

Mango Market Profile



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Table of Contents

Introduction.....	1
Agronomic Requirement.....	2
Why Invest in Mango.....	3
Local Mango Market (Jamaica).....	3-9
Mango Production data (2018–2022).....	3
Mango Import data (2019-2023)	4
Mango Export data (2019-2023)	5-6
Export Value (2019-2023).....	7
Export by Variety (2019-2023).....	8
Local Mango Consumption (2018-2022).....	9
Global Mango Market	10-13
Top 10 Mango Exporters.....	11
Top 10 Mango Importers.....	12
Top 10 Mango Producers	13
Standard of Quality	14-15
Export Requirements	16
Export Potential	17
Reference	18

Introduction

Mango (*Mangifera indica*) is a fruit belonging to the cashew family (*Anacardiaceae*) and ranks among the most significant and widely cultivated fruits in tropical regions, with approximately 59 million tons produced in 2022. Native to southern Asia, particularly Myanmar and the Assam state of India, the mango tree has produced numerous cultivated varieties (The Editors of Encyclopedia Britannica, 2024). Over time, the mango market has evolved into a dynamic sector within the global fruit industry. According to (Global Mango Market Report and Strategies to 2032, n.d.) the global mango market size reached a value of nearly \$57,332.9 million in 2021, having grown at a compound annual growth rate (CAGR) of 6.4% since 2016. Often referred to as the "king of fruits," mangoes are prized for their sweet flavour, nutritional benefits, and versatility.

This study aims to explore various aspects of the mango market, including agronomic requirements, market dynamics, and associated challenges. By examining the factors that influence mango growth, this research seeks to provide a comprehensive understanding of the current state and prospects of the mango industry. Moreover, the findings will offer valuable insights for farmers, investors, and policymakers seeking to improve mango production and address the sector's challenges.

Agronomic Requirements

Mangoes (*Mangifera indica*) require specific agronomic conditions to thrive and produce high-quality fruit. They flourish in warm climates with temperatures ideally between 25°C and 30°C (77°F to 86°F) and need protection from frost. The trees are adapted to a well-defined wet and dry season, preferring annual rainfall between 750 mm and 2,000 mm. Although they can endure dry periods, consistent irrigation is essential during the dry season. Mangoes grow best in well-drained soils, such as sandy loams or loamy soils, with a pH range between 5.5 and 7.5. Full sun exposure is crucial, requiring at least 6 to 8 hours of direct sunlight daily to ensure optimal fruit production.

Proper spacing is also important for healthy growth; in commercial orchards, mango trees should be spaced about 7 to 10 meters apart, while closer spacing may be used in smaller gardens, though this can affect tree size and yield. Regular watering is needed, especially during fruit development, but good drainage is essential to prevent waterlogging and root rot. Fertilization should be balanced, with recommendations including applying a general-purpose fertilizer or a specialized mango fertilizer several times a year, alongside incorporating organic matter like compost to improve soil fertility.

Pruning is necessary to maintain tree shape, remove dead or diseased wood, and ensure good air circulation, which also aids in easier harvesting. Mangoes are susceptible to various pests and diseases, including mango aphids, scale insects, powdery mildew, and anthracnose, so integrated pest management practices are advised. Additionally, as mangoes are typically cross-pollinated by insects, encouraging pollinators by providing suitable habitats can enhance fruit set and overall yield. By managing these factors carefully, you can optimize the growth, health, and productivity of mango trees.

Why invest in Mango?

Mangoes are the seventh most popular fruit globally with approximately 45 million metric tons consumed every year. According to the International Trade Centre, the United States is classified as a major market for imported mangoes. Additionally, Jamaica already has permission to export mangoes to the United States providing that a hot water treatment plant is established. Jamaica's proximity to the United States makes it economical to ship mangoes to the United States. Furthermore, investing in mangoes is promising for several reasons:

- ❖ **Growing Demand:** Mangoes are one of the most popular fruits globally, with increasing demand due to their taste, nutritional benefits, and versatility in culinary applications.
- ❖ **Diversity:** Mangoes can be consumed fresh, or processed into products such as juices, jams, purees, chutneys, and dried snacks, providing multiple revenue streams.
- ❖ **Export Opportunities:** Many regions have strong export markets for mangoes, providing profitable opportunities for growers and investors.

