

# INVESTMENT PROFILE FOR MANGO: ST.JULIAN, EAST INDIAN, TOMMY ATKINS

MARCH  
2019



# AGRO-INVEST

## AGRO-INVESTMENT CORPORATION

Promoting and Facilitating Agri-Business Investments



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## LIST OF ACRONYMS

FAO - Food and Agriculture Organization of the United Nations

FAOSTAT - Food and Agriculture Organization Corporate Statistical Database

GOJ - Government of Jamaica

ITC - International Trade Center

JMD - Jamaican Dollars

MICAF - Ministry of Industry, Commerce, Agriculture and Fisheries

STATIN - Statistical Institute of Jamaica

U.K. - United Kingdom

USA/U.S. - United States of America



USD - United States Dollars

USDA - United States Department of Agriculture

USDA APHIS - United States Department of Agriculture, Animal and Plant Health  
Inspection Service

## Product Profile

Table 1: Product Profile for Mango

<p>St. Julian 'Julie' Mango</p>  <p>Tommy Atkins Mango</p> 	<p><b>Botanical Name and Origin:</b> The mango (<i>Mangifera indica</i>) has its origins in South East Asia and was introduced to Jamaica in the 18th century.</p> <p><b>Species:</b> There are 41 species with 17 of them bearing fruit fit for human consumption. There are over 150 cultivars inclusive of 3 varieties namely:</p> <ol style="list-style-type: none"> <li>1. The St. Julian mango most commonly called 'Julie', is a medium-sized fruit and is somewhat flat on one side and the flesh is partially fibreless.</li> <li>2. The Tommy Atkins mango has an oblong-oval shape. Its size ranges from medium to large.</li> <li>3. The East Indian Mango is of medium size and has an oval shape. The skin of the mango is usually green in colour with a red or yellow colour.</li> </ol> <p><b>Nutritional Value:</b></p> <table border="1"> <thead> <tr> <th>Principle</th> <th>Nutrient Value</th> <th>Percentage of RDA</th> </tr> </thead> <tbody> <tr> <td>Energy</td> <td>70 Kcal</td> <td>3.50%</td> </tr> <tr> <td>Carbohydrates</td> <td>17 g</td> <td>13%</td> </tr> <tr> <td>Protein</td> <td>0.5 g</td> <td>1%</td> </tr> <tr> <td>Total Fat</td> <td>0.27 g</td> <td>1%</td> </tr> <tr> <td>Cholesterol</td> <td>0 mg</td> <td>0%</td> </tr> <tr> <td>Dietary Fiber</td> <td>1.80 g</td> <td>4.50%</td> </tr> <tr> <td>Vitamins</td> <td></td> <td></td> </tr> <tr> <td>Folates</td> <td>14 µg</td> <td>3.50%</td> </tr> <tr> <td>Niacin</td> <td>0.584 mg</td> <td>3.50%</td> </tr> <tr> <td>Pantothenic acid</td> <td>0.160 mg</td> <td>1%</td> </tr> <tr> <td>Pyridoxine (vit B-6)</td> <td>0.134 mg</td> <td>10%</td> </tr> <tr> <td>Riboflavin</td> <td>0.057 mg</td> <td>4%</td> </tr> <tr> <td>Thiamin</td> <td>0.058 mg</td> <td>5%</td> </tr> <tr> <td>Vitamin C</td> <td>27.7 mg</td> <td>46%</td> </tr> <tr> <td>Vitamin A</td> <td>765 IU</td> <td>25.50%</td> </tr> <tr> <td>Vitamin E</td> <td>1.12 mg</td> <td>7.50%</td> </tr> <tr> <td>Vitamin K</td> <td>4.2 µg</td> <td>3.50%</td> </tr> <tr> <td>Electrolytes</td> <td></td> <td></td> </tr> <tr> <td>Sodium</td> <td>2 mg</td> <td>0%</td> </tr> <tr> <td>Potassium</td> <td>156 mg</td> <td>3%</td> </tr> <tr> <td>Minerals</td> <td></td> <td></td> </tr> <tr> <td>Calcium</td> <td>10 mg</td> <td>1%</td> </tr> <tr> <td>Copper</td> <td>0.110 mg</td> <td>12%</td> </tr> </tbody> </table>	Principle	Nutrient Value	Percentage of RDA	Energy	70 Kcal	3.50%	Carbohydrates	17 g	13%	Protein	0.5 g	1%	Total Fat	0.27 g	1%	Cholesterol	0 mg	0%	Dietary Fiber	1.80 g	4.50%	Vitamins			Folates	14 µg	3.50%	Niacin	0.584 mg	3.50%	Pantothenic acid	0.160 mg	1%	Pyridoxine (vit B-6)	0.134 mg	10%	Riboflavin	0.057 mg	4%	Thiamin	0.058 mg	5%	Vitamin C	27.7 mg	46%	Vitamin A	765 IU	25.50%	Vitamin E	1.12 mg	7.50%	Vitamin K	4.2 µg	3.50%	Electrolytes			Sodium	2 mg	0%	Potassium	156 mg	3%	Minerals			Calcium	10 mg	1%	Copper	0.110 mg	12%
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### East Indian Mango



Iron	0.13 mg	1.50%
Magnesium	9 mg	2%
Manganese	0.027 mg	1%
Zinc	0.04 mg	0%
Phyto-nutrients		
Carotene-β	445 µg	—
Carotene-a	17 µg	—
Crypto-xanthin-β	11 µg	—
Lutein-zeaxanthin	0 µg	—
Lycopene	0 µg	—

Source: USDA 2019

**Medicinal Uses:** The ripe fruit has diuretic and laxative properties.

**By-Products:** Purée, juice, pickles, chutney and flakes, squash, raw slices in syrup or brine, pickles, curries, candies, fruit bars, salsas, and sorbets in syrup or brine, concentrate and puree, jam, mango wafer, mango powder, dehydrated mango slices, and mango milk powder.

