

8510280

Slippers, leather

| | |
|----------------|-----|
| United Kingdom | .33 |
| Jamaica | .38 |
| Italy | .03 |
| T o t a l | .84 |

8510700

Footwear, n.s.p.f.

| | |
|-----------|------|
| Japan | .73 |
| Hong Kong | .06 |
| Italy | .12 |
| Canada | .06 |
| T o t a l | 1.32 |

6. SEWING MACHINES

| | <u>1965</u> | | <u>1965</u> |
|-----------------------------------------------------------------------------------------------|-------------|-------------------------------------|-------------|
| <u>7173010</u> | | <u>7173040</u> | |
| Sewing machines valued not
over \$10 each | | Needles for sewing machines | |
| West Germany | .29 | West Germany | 2.00 |
| Japan | .39 | United Kingdom | .77 |
| United Kingdom | .06 | Belgium | .39 |
| France | .08 | T o t a l | 3.56 |
| T o t a l | .87 | | |
| | | <u>7173050</u> | |
| <u>7173020</u> | | Parts, n.e.s. of sewing
machines | |
| Sewing machines valued over
\$10 each, industrial or com-
mercial including shoe sewing | | Japan | 1.96 |
| West Germany | 3.53 | United Kingdom | 1.61 |
| United Kingdom | 2.27 | West Germany | 1.17 |
| Italy | 1.61 | Yugoslavia | .16 |
| Japan | .96 | Italy | .39 |
| Canada | .13 | Canada | .25 |
| Sweden | .14 | T o t a l | 5.66 |
| T o t a l | 8.84 | | |
| | | | |
| <u>7173030</u> | | | |
| Sewing machines valued over
\$10 each, except industrial
or commercial | | | |
| Japan | 34.51 | | |
| United Kingdom | 10.72 | | |
| Canada | .39 | | |
| Italy | 1.72 | | |
| West Germany | 1.29 | | |
| Switzerland | 1.28 | | |
| France | 1.28 | | |
| Sweden | .74 | | |
| T o t a l | 52.06 | | |

7. RUBBER AND PLASTIC PRODUCTS

| | <u>1965</u> | | <u>1964</u> |
|----------------------------------------------------------------------------------------|-------------|------------------------------------------------------------------------------------------------|-------------|
| <u>8931010</u> | | <u>8931040</u> | |
| Rubber and plastics foam or
sponge and plastics reinforced
or laminated n.s.p.f. | | Pacifiers, nursing nipples,
ice bags, hotwater bottles,
etc. of plastic or rubber | |
| France | .48 | Japan | .2 |
| West Germany | .30 | United Kingdom | .1 |
| Japan | .15 | Italy | .0 |
| Canada | .11 | T o t a l | .6 |
| Sweden | .08 | | |
| United Kingdom | .12 | <u>8931050</u> | |
| T o t a l | 1.39 | House furnishings, curtains and
drapes, table covers, etc. of
rubber or plastic | |
| <u>8931020</u> | | Japan | 2.6 |
| Gloves, rubber or plastic
seamless | | Taiwan | 1.5 |
| United Kingdom | .30 | T o t a l | 4.5 |
| Japan | .11 | | |
| France | .15 | <u>8931060</u> | |
| Austria | .10 | Articles for preparing, serving
etc. food or beverages, of rub-
ber or plastic, n.s.p.f. | |
| Italy | .09 | Italy | .2 |
| T o t a l | .98 | Japan | 2.0 |
| <u>8931025</u> | | Hong Kong | 1.0 |
| Gloves, rubber or plastic
n.s.p.f. | | United Kingdom | .3 |
| Japan | 9.14 | Taiwan | .5 |
| Hong Kong | 1.05 | West Germany | .2 |
| T o t a l | 10.35 | T o t a l | 4.8 |
| <u>8931030</u> | | <u>8931070</u> | |
| Wearing apparel, n.s.p.f. of
rubber or plastic | | Religious articles of rubber
or plastic n.s.p.f. | |
| Japan | 9.80 | Hong Kong | 3.6 |
| Taiwan | 1.22 | Japan | 1.1 |
| United Kingdom | .61 | Italy | .3 |
| West Germany | .54 | West Germany | .6 |
| T o t a l | 12.73 | T o t a l | 5.8 |

