

# *Opportunities and Constraints for Non-Traditional Agricultural Exports to the U.S. Market*

by

*Timothy G. Taylor  
and  
Patrick A. Antoine*

for the

*Study on the  
"Competitiveness of the Agricultural Sector in the Lesser Antilles"*

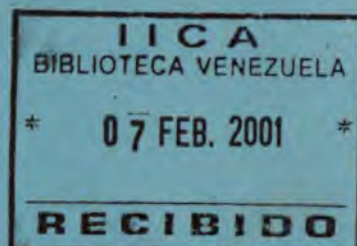
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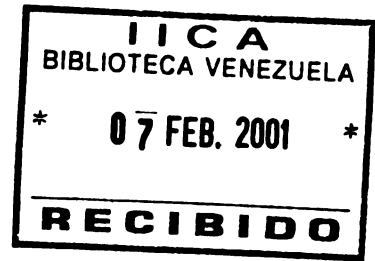
and the

*French Mission for Technical Cooperation (FMTC)*

@ June 1997







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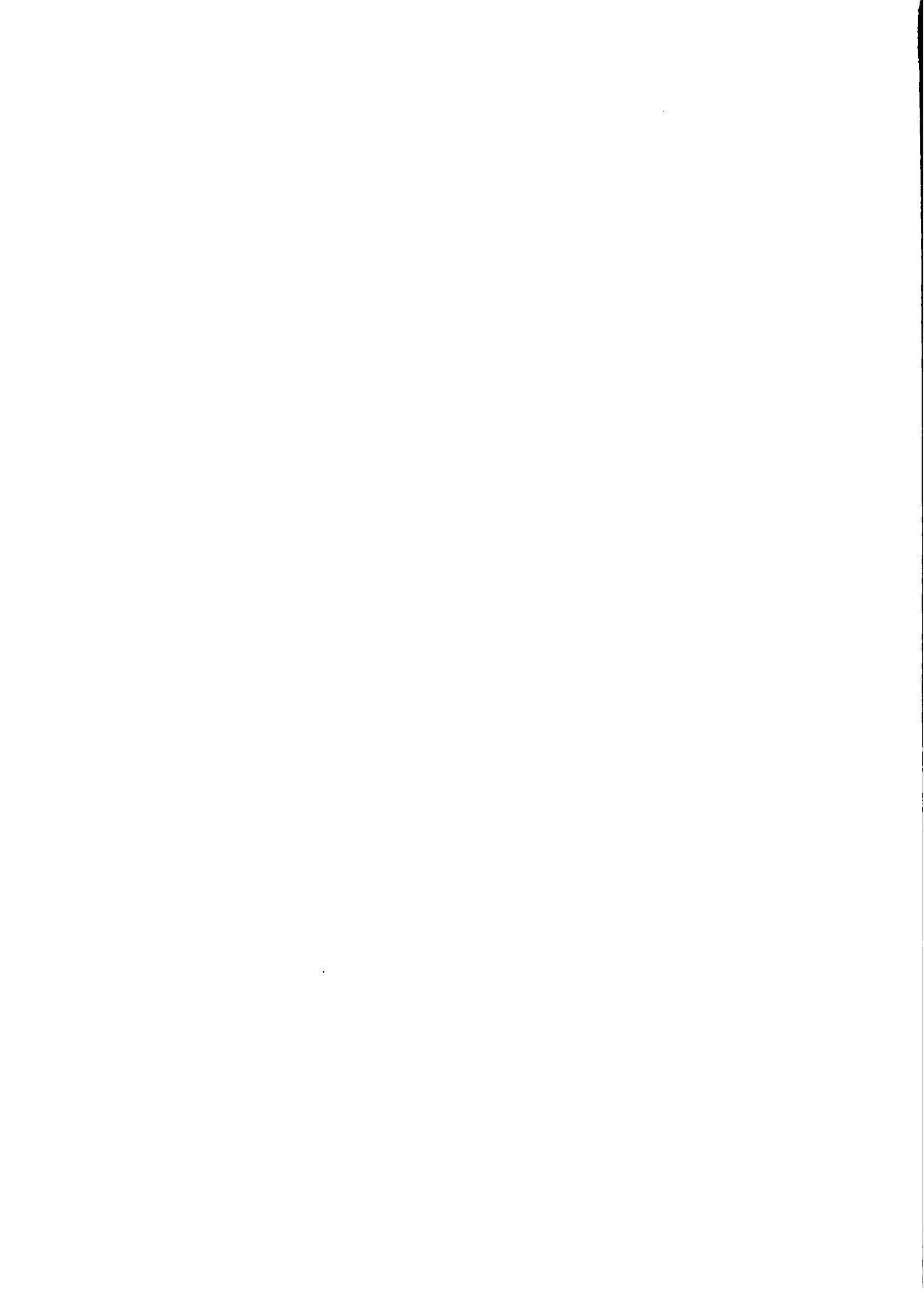
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# **Opportunities and Constraints for Non-Traditional Agricultural Exports to the U.S. Market**

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## Opportunities and Constraints for Non-Traditional Agricultural Exports to the U.S. Market

### Introduction

Over the past decade Caribbean countries have pursued agricultural diversification strategies in an effort to broaden their agricultural bases and develop sources of foreign exchange earnings beyond the traditional agricultural export mainstays of bananas, coffee and sugar. Central to these strategies has been the desire to develop export markets in the U.S. The size and diversity of the U.S. market for non-traditional agricultural products<sup>1</sup> offer many *apparent* opportunities for the Caribbean countries that are the focus of this study. However, the somewhat lackluster performance of these countries in exporting non-traditional agricultural products to the U.S. market over the past decade suggests that transforming these *apparent opportunities* into *substantive successes* is more difficult than is often believed.

The U.S. market for food products in general, and non-traditional agricultural products in particular, is sophisticated, complex and dynamic. As noted in the recent study by Antoine and Taylor,<sup>2</sup> successfully accessing the U.S. market requires a comprehensive understanding of all facets of this market. The pace at which trade liberalization is proceeding within the western hemisphere has enhanced the dynamics of the market, making its understanding more critical than ever.

The purpose of this section is to provide insight into the current forces driving change in the U.S. market for non-traditional agricultural products and to identify the primary opportunities and constraints to prospective Caribbean exporters. To this end, this section is composed of three sub-sections. The first sub-section provides an overview of trends in basic consumption and trade in non-traditional products in the U.S. market. The second sub-section overviews recent trends in the demographics, technology, and institutional characteristics of the U.S. food market in general, and the non-traditional products sub-sector in particular. The final section, synthesizes this information and discusses potential market opportunities and identifies the critical success factors for Caribbean non-traditional exports. Appendix AA to this section provides data on selected non-traditional imports into the U.S. market, while a list of import brokers in south Florida is provided in Appendix BB. A guide to World Wide Web resources and information useful to non-traditional exporters is contained in Appendix CC.

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1. Non-traditional products generally encompass a wide range of fruits and vegetables, including tropical products. In this analysis, unless otherwise noted the term "non-traditional" refers to fresh and processed vegetables. Within this broad classification, most tropical products are sub-classified as specialty vegetables.

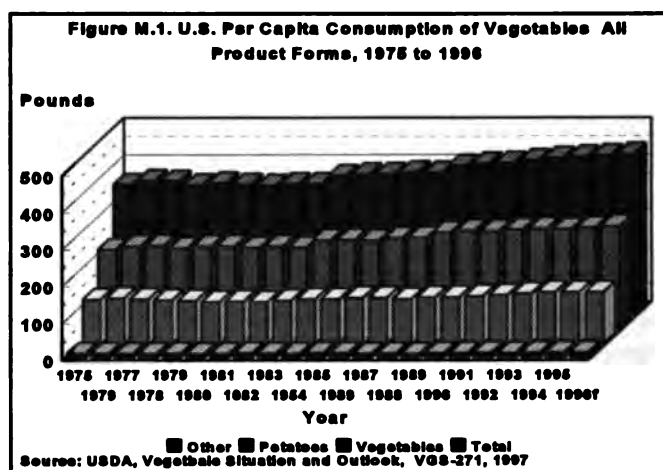
2. Antoine, PA. and T.G. Taylor. *Competitiveness of the Non-traditional Agricultural Sector in the OECS: A Diagnostic Analysis Volumes I and II*. Inter-American Institute for Cooperation on Agriculture, OECS Agricultural Diversification Coordinating Unit and University of Florida, 1993

## Trends in Consumption and Trade in Non-Traditional Products in the U.S. Market

The U.S. market for non-traditional agricultural products is large and diverse. As a precursor to discussing the opportunities that may exist for potential Caribbean exporters of non-traditional products, it is critical to summarize recent trends in traditional measures characterizing the market. To this end, this sub-section overviews trends in the per capita consumption of non-traditional products, as well as trends in major components of U.S. trade in non-traditional agricultural products.

### U.S. Consumption of Non-Traditional Agricultural Products

Over the past twenty years, U.S. per capita consumption of fresh and processed vegetables (including potatoes, mushrooms and dry edible beans) has increased approximately 23 percent. As noted in Figure M.1, however, the rate of increase in has slowed in recent years. Per capita consumption of fresh and processed vegetables (excluding potatoes, mushrooms and dry edible beans) showed the greatest change over this period, increasing by 28%. Consumption increased from 218.4 pounds per capita in 1975 to an estimated, 280 pounds per capita in 1996. Consumption of potatoes, the largest single consumption item, increased by 15% over this same time period. Per capita potato consumption increased from 122.9 pounds in 1975 to an estimated 140.1 pound in 1996. Consumption of other vegetables which include dry edible beans and mushrooms remained relatively constant.

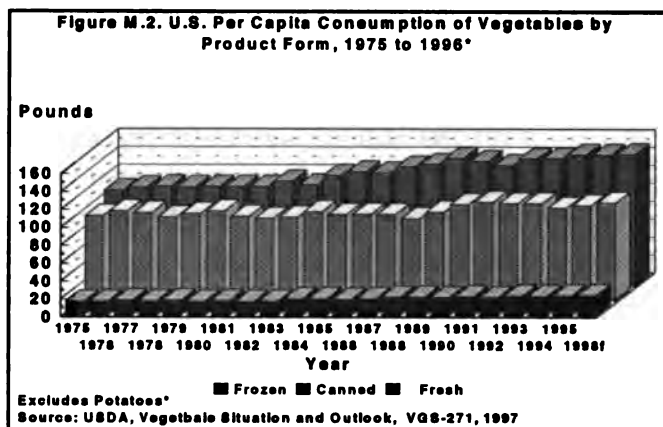


Trends in per capita consumption of vegetables by product form are presented in Figure M.2. Per capita consumption of frozen vegetables increased by 44.7%, from 15.9 pounds in 1975 to 23 pounds in 1996. Fresh vegetable consumption increased from 106.1 pounds per capita in 1975 to 146.7 pounds in 1996, an increase of 38.3%. Consumption of canned vegetable products also increased, but at a more moderate rate. Over the 1975 to 1996 period, consumption of canned vegetable increased only 15%, from 94.4 pounds per capita to 109 pounds per capita.

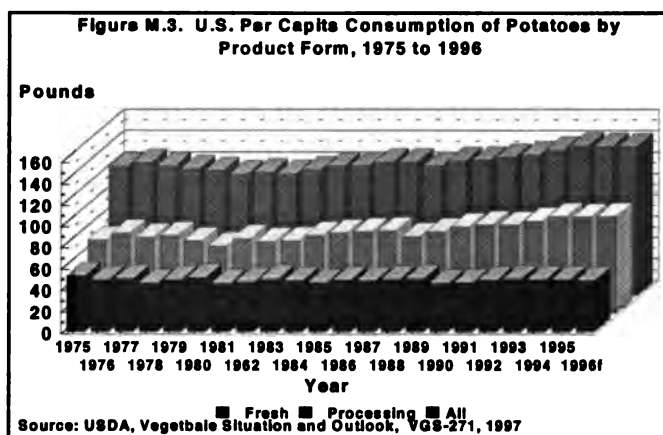
Consumption of potatoes by product form over the 1975 to 1996 period is shown in Figure M.3. Total per capita consumption increased from 121.9 pounds in 1975 to 140.1 pounds in



1996. Consumption of fresh potatoes declined by 7.7 % over the 1975 to 1996 period, from 52.6 pounds per capita to 48.5 pounds per capita. In contrast, consumption of frozen potatoes increased by 32.2% over this same period. Per capita consumption increased from 69.3 pounds in 1975 to over 91 pounds in 1996.



The trends depicted in Figures M.2 and M.3 provide the basis for several inferences regarding trends in the consumption of non-traditional products in the U.S. market. First, the importance of *health consciousness* is apparent by the significant increases in the consumption of fresh products over the 1975 to 1996 period. Close examination of Figure M.2 reveals, however, that much of this increase occurred from the mid-1980s until 1990. Since 1990, the rate of increase in fresh product consumption has slowed considerably. This suggests that the importance health in the choice of diet may be waning.



The increase in consumption of frozen vegetables and potatoes provides evidence of the importance of convenience. The peak of the *baby-boom* generation, and the preponderance of two-income families has placed a premium on foods that are not only healthful, but convenient to prepare. Frozen vegetables and vegetable preparations are viewed as ideal products from this standpoint.

The trend in consumption of frozen potatoes also provides evidence of the importance of away-from-home food consumption. American consumers are consuming increasing amounts of food away from home. While the trend in frozen potato consumption is indicative of the continued increase in consumption at traditional *fast-food* outlets (e.g. McDonalds, Burger King etc.), the demand for convenience has also spawned an explosion of mid-priced restaurant chains catering to middle- and upper-middle-income consumers. This is providing new markets for frozen and fresh product forms, and broadening the appeal of many ethnic foods.

### **U.S. Trade in Non-Traditional Agricultural Products**

The U.S. is a significant importer and exporter of non-traditional agricultural products. In 1996, U.S. imports of non-traditional products were valued at \$3.678 billion. Almost half of this total (\$1.789 billion) was fresh vegetables and melons. Imports of processed vegetable products in 1996 were valued at \$561.0 million. U.S. exports of non-traditional products in 1996 surpassed imports with a value of \$3.952 billion in 1996, making it a net exporter of non-traditional products.. Fresh vegetable and melon exports were valued at \$951.0 million and processed vegetable exports were valued at \$630.0 million.

Despite the significant value of trade in non-traditional products, non-traditional imports account for a relatively small proportion of U.S. consumption. As seen in Table M.1, though the share of consumption attributable to fresh vegetable imports increased from 5.3% in 1975 to 9.9% in 1993, it still represents a minor proportion of total fresh consumption. However, for certain commodities (e.g. frozen vegetables) imports account for a significant portion of U.S. consumption.

The market share of various foreign supply regions to the U.S. market for fresh and processed fruit and juices, and fresh and processed vegetables over the 1983-84 to 1993-94 period are presented in Tables M.2 and M.3, respectively. Latin America and the Caribbean (LAC) has been the primary source of fresh fruit imports. LAC countries have increased their share of the U.S. market from 71.8% in 1983-84 to just over 81% in 1992-94. Latin America (mainly Brazil) is also the primary source of juice imports. However, the market share of LAC for these product categories has fallen considerably from 79.3% in 1983-84 to 59.6% in 1993-94.

Table M.3 shows the dominant position of LAC in general, and Mexico in particular, in supplying fresh vegetables to the U.S. market. In 1983-84, LAC accounted for 83.2% of U.S. fresh vegetable imports. However, the share of the U.S. market for fresh vegetables attributable to LAC declined to 76.5% by 1993-94. Interestingly, this decline in market share has come at the expense of increased imports from developed countries, primarily Canada and those in the EU.

The sources of processed vegetable products entering the U.S. market are much more dispersed than for fresh vegetables. LAC countries have increased market share for these products from 11.9% of the U.S. market in 1983-84 to 19.45 in 1993-94. *Developed* countries possess a larger share of the U.S. market for processed vegetables than *developing* countries. However, since 1983-84, developing countries have substantially increased their market share at the expense of developed countries.

Tables M.2 and M.3 also place the size of Caribbean suppliers of non-traditional products into a useful perspective. In terms of fruit, the Caribbean accounted for 1.8% of the U.S. import market in 1983-84. This declined to 1.5% of the U.S. market by 1993-94. For fresh

fruit, the Caribbean accounted for 2.4 percent of the U.S. market in 1983-84 and about 1.9% in 1993-94.

Table M.1. Share of U.S. food disappearance covered by imports, selected

Commodity or Group	Share of Disappearance Covered by			
	1980	1985	1993	
	-----%			
Beef	6.	8.8	8.1	10.0
Fish and seafood	45	45.3	53.8	54.6
Fresh fruit	23	27.1	33.1	35.2
Grapes	5.	13.6	28.3	27.3
Other	6.	6.2	9.2	18.3
Non-citrus frozen fruit	14	13.4	10.2	6.5
Fresh vegetables	5.	7.6	9.0	9.9
Green peppers	12	26.5	24.0	22.5
Garlic	13	12.2	14.0	29.3
Tomatoes	21	22.3	24.0	22.5
Vegetables for processing				
Asparagus (frozen)		8.7	4.3	23.8
Broccoli	4.	9.1	22.0	73.6
Cauliflower		7.8	23.8	44.8
Chile peppers		27.5	35.6	34.8
Dry edible peas	6.	8.1	24.3	25.9
Spices	79	81.3	83.3	89.1
Sugar	36	37.7	25.2	15.8

Source: adapted from Dow, K. *Changing Food Consumption Patterns in the United States: Implications for Latin American and Caribbean Agriculture*. International Working Paper IW97-6. Food and Resource Economics Department, University of Florida, Gainesville, Florida, 1997.