## Crop Production

**Cost of Production:** A one hectare mango farm is a highly viable proposition. A summary is given in the table 12 (See Appendix).

**Table 2: Revenue Projections and Break-Even Analysis for a one hectare Mango Orchard**

Revenue Projections											
Estimated Output (kg / ha)	-	-	6840	8892	10260	13339	15391	20009	20009	23086	117826
Estimated Farmgate Price (US\$ / kg)	66	66	66	66	66	66	66	66	66	66	66
<b>Estimated Gross Revenue</b>	-	-	<b>451,440</b>	<b>586,872</b>	<b>677,160</b>	<b>880,374</b>	<b>1M</b>	<b>1.3M</b>	<b>1.3M</b>	<b>1.5M</b>	<b>7.7M</b>
<b>Total Net Income</b>	<b>(704,490)</b>	<b>(63,693)</b>	<b>345,339</b>	<b>483,112</b>	<b>555,172</b>	<b>756,851</b>	<b>861,968</b>	<b>1.2M</b>	<b>1.2M</b>	<b>1.3M</b>	<b>5.9M</b>
Operating Costs to Gross Revenue	-	-	17%	12%	13%	10%	12%	9%	9%	8%	15%
Break-Even Analysis											

Break-even Yield (Quantity)	10,674	965	1,608	1,572	1,848	1,872	2,331	2,342	2,402	2,405	28018
Break-even Price** (\$/kg)			15.51	11.67	11.89	9.26	10.00	7.72	7.92	6.87	16
Gross Margin			76%	82%	82%	86%	85%	88%	88%	90%	76%

Source: MICAFA (2018)

**Project Viability:**

**Gross Margin:** Under favourable conditions, investors can expect a gross margin of 90% in the 10<sup>th</sup> year and an annualized ROI of 33.71%.

**Internal Rate of Return (IRR):** The viability of the project is assessed in Table 2 above over a period of 10 years. The IRR works out to 44%.

**Net Present Value (NPV):** The NPV of the project is positive (\$2.7 million JMD) which suggests that the investment is worthwhile using a 9.5% discount rate.

**Suitable Locations:** Suitable locations for commercial mango production are in the parishes of St. Catherine, St. Elizabeth, Clarendon, and St. Thomas.

**Drainage:** Good drainage is required and sufficient nutrient supply is necessary for good crop production for Mangoes.

**Reap:** Mangoes are considered to be alternate bearing. This means that the tree will produce more fruit every other year (Agricultural Marketing Resource Center 2018).

**Harvesting Methods:** Using a picking rod with a netted pouch can reduce the damage of Mangoes when harvesting. This method of harvesting will mitigate the physical damages that is usually associated with defective harvesting methods of mangoes.

**Post-harvest handling:** Mangoes are commonly arranged in corrugated fibre board boxes. The mangoes are packed in single layer 8 to 20 fruits per box. The boxes ought to have an adequate number of air gaps to permit good ventilation.

**Disease Control:**

- Fruit fly traps
- Field sanitation / removal of damaged mangoes
- Insecticidal Sprays
- Treatment with either hot water treatment T102a or irradiation T105 150gy for fruit flies

**Intercropping:** Investors can practice intercropping with other fruits and vegetable to provide income during the first two years of the Mango Orchard. Suitable vegetable crops



such as cabbage, cauliflower, tomato, potato, cucumber, pumpkin can be grown as intercrops.