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Rubber and Plastic Products (Cont'd)

1965

8931080

Gaskets of rubber or plastic

| | |
|----------------|------|
| West Germany | .32 |
| United Kingdom | .39 |
| Belgium | .11 |
| Japan | .28 |
| Canada | .75 |
| T o t a l | 2.19 |

8931085

Containers of rubber or plastic
for packing, transporting,
etc.

| | |
|----------------|------|
| Hong Kong | .15 |
| Canada | .49 |
| Japan | .57 |
| Austria | .29 |
| Italy | .15 |
| United Kingdom | .02 |
| West Germany | .08 |
| T o t a l | 1.97 |

8931090

Rubber and plastic products
n.s.p.f.

| | |
|----------------|-------|
| Japan | 8.01 |
| West Germany | 5.30 |
| Canada | 2.20 |
| United Kingdom | 1.14 |
| Hong Kong | 1.14 |
| Italy | .69 |
| Taiwan | .80 |
| Denmark | .66 |
| Switzerland | .70 |
| France | .67 |
| T o t a l | 24.66 |

8. FURNITURE, WOOD

| | <u>1965</u> | | <u>1965</u> |
|------------------------------------------|-------------|--------------------------------------|-------------|
| <u>8210815</u> | | <u>8210840</u> | |
| Furniture and parts of bent-wood | | Furniture parts, wood n.s.p.f. | |
| Poland | .45 | Yugoslavia | .6 |
| Czechoslovakia | .29 | Japan | .8 |
| Yugoslavia | .20 | Canada | .0 |
| Rumania | .11 | Taiwan | .0 |
| T o t a l | 1.16 | West Germany | .0 |
| | | Italy | .0 |
| | | Denmark | .0 |
| | | Sweden | .0 |
| | | T o t a l | 3.0 |
| <u>8210820</u> | | | |
| Chairs, wood n.s.p.f., including folding | | <u>6324040</u> | |
| Italy | 2.46 | Wood doors, with or without hardware | |
| Yugoslavia | 2.69 | Canada | .0 |
| Denmark | 1.68 | Japan | .0 |
| Japan | 2.26 | Taiwan | .1 |
| Sweden | .86 | Spain | .0 |
| Spain | .85 | Colombia | .0 |
| Poland | .64 | T o t a l | .0 |
| United Kingdom | .49 | | |
| Norway | .50 | | |
| T o t a l | 13.97 | | |
| | | | |
| <u>8210830</u> | | | |
| Furniture, wood, n.s.p.f. | | | |
| Denmark | 4.21 | | |
| Yugoslavia | 2.80 | | |
| Italy | 2.80 | | |
| United Kingdom | 1.85 | | |
| Canada | 2.09 | | |
| Spain | 1.63 | | |
| Norway | 1.30 | | |
| Japan | 1.16 | | |
| Mexico | .97 | | |
| Sweden | .78 | | |
| France | 1.16 | | |
| Hong Kong | .86 | | |
| West Germany | .39 | | |
| T o t a l | 22.93 | | |

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9. SPORTING GOODS

| | <u>1965</u> | | <u>1965</u> |
|---------------------------------------|-------------|--------------------------------------------|-------------|
| <u>8944315</u> | | <u>8944325</u> | |
| Golf equipment and parts | | Lawn tennis rackets, strung
or not | |
| United Kingdom | 1.19 | Japan | .96 |
| Japan | 1.02 | Belgium | 1.01 |
| Canada | .04 | United Kingdom | .49 |
| Portugal | .06 | Pakistan | .39 |
| Spain | .04 | T o t a l | 2.97 |
| T o t a l | 2.42 | | |
| <u>8944365</u> | | <u>8944330</u> | |
| Balls for games or sports
n.s.p.f. | | Lawn tennis equipment and parts
n.e.s. | |
| Japan | .97 | United Kingdom | 1.38 |
| Taiwan | .18 | Sweden | .28 |
| Sweden | .04 | Japan | .14 |
| Italy | .12 | T o t a l | 1.89 |
| West Germany | .05 | | |
| T o t a l | 1.51 | <u>8413060</u> | |
| | | Gloves and mitts, baseball
and softball | |
| <u>8944305</u> | | Japan | 6.02 |
| Badminton equipment and parts | | T o t a l | 6.15 |
| Japan | 1.80 | | |
| United Kingdom | .19 | | |
| T o t a l | 2.00 | | |
| <u>8944310</u> | | | |
| Baseballs and softballs | | | |
| Jamaica | .32 | | |
| Japan | .25 | | |
| Haiti | .22 | | |
| T o t a l | .89 | | |

