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# MAJOR TROPICAL FRUITS

Market Review 2023





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# CONTENTS

Note on methodology .....	iv
Foreword .....	vi
Developments at a glance .....	vii
<b>Overview .....</b>	<b>1</b>
<b>Developments in world average export unit values.....</b>	<b>2</b>
<b>Risks and uncertainties .....</b>	<b>3</b>
<b>Commodity Briefs .....</b>	<b>4</b>
<b>Mango, mangosteen and guava.....</b>	<b>4</b>
<b>Exports .....</b>	<b>4</b>
<b>Imports.....</b>	<b>6</b>
<b>Pineapple .....</b>	<b>7</b>
<b>Exports .....</b>	<b>7</b>
<b>Imports.....</b>	<b>8</b>
<b>Avocado .....</b>	<b>9</b>
<b>Exports .....</b>	<b>9</b>
<b>Imports.....</b>	<b>11</b>
<b>Papaya .....</b>	<b>12</b>
<b>Exports .....</b>	<b>12</b>
<b>Imports.....</b>	<b>13</b>

## NOTE ON METHODOLOGY

This report analyses full-year results of developments in global trade in major tropical fruits in 2023 and represents an update to the Major Tropical Fruits Market Review Preliminary Results 2023, which was published on January 2024. The analysis contained herein is based on data on trade quantities that were compiled from the following sources: country responses to the 2024 questionnaire of the FAO Intergovernmental Sub-Group on Tropical Fruits; data from the UN Comtrade database, Global Trade Tracker Inc. and Trade Data Monitor Inc.; communications with national sources and industry partners in trading countries; and secondary data and information from desk research. The findings incorporate revised data and information as available up to the end of May 2024. All data in this report should be considered as provisional. FAO continuously monitors global trade flows of tropical fruits and publishes updates when revisions of officially reported data are released.

All datasets refer to global trade of fresh or dried major tropical fruits, as covered by HS codes 080430 (pineapple); 080440 (avocado); 080450 (mango, mangosteen and guava); and 080720 (papaya) under the harmonized tariff nomenclature system of the World Customs Organization. Data on the import volumes of the European Union exclude the United Kingdom of Great Britain and Northern Ireland since February 2020.

Unless otherwise specified, the source of the figures is the author(s)' own elaboration of various data sources as explained above.

Primary data on global trade flows and prices were kindly provided by the following organizations:

- Secretaría de Agricultura, Ganadería y Pesca, Argentina
- Statistical Committee of the Republic of Armenia
- Statistics Austria
- Ministry of Municipal Affairs and Agriculture Bahrain
- Bangladesh Bureau of Statistics (BBS)
- Banque Nationale de Belgique
- Ministry of Agriculture, Belize
- Ministerio de Desarrollo Rural y Tierras, Bolivia
- Brazilian Ministry of Agriculture and Livestock
- Agriculture and Agri-Food Canada, Statistics Canada
- Chinese Academy of Agricultural Sciences
- Ministerio de Agricultura y Ganadería, Costa Rica
- Ministry of Agriculture, Croatia
- Statistical Service of Cyprus
- Ministry of Agriculture, Czech Republic
- Ministry of Food, Agriculture and Fisheries of Denmark
- Ministerio de Agricultura y Ganadería, Ecuador
- Agricultural Office - Embassy of Arab Republic of Egypt
- Ministerio de Agricultura y Ganadería, El Salvador
- Statistics Estonia

- Federal Ministry of Food and Agriculture (BMEL), Germany
- Hellenic Statistical Authority
- Planeamiento del Ministerio de Agricultura, Ganadería y Alimentación, Guatemala
- Hungarian Central Statistical Office
- Statistics Indonesia - BPS
- Central Bureau of Statistics, Israel
- Ministry of Agriculture, Forestry and Fisheries, Japan
- Ministry of Agriculture of Latvia
- Ministry of Agriculture of the Republic of Lithuania
- Ministère de l'Agriculture et de l'Élevage, Madagascar
- Ministry Of Agriculture And Food Security, Malaysia
- Secretaria de Agricultura y Desarrollo Rural, Mexico
- Ministarstvo poljoprivrede, šumarstva i vodoprivrede, Montenegro
- Ministère de l'Agriculture, de la Pêche Maritime, du Développement Rural et des Eaux et Forêts, Maroc
- Ministry for Primary Industries, New Zealand
- Norwegian Agriculture Agency (Landbruksdirektoratet)
- Ministerio de Agricultura y Riego del Perú
- Ministry of Agriculture and Rural Development, Poland
- Ministério da Agricultura e Pescas, Portugal
- National Institute of Statistics, Romania
- Ministry of Agriculture, Fisheries, Natural Resources and Co-operatives, Saint Lucia
- Ministry of Agriculture, Land Reform and Rural Development, South Africa
- Department of Agriculture Sri Lanka
- Jordbruksverket, Sweden
- Ministry of Agriculture and Cooperatives, Thailand
- Turkish Statistical Institute
- Ministerio de Relaciones Exteriores del Uruguay
- General Statistics Office of Viet Nam

## FOREWORD

The *Major Tropical Fruits Market Review* is issued on an annual basis to Members and Observers of the Subgroup on Tropical Fruits of the Intergovernmental Group on Bananas and on Tropical Fruits, which is a subsidiary body of the Committee on Commodity Problems (CCP).