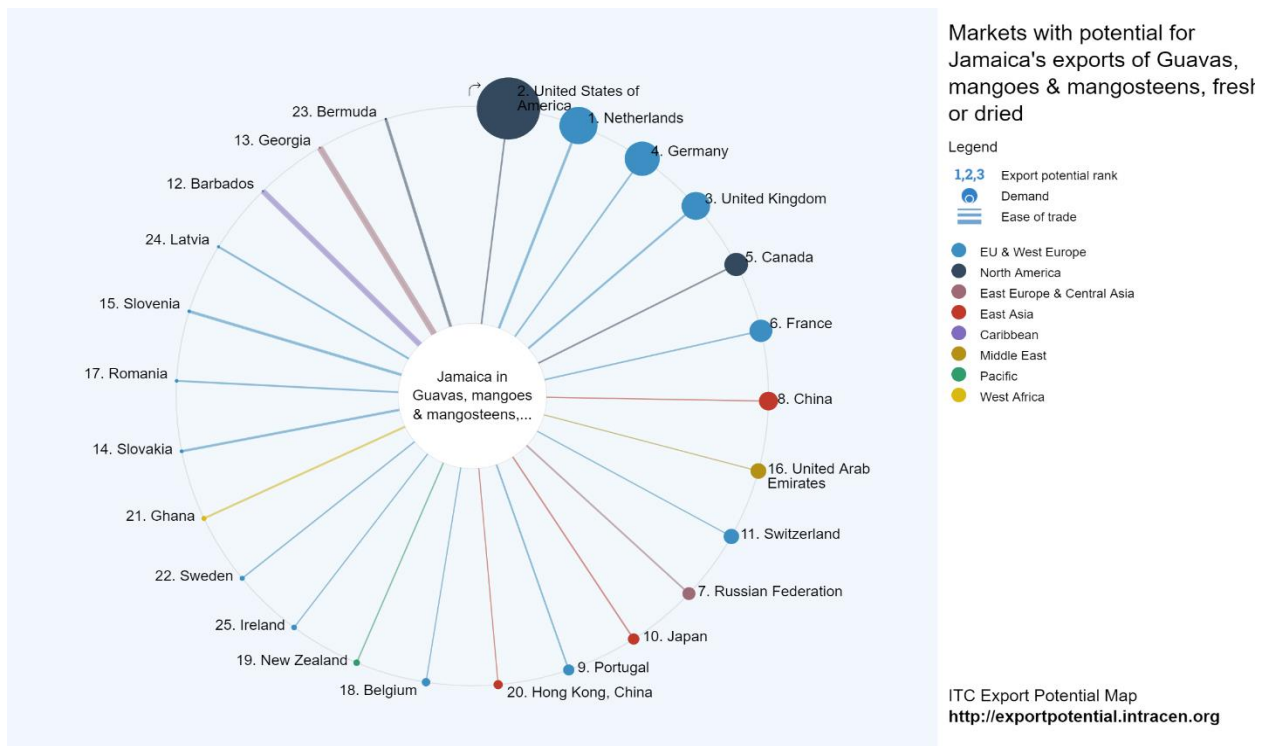
## Market Opportunities and Challenges

**Export Potential:** Mangoes fall under the International Harmonised System code 08045040, comprising of “Guavas, mangoes and mangosteens, fresh or dried”. The markets with greatest potential for Jamaica’s exports of mangoes are the Netherlands, U.S. and U.K (See Figures 1 and 2).

Based on data from the ITC (2019), the U.S. market has the highest demand potential for mangoes. The total untapped export potential of Guavas, mangoes & mangosteens, fresh or dried stands at \$ US 2.3 billion.

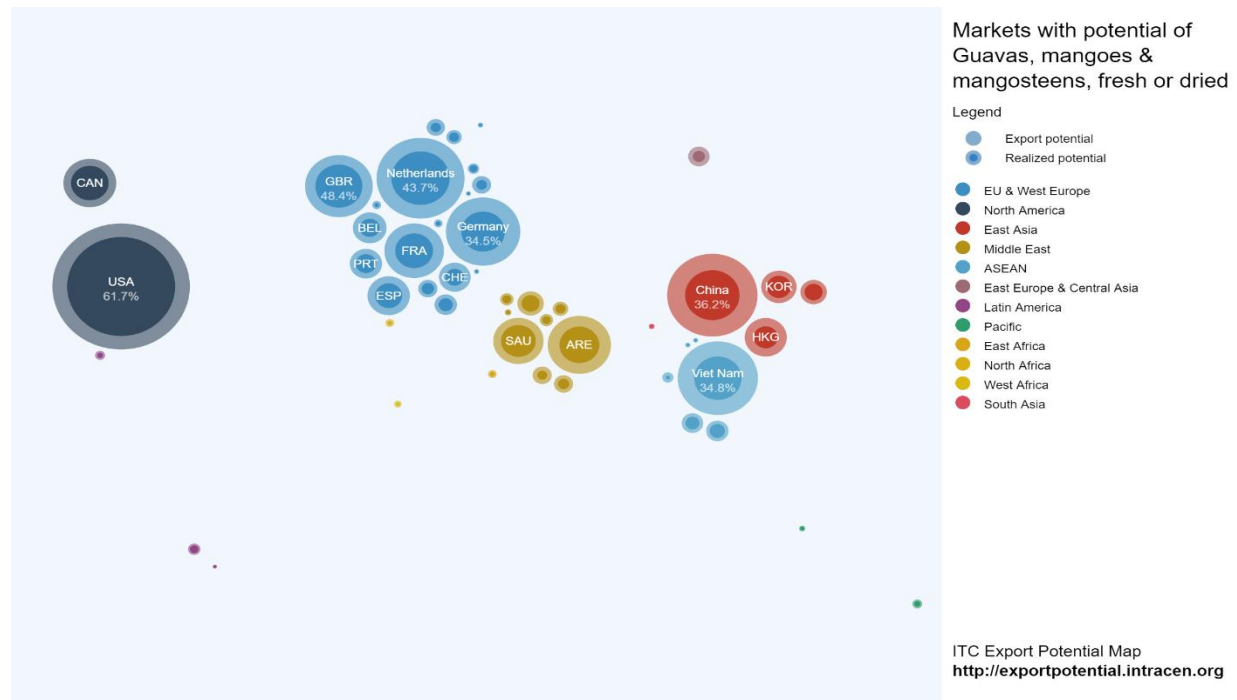
For investors to successfully take advantage of this market it requires several key components: pricing to remain competitive and profitable, good sales and marketing strategy, using attractive packaging similar other exporting countries and having a nearly all year-round presence in the market.