Over the 1983-83 to 1993-94 period the region also averaged just under 1.0% of the U.S. market for processed fruit. The market position of the Caribbean in the U.S. market for fresh vegetables is small, and declining. As seen in Table M.3, the market share of the Caribbean for fresh vegetable products declined from 3.6% in 1983-84 to 1.2% in 1993-94. In the U.S. market for processed vegetables, the market share of the Caribbean remained constant over the 1983-84 to 1993-94 period at 1.4%.

As noted earlier, a subset of non-traditional crops of special significance to the Caribbean in general, and the countries that are the focus of this study in particular, are those designated as fresh market specialty vegetables.

Table M. 2 Share of LAC and other geographic zones in the U.S. import market for fruit and juices.

Geographic Zone	Fruit							
	Total		Fresh		Processed		Juices	
	1983-84	1993-94	1983-84	1993-94	1983-84	1993-94	1983-84	1993-94
-----%								
World	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
LAC	43.8	58.7	71.8	82.1	9.3	15.4	79.3	59.6
Mexico	19.4	23.3	31.2	30.8	4.8	9.4	5.9	6.8
Central America	2.1	9.0	3.4	13.2	0.0	1.1	0.0	2.4
Caribbean	1.8	1.5	2.4	1.9	1.0	0.8	0.0	0.8
South America	20.6	25.0	34.8	36.2	3.0	4.1	72.7	49.5
Rest of the world	56.2	41.3	28.2	17.9	90.7	84.6	20.7	40.4
Developed countries	28.2	18.7	27.0	16.1	29.7	23.5	16.3	24.4
Developing countries	70.3	79.9	72.3	83.9	67.7	72.4	83.1	75.4

Source: Dow, K. *Changing Food Consumption Patterns in the United States: Implications for Latin American and Caribbean Agriculture*. International Working Paper IW97-6. Food and Resource Economics Department, University of Florida, Gainesville, Florida, 1997.

Table M.4 presents total U.S. domestic and import shipments of fresh specialty vegetables over the 1980 to 1995 period. As can be seen, total shipments over this period increased from 4.426 million cwt. in 1980 to 20.432 million cwt. in 1995, an increase of 379.2%. Among the specialty vegetables included in the table, tropical vegetables are especially noteworthy. Since 1980, total shipments of tropical products to the U.S. market have increased from 41,000 cwt. to 3.927 million cwt. in 1995, and increase of almost 950%.

Tables M.5 and M.6 present domestic and import shipments of fresh specialty vegetables to the U.S., respectively. As can be seen, imports have become an increasingly important source of specialty vegetables in the U.S. market. Indeed, the import share of total shipments increased from 20.0% in 1980 to almost 40.0% in 1995. It is also interesting to note that all domestic shipments of tropical specialty vegetables are imported. In spite of the rapid increase in shipments of tropical vegetables over the past 15 years, domestic production remains negligible. This suggests that continued growth in this category will continue to offer opportunities for exports to the U.S. market.

Table M.3 Share of LAC and other geographic zones in the U.S. import market for vegetables.

Geographic Zone	Vegetables					
	Total		Fresh		Processed	
	1983-84	1993-94	1983-84	1993-94	1983-84	1993-94
-----%-----						
World	100.0	100.0	100.0	100.0	100.0	100.0
LAC	46.4	50.3	83.2	76.5	11.9	19.4
Mexico	40.1	42.1	75.8	68.5	6.6	10.9
Central America	1.4	3.3	2.5	4.7	0.0	1.6
Caribbean	2.5	1.3	3.6	1.2	1.4	1.4
South America	2.5	3.6	1.2	2.0	3.6	5.4
Rest of the world	53.6	49.7	16.8	23.5	88.1	80.6
Developed countries	36.0	34.4	15.1	21.2	55.7	49.9
Developing countries	60.1	61.6	84.9	77.0	36.8	43.4

Source: Dow, K. *Changing Food Consumption Patterns in the United States: Implications for Latin American and Caribbean Agriculture*. International Working Paper IW97-6. Food and Resource Economics Department, University of Florida, Gainesville, Florida, 1997.

Taken as a whole, these data provide the basis for several inferences regarding the U.S. market for non-traditional products. First, the rapid increase in consumption of fresh fruit and vegetables spurred by the increase in health consciousness in the mid-1980s appears to be slowing. Per capita consumption has been relatively constant since the early-1990s. As noted by Cook<sup>3</sup>, growth in consumption is being driven more by the introduction of value-added fresh product forms (e.g. pre-cut salads) rather than increased consumption of raw product. This occurrence is at least partly in response to the demand for convenience, and the increase in away-from-home food consumption.

The continued and rapid increase in shipments of fresh specialty vegetables to the U.S. market, provides evidence of the growing importance of ethnic markets. The trends in these data also indicate the growing interest in new and exotic food items on the part of U.S. consumers. This is especially true for fresh tropical vegetables, which have exhibited tremendous growth in shipments to the U.S. market over the past 15 years.

3. Cook, R. *The Institutional Aspects of Fresh Fruit and Vegetable Marketing Systems: Impacts on Producers, Buyers, Consumers and Markets: The Case of the United States*. Unpublished manuscript, Department of Agricultural Economics, University of California-Davis 1996.

Table M.4. Total U.S. Domestic and Import Shipments of Fresh Market Specialty Vegetables, 1980-95.

Year & Item	Chinese cabbage	Escarole / endive	Garlic 1/	Greens	Romaine lettuce	Other lettuce 2/	Misc. herbs 3/	Misc. oriental 4/	Tropical 5/	Parsley	Southern/ snow peas	Chile peppers	Misc. vegetables 6/	Total
1980	149	515	244	964	737	417	-	1	41	187	54	357	598	4,264
1981	137	460	193	974	746	460	0	0	82	151	40	390	878	4,511
1982	107	461	240	1,056	809	496	0	14	86	174	58	533	979	5,013
1983	169	507	275	1,015	919	646	0	0	104	189	149	562	1,218	5,753
1984	117	496	370	1,054	886	631	0	4	115	164	180	666	1,025	5,708
1985	164	450	323	1,177	1,562	2,036	11	20	132	162	188	794	563	7,582
1986	163	432	362	1,333	2,298	2,310	55	194	161	210	189	1,097	422	9,226
1987	151	450	367	1,323	2,858	2,523	57	313	156	191	273	1,107	412	10,181
1988	127	445	372	1,194	3,164	2,872	62	415	1,361	212	315	1,213	427	12,179
1989	121	411	386	1,201	3,654	3,215	82	536	1,601	201	375	1,289	553	13,625
1990	140	364	387	1,175	4,333	3,584	159	593	1,497	178	339	1,490	696	14,935
1991	141	347	415	1,222	4,754	3,698	277	441	2,524	188	72	1,543	556	16,178
1992	164	383	410	1,359	5,191	3,734	255	152	3,508	208	27	1,340	584	17,315
1993	223	360	864	1,569	6,073	4,072	269	598	3,440	212	23	1,340	697	19,740
1994	220	299	471	1,430	5,563	3,403	252	545	3,695	161	12	1,566	676	18,293
1995	208	311	500	1,572	6,432	3,402	367	569	3,927	161	280	1,870	833	20,432

---1,000 cwt

-- = Not available.

1/ Domestic shipments not reported. 2/ Includes Boston, bibb, and red and green leaf lettuce. 3/ Includes anise, basil, chives, cilantro, cipolinos, dill, dry eschallot, horseradish, mint, parsley root, thyme, and watercress. 4/ Includes bean sprouts, bok choy, dikon, bobo, lobah and others. 5/ Arum, batatas (boniatos), breadfruit, calabaza, chayote, dashen, ginger root, malanga, tamarind, yams, and yucca. 6/ Alfalfa sprouts, cardoon, domestic celeriac (celery root), chicary root, jerusalem artichoke, jicama, oyster plant (salsify), radicchio, and tomatillos.

Source: Fresh Fruit and Vegetable Shipments: Calendar Year, Agricultural Marketing Service, USDA.

Table M.5 Total U.S. Domestic Shipments of Fresh Market Specialty Vegetables, 1980-95.

Year & Item	Chinese cabbage	Escarole /endive	Garlic 1/	Greens	Romaine lettuce	Other lettuce 2/	Misc. herbs 3/	Misc. oriental 4/	Tropical 5/	Parsley	Southern/ snow peas	Chile peppers	Misc. vegetables 6/	Total
-----1,000 cwt-----														
1980	132	492	--	959	732	369	--	0	0	185	27	38	457	3,391
1981	137	440	--	974	746	418	0	0	1	151	14	32	699	3,612
1982	102	432	--	1,050	809	429	0	0	0	173	20	57	765	3,837
1983	130	471	--	1,002	919	545	0	0	3	187	31	36	1,016	4,342
1984	115	445	--	1,033	880	502	0	2	0	151	40	71	762	4,001
1985	122	392	--	1,150	1,551	1,915	11	15	0	150	40	153	261	5,760
1986	149	366	--	1,293	2,287	2,234	54	187	1	184	42	412	70	7,279
1987	146	383	--	1,256	2,836	2,438	57	300	0	166	34	329	5	7,950
1988	125	374	--	1,108	3,136	2,806	60	397	0	186	24	332	0	8,548
1989	106	282	--	1,046	3,573	3,134	62	487	0	170	28	406	3	9,297
1990	120	233	--	991	4,330	3,517	83	530	0	153	26	440	1	10,424
1991	110	202	--	1,058	4,754	3,647	96	367	0	160	20	414	120	10,948
1992	135	226	--	1,178	5,177	3,680	102	88	0	159	15	287	155	11,202
1993	179	203	--	1,382	6,022	4,021	105	528	0	149	15	277	196	13,077
1994	152	141	--	1,273	5,522	3,358	56	411	0	112	11	464	173	11,673
1995	133	147	--	1,364	6,380	3,279	68	381	0	101	8	389	139	12,389

-- = Not available.

1/ Domestic shipments not reported. 2/ Includes Boston, bibb, and red and green leaf lettuce. 3/ Includes anise, basil, chives, cilantro, cipolinos, dill, dry eschallot, horseradish, mint, parsley root, thyme, and watercress. 4/ Includes bean sprouts, bok choy, dikon, bobo, lobah and others. 5/ Arum, batatas (boniatos), breadfruit, calabaza, chayote, dasheen, ginger root, malanga, tamarind, yams, and yucca. 6/ Alfalfa sprouts, cardoon, domestic celeriac (celery root), chicory root, jerusalem artichoke, jicama, oyster plant (salsify), radicchio, and tomatillos.

Source: Fresh Fruit and Vegetable Shipments: Calendar Year, Agricultural Marketing Service, USDA.

Table M.6. Total Import Shipments of Fresh Market Specialty Vegetables to the U.S. Market, 1980-95..

Year & Item	Chinese cabbage	Escarole /endive	Garlic 1/	Greens	Romaine lettuce	Other lettuce 2/	Misc. herbs 3/	Misc. oriental 4/	Tropical 5/	Parsley	Southern/ snow peas	Chile peppers	Misc. vegetables 6/	Total
1980	17	23	244	5	5	48	--	1	41	2	27	319	141	873
1981	0	20	193	0	0	42	0	0	81	0	26	358	179	899
1982	5	29	240	6	0	67	0	14	86	1	38	476	214	1,176
1983	39	36	275	13	0	101	0	0	101	2	118	524	202	1,411
1984	2	51	370	21	6	129	0	2	115	13	140	595	263	1,707
1985	42	58	323	27	11	121	0	5	132	12	148	641	302	1,822
1986	14	66	362	40	11	76	1	7	160	26	147	685	352	1,947
1987	5	67	367	67	22	85	0	13	156	25	239	778	407	2,231
1988	2	71	372	86	28	66	2	18	1,361	26	291	881	427	3,631
1989	15	129	386	155	81	81	20	49	1,601	31	347	883	550	4,326
1990	20	131	387	184	3	67	76	63	1,497	25	313	1,050	695	4,511
1991	31	145	415	164	0	51	181	74	2,524	28	52	1,129	436	5,230
1992	29	157	410	181	14	54	153	64	3,508	49	12	1,053	429	6,113
1993	44	157	864	187	51	51	164	70	3,440	63	8	1,063	501	6,663
1994	68	158	471	157	41	45	196	134	3,695	49	1	1,102	503	6,620
1995	75	164	500	208	52	123	299	188	3,927	66	272	1,481	694	8,049

-- = Not available.

1/ Domestic shipments not reported. 2/ Includes Boston, bibb, and red and green leaf lettuce. 3/ Includes anise, basil, chives, cilantro, cipolinos, dill, dry escallot, horseradish, mint, parsley root, thyme, and watercress. 4/ Includes bean sprouts, bok choy, dikon, bobo, lobah and others. 5/ Arum, batatas (boniatos), breadfruit, calabaza, chayote, dasheen, ginger root, malanga, tamarind, yams, and yucca. 6/ Alfalfa sprouts, cardoondomestic celeriac (celery root), chicary root, jerusalem artichoke, jicama, oyster plant (salsify), radicchio, and tomatillos. Source: Fresh Fruit and Vegetable Shipments: Calendar Year, Agricultural Marketing Service, USDA.



## **Trends in the U.S. Food Marketing System**

Examination of the consumption and trade data characterizing the U.S. market for non-traditional products provides only one piece of the puzzle which potential Caribbean exporters to the U.S. market must solve. A second piece of this puzzle may be found by examining the basic demographic, institutional and technological forces driving the U.S. food market, and relating these forces to the changing structure of the U.S. market for non-traditional agricultural products. It is to this purpose that the present sub-section is addressed.

### **Demographics**

There are several demographic factors<sup>4</sup> influencing the U.S. food market: 1) population growth; 2) the age distribution of the population; 3) ethnic composition; and 4) income growth. The U.S. population is expected to increase by about 15 percent over the next 30 years, only about one-half the rate of increase over the past 30 years. This decline in rate of population growth will slow the growth in total demand for food.

A result of this slowing of the population growth, will be an increase in the mean age of U.S. consumers. This is further enhanced by increases life expectancy. This *aging* of the population will affect both per capita food consumption and desired nutritional characteristics. Indeed, as shown in Table M.7, per capita food consumption patterns vary by age and food category. Older consumers tend to spend larger amounts on fresh and processed fruits and vegetables. It is also interesting to note that expenditures on food away-from-home generally increases until age 55-64, and then declines.

Another factor contributing to the increased diversity of demand for foods is the increasing ethnic diversity of the population. Hispanic, Asian, and African populations are increasing as a result of higher birth rates and increased immigration. This ethnic diversity will affect the types of food consumed in the U.S. In particular, this ethnic demand will bring about an increase in the number of small product niches within the overall food market and less emphasis on mass marketing of generic foods.

There has also been considerable income growth in certain segments of the U.S. population. This has generated a demand for variety in food products, especially exotic and unusual products. This segment is also less sensitive to price. The significance of this segment is evidenced by the fact that over 10,000 new products are introduced into retail grocery stores each year. In addition, there has been increased innovation and experimentation in restaurants and other away-from-home food formats.

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4. Kinsey, J. "Changes in Food Consumption From Mass Markets to Niche Markets." In *Food and Agricultural Markets: The Quiet Revolution*. L.P. Schertz and L.M. Daft, eds. National Planning Association, Washington D.C., 1994.

The increase in consumer income in the U.S. has also increased the time-value of money. This has translated into an increased demand for convenience. Increased participation of women in the labor force and dual-income families have increased this demand through the desire to decrease time spent on food acquisition and preparation. Fulfilling this demand means adding value to food and food products. This may take the form of processing, packaging, transporting, cooking and serving, as well as informing, protecting, and reassuring consumers about quality and safety. Non-traditional crops which are not familiar to U.S. households or require significant time for preparation may find themselves swimming upstream against the convenience current.

The increased demand for convenience, health, and food safety have combined to create a demand for more information about the characteristics of various food choices and government regulations to protect consumers from unsafe food. U.S. consumers are demanding increasingly detailed nutritional information so as to make better decisions concerning the food they eat. Government has also played an active role in the regard. This has placed an increased burden on producers, distributors, and marketers of both fresh and processed foods. Potential exporters must be prepared to furnish various types of product information, ranging from recipe cards to nutritional content labeling.

U.S. consumers are also demanding food and food products which are produced, processed and marketed in an environmentally-sustainable manner. There is an increasing awareness among consumers with respect to the relationship between food production and processing and the quality of environment in which they and their children will live. The U.S. can be expected to continue addressing food production, transformation, and transportation practices through regulatory standards which are sensitive to environmental impacts. While in some cases there may be less concern about environmental issues when food is produced in another country, the U.S. protest against Mexican tuna caught in nets which also catch dolphins is worth noting.