10. ELECTRIC MOTORS

1965

7221040

Motors, electric, less than
one horsepower

| | |
|----------------|------|
| Japan | .94 |
| Yugoslavia | 1.20 |
| West Germany | .47 |
| United Kingdom | 2.24 |
| T o t a l | 5.18 |

7221050

Motors, electric, one
horsepower and over, but
less than 20 horsepower

| | |
|----------------|------|
| United Kingdom | 1.70 |
| West Germany | .11 |
| T o t a l | 1.20 |

7221060

Motors, electric, 20 horse-
power and over

| | |
|----------------|------|
| United Kingdom | 2.37 |
| Canada | .36 |
| T o t a l | 2.97 |

1. ELECTRIC SHAVERS

1965

250420

Shavers with self-contained
electric motor

| | |
|----------------|------|
| Netherlands | 5.34 |
| France | .53 |
| West Germany | .55 |
| Switzerland | .40 |
| United Kingdom | .18 |
| Total | 7.19 |

APPENDIX C

TWIN PLANT POSSIBILITIES

PUERTO RICO - DOMINICAN REPUBLIC

SIC 2071 Candy and other confectionery products

Dominican Manufacturers

| | |
|--------------------------------------|---------------|
| Dulcera Dominicana de Bolonoto Hnos. | Santo Domingo |
| Cortes Hnos. and Co. | Santo Domingo |
| Confitera Dominicana | Santiago |
| Chocolaters Industrial | Puerto Plata |
| Reposteria Cabrini | Santo Domingo |
| La Caramela | Santiago |

Puerto Rican Manufacturers

| | |
|--------------------------------|----------|
| Ponce Candy Industries | Ponce |
| Stark Co., Howard B. | Ponce |
| Dulcera de Puerto Rico, Inc. | Hato Rey |
| Dustar, Inc. | Ponce |
| General Confectionery Industry | Bayamon |
| Noelia S. Candies | Hato Rey |

SIC 2121 Cigars

Dominican Manufacturers

| | |
|--------------------|----------------|
| Leon Jimenez | Santiago, R.D. |
| "V" de la Victoria | Tamboril |
| La Constancia | Moca |
| Leon del Rosario | Moca |
| Jose Reynoso | Peña |

Puerto Rican Manufacturers

| | |
|------------------------------------|--------|
| Consolidated Caguas Corp. | Caguas |
| General Cigar Co. de Utuado, S. A. | Utuado |
| Consolidated Cigar Corp. de Cayey | Cayey |
| Consolidated Cigar Corp. de P. R. | Caguas |

SIC 2251 Full-fashioned hosiery mills

Dominican Manufacturers

| | |
|--------------------------------|---------------|
| Ind. Textiles Puig | Santo Domingo |
| La Palmesana | Santo Domingo |
| Ind. Dominicana, Enrique Capel | Santo Domingo |

Puerto Rican Manufacturers

Finetex Hosiery, Inc.

Arecibo

SIC 23 Apparel and Other Finished Products Made From Fabrics and Similar
Materials

Dominican Textile and Apparel Manufacturers (23) Only 2 digit data available.