Estimates of Mango Production (2018-2022)

Table 1

Quantity (Kg)					
2018	2019	2020	2021	2022	Average
1,405,100	1,188,390	965,810	2,560,390	1,903,600	1,365,725

Table 1 illustrates the mango production data for Jamaica from 2018 to 2022, highlighting notable annual fluctuations. The total production for the period 2018-2022 was 8,023,290 kg with the year 2021 recording the highest production of 2,560,390kg an approximate increase of 165% compared to the previous year. Conversely, 2020 saw the lowest production at 965,810 kg: the severe drought conditions of 2019 were the main cause of the reduced productivity in 2020. Notably, the Meteorological Service of Jamaica reported that all parishes experienced above-normal rainfall, which contributed to a production increase in 2021. The production data for 2023 is currently unavailable.

Mango Import by Category (2019-2023)

Table 2(a) Mangoes fresh, artificially or naturally dried

Countries	Quantity (Kg)					Total
	2019	2020	2021	2022	2023*	
United States of America	2,267	109	719	-	2,522	5,617
Canada	-	-	-	10	-	10
Total	2,267	109	719	10	2,522	5,627

Source: STATIN *: Preliminary

Table 2(a) above details mango imports for the category fresh, naturally or artificially dried for the period 2019-2023. The total imports for this category amounted to 5,627 kg over the period. This figure suggests that Jamaica's consumptive needs for mangoes are currently being met through local production.

Table 2(b) Mangoes otherwise prepared or preserved

Countries	Quantity (Kg)					Total
	2019	2020	2021	2022	2023*	
United States of America	20,806	5,851	11,532	7,663	9,535	55,387
Canada	-	-	364	835	3,026	4,225
Belgium	128	96	7,571	-	-	7,795
Total	20,934	5,947	19,467	8,498	12,561	67,407

Source: STATIN *: Preliminary

Table 2(b) above presents prepared or preserved mango import statistics for the period 2019-2023. From the statistics, we observe that Jamaica imported approximately 10 times more mangoes in this category when compared to mango in its fresh or dried state during the same period. The total imports for prepared or preserved mangoes reached 67,407 kg for the period. Imported processed mangoes are commonly used as ingredients in a variety of processed foods, including juices, sauces, jams, and desserts. They are also essential in manufacturing flavoured snacks and confectioneries. Additionally, they play a role in restaurants and food service establishments for creating diverse dishes and beverages.

Mango Export by Category (Kg) (2019-2023)

Table 3 (a) Mangoes fresh, artificially or naturally dried

Quantity (Kg)						
Countries	2019	2020	2021	2022	2023*	Total
Canada	346,412	246,763	383,840	371,421	336,189	1,684,625
United Kingdom	49	-	254,252	186,118	183,390	623,809
United States of America	8,562	42,445	114,905	32,920	52,917	251,749
Other Countries	1,494	536	-	-	580	2,610
Total	356,517	289,744	752,997	590,459	573,076	2,562,793

Source: STATIN *: Preliminary

Table 3(a) provides an overview of the mango exports (kg) for the 5-year period 2019-2023 covering both fresh and dried (artificially or naturally) categories. The total exports during this period amounted to 2,562,793 kg, with Canada being the largest importer of mangoes from Jamaica. Canada represented about 66% of Jamaica's mango exports, with the highest trade volume recorded in 2021, totalling 383,840 kg. In 2020, many countries closed their borders due to COVID-19, leading to a significant drop in export figures. Exports then improved once the borders were open.

Table 3 (b) Mangoes otherwise prepared or preserved

Quantity (Kg)						
Countries	2019	2020	2021	2022	2023*	Total
Canada	3,363	516	40	1,468	3,450	8,837
United States of America	368	14	327	98	-	807
United Kingdom	-	-	1,219	728	-	1,947
Other Countries	804	1,139	1,437	-	18	3,398
Total	4,535	1,669	3,023	2,294	3,468	14,989

Source: STATIN *: Preliminary

Table 3(b) summarizes the exports (in kilograms) of prepared or preserved mangoes for the five-year period from 2019 to 2023. The total exports in this category were 14,989 kg, with Canada

being the largest importer. The data indicate that Canada is the leading importer of mangoes across all categories. Chutneys, sauces and jams were the main processed mango recorded for the period.