### **Information and Technology**

The U.S. food system is developing and implementing new biological and information technologies at an increasingly rapid pace.<sup>5</sup> These technologies facilitate the identification and fulfillment of new, diverse, and constantly changing market niches in an efficient and profitable manner. Information technologies now permit demographic data to be integrated with data on consumer attitudes and values to develop consumer lifestyle classifications. By Combining consumer media preference data and purchasing behavior from customer records, survey data, and supermarket scanner data, sophisticated consumer information systems are being developed to define very precise market niches. New processing and packaging developments have improved the quality, convenience, and shelf-life of fresh and processed foods.

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<sup>5</sup> Phillips, M.J. "Changes in Technologies: Opportunities and Challenges for American Agriculture." In *Food and Agricultural Markets: The Quiet Revolution*. L.P. Schertz and L.M. Daft, eds. National Planning Association, Washington D.C., 1994.

New biotechnologies could affect nearly every aspect of the agricultural and food industry. Products can be engineered and delivered in a way so as to match consumer preferences for specific food-product characteristics, including taste, nutrition, appearance, packaging, and other quality attributes. This is important as the U.S. food market is rapidly moving from mass marketing to niche marketing.

The food marketing system is responsible for the development and delivery of fresh and processed food products which are accurately targeted to even the smallest market niches. This approach to food marketing increases the number and complexity of tasks and requires changes in the way food markets function. Within this fluid environment, there exists opportunities for new firms and small firms to enter the market if they can meet specific, and often narrow, needs of consumers.

However, food products must meet more stringent standards of quality and often convenience. This means that farm products within each market channel must be more standardized. This is particularly true for processed products. There are significant capital requirements associated with the acquisition of both technology and information, and the resulting production and marketing of high-quality standardized products. Joint ventures with firms from other countries may represent a potential solution.

The trend towards more specific product requirements places increased importance on market coordinating structures, both internal (within the firm) and external (between firms). For example, contracts are being used more to coordinate the flow of products between producers and consumers. These contracts range from specification of price, quantity, and quality of a product to be traded at a future time and place, to a more detailed contract specifying production techniques or inputs. U.S. markets for non-traditional crops are shifting from open production and marketing systems to more contracting and vertical integration.

Coordination of exchange of food products and information is becoming increasingly difficult as more detailed product specifications are being demanded by narrow market niches. New levels of product information and specificity are now required to successfully target these markets. Accurate, timely information is becoming increasingly important, as targeting smaller market niches tends to increase business risk. Firms that are part of a system which can better determine what consumers want and meet those needs in a timely manner are most likely to succeed.

Table M.7 U.S. Per Capita Expenditure by Age of Head-of-Household for Selected Commodity Groups, 1992.\*

Food Group	Age of Household Head										Weighted Average				
	<25	25-34	35-44	45-54	55-64	> 64	-\$	%**	-\$	%**	-\$	%**			
Total Food	1,353	1,447	1,488	1,674	1,796	1,727	1,353	100.0	1,447	1,488	1,674	1,796	1,727	1,353	100.0
Food consumed away from home	547	556	508	596	544	476	547	40.4	556	508	596	544	476	547	27.6
Food consumed at home	806	891	980	1,078	1,252	1,251	806	59.6	891	980	1,078	1,252	1,251	806	72.4
Fresh and processed fruit	65	70	84	87	121	132	65	8.1	70	84	87	121	132	65	10.6
Bananas	8	8	8	12	14	17	8	1.0	8	8	12	14	17	8	1.4
Fresh and processed vegetables	69	67	71	85	103	108	69	8.6	67	71	85	103	108	69	8.6
Fish	23	24	31	33	42	39	23	2.9	24	31	33	42	39	23	3.1
Beef	62	76	81	91	100	96	62	7.7	76	81	91	100	96	62	7.7
Sugar	4	7	6	5	9	10	4	0.5	7	6	5	9	10	4	0.8
Coffee	8	10	13	16	23	25	8	1.0	10	13	16	23	25	8	2.0

\*Dollars per person and percent of expenditure are provided for each food group.

\*\*The percentages of "food away from home" and "food at home" are with respect to total expenditure. The percentages for the other groups are with respect to expenditures of "food at home."

Source: Dow, K. *Changing Food Consumption Patterns in the United States: Implications for Latin American and Caribbean Agriculture*. International Working Paper IW97-6. Food and Resource Economics Department, University of Florida, Gainesville, Florida, 1997.

### **Characteristics of the U.S. Market for Non-Traditional Products**

Having discussed the fundamental trends driving the general food system in the U.S., it is necessary to focus attention on the implications of these trends for the structure, conduct and performance of U.S. non-traditional markets. The marketing system for non-traditional has been influenced by several product and market characteristics including perishability, seasonality, price and quantity volatility, alternative product forms, bulkiness, and geographic specialization of production.<sup>6</sup> Perishability is especially important. Quality begins to deteriorate at harvest and continues during the marketing process. Non-traditional products must be processed or marketed in a timely and efficient manner in order to preserve quality and value. Thus, the entire distribution system is focused on speed of delivery and product quality. Even so, up to 10% of the value is lost in the marketing channel due to inadequate handling and storage, spoilage, cosmetic imperfections, and theft. Expensive and technologically sophisticated distribution channels, facilities, and equipment are being developed to maintain quality.

The biological nature of production combined with perishability creates problems in matching supply and demand for non-traditional, resulting in relatively large price and quantity risks given changing consumer tastes and preferences and production conditions. Non-traditional crops are somewhat unique in their susceptibility to pests, disease, and weather impacts, sometimes long production cycles, and high fixed costs. This often results in decreased short-run price sensitivity.

The marketing of most non-traditional crops is influenced by seasonal production patterns, and sometimes seasonal demand patterns. The entire crop in any given location is generally harvested, and marketed or processed, in a relatively short period of time. This can result in fresh market gluts or poor utilization of processing capacity throughout the year. Industrial consolidation in the form of large, often multinational, agribusinesses has altered many aspects of the production and marketing of non-traditionals. Many crops are now planted, harvested and marketed in sequence from several production areas during a season.

Consumer demand, and thus retailer demand, for year-round availability continues to fuel the trend toward geographic diversification of production. This has created import and strategic-alliance opportunities in spite of potentially increased production and marketing costs. Consumers have demonstrated a willingness to pay higher prices for non-traditional product in order to have year-round availability. Although many non-traditional crops are sold in fresh form, the possibility of alternative value-added product forms offers increased marketing opportunities in terms of time and place of sale. For some non-traditional crops grown in the Caribbean, importation into the United States market is only possible in processed form due to phytosanitary regulations. In other cases, transportation costs or

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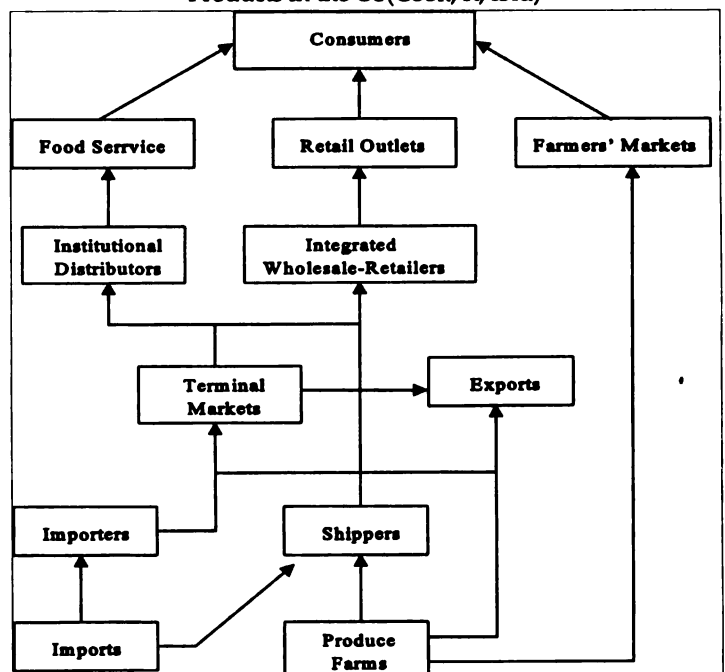
<sup>6</sup>Kohls, R.L. and J.N. Uhl. *Marketing Agricultural Products*. New York: Macmillan Publishing Company, 1990.

perishability may favor processed product forms. In situations where bulkiness is an issue, economies of transportation can be realized by concentrating or dehydrating these products near the point of production and moving higher-valued products into export markets.

Geographic specialization has both lengthened and complicated the marketing channel and increased the transportation cost component. As a result, producers of non-traditional crops now tend to be larger and more specialized and located in lower-cost areas. There may be market niches, both small and seasonal, which are not attractive to large firms, but which could be very attractive to smaller, innovative firms, located in the Caribbean. The potential to capitalize on such opportunities may best be realized through joint ventures or strategic alliances.

The principal marketing channels in the U.S. fresh fruit and vegetable marketing system are shown in Figure 1. The three primary sales outlets to consumers are: (1) retail food stores; (2) food service establishments (hotels, restaurants, and institutions); and (3) direct farmer-to-consumer sales. Produce sold in retail and food service outlets may be procured directly from shippers or wholesalers. Brokers are commonly used in the produce industry at every level of the marketing channel. Institutional distributors provide a key link between food service outlets and upstream shippers and importers. Market channel activity associated with retail food outlets is dominated by integrated wholesaler-retailers. Integrated wholesaler-retailers operate large-volume, centralized buying operations, making it more efficient to buy directly from the source, bypassing the wholesaler and thereby avoiding the intermediate margins and handling costs. Direct production source-to-buyer shipments also avoid breaking the cold chain, thus preserving quality.

Figure M.1. Marketing Channel for Non-Traditional Agricultural Products in the US (Cook, R, ibid)



While the U.S. system is dominated by corporate chain stores, there are also integrated wholesaler-retailers relationships which allow smaller wholesale and retail operations to cooperatively achieve levels of efficiency to compete with

the large corporate chain-store operations. Both of these systems are accessible to imports. Due to consolidation in recent years, the number of wholesaler-retailer centralized buying operations has declined and the sales per firm have increased. Estimates for 1996 indicate that there about 400 integrated wholesale-retail headquarters have buying offices in the U.S. The change to fewer, larger integrated wholesaler-retailer buyers and the rise in consolidated buying in food service channels have furthered the development of large-scale shippers in production regions. Retailers and food service firms are demanding increased services including: information on product attributes, recipes, and merchandising; ripening and other special; handling and packaging, and; year-round availability of a wide line of consistent quality fruits and vegetables. Shippers have responded with improved communications programs and by becoming multi-regional and multi-commodity.

These trends characterize a U.S. market channel for non-traditional crops which is large, concentrated, well-organized, vertically-integrated, geographically-dispersed, competitive, and specific in its demands for quality. Such a market can be both overwhelming and difficult to penetrate for small producers in low-volume production areas located in the Caribbean. While barriers to market entry are in many cases substantial, there are still opportunities created by market trends which favor diversity, nutrition, year-round availability, and niche markets. To capitalize on these opportunities will require attention to production and post-harvest technology and organization, acceptable quantities and qualities, and relationships, such as joint ventures and vertical integration, with U.S. food and agribusiness firms.

### **Implications for the Caribbean**

The U.S. market for food is becoming increasingly consumer driven, and consumers are becoming more discriminating in their food-purchasing behavior. Producers and marketers of food products are increasingly segmenting consumers into sub-groups based on lifestyle, location, and other demographics. Demographic changes, the demand for convenience, and attention to nutrition are influencing the food consumption patterns of a significant number of Americans.

Changes in food demand have created a segmented U.S. food market requiring the food production and marketing system to tailor products to specific market niches. The result is a system in which a widening array of fresh and processed foods are targeted at smaller and more numerous consumer segments. This is particularly true for non-traditional crops. These characteristics and dynamics present many constraints to potential Caribbean exporters. The sheer size of the U.S. market and the demand for consistent supplies of high quality products, places Caribbean producers of non-traditional products at a significant competitive disadvantage. With certain exceptions (e.g. mangoes and yams), there are few commercial plantings of non-traditional crops in the English-speaking Caribbean in general, and the Windward Islands in particular. As such, achieving consistent product supply, in the requisite volumes and with the required quality, remains problematic. These problems

are further exacerbated by the general absence of transportation links other than air transport, which is both costly, and restricts export volumes.

Much attention and research have been devoted to agronomic aspects of producing non-traditional products in the Caribbean. The development of efficient production techniques is of great importance. However, the critical challenge is less a matter of increasing yields, than in fostering the transformation of agricultural sectors of Caribbean countries to more commercially-based activities and enterprises. Though the issue of commercialization has been frequently discussed in various forums throughout the region, little substantive progress has been achieved. Such a transformation is not alone sufficient to ensure increases in non-traditional agricultural exports to the U.S., or other external markets. It is, however, a necessary ingredient to achieving success.

In spite of these constraints, opportunities for Caribbean non-traditional exports to the U.S. market do exist. The interest on the part of U.S. consumers in value-added products, and new and exotic products provide considerable potential for many of the non-traditional agricultural crops grown in the Caribbean. The increasing precision with which market niches are being defined creates an additional synergy with the small volumes that Caribbean producers can provide. This suggests that Caribbean producers may be able to satisfy certain micro-niches with the volumes likely to be sourced from the region, and with sufficiently high value to make air-shipment economically feasible

The marketing of non-traditional products in the U.S. is becoming increasingly dominated by large, integrated enterprises. If Caribbean producers are to capture the potential opportunities that exist, it is critical that linkages be formed with such large, integrated marketing concerns. There are many specific organizational structures that are possible (e.g. joint ventures, strategic alliances, contracts etc.). Which is best cannot easily be generalized. A variety of factors specific to both the market and product characteristics must be considered. For many years, there has been an implicit belief that the process of exporting to the U.S. market is a *production-first* process, with market access assured. In fact, the process is *market first* in orientation. As such, potential exporters must devote considerably more resources to developing effective linkages to the existing non-traditional marketing system in the U.S. than has been the case in the past.

Though the barriers to exporting to the U.S. market faced by Caribbean producers are substantial, they can be overcome. By virtue of their size, and constraints imposed by existing transportation linkages to the U.S. markets, the island nations of the Caribbean will likely never be able to compete in the U.S. market on the basis of price. However, the strong consumer perception of the tropical and exotic character of the Caribbean islands provides a marketing advantage that, to date, has been under-utilized. The key to success in exporting non-traditional products to the U.S. market ultimately rests in exploiting this advantage and developing small niche markets for high-valued products.



## **APPENDIX AA**

### **U.S. Market Summaries for Selected Non-Traditional Crops**



## Appendix AA - 1

### Avocado

The avocado (*Persea americana*) is a member of the Lauraceae family. Three major types exist: Mexican, Guatemalan, and West Indian. The predominant variety is Hass, grown in California. Avocado is well adapted to a variety of soil types, but will not tolerate flooding, excessive soil moisture or poorly drained soils. Fruits do not ripen on the tree. Mature fruit ripens in 3 to 8 days after harvest. Cold storage delays ripening and facilitates shipping to distant markets. Significant pests include scale insects, mites, borers, and thrips. Avocado is primarily used in fresh form, although some processed products are also consumed. In addition to its fruit, avocado oil is in great demand for making cosmetics, hair care products, lotions, and soaps. The oil is pressed from fruit rejected for export. Additionally, avocado seeds are processed into chicken feed.

### Production, Prices and Value

Avocados are grown in practically all tropical and sub-tropical regions of the world. The western hemisphere is by far the most important producer of avocado. Production of high quality avocados also occurs in Mexico, Dominican Republic, California, Florida, Israel, and South Africa. California is the major U.S. producer of avocado, accounting on average for 85% to 90% of total U.S. shipments. Annual shipments from California averaged 15.6 million kilograms over the 1983 to 1992 period. Peak seasonal shipments generally occur between May and July. Florida is the second largest domestic producer shipping an average of 2.3 million kilograms, with a seasonal peak from September to November.

Total value of U.S. production over the past ten years has increased substantially from \$109 million in 1983 to almost \$179.0 million in 1992. This increase has been driven by a substantial increase in prices which rose from \$0.41 per kilogram in 1983 to \$1.10 per kilogram in 1992. Average price over the 1983 to 1992 period was \$1.04 per kilogram.

### U.S. Import Suppliers

As a result of plant quarantine restrictions, the U.S. imports relatively few avocados. Six countries recorded exports to the U.S. in 1992. The Dominican Republic was the dominant exporter to the U.S. over the 1983 to 1989 period with shipments averaging 1.8 million kilograms per year. Shipments of avocado from the Dominican Republic accounted for approximately 58% of total world avocado exports to the U.S.

The U.S. imported 2,613,279 kilograms of fresh avocados in 1993. Chile is the leading importer (68%), followed by Dominican Republic (27%), Bahamas (5%), and smaller amounts from Grenada, Israel, and Jamaica. Fresh Avocados enter the U.S. market along the eastern seaboard, with 61% entering through Miami, 23% through Elizabeth, and 7% and 6% through Philadelphia and Fort Lauderdale, respectively. The U.S. imports just over 2 million kilograms of frozen avocados. All ports of entry for frozen avocados are located in Texas (primarily Laredo).