It is prepared by the Team on Responsible Global Value Chains, Markets and Trade Division, Food and Agriculture Organization of the United Nations (FAO), Rome.

The Team on Responsible Global Value Chains collects data and conducts analysis on trade in bananas and tropical fruit and carries out research and analysis on global value chains and agricultural commodities. Regular publications include market reviews, outlook appraisals and projections for bananas and tropical fruits. The team also provides technical assistance to developing countries in designing and implementing national policies regarding responsible value chains in agriculture.

The report is available at the following FAO website:

<https://www.fao.org/markets-and-trade/commodities/tropical-fruits>



## DEVELOPMENTS AT A GLANCE

- ▶ World exports of major tropical fruits rose by approximately 8 percent in 2023, to almost USD 10.8 billion in constant 2014–2016 dollar terms, marking the highest level reached thus far.
- ▶ The main drivers of trade were higher output in the main production zones for most major tropical fruits, including a steep increase in global supplies of avocado, as well as firm demand in major import markets.
- ▶ Developments by commodity:
  - Global exports of mango, mangosteen and guava grew by 5.2 percent, to 2.4 million tonnes.
  - Global pineapple exports expanded by 3.9 percent, to 3.2 million tonnes.
  - Global exports of avocado rose by 10.6 percent, to 2.8 million tonnes.
  - Global exports of papayas contracted by 2.6 percent, to 370 000 tonnes.
- ▶ Despite the overall positive supply situation at the global level, concerns surrounding adverse weather events as well as the spread of plant diseases continued to negatively impact producers in some cases and locations, especially regarding the cultivation of papayas.
- ▶ Because of a relatively strong global import demand, indicative world average export unit values displayed an overall tendency to increase, with the exception of avocados, whose unit values declined owing to the fast growth in supplies in 2023.





## Overview

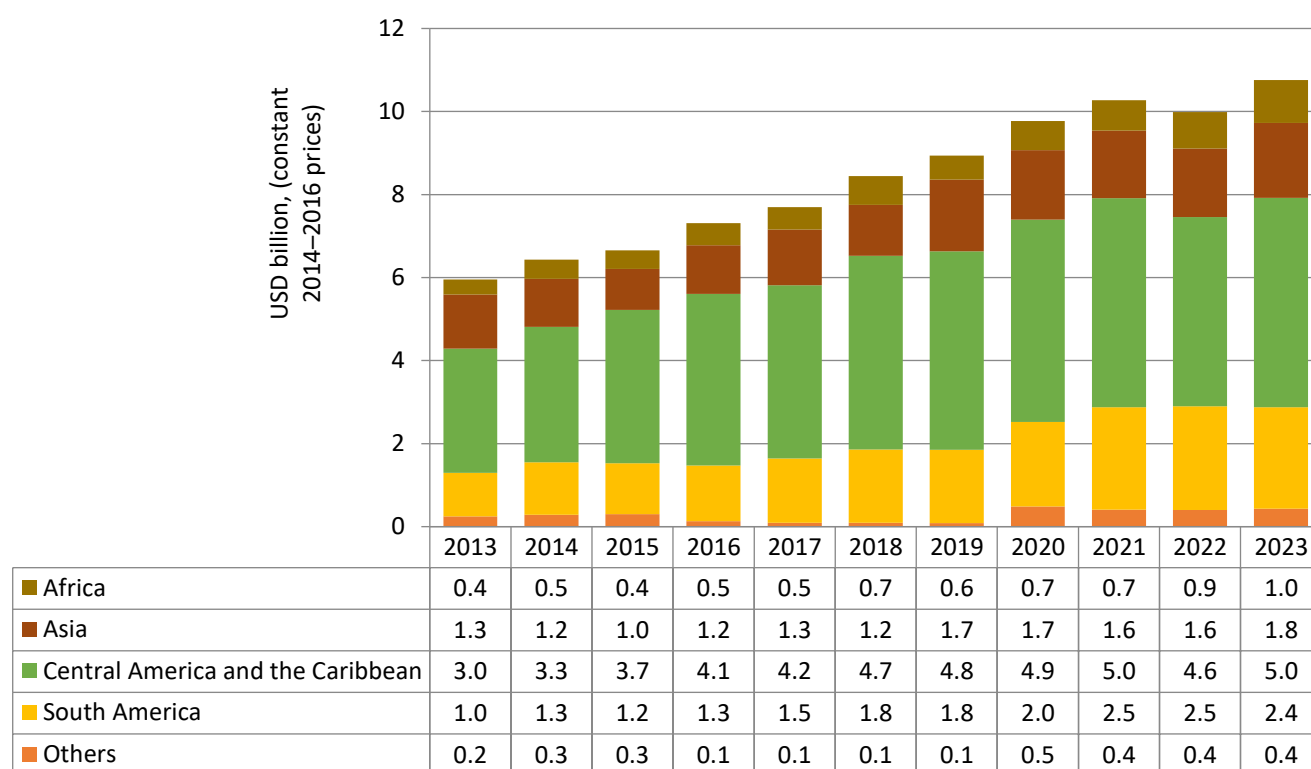
Available full year data indicate that the volume of world trade in major tropical fruits<sup>1</sup> in 2023 rose to a new peak of USD 10.8 billion in constant dollar terms, marking an increase of approximately 8 percent from 2022 (Figure 1). This constituted a strong recovery from the decline experienced in 2022 and placed the global aggregate export volume some 5 percent above their previous peak of USD 10.3 billion in constant dollar terms registered in 2021. It is noteworthy that the drop in 2022 was due entirely to lower exports from Central America and the Caribbean. Furthermore, with the exception of 2022, growth in exports over the past decade was highest from the two regions with the already highest exports, Central America and the Caribbean and South America.