| | |
|-----------------------------------|----------------------|
| Gonzalez and Co. | Santo Domingo |
| La Algodonera | Santo Domingo |
| Ropas y Tejidos Dom, | San Cristobal, R. D. |
| Honorio Gonzalez | Santo Domingo |
| Industrias Ramos | Santo Domingo |
| Anthun Hnos. y Co. | San Pedro de Macoris |
| Gual Hnos. y Cia. | San Pedro de Macoris |
| Ramon Menendez | Santo Domingo |
| Antuñia Hijo | Santiago, R. D. |
| Sombrerera "Jose Antonio" | Santo Domingo |
| Artesania Joar | Duarte |
| Espumas Industriales | Santo Domingo |
| Nayib Elias Rissi | San Pedro de Macoris |
| Evaristo Contreras | Santiago |
| Chafirck Khoury | Santiago |
| Industrias Elias | Santiago |
| La Moderna | San Pedro de Macoris |
| Anita Lama de Garcia "Ana Regina" | Santo Domingo |
| Industrial Luisa | Santiago |
| Industrias Lido | Santo Domingo |
| Materias Primas | Santo Domingo |
| Textilera Dominicana | Santo Domingo |
| Khalil J. Maria Hnos. | Santo Domingo |
| Candido Garcia D. | Santo Domingo |
| Mahan Issa | Santo Domingo |
| Marina | Santiago |
| Zoraida Aybar Sucs. | San Pedro de Macoris |
| Ramon y Jose Zaglul | San Pedro de Macoris |
| Jhonny Hazun Subero | San Pedro de Macoris |
| Jose de Js. Rosado | Santiago |
| Persio Martinez | Santiago |
| Fleileishmann | Santiago |
| Industrias Macorisanas | San Pedro de Macoris |

SIC 2321 Men's, youths', and boys' shirts (except work shirts), collars,
and nightwear

Selected Puerto Rican Apparel Manufacturers 4 digit data

Lares Mills, Inc.
Alfredo Mfg. Corp.

Lares
Rio Grande

125A

| | |
|-------------------------------|--------------------|
| Esquire Mfg. Corp. | Humacao |
| Isabela Vieques Corp. | Isabel II, Vieques |
| Merit Pajama Corp. of P. R. | Humacao |
| Sea Breeze Knitwear Corp. | Caguas |
| Towles Corp. of P. R., Wm. H. | Carolina |

SIC 2322 Men's, youths', and boys' underwear

| | |
|--------------------------|------------|
| Bravada Corp., The | Arecibo |
| Porto Mills, Inc. Div. A | Utua |
| Rio Grando Mfg. Corp. | Rio Grande |

SIC 2327 Men's, youths', and boys' separate trousers

| | |
|----------------------------|-------------|
| P. R. Clothing Corp. | Las Piedras |
| Sagner International, Inc. | San Juan |

SIC 2328 Work Clothing

| | |
|----------------------|----------|
| Angus Mfg. Co., Inc. | Mayaguez |
| Blue Star, Inc. | Mayaguez |
| Cadillac Mfg. Corp. | Mayaguez |
| Coral Mfg. Corp. | Mayaguez |

SIC 2331 Blouses, waists, and shirts

| | |
|--------------------------|------------|
| Economy Industries, Inc. | Rio Grande |
| P. R. Pioneering Corp. | Arecibo |

SIC 2339 Women's, misses', and juniors' outerwear, n.e.c.

| | |
|----------------|---------|
| Bonita, Inc. | Cayey |
| Ocatex Corp. | Salinas |
| Uniforms, Inc. | Cayey |

SIC 2341 Women's, misses', children's, and infants' underwear and nightwear

| | |
|---------------------------|----------|
| Carol Anne Corp. | Yauco |
| Ruvi Corp. | Guanica |
| Applique, Inc. | Mayaguez |
| Bunny Lingerie Corp. | Hato Rey |
| Cameo Lingerie, Inc. | Fajardo |
| Caribe Princess, Inc. | Humacao |
| Compex Undergarment Corp. | Coamo |
| Granada Mills, Inc. | Caguas |

La Vega Co.
Makress Lingerie, Inc.
Manuela Mfg. Co., Inc.
Palm Undies Corp.
Rafali Corp.
Sea Isle Mfg., Inc.