Figure 1: Markets with the Greatest Potential for Jamaica’s Exports of Mangoes



Source: ITC (2019)

Figure 2: Percentage of each Market with the Greatest Potential for Jamaica’s Exports of Mangoes



Source: ITC (2019)

With the U.S. representing a potential share of 61.7% of Jamaica’s exports of mangoes, U.S. Imports of Fresh Mangoes, Investors would face rigorous competition from Mexico as they are the biggest exporter of Mangoes to the U.S. as illustrated in Figure 3 below.

Figure 3: Mangoes: US Import Sources by Value

**Mangoes: U.S. import sources by value**

Ranking based on prior 4 annual market year* totals				2014	2015	2016	2017	2018	
Dried	Share	Avg	ANN: Jan-Dec	ANN	ANN	ANN	ANN	Nov YTD	Nov YTD
Mexico	45.3%	39,046		23,639	34,007	42,753	55,785	52,986	64,139
Philippines	32.4%	32,283		24,251	31,835	34,620	38,426	36,537	28,289
Thailand	12.4%	10,826		8,012	10,051	8,494	16,749	15,344	17,123
India	3.7%	2,876		1,668	3,023	2,321	4,492	4,171	6,398
Peru	2.4%	1,457		104	652	2,161	2,912	2,628	5,629
Other Countries				1,541	2,523	4,108	5,871	5,431	4,964
		89,999		59,214	82,090	94,457	124,235	117,097	126,542
Fresh	Share	Avg	ANN: Jan-Dec	ANN	ANN	ANN	ANN	Nov YTD	Nov YTD
Mexico	59.2%	238,373		202,125	217,585	254,629	279,154	279,143	261,964
Peru	13.1%	54,349		52,632	57,049	52,790	54,925	51,296	51,917
Ecuador	10.1%	44,152		36,320	39,638	54,214	46,438	25,996	29,853
Brazil	9.2%	39,344		37,832	50,760	31,719	37,066	36,626	32,507
Guatemala	3.3%	14,322		23,025	14,101	8,675	11,485	11,485	10,762
Other Countries				20,365	22,127	18,263	23,116	22,992	19,864
		411,508		372,299	401,261	420,291	452,183	427,538	406,868

Source: USDA (2019)

**Standards:** Mangoes must be produced and handled under the necessary sanitary and hygienic processes. These sanitary and phytosanitary measures therefore requires pest and disease free mangoes. Investors must ensure that mangoes produced are of the highest quality.

USDA-APHIS requires treatment of the mangoes by irradiation or hot water immersion. Fruits must be submersed in hot water at 45-48 °C for 90 minutes (See Table 3). Other precautionary measures include:

1. Mangoes must be produced in orchards in accordance with a systems approach employing a combination of mitigation measures for certain fruit flies, soft scale insects, and diseases.
2. Mango shipments will be inspected prior to exportation from Jamaica.
3. Mangoes have to be exported in commercial consignments only.
4. Mangoes must be accompanied by a phytosanitary certificate.

Table 3: Hot Water Treatment Time for Various Size Mangoes

Count (Mangoes/Box)	Weight (Grams)	Treatment Time (minutes)
6-8	571 - 700	90
9-12	376 - 570	75
14 - 18	Up to 375	65

Source: FAO “Mango Value Chain Analysis And Market Access Strategy” (2015)

According to a study entitled ‘Mango Value Chain Analysis and Market Access Strategy for Jamaica’ (2015), the estimated cost of HWT Plant = US\$ 300,000 which gives an amortized cost of US\$ 4,434 per month with full year-round utilization.

**Tariffs applied by United States of America:**

Table 4: Tariffs applied by the U.S to Jamaica

Product description	Tariff regime	Applied tariff (as reported)	Applied tariff (converted)	Total ad valorem equivalent tariff
Guavas, mangoes, and mangosteens, fresh, if entered during the period September 1 through May 31, inclusive	MFN duties (Applied)	6.6 cents/kg	66.00 \$/Ton	0.02454
Guavas, mangoes, and mangosteens, fresh, if entered during the period September 1 through May 31, inclusive	Preferential tariff for GSP countries	0	0	0
Guavas, mangoes, and mangosteens, fresh, if entered during the period September 1 through May 31, inclusive	Preferential tariff for CBI countries	0	0	0