### OECS Countries

The volume of avocado exports to the U.S. from OECS countries is small. The principal destination is the U.S. Virgin Islands. Shipments of avocados from the region to the U.S. over the 1983 to 1989 period from all OECS countries totalled only 50,000 kilograms, an average of 7,100 kilograms per year. The major exporting country was Dominica which, with 45,400 kilograms of avocado exports, accounted for approximately 90% of all avocado shipments from the region.

## Appendix AA - 2

Table A.A.1 - Avocado

### WORLD AVOCADO (KGS)

YEAR	TOTAL	JAN	FEB	MAR	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1983	1,086,460	47,839	15,643	2,836	3,380	2,912	66,122	166,975	49,171	210,168	267,782	181,729	52,103
1984	1,965,135	35,485	12,115	934	7,857	24,815	117,469	319,174	441,450	314,023	310,890	195,225	86,086
1985	2,172,991	97,249	58,881	45,412	13,508	30,369	75,436	224,927	288,614	343,047	429,484	392,773	173,291
1986	4,975,168	273,145	28,079	15,912	41,119	113,849	142,653	1,356,922	736,570	554,087	406,581	503,011	803,430
1987	4,484,855	89,048	4,061	1,227	10,491	89,126	217,570	439,396	132,402	282,383	1,980,114	1,011,083	237,754
1988	3,177,313	213,806	18,404	0	200	36,896	96,736	187,050	759,942	726,942	190,717	585,918	351,102
1989	4,928,992	302,736	3,155	0	13,956	78,781	94,514	359,087	134,456	385,587	1,367,924	1,549,482	639,304
AVERAGE		152,730	20,048	9,448	12,990	53,735	115,786	436,219	363,229	399,485	707,613	632,746	334,726

### OECS AVOCADO (KGS)

YEAR	TOTAL	JAN	FEB	MAR	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1983	5,178	75	0	0	0	0	0	848	1,683	1,135	832	805	0
1984	2,968	0	0	0	0	0	0	0	348	587	926	430	675
1985	9,401	200	90	0	0	0	0	68	393	35	5,764	1,918	933
1986	13,330	1,270	1,467	0	0	0	0	483	1,529	2,932	966	2,140	2,513
1987	11,550	272	0	0	0	0	73	709	2,681	3,217	2,939	1,323	336
1988	5,528	256	0	0	0	470	0	385	472	818	859	575	1,693
1989	2,094	105	45	0	818	0	0	348	371	32	375	0	0
AVERAGE		311	229	0	117	67	10	406	1,068	1,251	1,813	999	679

### ALL OTHER CBI AVOCADO (KGS)

YEAR	TOTAL	JAN	FEB	MAR	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1983	825,863	47,764	15,643	0	3,357	2,912	66,122	166,127	47,443	208,965	203,121	112,106	52,103
1984	1,722,758	10,111	3,345	934	7,857	24,815	117,469	319,174	441,102	313,386	282,820	176,255	25,690
1985	1,964,846	97,049	58,791	45,412	1,508	30,289	75,436	224,859	288,221	307,014	382,781	308,775	144,711
1986	3,055,330	126,203	28,612	15,912	41,119	113,649	142,600	1,060,829	631,863	425,719	53,788	205,819	211,417
1987	2,229,823	96,776	4,061	1,227	10,491	89,126	217,497	436,687	127,479	256,561	303,132	445,366	237,418
1988	2,439,120	212,410	18,404	0	200	36,226	95,664	181,522	582,893	350,403	189,335	422,854	349,409
1989	1,674,944	265,383	2,810	0	13,138	78,748	92,445	293,527	113,894	74,251	291,777	37,631	411,580
AVERAGE		122,525	18,495	9,099	11,066	53,652	115,319	383,532	318,928	276,614	243,822	244,115	204,615

### All Other CBI Countries

The volume of avocado exports to the U.S. from all other CBI countries is dominated by the Dominican Republic. Accounting for approximately 94% of all other CBI avocado shipments, the principal destination for Dominican Republic avocados is Puerto Rico.

### OECS Enterability Status

USDA plant quarantine restrictions significantly limit the number of countries that can export avocados to the U.S.. Perhaps most affected is Mexico, which though currently not able to export to the U.S., has the potential to dominate the export market. Within the OECS region, avocados are enterable into all U.S. ports from Grenada and St. Vincent and the Grenadines, to all North Atlantic ports from Antigua, Barbados, Dominica, Montserrat, St. Kitts, Nevis, and St. Lucia and to all North Pacific ports from Antigua, Barbados, Dominica, Montserrat, and Nevis. Additionally, avocados may enter Puerto Rico from St. Kitts and St. Lucia.

### Breadfruit

The breadfruit (*Artocarpus altilis*) belongs to the family Moraceae. There are two types of breadfruit, seeded (chataigne) and seedless. The common name in English is widely used, or translated into Spanish as fruta de pan. It is also known as mazapan, costana, panapen, pana de

### Appendix AA - 3

pepitas, lanqka, pana, and ulu. The breadfruit is ultra-tropical and must have deep, fertile, well drained soils. Important pests include soft scales, mealybugs, and ants.

Considered a staple food in the West Indies, the breadfruit is highly perishable and primarily used in fresh form. It may be eaten ripe as a fruit, or underripe as a vegetable. It is an excellent fruit for processing and breadfruit products include frozen, dried, and canned slices, chips, and flour.

#### Production, Price and Value

Breadfruit is grown in many tropical regions of the world, including the Caribbean, Hawaii, Central America, South America, Africa and the Philippines. Jamaica is by far the leading producer of the seedless type, followed by St. Lucia. There is virtually no U.S. commercial production of breadfruit. The breadfruit bears fruit for nine months of the year and is available mainly from June to November. There is a lack of available price data however 1993 FOB price for breadfruit in the OECS region is \$0.09 per kilogram.

#### U.S. Import Suppliers

In 1989, ten countries reported exports of breadfruit to the U.S.. The Dominican Republic was the dominant exporter over the 1983 to 1989 period with shipments averaging 136.5 thousand kilograms. Of the 576,240 kilograms of breadfruit imported into the U.S. in 1993, Jamaica accounted for 51%. Haiti and St. Lucia represented 11% and 10%, respectively. Trinidad and St. Vincent accounted for 8% and 7%, respectively. JFK is the dominant port of entry for breadfruit, accounting for 68% of imports. Miami is the second-leading port of entry with 27% of import volume.

#### OECS Countries

The volume of breadfruit exports to the U.S. from all OECS countries over the 1983 to 1989 period totalled 378.2 thousand kilograms. St. Lucia is the leading exporter accounting for approximately 48% of total OECS shipments of breadfruit with average shipments of 25,700 kilograms per year. The second leading exporter was Dominica, accounting for approximately 32% of total OECS shipments of breadfruit, and shipping solely to the U.S. Virgin Islands.

#### All Other CBI Countries

The volume of breadfruit exports from all other CBI countries totalled 2.1 million kilograms over the 1983 to 1989 period. The leading exporter in the region was the Dominican Republic accounting for approximately 44% of all other CBI breadfruit exports. Jamaica is the second leading exporter accounting for approximately 38% of all other CBI breadfruit shipments.

#### OECS Enterability Status

Breadfruit is enterable into all U.S. ports from Antigua, Dominica, Grenada, Montserrat, St. Kitts, Nevis, St. Lucia, and St. Vincent and the Grenadines.

## Appendix AA - 4

Table A.A 2 - Breadfruit.

WORLD BREADFRUIT (KGS)													
YEAR	TOTAL	JAN	FEB	MAR	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1983	295,479	5,936	21,412	13,554	6,523	13,622	47,735	51,683	27,708	50,636	30,875	20,693	5,202
1984	340,408	20,798	2,081	33,464	20,772	10,616	18,596	12,116	29,479	61,073	47,581	71,398	14,256
1985	251,955	10,881	4,079	4,891	19,277	29,272	19,495	19,499	20,766	47,122	30,082	31,440	15,351
1986	471,044	23,787	6,998	17,480	6,064	30,944	34,422	47,276	138,865	46,789	81,966	37,015	19,858
1987	480,272	27,154	23,119	21,912	16,906	37,292	59,737	70,288	83,219	31,291	59,358	14,028	35,988
1988	435,762	16,207	26,509	11,064	3,560	13,820	53,721	36,928	69,835	71,506	40,869	34,577	57,548
1989	409,856	9,891	19,954	44,173	49,830	20,230	71,075	49,009	18,402	81,073	31,426	13,420	3,771
<b>AVERAGE</b>	<b>18,308</b>	<b>14,876</b>	<b>20,931</b>	<b>17,536</b>	<b>22,257</b>	<b>43,264</b>	<b>40,988</b>	<b>55,125</b>	<b>55,841</b>	<b>43,166</b>	<b>31,796</b>	<b>21,882</b>	

OECS BREADFRUIT (KGS)													
YEAR	TOTAL	JAN	FEB	MAR	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1983	38,700	372	3,131	2,113	837	1,119	3,045	5,136	6,018	6,791	4,168	3,848	2,322
1984	41,883	440	1,721	1,897	1,694	2,140	2,340	3,266	4,973	11,810	4,392	3,349	3,681
1985	43,809	1,992	2,437	920	0	10,014	3,239	3,238	5,231	3,933	9,984	2,406	215
1986	40,074	748	403	104	27	919	3,708	10,916	8,990	9,926	2,040	889	1,404
1987	52,001	2,588	1,250	1,586	345	877	11,950	15,324	5,503	4,304	3,365	2,653	2,256
1988	59,006	903	3,167	1,778	100	851	16,881	5,031	10,426	11,789	3,200	2,353	2,527
1989	103,175	155	500	1,045	13,982	10,518	34,076	15,519	4,778	6,833	12,291	3,200	498
<b>AVERAGE</b>	<b>1,028</b>	<b>1,801</b>	<b>1,349</b>	<b>2,424</b>	<b>3,777</b>	<b>10,748</b>	<b>8,347</b>	<b>6,560</b>	<b>7,884</b>	<b>5,834</b>	<b>2,843</b>	<b>1,840</b>	

ALL OTHER CBIBREADFRUIT (KGS)													
YEAR	TOTAL	JAN	FEB	MAR	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1983	244,883	5,419	18,281	11,441	5,886	12,503	44,690	37,085	21,326	42,955	26,671	16,454	2,372
1984	271,785	20,333	318	31,587	18,987	8,878	14,256	8,850	24,302	49,001	42,372	42,592	10,531
1985	205,009	7,990	1,842	3,228	19,277	19,256	15,833	16,159	15,535	45,189	19,753	29,009	15,136
1986	381,330	8,017	3,835	15,807	5,958	22,967	30,374	32,008	126,016	24,117	59,928	36,126	16,388
1987	391,011	24,546	19,387	20,326	13,870	36,415	45,351	47,890	71,437	26,951	40,472	10,875	33,551
1988	367,240	15,304	22,532	9,230	3,480	12,880	36,204	26,705	57,839	58,717	37,969	31,879	55,021
1989	291,064	9,536	19,454	43,128	30,314	9,712	29,540	32,858	11,824	74,440	17,256	10,129	3,273
<b>AVERAGE</b>	<b>13,021</b>	<b>12,178</b>	<b>19,247</b>	<b>13,939</b>	<b>17,454</b>	<b>30,893</b>	<b>28,756</b>	<b>46,868</b>	<b>45,481</b>	<b>34,874</b>	<b>25,295</b>	<b>19,468</b>	

### Guava

Guava (*Psidium guajava*) is a member of the Myrtaceae family. It is also known as guayaba, guyava, or kuawa. Considered tropical to subtropical, guava thrives in both dry and humid climates, and in a variety of soil types, but cannot tolerate frosts. The guava is a prime host for the Mediterranean, Oriental, and Caribbean fruit flies.

There has consistently been a steady market for guava products in Florida and in recent years the demand has grown due to the increased numbers of Caribbean and Latin American residents in the U.S.. Guava can be used fresh or processed into guava paste or juice products. The greatest commercial uses are in jams, jellies, guava paste, and canned products.

#### Production, Price and Value

The guava has become naturalized in practically all tropical and sub-tropical regions of the world. However, wild guavas have constituted the bulk of commercial supply. There is no readily available data on commercial production of guava in the U.S.. However, commercial production of guava is important in Brazil, the Dominican Republic, Mexico, Hawaii, Malaysia, Fiji, the U.S. Virgin Islands, Cuba, and Puerto Rico.

## Appendix AA - 5

### U.S. Import Suppliers

In 1989, eight countries were reported as exporting guava to the U.S.. Mexico is the major exporter of frozen guavas shipping a total of 232.6 thousand kilograms to the U.S. in the two years 1984 and 1989. Mexican shipments in these two years accounted for 45% of total world shipments during the 1983-89 period.

Guava exports have been erratic, with no one country steadily reporting exports every year. In 1993, the U.S. imported 20,664 kilograms of Guava. The leading source of imports that year was Brazil with 57%, followed by El Salvador (33%), Philippines (6%), and Guatemala (3%). Ports of entry for guava imports are concentrated in Jacksonville (58%), Los Angeles (36%), and San Francisco (6%).

### OECS Countries

There were no exports of guavas from any OECS country during the 1983 to 1989 period.

### All Other CBI Countries

The volume of shipments of guavas from all other CBI countries is small. The dominant exporter is the Dominican Republic, which accounted for 74% of regional shipments to the U.S., with average shipments of 9,600 kilograms per year over the 1983 to 1989 period.

### OECS Enterability Status

Guavas are is enterable into all U.S. ports from all West Indian countries.

Table A.A. 3 - Guava

#### WORLD GUAVA (KGS)

YEAR	TOTAL	JAN	FEB	MAR	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1983	0	0	0	0	0	0	0	0	0	0	0	0	0
1984	239,918	74,019	31,847	3,499	599	0	0	0	500	390	17,590	38,730	72,984
1985	28,153	831	0	0	20,829	0	20	25	0	0	8,848	0	0
1986	54,432	200	581	1,773	8,294	28,405	2,843	7,897	254	3,018	14	0	3,153
1987	65,548	335	0	27	15	39	0	0	20,825	1,048	41,859	1,500	0
1988	17,109	2,035	398	42	12,828	250	272	0	150	0	0	18	1,330
1989	109,831	320	100	0	22,821	0	2,823	14,276	42,484	2,285	0	1,132	23,810
<b>AVERAGE</b>		11,077	4,873	783	8,998	4,099	823	3,171	9,188	956	9,414	5,911	14,468

#### ALL OTHER CBI GUAVA (KGS)

YEAR	TOTAL	JAN	FEB	MAR	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1983	0	0	0	0	0	0	0	0	0	0	0	0	0
1984	170	0	0	0	0	0	0	0	0	0	0	0	170
1985	12,487	0	0	0	8,499	0	0	0	0	0	5,988	0	0
1986	38	0	0	0	0	0	38	0	0	0	0	0	0
1987	40,832	0	0	0	0	0	0	0	0	23	40,809	0	0
1988	13,817	0	148	42	12,299	0	0	0	0	0	0	0	1,330
1989	24,078	0	0	0	0	0	1,734	0	16,584	2,285	0	1,132	2,361
<b>AVERAGE</b>		0	21	6	2,895	0	253	0	2,389	327	6,700	162	552

## Mango

The mango (*Mangifera indica*) is a member of the Anacardiaceae family. There are two main types of mango, the Indian and the Indochinese. The mango is tropical and well adapted to a variety of well drained soil types. The most significant pest affecting the mango is the fruit fly. Important

diseases are anthracnose and powdery mildew. Universally considered one of the finest fruits in the world, the mango is primarily used in fresh form, although many processed products are also consumed.

### Production, Price and Value

The mango has been introduced into every tropical and sub-tropical country in the world. India has the world's largest mango cultivation area, with about one million hectares and produces about 65% of the world's mango crop. Other major producers include Mexico, Brazil, Pakistan, the Philippines, Indonesia, China, Haiti, and Bangladesh. Commercial production of mangoes in the U.S. is centered in Florida with shipments averaging 2.9 million kgs per year over the 1983-1992 period. Shipments generally peak during June to August. Processing of mangoes for export is of great importance in Hawaii in view of the restrictions on exporting the fruit in fresh form. Because of the presence of the Caribbean fruit fly in Florida, all Florida mangoes for interstate shipment or export must be fumigated or hot water treated. Average FOB price for mangoes was reasonably stable over the 1983 to 1990 period averaging \$0.50 per kilogram. FOB prices peak in November, often reaching \$2.20 per kilogram, and then decline to seasonal lows in June and July.