Favourable weather conditions resulted in higher outputs in several major tropical fruit production zones, most notably a steep increase in avocado supplies from Mexico and in pineapple supplies from Costa Rica. Exports of the commodity cluster mango, mangosteen and guava similarly benefited from

higher production in both South American and Asian suppliers, but also from the resolution of the supply chain disruptions that had affected shipments to China in 2022. However, detrimental weather conditions, including the aftermath of hurricanes Dora and Julia, and a lack of sunshine, reduced papaya production in key producing areas and impeded their exports.

On the import side, positive developments in the hospitality sector supported demand growth in both the United States of America and the European Union, the two main importers, particularly of avocados and pineapples. In both markets, consumers reportedly also displayed a higher propensity to spend on nutrient-rich foods in retail outlets despite the inflationary pressures. Industry sources attributed this to the relatively elastic nature of demand for most major tropical fruits. Demand for tropical fruits in China, meanwhile, reportedly also continued on a positive trajectory, as Chinese customers continued to display a growing interest in, and propensity to spend on, premium imported tropical fruits, especially in the case of fresh pineapples and mangosteens.

**Figure 1.** Major tropical fruits: global aggregate export volumes, 2013 to 2023, USD billion, (constant 2014–2016 prices)



<sup>1</sup> This note defines major tropical fruits as pineapple, avocado, papaya and the commodity cluster composed of mango, mangosteen and guava.

Globally, pineapple, avocado and mango continued to be the three most significantly traded tropical fruits in terms of their export quantities in 2023, bananas aside (Figure 2). With global exports of approximately 3.2 million tonnes, pineapples remained the predominant commodity in quantity, with their popularity primarily driven by the fruit's low average export unit values. However, in value terms, avocados accounted for some 60 percent of global trade in major tropical fruits in 2023 (Figure 2) due to the significantly higher average export unit value of this fruit, which is typically a multiple of the average export unit value of pineapples. In addition, global trade in avocados experienced very fast growth in quantity terms in 2023, further consolidating the strong position of this commodity in global tropical fruit markets. The commodity cluster mango, mangosteen, and guava, meanwhile, accounted for approximately one quarter of global major tropical fruit trade in both quantity and constant value terms in 2023. At an export quantity of only 370 000 tonnes, papayas continued to play only a marginal role in international markets. A major obstacle to a significant expansion in global papaya trade, outside of its main destination of the United States of America, remains the fruit's high perishability and