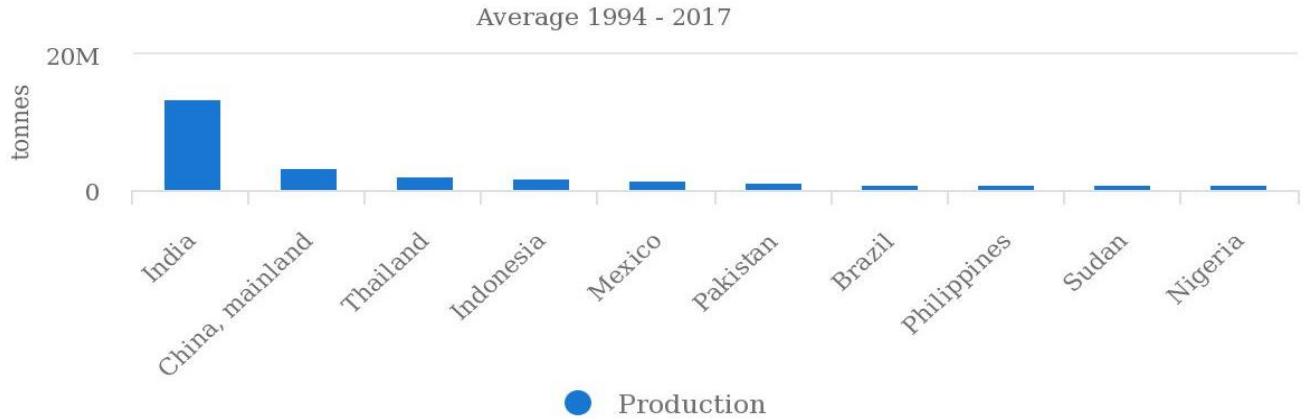
Source: ITC (MAcMap) 2018

## Market Analysis

### World Production

Mango is produced in most regions of the world. According to FAO (2019), India is clearly the largest producer, accounting for close to half of world production (1.3 million MT) followed by China (3.50 million MT) and Thailand (2.2 million MT) in 2017.

Figure 4: Top 10 Producers of Mangoes Globally



Source: FAOSTAT (Mar 15, 2019)

Source: FAOSTAT (2019)

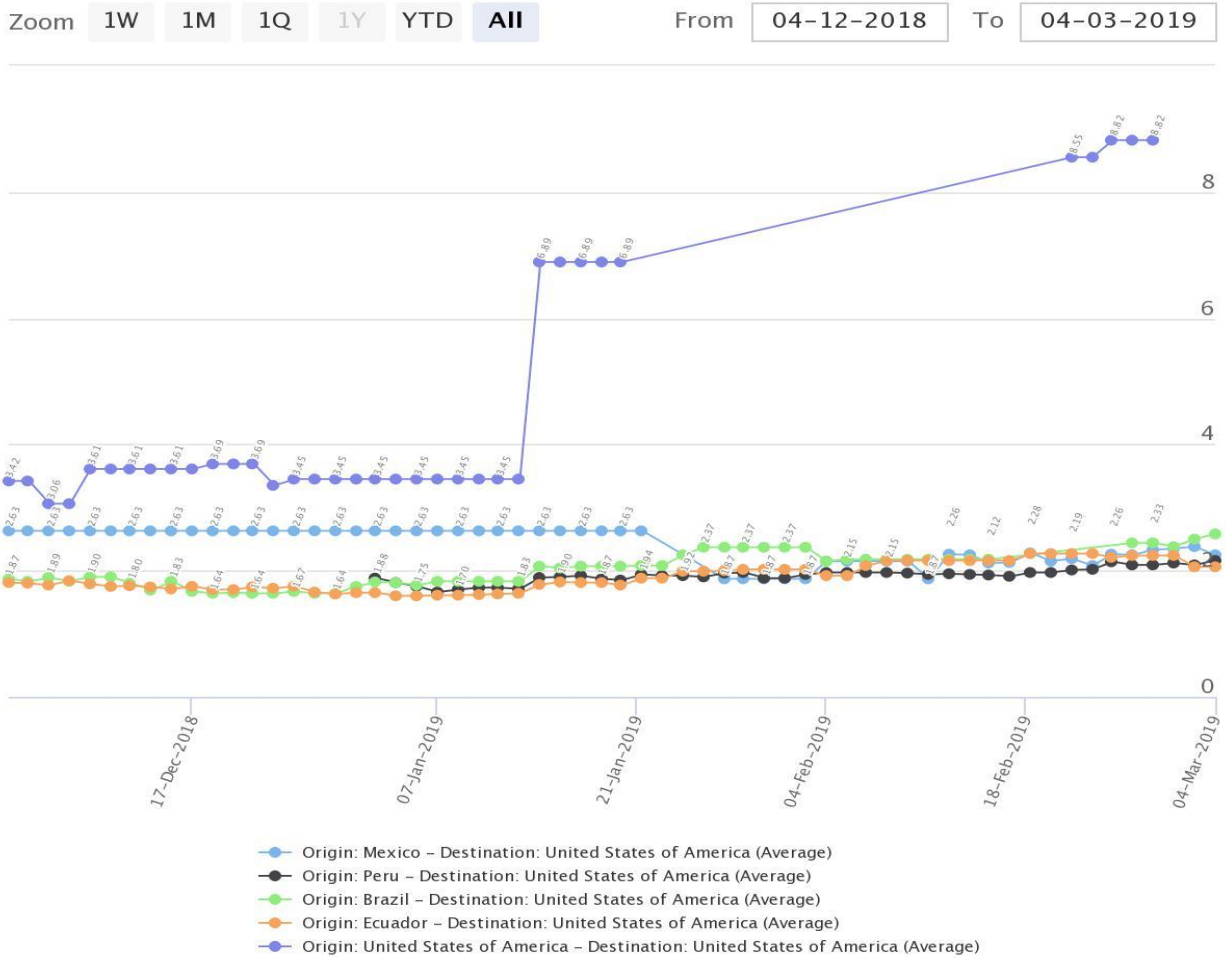
### Market Prices

In 2018, data from STATIN revealed that the average market price (export) for mangoes was sold at 1.98 USD/kg with the lowest price being 1.89 USD/kg and highest at 2.1 USD/kg.