### U.S. Import Suppliers

The U.S. is a significant importer mangoes. Mexico is by far the dominant exporter accounting for approximately 82% of total world mango shipments to the U.S. over the 1983 to 1989 period. Shipments from Mexico averaged 39.9 million kilograms per year over this period. Seasonal peaks in Mexican exports occur during June to August. Of the 95,884,540 kilograms of fresh mangos imported by the U.S. in 1993, Mexico was responsible for 89%, Haiti 9%, and lesser amounts coming from Brazil, Venezuela, Grenada, Peru, Dominican Republic, and St. Vincent. Leading ports of entry for fresh mangos include Nogales (56%), Hidalgo (24%), Miami (8%), and San Luis (4%). The small volume (606,538 kilograms) of frozen mangos imported by the U.S. comes from Mexico (55%), Costa Rica (11%), Philippines (9%), Peru (8%), Dominican Republic (7%), Colombia (6%), with lesser amounts from Guatemala, Venezuela, Honduras, and El Salvador. The primary ports of entry for frozen mangos are Laredo (58%), Charleston (15%), New Orleans (9%), and Fort Lauderdale (8%).

### OECS Countries

The volume of mango exports to the U.S. from OECS countries is small, totalling 87.3 thousand kilograms over the 1983 to 1989 period. The major exporter in the region was Grenada accounting for approximately 32% of all OECS shipments of mangoes. Dominica is the second major exporter accounting for approximately 25% of OECS mango exports. Because of their "fly-free" status mangoes produced in Grenada may enter the U.S. without hot water treatment. Mangoes from Dominica are exported to the U.S. Virgin Islands. Shipments from Grenada averaged 3,900 kilograms per year over the 1983 to 1989 period. Shipments from Dominica averaged 3,000 kilograms per year over the same period.

### All Other CBI Countries

The volume of mango exports from all other CBI countries is considerably larger than the OECS totalling 58.6 million kilograms over the 1983 to 1989 period. Haiti was by far the largest exporter accounting for approximately 94% of all other CBI shipments of mangoes. Shipments from Haiti averaged 7.8 million kilograms per year over the 1983 to 1989 period.



## Appendix AA - 7

### OECS Enterability Status

Mangoes are enterable into all U.S. ports from Grenada and St. Vincent. They are enterable into the U.S. Virgin Islands from Barbados, Dominica, Guadeloupe, Martinique, and St. Lucia.

Table A.A 4. Mango

WORLD MANGOES (KGS)													
YEAR	TOTAL	JAN	FEB	MAR	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1993	43,734,804	280,237	1,182,094	2,002,587	3,002,151	6,877,498	9,292,488	11,126,875	7,510,020	2,014,532	37,989	302,825	233,237
1994	42,811,037	472,113	315,132	1,575,262	2,545,220	8,557,004	10,862,828	10,362,486	5,261,780	1,801,884	116,224	251,915	130,258
1995	41,736,100	503,362	863,273	1,634,895	4,204,526	6,331,653	7,785,574	10,730,833	7,578,893	1,198,984	48,293	422,895	433,780
1993	50,234,042	6,481	409,189	1,899,840	4,841,374	7,831,136	13,256,550	15,757,984	6,378,282	548,421	28,980	4,824	7,951
1997	67,554,352	272,246	134,689	1,119,325	3,361,455	8,087,898	27,224,504	15,062,410	8,475,134	694,267	64,464	387,568	646,342
1993	37,961,351	3,614	17,599	942,674	2,788,000	6,121,657	8,490,849	9,728,733	7,893,487	1,912,772	83,392	66,097	2,267
1995	56,206,898	546,172	630,139	1,070,139	6,847,059	10,063,751	10,572,242	14,866,803	9,431,918	1,780,789	147,852	42,316	157,808
AVERAGE	293,502	581,725	1,442,817	3,815,834	7,800,042	12,461,146	12,629,731	7,949,851	1,378,944	75,032	208,419	233,090	

OECS MANGOES (KGS)													
YEAR	TOTAL	JAN	FEB	MAR	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1993	12,995	0	600	0	13	2,899	4,738	2,271	1,541	832	0	0	0
1994	7,952	0	0	0	0	894	2,340	591	1,768	2,621	0	0	0
1995	9,519	0	0	283	534	885	3,102	1,333	1,397	2,180	25	0	0
1996	8,334	0	0	243	2,003	1,086	3,490	219	443	0	650	305	5
1997	5,974	0	18	0	0	300	181	6,316	0	0	0	159	0
1998	22,998	0	0	1,920	12,811	7,959	300	208	0	0	0	0	0
1999	19,598	0	160	0	0	0	16,015	2,050	1,256	118	0	0	0
AVERAGE	0	111	347	2,166	1,972	4,294	1,704	918	921	82	66	1	

ALL OTHER CB MANGOES (KGS)													
YEAR	TOTAL	JAN	FEB	MAR	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1999	6,364,984	235,199	546,356	695,582	1,038,459	889,930	1,290,849	468,187	426,248	71,825	36,889	277,858	226,012
1994	8,179,832	419,845	696,655	1,299,275	1,744,838	2,161,969	984,259	436,982	297,652	72,179	0	117,780	104,298
1999	10,078,861	336,042	867,655	1,509,716	2,376,035	2,451,507	1,423,427	223,108	331,423	1,875	25,377	345,570	192,325
1999	9,219,099	5,754	889,185	1,195,129	1,859,739	2,457,022	1,399,097	586,896	288,944	18,189	2,793	4,819	698
1997	9,212,754	222,487	68,183	1,058,798	1,913,487	3,025,800	1,583,999	480,895	117,154	2,709	54,895	356,999	449,957
1995	8,340,890	1,022	8,243	832,034	1,556,555	2,490,880	2,443,495	887,407	111,890	39,410	1,827	95,097	2,267
1998	6,246,598	503,059	409,125	707,439	1,943,376	2,567,577	1,389,895	573,132	34,188	10,183	259	26,057	105,189
AVERAGE	246,057	421,769	1,070,273	1,747,781	2,290,432	1,477,872	620,870	229,639	30,175	17,364	170,710	154,875	

### Passion Fruit

The yellow passion fruit (*Passiflora edulis f. flavicarpa*) is a member of the Passifloraceae family. It is also known as parcha, parchita, ceibey, lilikoi, and mountain sweet cup. The yellow passion fruit is tropical and can be grown on a variety of well drained soils, but will not tolerate frosts and requires protection from wind. Fruits drop to the ground when ripe and should not be harvested prior to this occurrence, as unripe fruit has a woody taste. Harvesting is very labor intensive. Few pests attack the fruit. There has been no report of attack by the Caribbean fruit fly in Florida.

Passion fruit is used in fresh form, but it is mainly processed into juice form, and used as an additive to other fruit juices. Purple passion fruit is preferred for fresh consumption, the yellow for processing and preserves.

### Production, Price and Value

Yellow passion fruit is grown in most tropical and subtropical countries of the world. Passion fruit is commercially important in Australia, South Africa, Brazil, and the United States. Brazil has had a well-established passion fruit industry for many years, with large scale juice extraction plants. There is no readily available data on commercial production of passion fruit in the U.S., although commercial production is centered in Hawaii.

## Appendix AA - 8

### U.S. Import Suppliers

In 1989, five countries were reported as exporting passion fruit to the U.S.. New Zealand is the major exporter of fresh passion fruit, with shipments averaging 42.8 thousand kilograms per year over the 1983 to 1989 period, accounting for approximately 31% of total world shipments to the U.S.. In 1993, New Zealand was the source of over 99% of the 42,199 kilograms of fresh passionfruit imported by the U.S.. Small amounts were imported from St. Vincent. Over 99% of these fresh passionfruit imports enter the U.S. through Los Angeles, with trace amounts entering through JFK and San Francisco.

U.S. imports of frozen passionfruit totaled 120, 810 kilograms in 1993. Venezuela was the leading exporterto the U.S. with 38%, followed by Brazil with 29%, Dominican Republic with 16% and Colombia with 15%.Almost all U.S.imports of frozen passionfruit enter through Florida, with Jacksonville accounting for 76%, Fort Lauderdale 16%; Miami, 8%.

### OECS Countries

There were no significant exports of passion fruit from any country in the OECS during 1983 to 1989 period.

### All Other CBI Countries

Shipments of passion fruit to the U.S. from all other CBI countries totalled 330.6 thousand kilograms over the 1983 to 1989 period. The major exporter is the Dominican Republic with shipments averaging 27,100 kilograms per year. This accounts for approximately 57% of all other CBI shipments and 20% of total world shipments of passion fruit to the U.S.

### OECS Enterability Status

Passion Fruits are enterable into all U.S. ports from Grenada and St. Vincent.

Table A.A.5 Passionfruit

#### WORLD PASSION FRUIT (KGS)

YEAR	TOTAL	JAN	FEB	MAR	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1983	117,813	150	808	4,236	9,323	10,264	3,101	36,811	31,967	3,105	0	0	17,818
1984	141,884	0	33,845	10,773	8,584	2,854	35,442	6,686	3,198	30,089	101	87	345
1985	112,798	41,820	6,908	13,184	14,747	10,493	6,358	6,567	703	7,382	1,883	2,855	0
1986	200,211	1,172	4,228	21,847	17,240	12,350	5,151	7,412	3,358	10,480	2,485	112,827	2,178
1987	74,394	1,851	3,174	13,131	12,739	7,809	5,380	6,108	17,830	520	4,732	949	303
1988	201,281	8	4,045	12,556	43,457	15,842	24,750	17,145	54,453	24,475	813	2,370	1,577
1989	120,300	64	5,233	36,342	9,100	5,111	5,223	2,578	3,428	2,115	43,180	3,133	4,788
AVERAGE		6,482	8,322	15,977	16,600	9,189	12,198	11,896	16,424	12,449	7,599	17,389	3,858

#### ALL OTHER CBI PASSION FRUIT (KGS)

YEAR	TOTAL	JAN	FEB	MAR	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1983	22,050	50	0	0	0	4,300	0	0	0	0	0	0	17,700
1984	40,788	0	0	0	0	249	0	1,958	0	38,583	0	0	0
1985	11,837	2,391	0	0	599	2,503	2,727	1,494	149	572	77	1,335	0
1986	29,382	672	0	477	3,617	938	748	3,542	2,361	9,335	1,338	4,083	2,173
1987	27,825	1,425	609	358	0	2,782	1,857	2,305	15,052	0	3,557	0	0
1988	133,029	0	0	1,984	5,990	7,546	16,424	16,450	83,825	24,270	798	2,245	1,517
1989	65,729	0	0	0	2,256	1,430	4,429	1,134	3,412	2,115	43,050	3,110	4,783
AVERAGE		691	87	400	1,807	2,761	4,028	3,840	10,688	10,694	6,974	1,592	3,740

### **Pineapple**

The pineapple (*Ananas comosus*) belongs to the Bromeliaceae family. Pineapple cultivars are classified into five groups: Cayenne, Queen, Spanish, Brazilian, and Maipure. The name is widely recognized, however in some Spanish speaking countries it is called pina. Classified as tropical, it cannot tolerate frost, and is best suited to climates that are frost-free. It is a true xerophytic crop, highly adaptable and tolerant to drought. It thrives best in a sandy loam soil, and requires adequate soil moisture for good fruit production. The most common pests are mealybugs and nematodes. They are also attacked by fruit flies, but as they do not survive in the fruit, quarantine restrictions have been lifted. The majority of the world's pineapple production is canned. Other pineapple product uses are fruit salads, sugar syrup, alcohol, and citric acid. However, in recent years the export of fresh pineapples to temperate countries has increased significantly. There is also some use of pineapple plants as indoor ornamentals.

#### **Production, Prices and Value**

Over the past 100 years, the pineapple has become one of the leading commercial fruit crops of the tropics. The major producing countries are the U.S., Brazil, Swaziland, Malaysia, Taiwan, Mexico, the Philippines, South Africa, and Puerto Rico. For some time Hawaii was the sole U.S. producer of pineapples, accounting for 60% of fresh market supply. Annual shipments from Hawaii have averaged 108.5 million kilograms over the 1983 to 1992 period. Peak seasonal shipments generally occur between March and July. The off-season is from September to December. In recent years, pineapple production in Hawaii has decreased significantly. Average FOB price for fresh pineapple has shown little variation over the 1983 to 1991 period averaging \$0.44 per kilogram. FOB prices are slightly higher in August and September, and slightly lower in March and April.

#### **U.S. Import Suppliers**

The U.S. is a significant importer of fresh pineapples. In 1992, five countries were reported as exporting pineapples to the U.S. Costa Rica was the leading exporter, accounting for approximately 34% of total world shipments of pineapples to the U.S. over the 1983 to 1989 period. Shipments from Costa Rica averaged 38.4 million kilograms per year over this period. Costa Rica accounts for 43% of the 123,449,689 kilograms of U.S. imports of fresh pineapple in 1993. The Dominican Republic accounted for 30%, with Honduras supplying 18% and Mexico 9%. Small amounts are imported from several countries including Venezuela, Colombia, and Jamaica. Fresh pineapple enters the U.S. through a number of ports. The majority enters through Philadelphia and Dover (23% each), Savannah (17%), Gulfport (14%), and Hildago (8%). Of the 353,284 kilograms of frozen pineapple entering the U.S. in 1993, the majority (88%) comes from Costa Rica, with Mexico representing 10% while Honduras and Colombia contribute smaller amounts. Los Angeles is the port of entry for 72% of frozen pineapple imports, while Philadelphia accounts for 14% and Laredo 10%.

#### **OECS Countries**

There are few OECS countries exporting pineapples and total volume of pineapple exports is very small, totalling only 1.8 thousand kilograms over the 1983 to 1989 period. The principal destination is the U.S. Virgin Islands. Dominica is the leading exporter accounting for approximately 40% of all OECS shipments over the 1983 to 1989 period. St. Kitts is second with approximately 31% of total OECS shipments.

## Appendix AA - 10

### All Other CBI Countries

The volume of shipments from all CBI countries is substantial, totalling 374.7 million kilograms over the 1983 to 1989 period. Costa Rica is the major exporter accounting for approximately 49% of all other CBI shipments of pineapple to the U.S..

### OECS Enterability Status

Pineapples are enterable into all U.S. ports except Hawaii from Antigua, Barbados, Dominica, Grenada, Montserrat, St. Kitts, Nevis, St. Lucia, and St. Vincent and the Grenadines.

Table A.A. 6 - Pineapple

Table 6.14 World, OECS and All Other CBI Shipments of Pineapple

WORLD PINEAPPLES (KGS)													
YEAR	TOTAL	JAN	FEB	MAR	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1983	61,542,216	6,335,696	4,843,704	8,355,272	4,735,160	8,491,783	6,630,856	3,885,643	3,136,160	2,847,665	1,762,966	6,317,256	2,200,045
1984	64,422,827	5,587,004	5,480,265	8,984,713	10,477,201	5,418,847	6,251,462	2,164,331	2,719,284	2,926,153	2,817,916	9,832,597	3,800,864
1985	60,869,305	4,998,518	5,034,100	5,835,973	4,042,991	7,653,399	6,757,377	6,530,903	2,766,804	2,691,616	3,450,918	4,733,405	6,153,501
1986	66,138,009	7,506,059	7,775,429	9,410,773	7,169,809	11,865,891	9,947,911	7,827,638	6,468,630	5,403,832	2,912,414	3,857,213	5,892,210
1987	68,853,358	4,698,510	7,141,573	6,701,891	12,937,798	9,872,781	13,084,708	6,420,215	4,395,474	3,757,129	4,059,271	6,851,311	8,132,695
1988	68,359,748	6,444,538	7,951,657	9,204,731	5,775,358	9,420,254	9,141,306	8,922,233	5,499,867	5,533,356	2,510,011	7,356,388	10,800,048
1989	91,798,463	7,745,087	10,011,633	9,816,081	8,657,928	7,849,823	9,118,983	8,769,303	7,353,948	5,581,858	7,263,459	7,577,194	6,275,366
AVERAGE	6,185,059	8,891,194	8,327,062	7,399,482	8,598,111	8,704,370	5,931,467	4,822,861	4,103,344	3,539,568	6,032,195	6,164,961	

OECS PINEAPPLES (KGS)													
YEAR	TOTAL	JAN	FEB	MAR	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1983	54	0	0	0	0	18	36	0	0	0	0	0	0
1984	544	0	0	0	0	544	0	0	0	0	0	0	0
1985	11	0	0	0	0	11	0	0	0	0	0	0	0
1986	746	0	0	0	0	455	291	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0	0	0	0	0	0
1988	400	0	0	0	0	0	400	0	0	0	0	0	0
1989	124	0	124	0	0	0	0	0	0	0	0	0	0
AVERAGE	0	0	18	0	0	147	104	0	0	0	0	0	0

ALL OTHER CBI PINEAPPLES (KGS)													
YEAR	TOTAL	JAN	FEB	MAR	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1983	29,414,864	3,893,336	2,353,551	1,879,150	867,696	2,850,748	3,817,025	2,493,604	2,171,521	1,729,495	1,001,289	6,511,420	321,869
1984	45,989,807	3,254,244	3,698,202	4,239,239	7,562,123	4,031,069	4,898,723	1,868,544	2,065,643	2,331,614	1,725,934	8,127,997	1,899,475
1985	48,391,809	3,137,890	3,745,823	4,303,429	2,455,707	5,590,799	5,391,099	5,743,744	2,264,395	2,240,357	9,010,568	3,896,240	4,811,556
1986	61,598,140	5,842,393	5,890,242	5,374,190	4,201,852	8,551,167	8,082,439	6,371,316	4,093,331	4,123,914	2,022,971	2,613,702	4,436,623
1987	52,777,489	982,045	2,581,867	4,252,750	8,049,999	4,905,774	10,393,748	2,964,052	2,792,553	2,181,104	2,702,950	4,321,301	6,899,346
1988	63,418,478	4,803,741	6,216,566	5,610,517	2,846,221	6,845,098	6,544,110	6,856,857	3,953,177	4,324,030	1,766,883	5,180,591	9,168,907
1989	75,802,954	6,786,258	8,509,018	7,066,921	4,583,777	5,250,732	7,329,977	5,930,281	6,396,947	4,679,050	6,863,601	6,868,488	5,275,904
AVERAGE	4,081,415	4,713,610	4,660,885	4,312,482	5,403,627	6,608,160	4,547,171	3,391,367	3,081,936	2,740,165	5,329,963	4,858,240	

### Soursop

The soursop (*Annona muricata*) is a member of the Annonaceae family. It is generally known as guanabana, but is also called huanaba, zapote de viejas, cabaza de negro, or catoche. Considered tropical trees produce fruit continuously throughout the year. Fruits should be picked while still firm and should not ripen on the tree. They are easily bruised or punctured, and must be handled with care. The principal pest is the mealybug, but it is also subject to attack by fruit flies. Soursop is primarily used fresh and is widespread throughout the tropics in the making of soursop drinks. It is also processed, the juice and pulp are used for making beverages, ice cream and syrup.