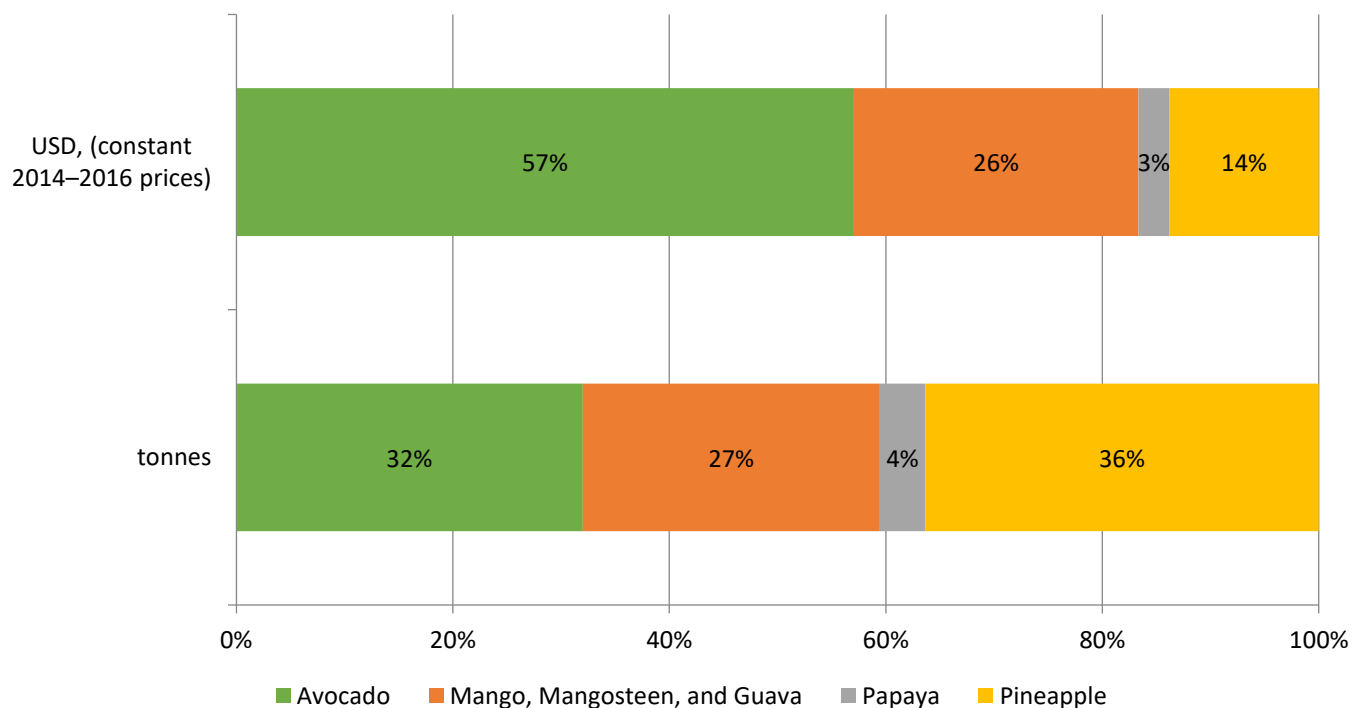
sensitivity in transport, which renders Central and South American produce less suitable for supply to far afield destinations, including the European Union. The situation was further complicated by a mounting reluctance of consumers in key European Union markets to purchase produce imported by air<sup>2</sup>.

## Developments in world average export unit values

World average export unit values of all four major tropical fruits (Figure 3) continued to reflect closely their respective supply and demand conditions over the course of 2023.

Average export unit values of avocados dipped from a peak of USD 2 603 in October to a trough of USD 1 749 per tonne in July 2023, and fluctuated at relatively low levels thereafter, as abundant supplies from the two major exporters, Mexico and Peru, outstripped demand in world markets. Over the full year, average export unit values of avocados thereby remained 10 percent below their 2022 level, at a reported USD 2 265 per tonne, the lowest recorded since 2015.

Figure 2. Major tropical fruits: Share of 2023 export quantities by type, measured in USD (constant 2014–2016 prices) and tonnes



<sup>2</sup> <https://www.freshplaza.com/europe/article/9585769/global-market-overview-papayas/>



World average export unit values for the commodity cluster mango, mangosteen and guava, meanwhile, continued to largely follow their regular seasonal variations throughout the year, starting from USD 1 260 in January 2023 and ranging noticeably above their 2022 level in the last quarter. On average, export unit values for this commodity group stood 8 percent higher in 2023 than in the previous year.

World export unit values of pineapples averaged 11 percent higher in 2023 than in 2022, on account of firm demand in both key destinations, the United States of America and the European Union. Notoriously characterized by relatively little fluctuation, average export unit values of pineapples started the year at an average of USD 627 per tonne in January 2023, lingered around USD 650 to 660 per tonne between June and September, and finished at USD 683 per tonne in December, the highest average unit value recorded since 2017.

World average export unit values of papayas, meanwhile, rose from USD 775 per tonne in January 2023 to USD 901 per tonne in December 2023, on account of the positive demand situation in the United States of America, the main importer of papayas. Over the full year, however, the average