According to ITC (2019), the average retail price for mangoes in the U.S. are 2.26 USD/kg with the lowest price being 2.06 USD/kg and highest at 2.58 USD/kg.

Figure 5: Evolution of Prices for Mangoes

### Evolution of prices for Mango (USD/kg)



Source: ITC (2019)

According to 2016 data from the U.S. Department of Agriculture’s Economic Research Service (ERS), the average retail price was considerably higher for dried mango at US\$ 10.16 per pound.

### World Export Characteristics

Jamaica’s export value of 080450 - Fruit, edible; guavas, mangoes and mangosteens, fresh or dried amounted to US\$ 11,511.00 in 2017.

Table 5: Exports from Jamaica to USA of 080450 - Fruit, edible; guavas, mangoes and mangosteens, fresh or dried

Year	Quantity	Units	Value (\$ USD)	Unit Value (\$ USD)	Annual Growth In Value (%)
2014	20,173	Weight in kilograms	37,955	1.88	
2015	4,649	Weight in kilograms	38,832	8.35	2.31

2016	5,131	Weight in kilograms	10,407	2.03	-73.20
2017	5,160	Weight in kilograms	11,511	2.23	10.61

Source: Caribbean Export Intelligence Portal (2019)

### Jamaica Exports to the World

The total exports of Mangoes for 2017 was 517,172kg and was valued at US\$907,788 with Canada being the largest importer of mangoes from Jamaica. (See Table 6 and Figure 6). Canada imported US\$840,633 worth of mangoes.

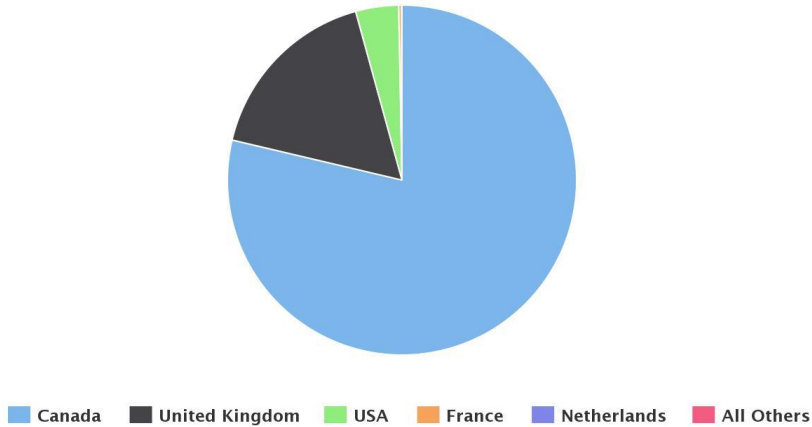
**Table 6: Jamaica's Export of Mangoes in 2017 (Preliminary)**

Description	kg	J\$	US\$	Country	Year
Mangoes fresh or naturally dried	413,373	108,105,994	840,633	Canada	2017
Mangoes fresh or naturally dried	1,112	292,350	2,270	St. Maarten (Dutch part)	2017
Mangoes fresh or naturally dried	800	1,200	9	Turks and Caicos Islands	2017
Mangoes fresh or naturally dried	5,160	1,476,196	11,511	United States of America	2017
Mangoes artificially dried	13,471	4,273,101	33,315	Canada	2017
Mangoes otherwise prepared or preserved whether or not containing added sugar or other sweetening matter or spirit not elsewhere specified or included.	119	42,348	331	British Virgin Island	2017
Mangoes otherwise prepared or preserved whether or not containing added sugar or other sweetening matter or spirit not elsewhere specified or included.	1,698	1,821,399	14,199	Canada	2017
Mangoes otherwise prepared or preserved whether or not containing added sugar or other sweetening matter or spirit not elsewhere specified or included.	174	27,070	213	Cayman Islands	2017
Mangoes otherwise prepared or preserved whether or not containing added sugar or other sweetening matter or spirit not elsewhere specified or included.	198	51,300	400	St. Maarten (Dutch part)	2017
Mangoes otherwise prepared or preserved whether or not containing added sugar or other sweetening matter or spirit not elsewhere specified or included.	269	43,972	348	Turks and Caicos Islands	2017
Mangoes otherwise prepared or preserved whether or not containing added sugar or other sweetening matter or spirit not elsewhere specified or included.	1,598	579,170	4,559	United States of America	2017

Source: STATIN (2017)

**Figure 6: Top 5 Importers of Jamaican Mangoes in 2018**

Top 5 importers of 080450 – Fruit, edible; guavas, mangoes and mangosteens, fresh or dried from Jamaica



Source: Caribbean Export Intelligence Portal (2018)

**Table 7: Mango Variety of Jamaica’s Export in 2017**

Mango Variety	Percentage Export by Variety in 2017
St. Julian	66.8
East Indian	32.2
Other Varieties	1

Source: Plant Quarantine/Produce Inspection Division (2017)

### World Import Characteristics

Table 8 below shows the total mango imports for the period of 2017. The total imports for this period was 29,957kg.