Mango Export Value (US\$) (2019-2023)

Table 4

Countries	Value (US\$)					Total	% of Total Export
	2019	2020	2021	2022	2023*		
Canada	734,750	525,464	843,410	1,627,787	859,649	4,591,060	69.09
United Kingdom	230	-	526,095	425,094	380,917	1,332,336	20.05
United States of America	17,902	91,330	274,206	126,776	193,417	703,631	10.59
Other Countries	4,045	6,396	5,848	-	1,867	18,156	0.27
Total	756,927	623,190	1,649,559	2,179,657	1,435,850	6,645,183	100.00

*Source: STATIN *: Preliminary*

Table 4 displays the value (in US\$) of fresh and dried mango exports for the five-year period from 2019 to 2023. The total export value for this period was US\$ 6,645,183. Canada was the leading importer of mangoes from Jamaica, with import values peaking at US\$1,627,787 in 2022. The country accounted for approximately sixty-nine percent (69%) of the export value for mangoes for the period. Turks and Caicos and Cambodia are among the low-tier countries for mango export representing less than 1% of total exports.

Mango Export by Variety 2019 - 2023

Table 5

TOTAL MANGO EXPORTS BY TYPES 2019 - 2023						
Mango Types	Quantity (Kg)					Total
	2019	2020	2021	2022	2023	
Bastard Bombay	-	-	-	450	95	545
Beefy Mango	-	-	273	568	-	841
Black Mango	890	167	9,333	8,871	8,797	28,058
Bombay Mango	157	41	2,325	716	536	3,775
Common Mango	454	136	3,448	7,321	6,343	17,702
East Indian	98,636	86,219	256,731	232,233	228,154	901,973
Guinea Mango	175	-	-	-	-	175
Haden	217	41	184	267	77	786
St. Julian Mango	278,853	205,752	423,419	393,212	314,118	1,615,354
Keitt	245	124	1,042	181	677	2,269
Kidney Mango	-	-	-	48	-	48
Long Mango	41	-	177	329	254	801
Millie Mango	68	75	998	338	35	1,514
Nelson Mango	-	-	41	41	-	82
Number Eleven	174	-	2,004	2,028	1,145	5,351
Robin Mango	41	1,378	3,701	1,982	1,445	8,547
Sweetie Come Brush Me	-	-	183	109	183	475
Tommy Atkins	110	55	259	-	9	433
Trini Graham	808	-	2,932	3,182	-	6,922
Turpentine	-	-	-	-	18	18
TOTAL KG/YEAR	380,869	293,988	707,050	651,876	561,886	2,595,669

Source: Plant Quarantine/Produce Inspection Branch

According to the Plant Quarantine Produce Inspection Branch, St. Julian Mangoes and East Indian Mangoes dominated the export market, while other varieties showed considerable variation in export volume and frequency. St. Julian Mangoes had a total export volume of 1,615,354 kg over the five-year period, peaking in 2021 with 423,419 kg and decreasing to 314,118 kg in 2023, yet they remain the highest in cumulative exports. East Indian Mangoes, on the other hand, totalled 901,973 kg, with their peak in 2021 at 256,731 kg. Based on table 5, St. Julian Mangoes accounted for approximately 62% of total exports, while East Indian Mangoes at 31%. Therefore, the remaining varieties contribute approximately 6% of the total mango exports.

Total Local Mango Consumption (2018-2022)

Table 6

Year	Quantity (Kg)			Local Consumption (kg)
	Production (Kg)	Import (Kg)	Export (Kg)	
2018	1,405,100	2,267	421,529	985,838
2019	1,188,390	109	356,517	831,982
2020	965,810	719	289,744	676,785
2021	2,560,390	10	752,997	1,807,403
2022	1,903,600	2,522	590,459	1,315,663
TOTAL	8,023,290	5,627	2,411,246	5,617,671

Source: STATIN, RADA

Table 6 illustrates the total local mango consumption. According to the Rural Agricultural Development Authority, Jamaica consumed 70% of its mango production, with the remaining 30% being exported. Although Jamaica imports mangoes, they are usually utilized within the food and beverage sector.

Global Market

The global mango industry is a major sub-sector within agriculture, predominantly situated in tropical and subtropical regions. India stands as the world's largest producer, contributing over 40% of global mango production (Food and Agriculture Organization, 2023). Other significant producers include China, Thailand, Indonesia, the Philippines, and Mexico, each benefiting from favourable growing conditions and advanced agricultural practices.