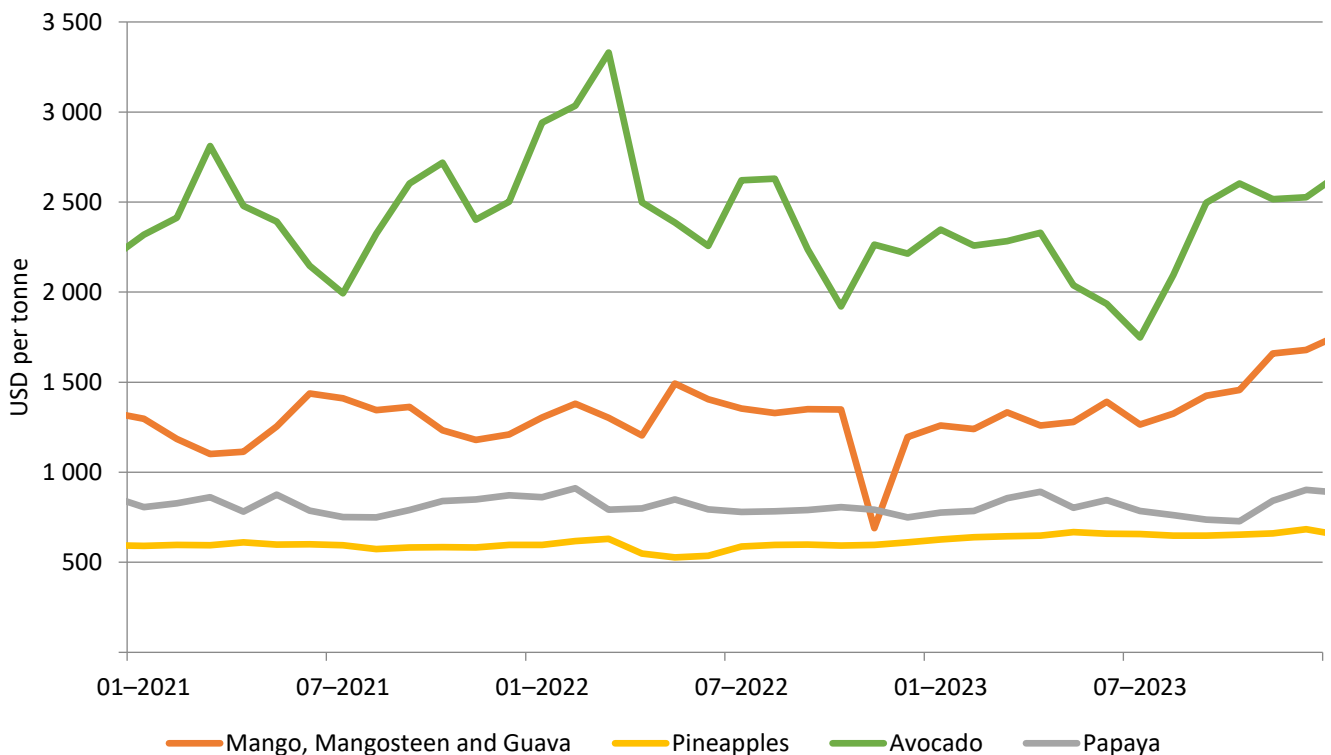
export unit value remained largely unchanged from 2022, at USD 809 per tonne, due to the effect of seasonal price decline between July and October 2023.

## Risks and uncertainties

The outlook for global production, trade and consumption of tropical fruits is subject to several potentially significant risks and uncertainties. Elevated inflation rates, high interest expenses and exchange rate fluctuations threaten to hinder demand in domestic and import markets, especially for consumers in poorer economic strata. With several ongoing wars affecting the global economy, the risks of potential future disruptions to local and global supply chains, fertilizer markets, transport routes and access to export markets add further uncertainties to the outlook. Geopolitical uncertainties that may result in the disruption of established trade relationships and potentially cause large effects on domestic and global markets are of additional concern.

On the supply side, the effects of global warming are resulting in a higher occurrence of droughts, floods, hurricanes and other natural hazards, which render

Figure 3. Major tropical fruits: World average export unit values, January 2021 to December 2023, USD per tonne



the production of major tropical fruits increasingly challenging and costly. This is a particularly acute difficulty, as the vast majority of tropical fruits are produced in remote, informal settings, where cultivation is highly dependent on rainfall, prone to the adverse effects of increasingly erratic weather events and disconnected from major transport routes. The risk of adverse conditions limiting the production of fruits that meet the quality levels demanded by consumers in importing markets is therefore high.

Importing countries are increasingly enacting laws requiring producers and businesses to adopt responsible practices and perform mandatory due diligence to address various sustainability risks. Complying with these regulations may take time for producers and exporters, as it requires the generation of information and development of new skills for effective due diligence. These requirements also entail additional costs for businesses and the need for staff capacity development. Given the perishable nature of tropical fruits in production, trade and distribution, environmental challenges, insufficient infrastructure, transport bottlenecks and challenges complying with sustainability requirements continue to jeopardize production and supply to international markets.

Producer organizations and governments of producing and importing countries have a key role to play in mitigating the possible impacts stemming from these various risks, particularly in view of their potential repercussions for smallholder farmers and workers employed in the industry. Close co-ordination of the capacity development and extension activities of all concerned national institutions and value chain actors will be beneficial to the development of proper policies, regulations and strategic measures that address these challenges in a comprehensive way. The transparent collaboration among all stakeholders of the tropical fruit sector will be critical, especially with regard to addressing current and future sustainability concerns related to the expansion of this industry.

## Commodity Briefs

### Mango, mangosteen and guava

#### Exports

Global exports of mango, mangosteen and guava grew to 2.4 million tonnes in 2023, an increase of 5.2 percent from the previous year. Higher exports of mangosteen from Thailand, as well as of mangoes from Brazil and Mexico, were the main driving factor behind this. In terms of export quantities by type at the global level, mango continued to account for around 85 percent of global shipments and mangosteen for around 15 percent. As previously, guava continued to display a low availability in import markets, in particular due to its lower suitability for transport.