## Appendix AA - 11

### Production, Price and Value

The soursop is grown in countries throughout the tropical world including, the Bahamas, the West Indies, Mexico, Peru, Argentina, Southeast Asia, Malaya, Africa, Cuba, Puerto Rico, Columbia, and Brazil. There is no current commercial soursop production in the U.S.

### U.S. Import Suppliers

In 1989, two countries reported exporting frozen soursop to the U.S.. The Dominican Republic was the major exporter, with shipments averaging 111.2 thousand kilograms per year over the 1983 to 1989 period, accounting for approximately 92% of total world shipments.. In 1993, The Dominican Republic is the source for 97% of U.S. frozen soursop imports supplying 48,668 kilograms. The remaining U.S. imports were from Costa Rica, Colombia, and Honduras. Frozen soursop enters the U.S. primarily through Fort Lauderdale (73%), with New Orleans, Elizabeth, and Miami accounting for 13%, 8%, and 4%, respectively There have been no fresh imports of soursop into the U.S. since 1983.

### OECS Countries

There were no exports of soursop from any OECS country during 1983 to 1989 period.

### All Other CBI Countries

Approximately 95% of total world shipments of soursop come from this region. The Dominican Republic is the dominant exporter.

### OECS Enterability Status

Soursop is not enterable into the U.S. in fresh form from any West Indian country due to the presence of fruit flies.

Table A.A. 7 - Soursop

#### WORLD SOURSOP (KGS)

YEAR	TOTAL	JAN	FEB	MAR	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1983	47,212	0	16,314	13,082	12,485	9	909	80	1,283	3,100	0	0	0
1984	23,235	0	3,000	244	0	1,429	17,135	1,337	0	0	90	0	0
1985	128,484	0	0	9,309	7,840	16,894	12,679	35,838	20,730	25,984	0	0	0
1986	280,802	22,233	50,805	82,008	58,484	0	16,793	4,298	82	139	4,771	22,143	41,048
1987	110,471	3,831	0	11,086	10,812	1,228	8,006	7,744	7,317	8,906	4,548	0	47,415
1988	112,806	19,806	5,313	9,550	15,885	8,100	9,388	18,986	20,981	0	0	2,857	1,970
1989	141,812	6,527	27,206	24,139	0	15,927	8,100	21,738	2,341	1,325	15,001	3,381	15,929
<b>AVERAGE</b>		<b>7,457</b>	<b>14,634</b>	<b>18,487</b>	<b>14,727</b>	<b>6,227</b>	<b>10,427</b>	<b>12,740</b>	<b>7,532</b>	<b>5,833</b>	<b>3,487</b>	<b>4,054</b>	<b>15,194</b>

#### ALL OTHER CBI SOURSOP (KGS)

YEAR	TOTAL	JAN	FEB	MAR	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1983	47,043	0	16,314	13,082	12,485	0	909	0	1,283	3,000	0	0	0
1984	23,145	0	3,000	244	0	1,429	17,135	1,337	0	0	0	0	0
1985	125,271	0	0	9,309	7,840	16,894	12,679	31,855	20,730	25,984	0	0	0
1986	243,109	22,233	50,805	82,008	38,557	0	16,793	3,488	82	0	4,771	22,143	22,539
1987	108,502	3,189	0	10,278	10,482	809	8,006	7,744	7,317	8,906	4,548	0	47,415
1988	112,022	19,806	5,313	8,986	15,885	8,100	9,388	18,986	20,981	0	0	2,857	1,970
1989	141,812	6,527	27,206	24,139	0	15,927	8,100	21,738	2,341	1,325	15,001	3,381	15,929
<b>AVERAGE</b>		<b>7,394</b>	<b>14,818</b>	<b>18,291</b>	<b>12,148</b>	<b>6,137</b>	<b>10,427</b>	<b>12,161</b>	<b>7,532</b>	<b>5,599</b>	<b>3,474</b>	<b>4,054</b>	<b>12,550</b>

### **Sweet Potato**

The sweet potato (*Ipomoea batatas*) is a member of the Convolvulaceae family. It is a warm season crop, and is an important staple food source in the tropics where the white potato is not adapted. The sweet potato does best in fine sandy loams or sands. It has few foliar diseases, but is highly susceptible to soil borne diseases and pests including scurf, black rot, soil rot, and Fusarium. Sweet potatoes are primarily used fresh, accounting for over one-half of total consumption. The remaining production is processed. Per capita U.S. consumption is approximately five pounds per year. It should be noted that there is a difference in the U.S. sweet potato and the Caribbean sweet potato. Data presented here pertain to the U.S. varieties.

#### **Production, Price and Value**

The sweet potato is grown all over the tropical and subtropical world. Asia leads in acreage cultivated in sweet potato followed by Africa and South America. Commercial production in the U.S. is concentrated in North Carolina, California, and Louisiana. North Carolina is the leading U.S. producer of sweet potatoes, with shipments averaging 95.6 million kilograms per year over the 1983 to 1992 period. Peak shipments are generally between October to December. California is also an important producer, with shipments averaging 47.7 million kilograms per year over the same time period. Peak shipments from California generally occur between November to January. Cash receipts from sweet potato production in the U.S. fluctuated over the 1980 to 1990 period falling from \$114.2 million in 1980 to \$108.3 million in 1990.

#### **U.S. Import Suppliers**

In 1989, four countries were reported as exporting sweet potatoes to U.S. territories. Sweet potatoes are not imported into the U.S. mainland. The principal destination is Puerto Rico. The Dominican Republic is essentially the sole supplier of sweet potatoes, accounting for approximately 99.5% of total world shipments.

#### **OECS Countries**

The volume of sweet potato exports to the U.S. from OECS countries is extremely small. The principal destination is the Virgin Islands. Shipments of sweet potatoes from the region to the U.S. over the 1983 to 1989 period from all OECS countries totalled only 42,900 kilograms. Throughout the time period, St. Kitts has been the major exporter with approximately 50% of all shipments. However, it appears that Dominica with 27% of overall shipments is now the major exporter. For both countries, shipments have declined dramatically throughout the 1983 to 1992 period.

#### **All Other CBI Countries**

The Dominican Republic accounts for virtually all sweet potato exports from this region. Shipments of sweet potatoes from the Dominican Republic averaged 5.1 million kilograms per year over the 1983 to 1989 period.

#### **OECS Enterability Status**

Sweet potatoes are enterable into the U.S. Virgin Islands from all West Indian countries, and it is enterable into Puerto Rico with treatment T101 (b3) required by all countries except the Dominican Republic.

## Appendix AA - 13

Table A.A. - Sweet Potato

WORLD SWEET POTATOES (KGS)													
YEAR	TOTAL	JAN	FEB	MAR	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1983	7,542,471	389,998	506,415	674,890	677,788	451,333	752,722	891,345	864,460	901,151	899,514	900,417	362,842
1984	8,290,126	576,033	739,815	709,024	525,806	771,711	813,710	799,811	1,032,839	729,511	566,483	902,814	364,789
1985	8,869,443	259,847	1,042,759	1,166,299	1,183,998	1,015,789	864,848	689,789	629,453	590,372	551,597	34,834	763,006
1986	7,340,837	614,995	88,899	1,000,043	864,098	822,300	1,129,890	382,897	719,173	588,727	41,083	478,074	824,988
1987	3,507,744	79,461	136,189	21,907	0	926,282	0	0	0	599,914	441,216	876,723	432,043
1988	508,843	39,889	37,064	43,586	52,549	41,748	43,275	58,745	48,987	42,425	38,250	29,195	38,422
1989	473,360	38,888	44,058	51,929	69,872	68,343	46,404	40,861	24,787	27,527	33,819	0	45,907
<b>AVERAGE</b>	<b>282,894</b>	<b>370,490</b>	<b>523,724</b>	<b>478,290</b>	<b>594,075</b>	<b>535,648</b>	<b>380,020</b>	<b>473,828</b>	<b>452,947</b>	<b>381,418</b>	<b>374,865</b>	<b>378,555</b>	

OCEAN SWEET POTATOES (KGS)													
YEAR	TOTAL	JAN	FEB	MAR	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1983	21,090	1,815	8,840	1,412	1,748	868	864	620	440	351	720	1,421	2,092
1984	9,856	291	145	290	945	3,119	744	0	0	64	345	374	539
1985	4,810	0	523	298	418	123	575	394	12	25	135	2,239	100
1986	6,179	30	611	490	231	524	1,107	1,030	988	1,010	90	276	101
1987	1,998	125	0	0	0	200	0	0	0	150	1,331	0	100
1988	1,778	50	169	150	25	814	130	25	15	0	90	145	175
1989	433	130	111	0	0	0	72	20	83	0	37	0	0
<b>AVERAGE</b>	<b>349</b>	<b>1,456</b>	<b>372</b>	<b>481</b>	<b>805</b>	<b>502</b>	<b>298</b>	<b>174</b>	<b>229</b>	<b>363</b>	<b>636</b>	<b>444</b>	

ALL OTHER CBI SWEET POTATOES (KGS)													
YEAR	TOTAL	JAN	FEB	MAR	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1983	7,518,494	387,710	497,700	673,348	678,037	450,477	751,798	890,595	864,020	900,783	897,338	898,998	349,732
1984	8,253,820	575,562	739,670	708,734	524,961	768,562	812,999	799,811	1,032,803	729,249	566,983	902,440	364,250
1985	8,862,399	259,847	1,041,842	1,194,653	1,183,333	1,015,430	864,273	689,375	629,441	590,347	551,429	32,111	762,418
1986	7,332,715	613,879	89,298	999,051	863,867	821,778	1,127,473	391,777	717,495	585,717	40,983	477,798	824,811
1987	3,506,363	79,336	136,189	21,907	0	925,637	0	0	0	592,784	438,894	876,723	431,943
1988	508,896	39,918	36,936	43,836	52,534	40,894	43,145	58,720	48,972	42,425	38,190	29,060	38,247
1989	473,364	38,775	31,825	40,425	46,825	32,925	32,522	30,825	21,000	27,527	29,090	0	33,875
<b>AVERAGE</b>	<b>281,875</b>	<b>367,221</b>	<b>521,693</b>	<b>473,921</b>	<b>579,396</b>	<b>533,167</b>	<b>379,272</b>	<b>473,303</b>	<b>452,964</b>	<b>379,707</b>	<b>374,100</b>	<b>378,154</b>	

### Dasheen

Dasheen (*Colocasia esculenta*) is a member of the Araceae family. Dasheen is also known as taro, eddo, tannia, malanga, and yautia. Dasheens are an important vegetable crop throughout the Caribbean basin region. Classified as tropical, dasheens do well in a variety of soil types but require large amounts of water and cannot tolerate cold temperatures. Major diseases include leaf blight and soft rot. Important insect pests are nematodes. Dasheens are used primarily for fresh consumption. They are cooked by boiling and used as a starchy vegetable. The flour is used in making alcohol.

#### Production, Price and Value

Commercial production of dasheens takes place in Western Africa, India, Southeast Asia, and the throughout the Caribbean. There is no commercial production of dasheens in the U.S. although they are produced on a small scale in Hawaii.

#### U.S. Import Suppliers

The Dominican Republic is by far the dominant exporter of dasheens accounting for approximately 81% of total world shipments of dasheens to the U.S. over the 1983 to 1989 period. Shipments from the Dominican Republic averaged 15.9 million kilograms per year over this period. The U.S. imported 9,449,547 kilograms of dasheen in 1993. Two countries dominated dasheen imports, Costa Rica with 49% and Dominican Republic with 33%. Other import suppliers included Jamaica (10%), Brazil and West Samoa (2% each), and Mexico (1%). Leading ports of entry include Miami (35%), Elizabeth, New Jersey (19%), West Palm Beach, Florida (10%), and JFK (6%).

## Appendix AA - 14

The U.S. imported just 29,676 kilograms of frozen dasheen in 1993, of which 77% came from Dominican Republic and 23% from Costa Rica. Frozen dasheen had four entry points, each representing significant import volumes: Elizabeth, NJ (30%); Fort Lauderdale (29%); Miami (22%); and New Orleans (19%).

### OECS Countries

Dasheens are produced in most OECS countries, and shipments from the region totalled 819.3 thousand kilograms over the 1983 to 1989 period. Dominica was the major exporter accounting for 87% of all dasheen shipments to the U.S. over this period. Shipments from Dominica averaged 101.8 thousand kilograms per year. The principal destination is the U.S. Virgin Islands.

### All Other CBI Countries

Shipments of dasheens to the U.S. from all other CBI countries totalled 126.5 million kilograms over the 1983 to 1989 period. The Dominican Republic was the dominant exporter, accounting for approximately 88% of all dasheen exports to the U.S. from this region.

### OECS Enterability Status

Dasheens are enterable into all U.S. ports from all West Indian countries.

Table A.A. 9 - Dasheen

#### WORLD DASHEEN (KGS)

YEAR	TOTAL	JAN	FEB	MAR	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1983	13,989,342	1,241,836	1,182,385	753,916	1,276,434	741,423	1,028,373	974,681	1,117,925	944,534	2,495,545	1,051,121	1,161,469
1984	16,347,201	1,027,066	1,886,377	1,363,894	1,397,584	1,354,401	1,305,885	1,231,171	2,366,787	1,519,313	992,215	787,207	1,153,301
1985	24,315,292	1,669,958	2,339,748	2,271,566	1,814,023	2,041,048	1,883,513	1,965,598	1,988,224	2,295,359	1,680,425	2,245,762	2,119,136
1986	21,056,667	1,621,858	1,984,563	2,042,483	1,794,783	996,986	1,610,917	1,056,203	2,027,293	1,994,693	1,396,999	1,787,797	2,560,132
1987	19,401,835	1,684,882	1,832,741	1,458,778	1,718,505	1,713,987	1,391,804	1,579,825	928,469	1,645,917	1,502,761	1,939,342	2,265,226
1988	21,006,681	1,460,230	1,383,482	1,520,589	1,610,471	1,096,328	2,099,315	1,865,982	3,463,444	1,843,126	1,518,889	1,526,072	1,597,574
1989	21,369,780	1,416,268	2,067,492	2,124,044	1,637,785	1,664,019	2,258,491	1,634,181	1,837,540	1,370,433	1,649,239	1,272,924	2,240,364
AVERAGE		1,445,960	1,779,824	1,647,878	1,635,652	1,401,897	1,682,326	1,472,489	1,964,240	1,630,482	1,604,899	1,510,821	1,862,458

#### OECS DASHEEN (KGS)

YEAR	TOTAL	JAN	FEB	MAR	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1983	112,286	15,928	11,531	8,591	9,995	9,868	7,694	7,171	7,432	11,786	4,268	7,241	10,943
1984	127,772	9,228	13,832	5,844	6,870	18,264	22,805	5,109	8,842	7,660	10,492	11,135	10,093
1985	129,171	7,030	10,537	21,428	10,733	7,211	26,788	6,634	6,895	7,169	8,844	6,707	9,697
1986	111,134	5,930	8,040	8,848	7,468	13,143	12,539	10,298	7,202	9,096	8,786	9,167	9,921
1987	88,744	8,984	10,210	8,940	12,429	6,269	7,105	2,156	5,595	9,240	8,851	6,191	2,754
1988	121,043	9,518	11,277	12,124	14,720	10,599	12,818	10,336	8,255	8,416	6,049	7,598	9,333
1989	129,531	9,968	10,823	17,408	6,940	9,298	32,349	15,483	8,794	315	8,541	0	10,656
AVERAGE		9,518	10,893	11,954	10,165	10,213	17,443	8,189	7,222	7,669	7,936	6,663	9,057

#### ALL OTHER CBI DASHEEN (KGS)

YEAR	TOTAL	JAN	FEB	MAR	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1983	12,752,982	1,141,800	1,058,428	826,162	1,178,368	626,724	942,464	699,511	1,047,996	829,125	2,419,895	995,483	966,704
1984	14,843,189	806,848	1,727,613	1,245,390	1,242,731	1,238,879	1,188,905	1,080,254	2,272,540	1,380,999	928,572	832,149	822,308
1985	22,445,902	1,482,325	2,139,048	2,063,881	1,676,593	1,897,898	1,710,943	1,948,641	1,881,889	2,127,475	1,596,367	2,142,011	1,873,031
1986	19,586,464	1,533,156	1,847,105	1,805,445	1,659,650	897,383	1,722,759	957,895	1,925,778	1,838,210	1,284,798	1,649,993	2,444,284
1987	18,043,317	1,539,076	1,484,866	1,344,582	1,600,328	1,560,833	1,344,039	1,446,285	881,374	1,555,191	1,405,299	1,648,950	2,020,484
1988	19,772,344	1,314,752	1,290,165	1,419,534	1,696,256	1,022,813	1,948,185	1,787,352	3,372,882	1,592,768	1,443,431	1,487,826	1,476,590
1989	19,359,123	1,344,351	1,958,126	1,980,284	1,486,442	1,899,472	1,984,914	1,486,524	1,863,395	1,114,774	1,536,039	1,044,955	2,101,847
AVERAGE		1,308,930	1,644,192	1,497,897	1,502,910	1,277,400	1,545,744	1,358,395	1,863,862	1,479,792	1,516,489	1,397,336	1,689,296



### **Tomato**

The tomato (*Lycopersicon esculentum*) is a member of the Solanaceae family. The tomato is an important vegetable crop, second only to potatoes in value terms. The tomato is drought tolerant and does best in deep, well drained, fertile loams. Many pests affect the tomato. Common insect pests include aphids, Colorado potato beetle, tomato fruit worm, and cutworms. Tomatoes are also prone to diseases including *Rhizoctonia*, *Verticillium* and *Fusarium* wilts.