Aibonito
Arecibo
Naranjito
Rio Piedras
Mayaguez
Fajardo

SIC 2342 Corsets and allied garments

Charlotte Bra Co., Inc.
Henry Corp. The
Perfect Bra, Inc.
Perfect Bra, Inc.
Playtex Caribe, Inc.
Beatrice Needle Craft, Inc.
Beatrice Needle Craft, Inc.
Bra-Glo Mfg., Inc.
Catherine Needlecraft, Inc.
Dandy Brassieres, Inc.
Debmar Corp.
Emily, Inc.
Exquisite Form Ind. P. R. Branch
Harjon, Inc.
Henry Garcia Mfg. Co., Inc.
Henry Garcia Mfg. Co., Inc.
Hilmar Corp.
Isabel Products, Inc.
Joy Brassiere, Co.
Juana Diaz Co., Inc.
Juana Diaz Corp.
Lisa, Inc.
Melisa Bra Co., Inc.
Newport Brassiere Co., Inc.
Paradise Mfg., Inc.
Paula Brassiere Co., Inc.
Playtex Caribe, Inc.
Roni Bra, Inc.
Sally Mfg. Corp.
Sara Bra, Inc.
Syl-Bee Mfg. Co., Inc.
Tedros Corp.
Warner Brothers Co. of P. R., Inc.
Wayne Industries, Inc.
Wilida, Inc.
Wilida, Inc.
Aguada Foundations, Inc.
Americana Mfg. Co., Inc.
Angela Mfg. Co., Inc.
Bali of P. R., Inc.
Beatrice Needlecraft, Inc.

Rio Piedras
Hato Rey
Caguas
Aguas Buenas
Dorado
Ponce
Mayaguez
Carolina
Mayaguez
Hato Rey
Carolina
Adjuntas
Bayamon
Carolina
Hato Rey
Las Piedras
Arecibo
Santa Isabel
Hato Rey
Juana Diaz
Ponce
Hato Rey
Caguas
Rio Piedras
Gurabo
Caguas
Manati
Hato Rey
Juana Diaz
Hato Rey
Aguas Buenas
Carolina
Guaynabo
Cataño
Ponce
Añasco
Aguada
Guayama
Guayama
Rio Piedras
Mayaguez

121A

Bow Bra Co., Inc.
Bratex Corp.
Caribe Brassiere Co., Inc.
Caribe Underwear Corp.

Rio Piedras
Salinas
Caguas
Bayamon

SIC 2352 Men's and boys' hats and caps

Southland Mfg. Corp.

Mayaguez

SIC 2361 Dresses, blouses, waists, and shirts

Aguadilla Children's Wear Plant
Sportee Corp. of America

Aguadilla
Ponce

SIC 2381 Dress and work gloves, except knit and all leather

Barry Corp.
Carib Co., Inc. The
Edro Corp.
Finale, Inc. El
Surtex Glove Corp.
Rico Glove Corp.

Santurce
Aibonito
Añasco
Caguas
Coamo
Cayey

SIC 2385 Raincoats and other water-proof outer garments

Playtex Pan American, Inc.

Manati

SIC 2392 House furnishings, except curtains and draperies

C. and G. Hemming, Inc.

Yauco

SIC 2393 Textile bags

Formcraft Equipment Co., Inc.

Quebradillas

SIC 2394 Canvas Products

Rebmar, Inc.

Corozal

SIC 2395 Pleating, decorative and novelty stitching, and tucking for trade

A. and J. Industries, Inc.
Gary Garment Co., Inc.
General Enterprises, Inc.

Yauco
Mayaguez
Lajas

Puerto Rican Manufacturers

| | |
|-------------------------------------|-----------|
| Ponce Tanning Corp. | Ponce |
| P. R. Tanning Corp. Caguas Division | Caguas |
| P. R. Tanning Corp. Juncos Division | Juncos |
| Esco Corp. | Vega Baja |
| Dorado Leather Corp. | Caguas |
| Nashtone, Inc. | Cabo Rojo |
| Exotic Leather Corp. | Dorado |

SIC 3141 Footwear, except house slippers and rubber footwear

Dominican Manufacturers

| | |
|-----------------------------|---------------|
| Perez Cividanes and Co. | Santo Domingo |
| Dominicana Ind. de Calzados | Santo Domingo |
| Industria del Calzado | Santo Domingo |
| Claudio Suarez | Santo Domingo |
| Juan de Js. Albaine | Santiago |
| Francisco H. Espejo | Moca, R. D. |
| Antonio Hued. | Santiago |
| Juan E. Baez | Santiago |