**Table 8: Jamaica’s Total Mango Imports in 2017**

Description	kg	J\$	US\$	Country	Year
Mangoes fresh or naturally dried	1,426	192,904	1,502	United States of America	2017
Mangoes artificially dried	102	174,396	1,383	Thailand	2017
Mangoes artificially dried	381	115,390	900	United States of America	2017
Mangoes otherwise prepared or preserved whether or not containing added sugar or other sweetening matter or spirit not elsewhere specified or included.	19	14,704	114	Canada	2017
Mangoes otherwise prepared or preserved whether or not containing added sugar or other sweetening matter or spirit not elsewhere specified or included.	10	42	0	Dominican Republic	2017



Mangoes otherwise prepared or preserved whether or not containing added sugar or other sweetening matter or spirit not elsewhere specified or included.	710	15,852	123	Mexico	2017
Mangoes otherwise prepared or preserved whether or not containing added sugar or other sweetening matter or spirit not elsewhere specified or included.	27,309	6,895,928	53,877	United States of America	2017

Source: STATIN (2017)

The Total value of imports in the World for Mangoes in 2018 amounted \$ US 169,432,274.

Table 9: Global Mango Imports for the period of 2014-2018

Year	Quantity	Units	Value (\$ USD)	Unit Value (\$ USD)	Trade Balance (\$ USD)
2014	1,527,098,964	Weight in kilograms	2,367,770,165	1.55	-271,247,564
2015	1,534,601,965	Weight in kilograms	2,471,017,856	1.61	-381,942,532
2016	1,608,717,551	Weight in kilograms	2,558,330,043	1.59	-216,415,154
2017	1,413,108,177	Weight in kilograms	2,665,736,559	1.89	-58,717,514
2018	80,275,003	Weight in kilograms	169,432,274	2.11	311,990,273

Source: Caribbean Export Intelligence Portal (2019)

### USA Imports from World

In 2017, USA imported 259,825,908 mangoes across the world which amounted to \$ US 655,991,990.

Table 10: U.S. Mango Imports for the period of 2014-2017

Year	Quantity	Units	Value (\$ USD)	Unit Value (\$ USD)	Trade Balance (\$ USD)
2014	385,807,341	Weight in kilograms	492,173,593	1.28	-452,722,044
2015	405,964,626	Weight in kilograms	544,148,828	1.34	-504,972,962
2016	464,796,939	Weight in kilograms	583,318,494	1.25	-545,768,358
2017	259,825,908	Weight in kilograms	655,991,990	2.52	-614,778,129

Source: Caribbean Export Intelligence Portal (2019)

## Financial Opportunities for Investment

**Table 11: Financial Opportunities for Investment in Agriculture in Jamaica**

Provider	Finance Type	Amount Lower Limit	Amount Upper Limit	Currency
Development Bank Of Ja Ltd	Grant	Not Specified	\$300,000.00	USD
Development Bank Of Ja Ltd	Loan Commercial	Not Specified	Not Specified	USD
Development Bank Of Ja Ltd	Loan Commercial	Not Specified	Not Specified	USD
First Global Bank Ltd	Loan Commercial	Not Specified	Not Specified	USD
U W I Credit Union Co-operative Society	Loan Commercial	Not Specified	Not Specified	USD
Inter-American Dev Bank	Equity	Not Specified	\$5,000,000.00	USD
Inter-American Dev Bank	Loan Commercial	Not Specified	\$5,000,000.00	USD
EXIM Bank	Loan Commercial	\$8,455.22	\$500,000.00	USD
St Catherine Co-Op Credit Union Ltd	Loan Commercial	Not Specified	\$200,000.00	USD
Access Financial Services Ltd	Loan Commercial	Not Specified	\$150,000.00	USD
Access Financial Services Ltd	Loan Commercial	\$30,000.00	Not Specified	USD
Access Financial Services Ltd	Loan Commercial	\$10,000.00	\$100,000.00	USD
Development Bank Of Ja Ltd	Loan Government	Not Specified	\$15,000,000.00	JMD
Development Bank Of Ja Ltd	Loan Government	Not Specified	\$15,000,000.00	JMD
Development Bank Of Ja Ltd	Loan Government	Not Specified	\$5,000,000.00	JMD
Development Bank Of Ja Ltd	Loan Government	Not Specified	\$500,000.00	JMD
Development Bank Of Ja Ltd	Loan Government	Not Specified	\$5,000,000.00	JMD
Development Bank Of Ja Ltd	Loan Government	Not Specified	\$2,500,000.00	JMD
Development Bank Of Ja Ltd	Loan Government	Not Specified	\$5,000,000.00	JMD
Development Bank Of Ja Ltd	Grant	Not Specified	\$300,000.00	JMD
Development Bank Of Ja Ltd	Loan Government	\$50,000,000.00	\$500,000,000.00	JMD
EXIM Bank	Loan Government	Not Specified	\$2,000,000.00	JMD
EXIM Bank	Loan Government	Not Specified	\$62,000.00	JMD
First Global Bank Ltd	Loan Commercial	Not Specified	\$30,000,000.00	JMD
National Commercial Bank Ja Ltd	Loan Commercial	Not Specified	\$30,000,000.00	JMD
National Commercial Bank Ja Ltd	Loan Commercial	Not Specified	\$7,500,000.00	JMD