Favourable weather conditions in Mexico resulted in a successful expansion in domestic production as well as satisfactory fruit quality. Data provided by the Mexican government in May 2024 indicate that mango harvested area in the country expanded by 6 percent in 2023, leading to an equivalent increase in production quantities. Available trade data for 2023 accordingly show that exports from Mexico grew by 3.5 percent over the full year, to some 480 000 tonnes, thereby consolidating the country's 21 percent market share in global mango exports. According to trade data by destination provided by the Mexico National Institute of Statistics, some 80 percent of Mexican mangoes were destined for the United States of America, and some 7 percent for Canada in 2023. According to industry sources, mangoes from Mexico continued to be met with rising consumer demand in the United States of America due to their flavour and texture characteristics.

Exports from Thailand, the leading supplier of mangosteens to world markets, rose by some 12 percent in 2023, to 370 000 tonnes, as production of mangosteens remained strong and the supply chain disruptions that had affected shipments to China in 2022 resolved. In 2023, China procured some 88 percent of Thai exports of mangosteen, at a relatively high price of USD 2 118 per tonne, as the premium



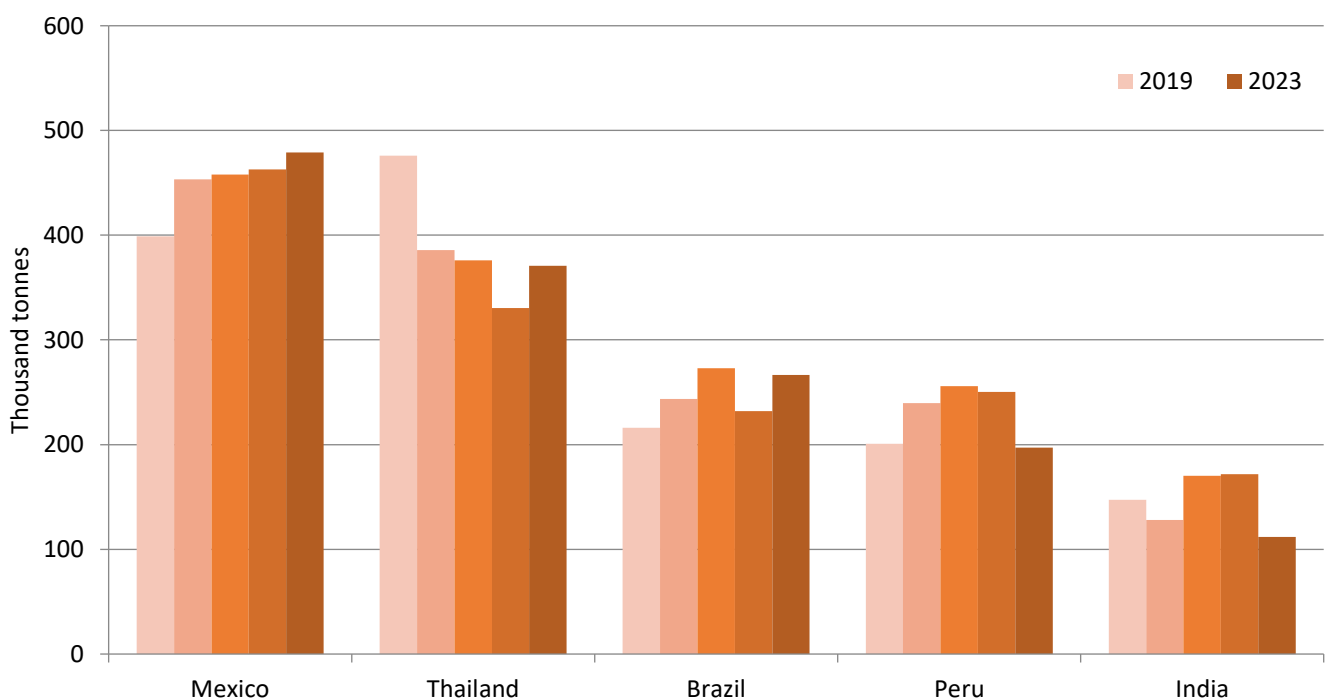
quality of Thai fruits continued to be met with firm consumer demand in China. Data provided by the Thailand Ministry of Finance indicate an average export unit value for shipments from Thailand to China of USD 2 110 per tonne in 2023, a 6-percent year-on-year rise. Aside from China, Thailand also supplies fresh mangosteens in significant quantities to Viet Nam as well as fresh mangoes to Malaysia, albeit both at substantially lower average export unit values of only around USD 550 to 600 per tonne.

Exports of mango, mangosteen and guava from South American suppliers declined by 10.5 percent in 2023, to some 500 000 tonnes, as shipments from Peru and Ecuador, two of the three key suppliers from the region, were affected by adverse weather conditions. Trade data for 2023 accordingly indicate a contraction of 21 percent for shipments from Peru, to just below 200 000 tonnes. Exports from Ecuador, which are almost exclusively destined to the United States of America, dropped to 27 000 tonnes, a decrease of 58 percent from 2022. Favourable weather conditions, meanwhile, resulted in a 15-percent increase in supplies from Brazil, to approximately 270 000 tonnes. Shipments from Peru and Brazil are primarily destined for European Union markets, with only some 20 to 30 percent of exports from either country reaching the United States of America. In the

European Union, Brazil benefits from its ability to produce mangoes perennially, including a number of varieties that are popular in key European import markets such as Tommy Atkins, Keitt and Kent.