Tomatoes have a wide variety of uses. They are popular in fresh form, but also are extensively used in many processed foods, including canned tomatoes, sauces, juices, prepared foods, and condiments.

#### **Production, Price and Value**

Commercial production of tomatoes in the U.S. is centered in Florida and California. Mexico is also a major producer of tomatoes. Florida is the leading U.S. producer of fresh tomatoes, with shipments averaging 608.2 million kilograms per year over the 1983 to 1992 period. Shipments generally peak in November-December, and again in April and May. California is the second leading U.S. producer of fresh tomatoes with average annual shipments of 354.2 million kilograms. Shipments from California generally peak from July to September.

Cash receipts from tomato production in the U.S. over the 1980 to 1990 period increased from \$903.8 million in 1980 to \$1.62 billion in 1990. Average FOB price for tomatoes has been stable over the 1984 to 1991 period averaging \$0.59 per kilogram. FOB prices peak in January, generally averaging \$0.94 per kilogram and reach seasonal lows in June and July.

#### **U.S. Import Suppliers**

In 1992, eleven countries were reported as exporting tomatoes to the U.S.. Mexico is by far the dominant exporter, accounting for approximately 99% of total world shipments to the U.S. over the 1983 to 1989 period. Shipments from Mexico averaged 390.0 million kilograms per year over this period. Seasonal peaks in Mexican exports occur during January through March. Some other minor importer suppliers include Dominican Republic, Canary Islands, and Guatemala. Nogales serves as the port of entry for 75% of tomato imports and San Diego accounts for another 22%.

#### **OECS Countries**

The volume of tomato exports to the U.S. from OECS countries is small. The principal destination is the U.S. Virgin Islands. Shipments of tomatoes from the region totalled only 1,700 kilograms over the 1983 to 1989 period. The leading exporter was Dominica accounting for approximately 42% of total OECS shipments of fresh tomatoes over the 1983 to 1989 period. St. Lucia was the second major exporter, accounting for approximately 36% of total OECS tomato shipments during this period.

#### **All Other CBI Countries**

Shipments of tomatoes to the U.S. from all other CBI countries is considerably larger than the OECS region, totalling 27.2 million kilograms over the 1983 to 1989 period. The Dominican Republic was the dominant exporter accounting for approximately 92% of all tomato shipments from all other CBI countries. Shipments from the Dominican Republic averaged 3.5 million kilograms per year over the 1983 to 1989 period.

## Appendix AA - 16

### OECS Enterability Status

Tomatoes are enterable into all U.S. ports from Antigua, Barbados, Dominica, Grenada, Montserrat, St. Kitts, Nevis, St. Lucia, and St. Vincent and the Grenadines.

Table A.A. 10 - Tomato

#### WORLD TOMATOES (KGS)

YEAR	TOTAL	JAN	FEB	MAR	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1993	344,808,005	39,212,131	41,351,366	84,865,907	71,880,005	41,847,940	14,128,708	4,807,010	5,709,598	12,012,537	6,809,217	13,673,723	9,009,867
1994	388,984,588	50,388,906	85,496,405	89,307,123	51,086,353	24,829,805	13,583,798	7,602,219	9,787,238	13,010,155	18,769,504	19,218,836	11,849,130
1995	393,793,897	55,012,492	73,384,837	102,041,757	60,438,114	15,787,517	10,303,906	10,652,872	13,356,852	12,095,857	15,811,488	11,133,887	13,796,820
1996	434,272,249	79,741,828	69,880,340	87,342,423	64,585,522	16,875,051	13,008,887	9,328,933	16,380,801	16,827,336	17,811,036	17,428,348	23,887,352
1997	452,742,007	64,844,273	78,837,355	89,281,484	59,941,978	24,768,911	18,598,727	19,281,573	8,902,894	15,554,367	28,136,128	27,900,750	20,723,596
1998	393,915,703	52,350,665	78,443,842	80,215,773	47,811,236	16,983,557	18,219,549	17,038,385	24,185,784	25,931,956	14,434,872	19,484,878	18,834,604
1999	364,513,982	31,455,171	67,557,728	52,978,171	43,210,035	25,400,818	19,913,297	31,445,607	15,553,849	23,485,335	19,860,826	16,554,558	17,117,788
AVERAGE		53,283,836	70,393,082	80,433,374	56,961,892	23,781,828	15,108,095	14,275,086	13,405,259	17,242,478	17,061,452	17,470,188	16,428,194

#### OECS TOMATOES (KGS)

YEAR	TOTAL	JAN	FEB	MAR	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1993	0	0	0	0	0	0	0	0	0	0	0	0	0
1994	61	27	0	0	0	0	0	0	0	0	0	34	0
1995	855	0	4	0	530	24	97	0	0	0	0	0	0
1996	513	0	30	115	23	80	93	66	75	60	9	0	0
1997	48	0	0	0	0	0	46	0	0	0	0	0	0
1998	361	0	0	0	340	0	0	21	0	0	0	0	0
1999	124	0	10	25	89	0	0	0	0	0	0	0	0
AVERAGE		4	8	20	140	11	34	13	11	7	1	5	0

#### ALL OTHER CB TOMATOES (KGS)

YEAR	TOTAL	JAN	FEB	MAR	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1993	1,454,422	46,882	255,353	870,013	125,394	53,399	14,343	10,011	19,436	18,419	12,419	9,832	19,421
1994	2,189,515	256,891	703,389	873,805	91,432	36,718	92,163	27,788	35,990	19,399	23,348	13,586	25,313
1995	2,850,588	179,449	458,802	950,841	1,074,727	22,738	27,152	48,342	22,513	32,442	9,231	4,213	22,148
1996	10,202,803	82,175	906,895	4,775,724	4,213,945	110,736	24,732	24,082	37,810	31,453	3,928	7,020	6,108
1997	6,486,282	21,771	1,285,229	2,577,812	2,094,276	36,123	8,993	11,956	5,087	2,868	244,859	113,818	65,379
1998	3,082,598	95,585	410,900	1,408,939	1,018,280	45,384	18,808	10,544	15,252	18,403	7,917	20,379	14,289
1999	1,007,567	36,180	342,040	461,677	86,388	7,299	19,889	5,183	219	15,845	14,779	1,014	17,094
AVERAGE		99,772	623,229	1,702,667	1,243,203	44,825	29,151	19,412	19,484	19,807	44,925	24,245	24,278

## Yam

The yam (*Dioscorea alata*) is a member of the Dioscoreaceae family. Yams are an important dietary staple throughout the Caribbean and humid tropics. The most common varieties are Florido and Guinea Blanco also known as habanero. Yams do well in a variety of soil types but require hot, moist weather and a long growing season. Major diseases include anthracnose, mosaic, and leaf spot. Important insect pests are nematodes.

Yams are primarily used for fresh consumption. A popular food among the Caribbean people, yams are an important source of carbohydrates. Yams are often confused with sweet potatoes, especially in the U.S., but it should be noted that they are not the same commodity.

### Production, Price and Value

Commercial production of yams takes place in Western Africa, India, Southeast Asia, and the Caribbean Basin. There is no commercial production of yams in the U.S. due to cold weather and short growing seasons. There is no readily available price data for yams.

**U.S. Import Suppliers**

Columbia was the major exporter of yams accounting for approximately 44% of total world shipments of yams to the U.S. over the 1983 to 1989 period. Shipments from Columbia averaged 5.3 million kilograms per year over this period. Peak seasonal shipments of Columbian yams to the U.S. generally occur from January to March.

U.S. Imports of fresh yams totaled 10,470,794 kilograms in 1993. Jamaica was the largest supplier, accounting for 50% U.S. imports. Other major suppliers included Colombia (21%), Costa Rica (12%), Brazil (9%), and Ghana (3%). The most significant U.S. port of entry for fresh yams is John F. Kennedy (JFK) in New York (26%), followed by Elizabeth, New Jersey (19%), Fort Lauderdale, Florida and Miami, Florida (each with 15%), and Tampa, Florida (14%).

The U.S. imported 85,209 kilograms of frozen yams in 1993, all from Costa Rica (62%) and Dominican Republic (38%). Fort Lauderdale, Florida represented the port of entry for 69% of frozen yam imports. Other ports of entry included Elizabeth, New Jersey (21%), New Orleans, Louisiana (5%), Miami, Florida (3%), and Philadelphia, Pennsylvania (2%).

**OECS Countries**

Yams are produced in all OECS countries, however the volume of yam shipments from the OECS countries to the U.S. is small, totalling only 213,583 kilograms over the 1983 to 1989 period. Dominica was the major exporter accounting for approximately 68% of all yam shipments from the OECS region. Shipments from Dominica averaged 19,608 kilograms per year over this time period. St. Lucia was also a significant exporter accounting for approximately 24% of all yam shipments from the OECS. Shipments from St. Lucia averaged 7,471 kilograms per year over this time period. The principal destination for all OECS yams is the U.S. Virgin Islands.

Table A.A. 11 Yam

WORLD YAMS (KGS)													
YEAR	TOTAL	JAN	FEB	MAR	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1983	10,671,001	1,267,016	664,866	1,211,161	1,784,460	670,440	646,407	614,246	601,262	616,661	636,702	436,402	669,896
1984	9,789,662	1,479,116	1,169,236	1,104,998	648,832	640,612	672,704	1,029,149	460,631	386,613	398,777	666,990	711,622
1985	12,107,624	1,416,660	647,505	1,443,260	682,850	1,717,699	1,165,469	762,691	659,299	794,020	632,669	714,206	1,069,900
1986	11,262,722	819,372	1,019,997	629,663	1,158,824	1,403,424	643,817	643,972	787,771	787,208	626,244	789,066	668,625
1987	12,899,611	1,789,261	664,379	1,276,064	1,669,180	1,173,743	634,228	619,277	787,067	1,106,100	621,798	386,669	1,747,206
1988	14,679,869	699,670	1,896,247	2,269,613	1,167,868	1,364,948	663,116	679,662	679,669	1,099,661	741,146	784,279	2,139,910
1989	15,069,777	1,939,661	1,622,169	1,662,748	1,466,271	1,274,764	669,161	629,213	611,279	626,138	669,697	700,266	2,069,160
AVERAGE		1,227,264	1,160,090	1,446,376	1,202,032	1,269,646	669,841	729,241	706,766	646,666	666,010	662,043	1,216,604

OECS YAMS (KGS)													
YEAR	TOTAL	JAN	FEB	MAR	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1983	39,690	6,786	4,810	2,192	2,736	2,799	1,266	166	166	28	1,037	2,793	6,661
1984	37,394	6,670	2,240	1,742	2,220	10,206	219	76	222	319	692	3,069	2,241
1985	32,167	1,796	3,899	4,198	6,080	3,176	3,496	1,439	667	3,166	1,617	659	3,131
1986	39,672	6,061	6,800	39,672	2,210	3,100	2,220	1,102	661	1,066	1,000	1,224	3,039
1987	39,167	4,227	4,222	19,099	1,606	1,224	797	626	282	601	1,661	1,319	2,042
1988	17,176	2,449	1,275	2,242	2,024	1,266	640	0	0	290	622	2,271	2,229
1989	25,276	2,121	2,222	2,122	1,660	610	277	160	260	10,227	680	0	2,222
AVERAGE		4,261	3,706	6,297	2,266	2,220	1,221	490	297	2,112	1,060	1,761	4,163

ALL OTHER CBIYAMS (KGS)													
YEAR	TOTAL	JAN	FEB	MAR	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1983	6,692,672	293,223	490,190	484,247	1,499,928	697,321	446,247	663,643	646,489	487,200	231,666	166,793	156,991
1984	4,266,724	392,657	457,193	489,619	446,991	345,476	467,246	679,769	286,024	291,226	966,476	414,111	297,742
1985	6,766,467	369,441	613,274	602,921	400,914	1,029,699	406,228	376,769	277,746	479,764	401,721	361,292	219,149
1986	9,214,260	227,167	669,694	617,662	319,229	966,169	261,000	387,691	246,999	389,261	321,999	429,227	256,999
1987	4,766,946	679,709	252,166	399,429	712,267	399,629	369,679	406,769	619,121	679,999	256,166	146,999	116,229
1988	6,176,229	434,469	643,166	601,662	243,669	369,144	669,261	406,379	217,761	316,412	439,129	460,401	662,242
1989	4,617,900	172,676	616,776	462,162	222,221	306,249	200,299	472,129	362,699	419,669	624,726	607,992	669,226
AVERAGE		389,669	461,604	617,666	644,427	496,269	367,619	376,466	282,671	429,669	389,669	367,666	316,474

**All Other CBI Countries**

Shipments of yams to the U.S. from all other CBI countries totalled 34.3 million kilograms over the 1983 to 1989 period. Jamaica is the dominant exporter, accounting for approximately 83% of all yam exports to the U.S. from this region. Shipments from Jamaica averaged 4.08 million kilograms per year over this time period.

**OECS Enterability Status**

Yams are enterable into the U.S. Virgin Islands from all West Indian countries.

**APPENDIX BB**

**Major Importers of Non-Traditional Agricultural Products in  
South Florida**



**F - FRUITS & FRUIT JUICES**

- 1-Fresh Fruit
- 2-Fruit Juice
- 3-Concentrate
- 4-Mangos
- 5-Avocados
- 6-Strawberries
- 7-Pineapples
- 8-Passion
- 9-Blueberries
- 10-Limes
- 11-Lime oils & Puree
- 12-Tropical Fruit
- 13-Bananas

**V - FRESH VEGETABLES & MELONS**

- 1-Fresh Veg. (Misc.)
- 2-Celery
- 3-Watermelons
- 4-Mushrooms
- 5-Sweet Corn
- 6-Carrots
- 7-Tomatoes
- 8-Veg. Juice
- 9-Organically Grown Veg.
- 10-Tropical Veg.
- 11-Lettuce
- 12-Radishes
- 13-Red % Bell Peppers
- 14-Cherry Tomatoes
- 15-Chinese Veg. & Fruits
- 16-Potatoes & Onions
- 17-Latin Veg.