National Commercial Bank Ja Ltd	Loan Commercial	Not Specified	\$5,000,000.00	JMD
JN Small Business Loans Ltd	Loan Commercial	Not Specified	\$5,000,000.00	JMD
JN Small Business Loans Ltd	Loan Commercial	\$30,000.00	\$1,000,000.00	JMD
JN Small Business Loans Ltd	Loan Commercial	Not Specified	\$150,000.00	JMD
JN Small Business Loans Ltd	Loan Commercial	\$30,000.00	\$1,000,000.00	JMD
JN Small Business Loans Ltd	Loan Commercial	\$1,000,000.00	\$5,000,000.00	JMD
Scotia Ja Microfinance Co Ltd	Loan Commercial	\$60,000.00	Not Specified	JMD
Access Financial Services Ltd	Loan Commercial	Not Specified	\$100,000.00	JMD
Access Financial Services Ltd	Loan Commercial	\$100,000.00	\$500,000.00	JMD
Access Financial Services Ltd	Loan Commercial	\$500,000.00	\$1,000,000.00	JMD
Access Financial Services Ltd	Loan Commercial	Not Specified	\$30,000.00	JMD
Bank Of Nova Scotia Ja Ltd The	Loan Commercial	Not Specified	\$500,000.00	JMD
Bank Of Nova Scotia Ja Ltd The	Loan Commercial	\$500,000.00	\$5,000,000.00	JMD

Source: Caribbean Export Intelligence Portal (2019)

**Contact our Investment Team today for more information on available Investment Opportunities!**

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## Appendix

Table 12: Detailed Cost of Production for a one hectare Mango Orchard

Item	Yr. 1	Yr. 2	Yr. 3	Yr. 4	Yr. 5	Yr. 6	Yr. 7	Yr. 8	Yr. 9	Yr. 10	TOTAL
<b>Labour Operations:-</b>											
Land Preparation	150,000										150,000
Head trenches/maint.	10,500	2,800	2,800	2,800	2,800	2,800	2,800	2,800	2,800	2,800	35,700
Line & peg	1,000										1,000
Dig holes	6,000										6,000
Apply manure	1,600										1,600
Head & drop plants	1,500										1,500
Plant & stake	2,400										2,400
Apply fertilizer	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	15,000
Supply seedlings	1,500	1,500	1,500	-	-	-	-	-	-	-	4,500
Circle weed	4,800	4,800	4,800	4,800	4,800	4,800	4,800	4,800	4,800	4,800	48,000
Apply herbicide	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	15,000

Apply slugbait	1,500	1,500	1,500	-	-	-	-	-	-	-	4,500
Apply pesticide	-	-	1,400	1,400	1,400	1,400	1,400	1,400	1,400	1,400	11,200
Prune plants	5,600	5,600	5,600	5,600	5,600	5,600	5,600	5,600	5,600	5,600	56,000
Harvest produce	-	-	5,600	5,600	8,400	8,400	10,500	10,500	12,320	12,320	73,640
Transport to farmgate	-	-	20,000	20,000	30,000	30,000	50,000	50,000	50,000	50,000	300,000
<b>Sub - total</b>	<b>189,400</b>	<b>19,200</b>	<b>46,200</b>	<b>43,200</b>	<b>56,000</b>	<b>56,000</b>	<b>78,100</b>	<b>78,100</b>	<b>79,920</b>	<b>79,920</b>	<b>726,040</b>
<b>Material Inputs:-</b>											
Pegs	1,400										1,400
Seedlings	60,000										60,000
N.P.K fertilizer	1,540	3,038	5,390	6,720	8,050	9,240	10,640	11,200	12,460	12,600	80,878
Manure	1,680	1,680	1,680								5,040
Slugbait	2,100	2,100	2,100								6,300
Fungicide	-	-	1,680	1,680	1,680	1,680	1,680	1,680	1,680	1,680	13,440
Insecticide	-	-	1,540	1,540	1,540	1,540	1,540	1,540	1,540	1,540	12,320
<b>Sub - total</b>	<b>66,720</b>	<b>6,818</b>	<b>12,390</b>	<b>9,940</b>	<b>11,270</b>	<b>12,460</b>	<b>13,860</b>	<b>14,420</b>	<b>15,680</b>	<b>15,820</b>	<b>179,378</b>
<b>Equipment:-</b>											
Knapsack Sprayer & Mist Blower	86,405										86,405

Irrigation Equipment (on farm drip)	238,000										238,000.00
<b>Sub - total</b>	<b>324,405</b>										<b>324,405</b>
<b>Other Costs:</b>											
Contingencies	35,857	3,643	8,203	7,440	9,418	9,584	12,874	12,953	13,384	13,404	126,759
Tools	4,670	477	867	5,557	5,557	5,557	5,557	5,557	5,557	5,557	44,914
Land Charges	29,653	29,653	29,653	29,653	29,653	29,653	29,653	29,653	29,653	29,653	296,526
Supervision	53,785	3,903	8,789	7,971	10,091	10,269	13,794	13,878	14,340	14,361	151,180
<b>Sub - total</b>	<b>123,965</b>	<b>37,675</b>	<b>47,511</b>	<b>50,620</b>	<b>54,718</b>	<b>55,063</b>	<b>61,878</b>	<b>62,040</b>	<b>62,934</b>	<b>62,974</b>	<b>619,378</b>
<b>TOTAL</b>	<b>704,490</b>	<b>63,693</b>	<b>106,101</b>	<b>103,760</b>	<b>121,988</b>	<b>123,523</b>	<b>153,838</b>	<b>154,560</b>	<b>158,534</b>	<b>158,714</b>	<b>1.8M</b>

Source: MICAF (2018)