The vibrancy of the global market for mangoes can be seen in World exports depicted in table 7 below. The global mango export by the top 10 exporters fluctuated in volume over the five-year period, with a peak in 2023 at 2,207,274,000.00 kg and a low in 2019 at 1,625,684,000.00 kg. Despite this fluctuation, the total export value in 2023 increased to \$3,665,348,000, indicating a general stability in the market with occasional fluctuations. Thailand and Mexico were among the top exporter across the five-year period. The tables below depict the trade quantities of fresh or dried guavas, mangoes and mangosteen. Mango export and import volumes are grouped in this category. However, according to the Food and Drug Organisation (FAO) mangoes accounts for approximately 75% of the total volume.

Table 7

Top 10 Exporters of Fresh or Dried Guavas, Mangoes and Mangosteen (Quantity in kg)					
Exporters	2019	2020	2021	2022	2023
Mexico	234,608,000.00	251,549,000.00	429,391,000.00	447,502,000.00	461,766,000.00
Cambodia	6,138,000.00	5,755,000.00	13,931,000.00	20,338,000.00	413,162,000.00
Thailand	479,616,000.00	391,280,000.00	325,905,000.00	281,403,000.00	317,648,000.00
Brazil	222,126,000.00	243,466,000.00	273,071,000.00	231,875,000.00	266,576,000.00
Peru	191,417,000.00	239,391,000.00	253,042,000.00	249,786,000.00	196,856,000.00
Netherlands	192,740,000.00	205,521,000.00	221,072,000.00	172,359,000.00	182,227,000.00
Pakistan	97,091,000.00	107,196,000.00	189,690,000.00	111,695,000.00	132,773,000.00
India	147,242,000.00	128,026,000.00	170,212,000.00	171,749,000.00	111,759,000.00
Egypt	19,685,000.00	25,222,000.00	30,152,000.00	60,323,000.00	72,515,000.00
China	35,021,000.00	51,341,000.00	46,977,000.00	43,421,000.00	51,992,000.00
AVERAGE	162,568,400.00	164,874,700.00	195,344,300.00	179,045,100.00	220,727,400.00

Source: International Trade Centre (ITC)

Table 7 provides an overview of the top 10 exporters of fresh or dried guavas, mangoes and mangosteen. From the table, we observe that Mexico and Thailand were the main exporters of fresh or dried guavas, mangoes and mangosteen, exporting a total volume of 1,824,816,000.00, and 1,795,852,000.00 respectively. The data summarizes the fluctuations in export across the years.

Table 8

Top 10 Fresh or Dried Guavas, Mangoes and Mangosteen (Quantity in Kg)					
Importers	2019	2020	2021	2022	2023
United States of America	518,161,000.00	573,766,000.00	588,002,000.00	607,232,000.00	589,336,000.00
China	379,882,000.00	379,173,000.00	263,476,000.00	291,109,000.00	253,298,000.00
Netherlands	208,975,000.00	231,381,000.00	249,871,000.00	221,483,000.00	220,862,000.00
Germany	91,558,000.00	99,511,000.00	110,934,000.00	90,894,000.00	115,532,000.00
Viet Nam	85,171,000.00	7,751,000.00	9,240,000.00	7,408,000.00	101,853,000.00
United Arab Emirates	89,852,000.00	91,466,000.00	104,818,000.00	89,456,000.00	89,063,000.00
Spain	60,590,000.00	70,302,000.00	78,626,000.00	67,804,000.00	85,183,000.00
United Kingdom	79,579,000.00	3,004,000.00	83,913,000.00	78,923,000.00	81,811,000.00
Canada	71,230,000.00	77,404,000.00	80,545,000.00	76,140,000.00	80,454,000.00
France	70,376,000.00	60,722,000.00	66,548,000.00	67,921,000.00	57,654,000.00
AVERAGE	165,537,400.00	166,448,000.00	163,597,300.00	159,837,000.00	167,504,600.00

Source: International Trade Centre (ITC)

Table 8 shows the top 10 importers of fresh or dried guavas, mangoes and mangosteen for the period 2019-2023. The United States of America was the top importer for the period with imports totalling 2,876,497,000.00. Viet Nam recorded the lowest volumes among the countries listed above. Imports from Viet Nam was totalled 211,423,000.00. The data reflects an overall fluctuation in the volume of fresh or dried guavas, mangoes and mangosteen imported.