**Ameri Fresh**  
 Mr. Lloyd Rosen  
 1801 B East Sahlman Dr.  
 Tampa, FL 33605  
 813-247-7012  
 Fax 813-247-1855  
 F6

**Carnival Fruit Co.**  
 Mr. Alan H. Spritz  
 475 NE 185 St.  
 North Miami Beach, FL 33179  
 305-653-8899  
 Fax 305-653-5570  
 F1 V1

**Brooks, J.R. and Son, Inc.**  
 Mr. William Schaefer  
 Post Office Drawer 9  
 18400 SW 256th St.  
 Homestead, FL 33090-0009  
 305-247-3544  
 Fax 305-245-3925  
 F5 F4 F10

**Coconut Grove - Avicenna**  
 Mr. Bill Karim  
 Post Office Box 20307  
 Tampa, FL 33622-0307  
 813-888-9292  
 Fax 813-882-4020  
 V2

**C.C.A., Inc.**  
 Mr. S. Volpe  
 2115 N. Miami Ave.  
 Miami, FL 33127  
 305-573-1776  
 Fax 305-573-8639  
 F1

**Consolidated Food Services, Inc.**  
 Mr. John Serralles  
 10240 SW 56 St. #11047  
 Miami, FL 33165  
 305-598-8680  
 Fax 305-598-0174  
 V12 V13

**Campofresco, Inc.**  
 Mr. Carids J. Carrillo  
 4013 N Cypress Dr.  
 Pompano Beach, FL 33069  
 305-978-2034  
 Fax 305-974-1084  
 F3 F12

**El Morro Food Dist., Inc.**  
 Mr. Manuel Perez-Galan  
 Post Office Box 2501  
 Miami Beach, FL 33140  
 305-324-0760  
 Fax 305-324-8722  
 F1

**Florida Blueberries, Inc.**  
 Mr. Phil Emmer  
 Post Office Box 836  
 11325 Northeast U.S Hwy 301  
 Waldo, FL 32694-0836  
 904-376-2444  
 Fax 904-468-2020  
 F9

**Gargiulo, Inc.**  
 Mr. Jeffrey Gargiulo  
 15000 Old 41 North  
 Naples, FL 33963  
 813-597-3131  
 Fax 813-597-8963  
 F6 V7

**FL European Export Import Co**  
 Mr. Don Blackburn  
 8304 NW 14th St.  
 Miami, FL 33126  
 305-477-0991  
 Fax 305-477-0994  
 F10 F5 F4

**Hinton Farms Produce, Inc.**  
 Mr. Robert M. Hinton  
 1307 W. Haines St.  
 Plant City, FL 33564  
 813-754-7446  
 Fax 813-754-8561  
 V14 F9 F6

**Florida Key West, Inc.**  
 Mr. Earl G. Tanner  
 3521 Central Ave.  
 Fort Myers, FL 33901  
 813-936-6548  
 Fax 813-936-2943  
 F2

**Juices International**  
 Mr. Phil Baehr  
 1215 Robinswood Court  
 Lakeland, FL 33813  
 813-646-1550  
 Fax 813-648-0423  
 F2

**Florida Lime & Avocado Admin**  
 Ms. Shirley J. Manchester  
 Post Office Box 188  
 Homestead, FL 33090-0188  
 305-247-0848  
 F5 F10

<p><b>Kelley and Rowan, Inc.</b>  Mr. James Kelley  9555 North Kendal Dr., Suite 200  Miami, FL 33176  305-279-4555  Fax 305-279-6427  <b>V10 V1 F1</b></p>	<p><b>Florida Lime Growers, Inc.</b>  Mr. Bill Planes  Post Office Box 70-0277  22750 SW 134 Ave.  Goulds, FL 33170  305-258-9900  F ax 305-258-9944  <b>F10</b></p>	<p><b>Kendall Foods, Inc.</b>  Mr. Harold E. Kendall  Post Office Box 458  23600 S Dixie Highway  Goulds, FL 33170  305-258-1631  Fax 305-258-2445  <b>F12 F5 F10</b></p>
<p><b>Florida Natural Flavors, Inc.</b>  Mr. Dave Erdman  1550 Dodd Road  Winter Park, FL 32792  407-671-2569 Fax 407-657-4053  <b>F2</b></p>	<p><b>Limeco, Inc.</b>  Mr. Michael D. Sullivan  6555 NW 36th St., Suite 113  Miami, FL 33166  305-871-7760 Fax 305-871-7793  <b>F10 F5 F4</b></p>	<p><b>M.P. &amp; Sons, Inc.</b>  Ms. Phellicia Perez  27440 SW 187 Ave  Homestead, FL 33031  305-245-7305  <b>F5 F10 F4</b></p>
<p><b>Sedan Enterprises</b>  Ms. Jannette Sedan  4313 Hurd Ave.  Orlando, FL 32812  407-275-5011  Fax 407-275-5011  <b>F1</b></p>	<p><b>Mayrsohm Inter. Trading, Inc.</b>  Mr. B. Mayrsohn  1070 SE 9th Terrace  Hialeah, FL 33010  305-884-6121  Fax 305-884-3411  <b>F1 V1</b></p>	<p><b>Simmons International</b>  Mr. Brian Simmons  7273 SW 112 Place Circle  Miami, FL 33173  305-385-6000  Fax 305-274-2776  <b>F6 V4</b></p>
<p><b>Mercado Espanol Internacional</b>  Mr. Armando Manzano  1351 SW 124th Court, Unit A  Miami, FL 33184  305-554-4013  Fax 305-553-1337 <b>F12</b></p>	<p><b>Six B Farms</b>  Mr. W.C. Brewer  Post Office Box 232  Pineland, FL 33945  813-472-6331  <b>V3 F6</b></p>	<p><b>Movsovitz and Sons, Inc.</b>  Mr. Ross R. Bryant  Post Office Box 41565  Jacksonville, FL 32203  904-764-7681  Fax 904-764-6744  <b>F1 V1</b></p>
<p><b>Sunburst Tropical Fruit Co.</b>  Mr. G.E. Grochowski  7113 Howard Road  Post Office Box 514  Bokeelia, FL 33922  813-283-1200  <b>F12</b></p>	<p><b>Parman-Kendall, Inc.</b>  Mr. Harold E. Kendall, Jr.  Post Office Box 458  Goulds, FL 33170  305-258-1631 Fax 305-258-1884  <b>F2 F5 F11</b></p>	<p><b>Sunshine Packing House, Inc.</b>  Ms. Aileen Ruland  Post Office Box 343577  Florida City, FL 33034  305-248-4280 ax 305-247-7140  <b>F5 F10 F4</b></p>
<p><b>Pompano Export, Inc.</b>  Mr. Albert Beaufrand  560 NE 26th Ct.  Pompano Beach, FL 33064  305-781-6655  Fax 305-785-2126  <b>F1 V1</b></p>	<p><b>Very Best Foods</b>  Mr. Isidoro Rodriguez  Post Office Box 521894  Miami, FL 33152  305-362-5316  <b>F2</b></p>	<p><b>Walden &amp; Sparkman, Inc.</b>  Mr. Leroy English  Post Office Box 98  Highway 574, South Dover Rd.  Dover, FL 33527  813-659-1704  <b>F6</b></p>



<p><b>World Fresh Marketing, Inc.</b>  <b>Mr. Peter Pereira</b>  <b>Miami Intl. Commerce Ctr.</b>  <b>7955 NW 12th St., Suite 212</b>  <b>Miami, FL 33126</b>  <b>305-477-3868</b>  <b>Fax 305-477-4187</b>  <b>F4 F5 V</b></p>	<p><b>A. Duda &amp; Sons, Inc.</b>  <b>Mr. Dan Duda</b>  <b>6010 Highway 29 South</b>  <b>La Belle, FL 33935-9577</b>  <b>813-675-2600</b>  <b>Fax 813-675-2455</b>  <b>V1</b></p>	<p><b>Miami Wholesalers, Inc.</b>  <b>Mr. Ray Rodriguez</b>  <b>1975 W 44th Place</b>  <b>Suite 109</b>  <b>Hialeah, FL 33012</b>  <b>305-558-6347</b>  <b>Fax 305-822-4447</b>  <b>V1</b></p>
<p><b>BeMel, Inc.</b>  <b>Mr. Solly Avi-Noam</b>  <b>978 Nautilus Isle.</b>  <b>Dania, FL 33004</b>  <b>305-921-8543</b>  <b>Fax 305-922-2938</b>  <b>V1</b></p>	<p><b>Five Brothers Produce, Inc.</b>  <b>Mr. Tommy Torbet</b>  <b>Post Office Box 3592</b>  <b>300 N Krome Ave.</b>  <b>Florida City, FL 33034</b>  <b>305-247-0900</b>  <b>Fax 305-245-0855</b>  <b>V1</b></p>	<p><b>Caribbean Harbor Imports, Inc</b>  <b>Mr. Waldemar Schlgmon</b>  <b>3062 North Andrews Avenue</b>  <b>Wilton Manor, FL 33311</b>  <b>305-563-6640</b>  <b>Fax 305-563-7908</b>  <b>V1</b></p>
<p><b>Florida Carib Fishery, Inc.</b>  <b>Mr. Gerard Safian</b>  <b>25 SW South River Dr.</b>  <b>Miami, FL 33130</b>  <b>305-545-8003</b>  <b>Fax 305-547-2772</b>  <b>V3</b></p>	<p><b>Fred's Produce Distributing Co.</b>  <b>Mr. Fred Mojica</b>  <b>1265 NW 22 St. Unit 14</b>  <b>Miami, FL 33142</b>  <b>305-545-0010</b>  <b>Fax 305-545-9525</b>  <b>V1 V10</b></p>	<p><b>Import &amp; Export International</b>  <b>Ms. Elizabeth Luna</b>  <b>6620 Lucente Dr.</b>  <b>Jacksonville, FL 32210</b>  <b>904-786-0169</b>  <b>V1</b></p>
<p><b>Gargiulo, Inc.</b>  <b>Mr. Jeffrey Gargiulo</b>  <b>15000 Old 41 North</b>  <b>Naples, FL 33963</b>  <b>813-597-3131</b>  <b>Fax 813-597-8963</b>  <b>515127 F6 V7</b></p>	<p><b>Interface Seafood, Inc.</b>  <b>Mr. Jack Boron</b>  <b>7821 NW 72nd Ave.</b>  <b>Miami, FL 33166</b>  <b>305-887-9845</b>  <b>Fax 305-884-7415</b>  <b>V10</b></p>	<p><b>Hallee-Boysales</b>  <b>Mr. Ivin Arost</b>  <b>2880 Lust Road, Suite C</b>  <b>Apopka, FL 32703</b>  <b>407-886-7200</b>  <b>Fax 407-886-7233</b>  <b>V6</b></p>
<p><b>J-B Produce</b>  <b>Mr. Ron Johnson</b>  <b>1210 Merlyn St.</b>  <b>Lakeland, FL 33807</b>  <b>813-646-4617</b>  <b>V1</b></p>	<p><b>Kelley and Rowan, Inc.</b>  <b>Mr. James Kelley</b>  <b>9555 North Kendall Dr, Suite 200</b>  <b>Miami, FL 33176</b>  <b>305-279-4555</b>  <b>Fax 305-279-6427</b>  <b>V10 V1 F1</b></p>	<p><b>How-Well Organics</b>  <b>Mr. Wade Howell</b>  <b>Route 1, Box 116</b>  <b>Jennings, FL 32053</b>  <b>904-938-2046</b>  <b>Fax 904-938-2047</b>  <b>V9</b></p>
<p><b>Litowich, Ben &amp; Son, Inc.</b>  <b>Mr. Ben Litowich</b>  <b>6261 West Atlantic Blvd. #108</b>  <b>Margate, FL 33063</b>  <b>305-973-8000</b>  <b>Fax 305-973-8099</b>  <b>V1</b></p>	<p><b>Hydro Fresh Products, Inc.</b>  <b>Mr. Gerald A. Opegard</b>  <b>3785 Alt. 19 No.</b>  <b>Palm Harbor, FL 34683</b>  <b>813-938-9117</b>  <b>Fax 813-938-0681</b>  <b>V1</b></p>	<p><b>Mancini Packing Co.</b>  <b>Mr. Joseph A. Mancini</b>  <b>Post Office Box 157</b>  <b>Zolfo Springs, FL 33890</b>  <b>813-735-0678</b>  <b>Fax 813-735-1172</b>  <b>V13</b></p>

<p><b>Mayrsohn Intern.Trading, Inc.</b>  Mr. B. Mayrsohn  1070 SE 9th Terrace  Hialeah, FL 33010  305-884-6121  Fax 305-884-3411  <b>F1 V1</b></p>	<p><b>Prawn Seafood, Inc.</b>  Mr. Jeff Wine  6851 NW 32nd Ave.  Miami, FL 33147  305-696-5450  Fax 305-693-6348  <b>V1</b></p>	<p><b>Midstate Potato Dist., Inc.</b>  Mr. Kenneth Wiles  4302 Airport Rd.  Plant City, FL 33567  813-752-8866  Fax 813-752-5044  <b>V16</b></p>
<p><b>River Plate Products, Inc.</b>  Mr. Brian Gilchrest  159 SW 101 Way  Coral Springs, FL 33071  305-943-2166  Fax 305-946-3376  <b>V1</b></p>	<p><b>Sannall, Inc.</b>  Mr. Pete Skinner  Rt. 2, Box 130-B  Live Oak, FL 32060  904-563-1097  <b>V1</b></p>	<p><b>Pioneer Growers Coop.</b>  Mr. Robert S. Wigley  Post Office Box 490  Belle Glade, FL 33430  407-996-5561  Fax 407-996-5703  <b>V2 V11 V12</b></p>
<p><b>Pitman and Sons, Inc.</b>  Mr. Donald Pitman  Post Office Box 12529  5400 Longleaf St.  Jacksonville, FL 32209  904-768-6888 Fax 904-768-6888  <b>V1</b></p>	<p><b>Six B Farms</b>  Mr. W.C. Brewer  Post Office Box 232  Pineland, FL 33945  813-472-6331  <b>V3 F6</b></p>	<p><b>Six L's Packing Company, Inc.</b>  Mr. Charles Weisinger  Post Office Box 1227  Immokalee, FL 33934-1227  813-657-4421  <b>V1 V7</b></p>
<p><b>Twin Packing Co.</b>  Mr. Maurice Esformes  Post Office Box 420216  2140 NW 23rd St.  Miami, FL 33242  305-633-6551  Fax 305-634-6506  <b>V16</b></p>	<p><b>South Bay Growers</b>  Mr. Gary Norman  Post Office Drawer A  300 N Highway 27  South Bay, FL 33493  407-996-5581  <b>V1 V5 V6</b></p>	<p><b>Valdes Farm, Inc.</b>  Mr. Eladio Valdes  Post Office Box 650592  14945 SW 197th Ave.  Miami, FL 33265  305-233-8224  Fax 305-233-0813  <b>V17</b></p>
<p><b>Summersweet, Inc.</b>  Mr. Brett Bergmann  Post Office Box 2198  Belle Glade, FL 33430  407-790-9338  Fax 407-996-5709  <b>V5</b></p>	<p><b>Trans World Co. of Miami, Inc.</b>  Mr. Anthony Vitale  P.O. Box 610461  2090 NW 13th Ave.  Miami, FL 33142;  305-545-5630  Fax 305-545-7727  <b>V15</b></p>	<p><b>Zellwin Farms Co.</b>  Mr. W.F. (Billy) Moon  Post Office Box 188  Zellwood, FL 32798  407-886-1891  Fax 407-889-2515  <b>V6 V12</b></p>
<p><b>Great American Farms</b>  Mayda Sotomayor  1287 W. Atlantic Blvd.  Pompano Beach, FL 33069  954-785-9400 Fax 954-941-2977  <b>V</b></p>		

## APPENDIX CC

### A Guide to World Wide Web Sites Useful to Marketing Non-traditional Agricultural Commodities

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There are numerous World Wide Web (WWW) sites that provide useful information to individual and organization seeking to export non-traditional agricultural commodities from the Caribbean. Although the sites listed below are few in number, they provide excellent starting points for finding an extensive amounts of information and data. The sites listed below are organized into three groups: 1) general purpose agricultural sites; 2) market information sites; and 3) trade information and resources.

#### *General Purpose Sites*

The site listed below provide excellent staring points to locate a broad array of information of agriculture and related areas.

**Resources for Agricultural Economists:** <http://kierkegaard.ifas.ufl.edu/>

Provides links to a large number of statistical data sites, international organizations and U.S. government location relevant to agriculture.

**AGRINET:** <http://www.agrinetinternational.com/>

General purpose site for private farming interests. Good general starting point

**Global Agribusiness Information Network (GAIN):** <http://www.milcom.com/fintrac/>

Maintained by Fintrac, this is a comprehensive site that includes a great deal of information on tropical agriculture, including market information and dailey market prices.

#### *Dailey Market Prices for Selected Cities*

The following sites provide current and detailed information on daily commodity price for selected cites throughtout North America and Europe

**Global Agribusiness Information Network (GAIN):** <http://www.milcom.com/fintrac/>

**Today's Market Prices:** <http://todaymarket.com/>

**Market Information System at the University of Florida:** <http://mis.ifas.ufl.edu/~market/>

***Trade Information and Resources***

**OAS Foreign Trade Information System: <http://www.sice.oas.org/STIDRE.stm>**

Excellent starting point for finding a broad array of trade information available at many international organizations

**AGROINFO: <http://www.agroinfo.org/>**

General agricultural information site sponsored by Caribbean and Latin American Action and the InterAmerican Institute for Cooperation on Agriculture.

**FAOSTAT Statistics Database: <http://apps.fao.org/>**

Extensive database on agriculture, forestry and fisheries. Fee-based.



FECHA DE DEVOLUCION


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Autor  
Opportunities and constrain-  
Título for non-traditional agri-  
cultural exports to the ...

Fecha Devolución	Nombre del solicitante