In terms of emerging suppliers to world markets, available data for India show a drop in mango exports of some 35 percent, pointing to a full-year estimate of 110 000 tonnes. India ranks by far as the largest producer of mangoes globally, at a production quantity of 26.3 million tonnes in 2022, as reported by the latest officially available FAOSTAT data. Strong domestic demand for mangoes in the country means that supplies almost exclusively cater to the domestic market. In 2023, lucrative domestic prices reportedly reduced the quantities available for export markets, thereby causing the decline in exports from India. Generally, some 25 to 30 percent of shipments from India are supplied to the United Arab Emirates and Saudi Arabia, where demand for tropical fruits has been burgeoning in recent years, and another 10 percent to neighbouring Nepal. Available data for exports from Pakistan, meanwhile, suggest that the country saw a rise in shipments by 20 percent in 2023, to 130 000 tonnes.

Figure 4. Mango, Mangosteen and Guava: Export quantities from the leading exporters, 2019 to 2023, thousand tonnes



## Imports

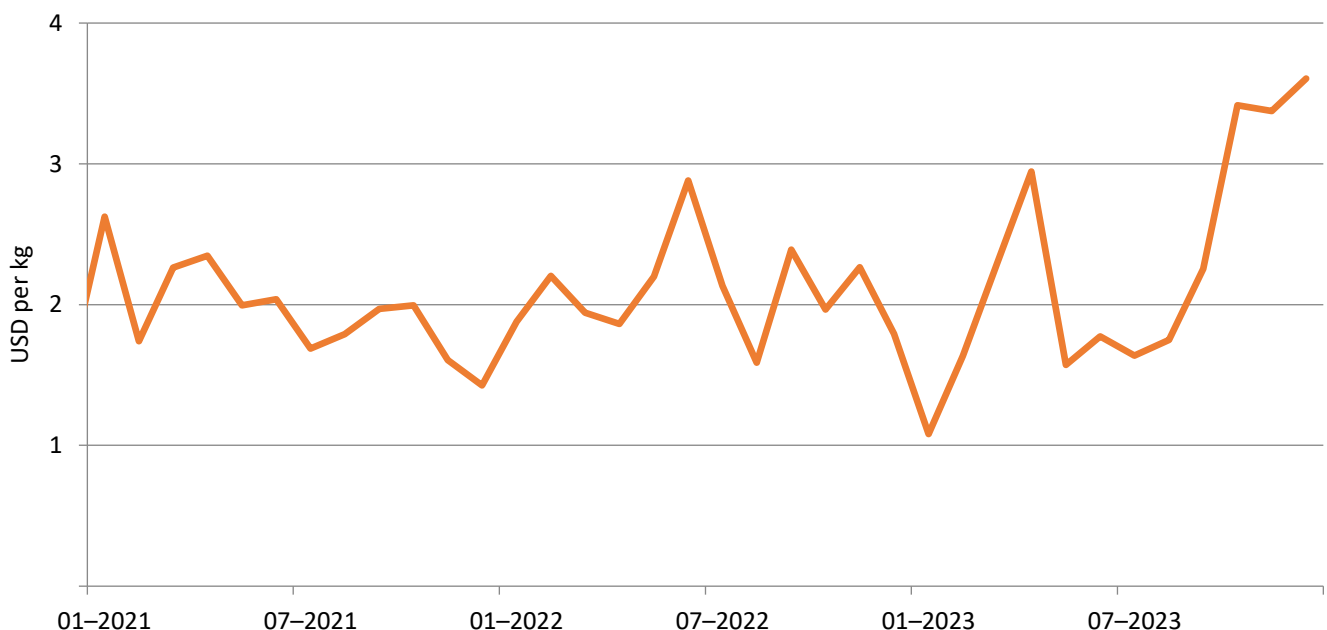
Total global import quantities of fresh mangoes, mangosteens, and guavas rose by 2 percent in 2023, to 2.3 million tonnes, as suggested by available trade data. The United States of America and the European Union remained the two leading global importers, with import shares of 25 percent and 17 percent, respectively. In both markets, consumer demand for mangoes increased slightly, driven by a mounting nutritional awareness of the assumed health benefits of these fruits. However, import growth was only registered in the European Union in 2023, on account of a positive supply situation in Brazil. Shipments to the United States of America, meanwhile, were hindered by the supply shortages in Peru and Ecuador, two of the top five exporters of mangoes to the United States of America. Overall, imports into the United States of America thereby contracted by 3 percent in 2023, to approximately 570 000 tonnes. Imports into the European Union, meanwhile, grew by 2.4 percent, to some 400 000 tonnes. Available data further show that unit values at the import stage rose in both markets, by around 5 to 6 percent, to averages of USD 1 509 in the United States of America and USD 2 000 in the European Union.