Table 9

Top 10 Producing Countries of Fresh or Dried Guavas, Mangoes and Mangosteen (Quantity in tonnes) 2022	
1. India	26,299,000
2. Indonesia	4,125,244
3. China	3,800,000
4. Pakistan	2,782,809
5. Mexico	2,485,546
6. Brazil	2,111,139
7. Malawi	1,916,502
8. Bangladesh	1,452,303
9. Vietnam	1,443,572
10. Thailand	1,398,902

Source: FAOSTAT, 2022

Table 9 shows the top 10 producers of fresh or dried guavas, mangoes and mangosteen in 2022 of which India was the largest producing country (26,299,000 tonnes of fresh or dried guavas, mangoes and mangosteen).

Table 10

Top 10 Exporting Countries of Fresh or Dried Guavas, Mangoes and Mangosteen (Quantity in tonnes) 2023	
1. Mexico	461,766
2. Cambodia	413,162
3. Thailand	317,648
4. Brazil	266,576
5. Peru	196,856
6. Netherlands	182,227
7. Pakistan	132,773
8. India	111,759
9. Egypt	72,515
10. China	51,992

Source: International Trade Centre (ITC)

Table 10 shows the top 10 exporters of fresh or dried guavas, mangoes and mangosteen in 2023 with Mexico emerging as the leading exporter, reporting a volume of 461,766 tons.

Standard of Quality

According to the Codex Alimentarius, This Standard applies to commercial varieties of mangoes grown from *Mangifera indica* L., of the Anacardiaceae family, to be supplied fresh to the consumer, after preparation and packaging. Mangoes for industrial processing are excluded. This standard defines the criteria for the grading, and handling of mangoes to meet international and local market expectations. Mangoes are classified in three classes defined below:

“Extra” Class

Mangoes in this class must be of superior quality. They must be characteristic of the variety. They must be free of defects, except for very slight superficial defects, provided these do not affect the general appearance of the produce, the quality, the keeping quality and presentation in the package.

Class I

Mangoes in this class must be of good quality. They must be characteristic of the variety. The following slight defects, however, may be allowed, provided these do not affect the general appearance of the produce, the quality, the keeping quality and presentation in the package:

- slight defects in shape
- slight skin defects due to rubbing or sunburn, suberized stains due to resin exudation (elongated trails included) and healed bruises not exceeding 3, 4, 5 cm² for size groups A, B, C respectively.

Class II

This class includes mangoes which do not qualify for inclusion in the higher classes, but satisfy the minimum requirements specified in Section 2.1 above. The following defects, however, may be allowed, provided the mangoes retain their essential characteristics as regards the quality, the keeping quality and presentation:

- defects in shape

- skin defects due to rubbing or sunburn, suberized stains due to resin exudation (elongated trails included) and healed bruises not exceeding 5, 6, 7 cm² for size groups A, B, C respectively.

In Classes I and II, scattered suberized rusty lenticels, as well as yellowing of green varieties due to exposure to direct sunlight, not exceeding 40% of the surface and not showing any signs of necrosis are allowed.

Size is determined by the weight of the fruit, in accordance with the following table:

Table 11

Size Code	Weight (in grams)
A	200-350
B	351-550
C	551-800

Source: Codex Alimentarius

Requirements to export to Target Markets

The requirements to export are country specific:

Table 12

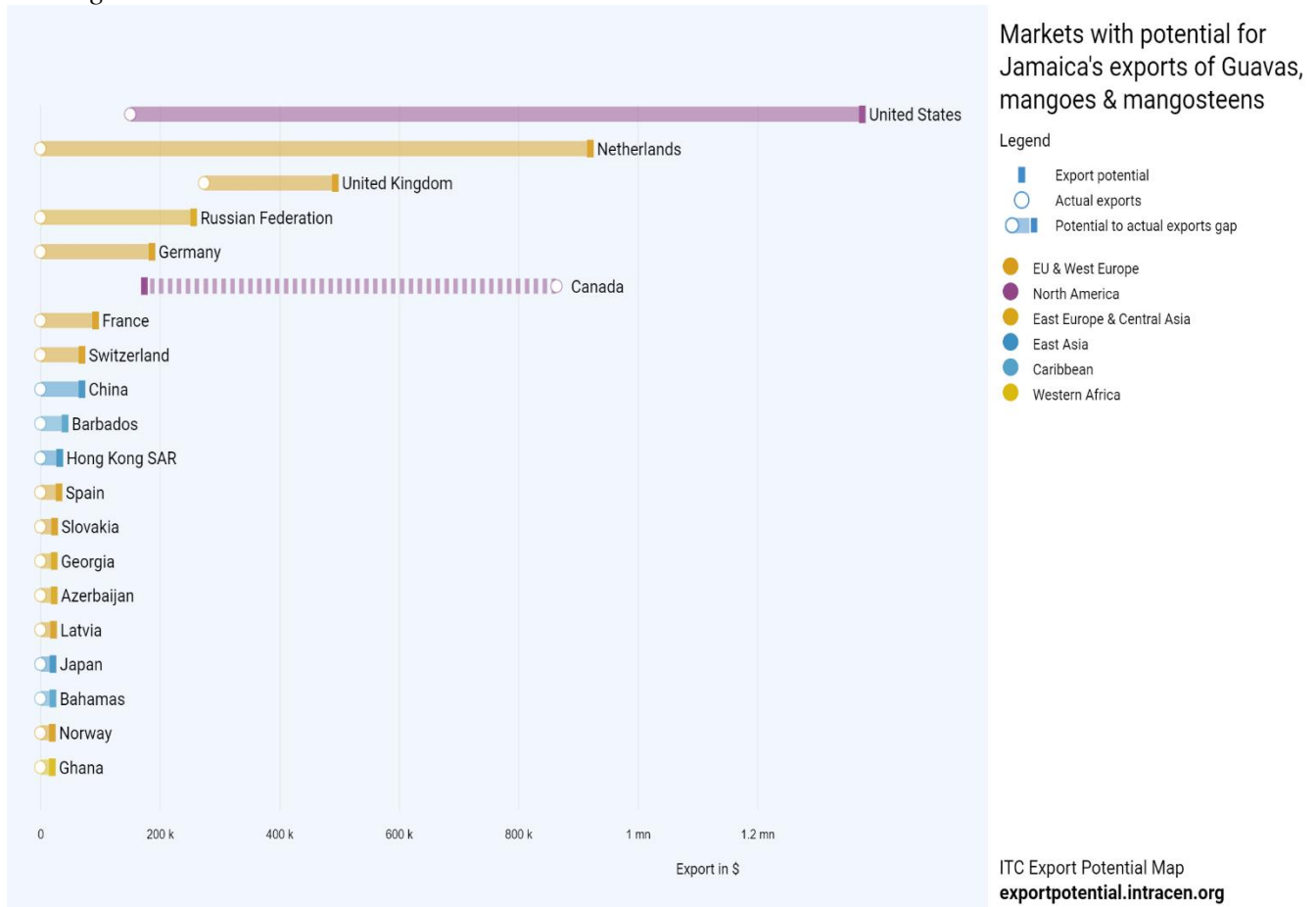
Country	Requirements
Canada	Inspection (to ensure the mangoes are clean and fruit flies' quantity are limited as well as properly packaged) Certification (Phytosanitary Certificate) issued
United Kingdom	Inspection (to ensure the mangoes are clean and fruit flies' quantity are limited as well as properly packaged) Certification (Phytosanitary Certificate) issued
United States of America	<p>The 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. Mango shipments would have to be inspected prior to exportation from Jamaica and found free of these pests and diseases.</p> <p>The mangoes must be exported in commercial consignments only and would have to be treated to mitigate the risk of fruit flies</p> <p>The mangoes also must be accompanied by a phytosanitary certificate issued by the Plant Quarantine and Produce Inspection Branch.</p> <p>Individual travellers are not permitted to take mangoes with them into the US.</p>

Source: Plant Quarantine Division

Export Potential

According to the International Trade Centre, Jamaica possesses an untapped global mango market valued at USD 3.1 million. The following countries present promising opportunities for Jamaica's mango exports:

Figure 1



Source: International Trade Centre (ITC)

Figure 1 above outlines the primary mango export market opportunities for Jamaica. It illustrates that Jamaica has surpassed its market potential in Canada, while significant opportunities remain in countries such as the United States, the Netherlands, and the United Kingdom.

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