Puerto Rican Manufacturers

| | |
|-----------------------------------|--------------|
| Barceloneta Shoe Corp. | Barceloneta |
| Clara Shoe Corp. | Juana Diaz |
| Comerio Shoe Corp. | Comerio |
| International Shoe Corp. of P. R. | Manati |
| Manati Shoe Corp | Manati |
| Paula Shoe Co., Inc. | Ponce |
| Barranquitas Shoe Co., Inc. | Barranquitas |
| Bristol Shoe Corp. | Ponce |
| Dixon-Ford Shoe Co., Inc. | Salinas |
| Foot-Mits Shoe Corp. | Ponce |
| Gentry Shoe Co., Inc. | Ponce |
| Island Shoe Co., Inc. | Manati |
| Kaufman Shoe Co., Inc. | Aguadilla |
| Marlena-Marie Shoe Corp. | Humacao |
| Pan-Am Shoe Co., Inc. | Camuy |
| Wilson Shoe Co., Inc. | Santa Isabel |
| Dorado Shoe, Inc. | Aguadilla |
| J. J. Shoe Corp. | Ponce |
| Mayaguez Shoe Corp. | Mayaguez |
| Morro Shoe Corp., El | Comerio |
| Avanti Shoe Corp. | Naguabo |
| Gelshu, Inc. | Barceloneta |
| Princess Shoe Corp. | Ponce |
| Utrilon Industries USA, Inc. | Rio Piedras |
| Cidra Shoe Corp. | Cidra |

Jacqueline Sandals and Shoe Corp.
Williams Products Corp.
International Shoe Corp.
International Shoe Corp.
Victoria Shoe Corp.

Bayamon
Luquillo
Manati
Hato Rey
Juana Diaz

SIC 3429 Hardware, n.e.c.

Dominican Manufacturers

None

Puerto Rican Manufacturers

Anderson Corp., The
B.V.I. Sprayers, Inc.
Sang Doors and Frames, Inc.
Seasonite Engineering
Grand Rapids Hardware of P. R., Inc.
Purdy Door Operators Corp.

Rio Piedras
Bayamon
Cataño
Rio Grande
Mayaguez
Ciales

SIC 3611 Electric measuring instruments and test equipment

Dominican Manufacturers

None

Puerto Rican Manufacturers

Daystrom Weston, Inc.
General Electric Instruments Corp.
Howell Instruments of P. R., Inc.
Soil Electronics Mfg. Corp. Sencor
Weston Caribe, Inc.

Ponce
Caguas
Hato Rey
Hato Rey
Ponce

SIC 3612 Power, distribution, and specialty transformers

Dominican Manufacturers

None

Puerto Rican Manufacturers

Electrical Equipment, Inc.
Sayles Electric Co.
P. R. Transformer

Carolina
Toa Baja
Arecibo

195A

SIC 3613 Switchgear and switchboard apparatus

Dominican Manufacturers

None

Puerto Rican Manufacturers

| | |
|--------------------------------------|-------------|
| Comel International Corp. | Cataño |
| General Electric Circuit Breakers | Rio Grande |
| General Electric Switchgear, Inc. | Rio Grande |
| Caribe Circuit Breaker Co., Inc. | Carolina |
| Borinquen Circuit Breakers Co., Inc. | Carolina |
| Hamlin International Corp. | Ponce |
| G. E. Low Voltage Prods., Inc. | Rio Piedras |
| Courtley Mfg. Corp. | Bayamon |
| Lighting, Inc. | Carolina |
| Esma Lamp Shade Ind., Inc. | Humacao |

SIC 3643 Current carrying wiring devices

Dominican Manufacturers

None

Puerto Rican Manufacturers

| | |
|---------------------------------------|-------------|
| General Electric Wiring Devices, Inc. | Juana Diaz |
| Tenna Mfg. C. Inc., The | Caguas |
| Pamcor, Inc. | Rio Piedras |
| Gibson Caribe, Inc. | Luquillo |

SIC 3644 Non-current carrying wiring devices

Dominican Manufacturers

None

Puerto Rican Manufacturers

| | |
|------------------------------------|----------|
| Electronic Mica Co., Inc. | Santurce |
| Indumetal Corp. | Hato Rey |
| Rapid Electric Co. of P. R., Inc. | Arecibo |
| Borinquen Insulation Mfg. & Supply | Santurce |

SIC 3651 Radio and television receiving sets, except communication types

Dominican Manufacturers

None

Puerto Rican Manufacturers

Curtis Mathes of P. R., Inc.
Matsushita Electric of P. R., Inc.
Euphonics Acoustics, Inc.
Nortronics of P. R., Inc.
Radio Electronics, Inc.

Toa Alta
Caguas
Guaynabo
Rio Grande
Caguas

SIC 3661 Telephone and telegraph apparatus

Dominican Manufacturers

None

Puerto Rican Manufacturers

Circuit Components Co., Div. P. R.
Electrospace Corp. of P. R.
Insko Electric Products, P. R., Inc.
Caribe General Electric, Inc.

Rio Piedras
Naguabo
Carolina
Rio Grande

SIC 3621 Motors and generators

Dominican Manufacturers

None

Puerto Rican Manufacturers

Electro Industries, Inc.
Micro Electric Motors, Inc.
Electric Motor Corp. of P. R.
Motors, Inc.

Caguas
Utuado
Bayamon
Caguas

SIC 3622 Industrial Controls

Dominican Manufacturers

None

Puerto Rican Manufacturers

General Electric Controls, Inc.
Micro-Circuit Co.
Phillips Control Corp. of P. R.
Guardian Electric, Inc. P. R.

Vega Alta
Rio Piedras
Rio Piedras
Santurce

1247

SIC 3629 Electrical industrial apparatus, n.e.c.

Dominican Manufacturers

None

Puerto Rican Manufacturers

| | |
|----------------------------------|-------------|
| Marey Heaters Corp. | San Juan |
| Dur-O-Matic of P. R., Inc. | Rio Piedras |
| Reliable Water Heaters Co., Inc. | Fajardo |
| Dom of Puerto Rico | Rio Piedras |

SIC 3642 Lighting fixtures

Dominican Manufacturers

None

Puerto Rican Manufacturers

| | |
|-----------------------------------------------------------|-------------|
| International Electronics of P. R. Ltd.
Lighting, Inc. | Fajardo |
| Augura Mfg. Corp. | Carolina |
| Delight P. R., Inc. | Cabo Rojo |
| Electrospace Corp. of P. R. | Guaynabo |
| Itt Caribbean Mfg., Inc. | Naguabo |
| | Rio Piedras |

SIC 3662 Radio and television transmitting, signaling and detection equipment

Dominican Manufacturers

None

Puerto Rican Manufacturers

| | |
|---------------------------|--------|
| Kay-Townes of P. R., Inc. | Rincon |
|---------------------------|--------|

SIC 3672 Gathode ray picture tubes

Dominican Manufacturers

None

Puerto Rican Manufacturers

| | |
|-----------------------------|-----------|
| Rico Electronics, Inc. | Vega Alta |
| Caribbean Electronics, Inc. | Vega Alta |
| Silveray Tube Co., Inc. | Toa Baja |

SIC 3699 Electrical machinery, equipment, and supplies, n.e.c.

Dominican Manufacturers

None

Puerto Rican Manufacturers

Rona, Inc. Rio Piedras

SIC 3821 Mechanical measuring and controlling instruments, except automatic temperature controls

Dominican Manufacturers

None

Puerto Rican Manufacturers

| | |
|------------------------------------|-------------|
| B-D Thermometer Co. | Juncos |
| Becton Dickinson P. R., Inc. | Juncos |
| Endeco Puerto Rico, Inc. | Guaynabo |
| International Data Prods. Inc. | Luquillo |
| Lufkin Carbide, Inc. | Ponce |
| Primus Mfg., Inc. | San Lorenzo |
| Statham Instruments, Inc. of P. R. | Hato Rey |
| Statham Transducers, Inc. | Hato Rey |

SIC 3841 Surgical and medical instruments and apparatus

Dominican Manufacturers

None

Puerto Rican Manufacturers

| | |
|---------------------------------|----------|
| Barnes-Hind International, Inc. | Carolina |
| Baxter Laboratories, Inc. | Hato Rey |
| Baxter Laboratories, Inc. | Jayuya |
| Baxter Laboratories Nev., Inc. | Hato Rey |
| Baxter Laboratories Nev., Inc. | Jayuya |
| Medical Sterile Prods. Inc. | Rincon |