Imports by China, the third leading global importer of mangoes, mangosteens and guavas in recent years,

fell by a reported 20 percent in 2023, to approximately 270 000 tonnes, equivalent to 12 percent of global imports. Chinese imports of this commodity group are dominated by mangosteens, which accounted for some 95 percent of total quantities in 2023, according to available data on imports by type provided by China Customs Statistics. Growth in imports of this commodity group to China had in previous years been driven by higher procurements of mangosteens from Thailand. However, in 2022, substantially higher imports of mangoes from Viet Nam and Cambodia, which respectively reached some 50 000 tonnes and 28 000 tonnes, also played a large role. Available import data by origin for 2023 show near-100 percent declines in procurements from these two suppliers, which could not be offset by higher imports from Thailand. This impeded the overall growth prospects of imports of this commodity cluster by China. In terms of average import unit values, shipments of mangosteens to China continued to range at a high level of USD 3 013 per tonne, the same as recorded in 2022, as indicated by available data.

Further noteworthy importers of mango, mangosteens and guavas continued to be Saudi Arabia and the United Arab Emirates, which respectively procured some 95 000 and 120 000 tonnes from world markets in 2023, following fast growth of 40 percent for the United Arab Emirates.

**Figure 5.** Mango: United States of America, Indicative average wholesale prices, January 2021 to December 2023, USD per kg



Available trade data for 2023 indicate that imports of this commodity cluster by Saudi Arabia continued to be dominated by fresh or dried mangoes at 88.6 percent, with guavas accounting for 11 percent, and mangosteens making up only a negligible share of total imports. The main origins of mango imports to Saudi Arabia in 2023 were Yemen, Egypt and Pakistan, with procurements from Yemen and Egypt showing year-on-year growth of 49 percent and 33 percent, respectively.

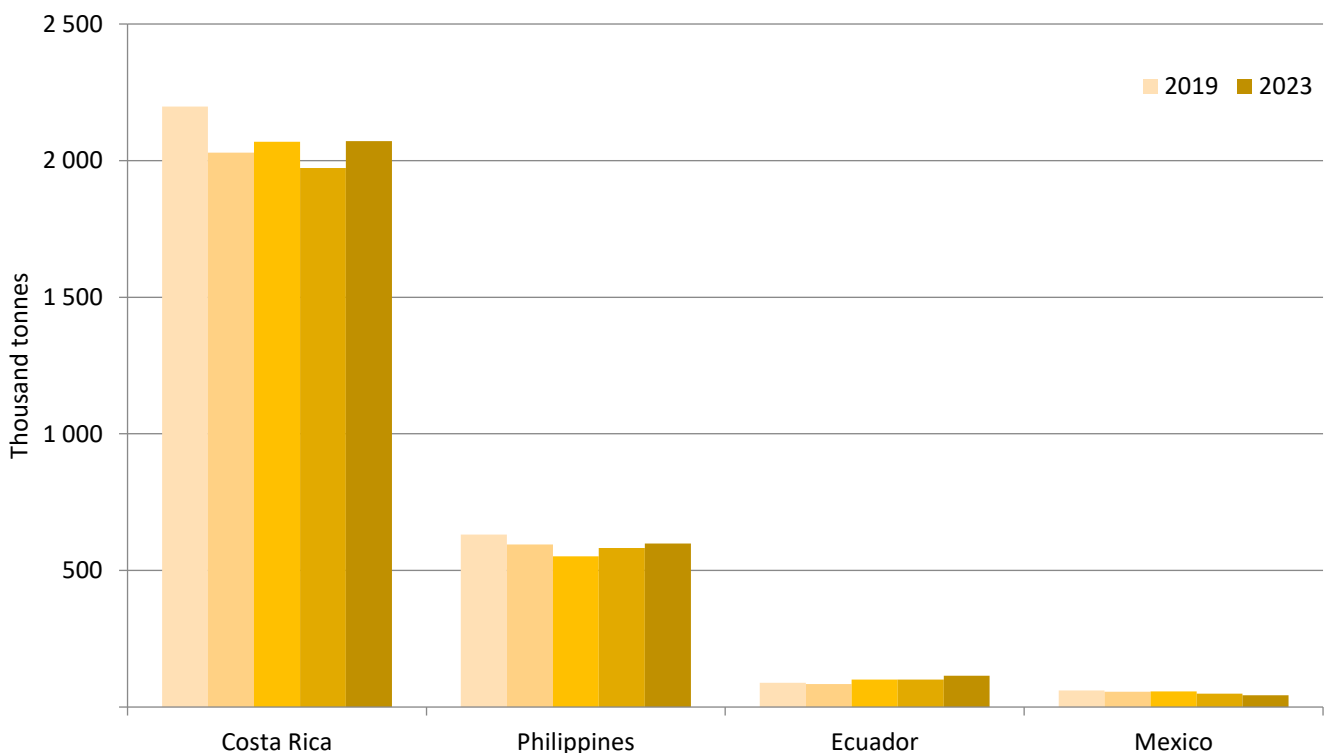
Indicative average wholesale prices of mangoes in the United States of America (Figure 5), which exclude mangosteen and guava, continued to reflect seasonal fluctuations in supply and demand over the course of 2023, but ranged some 9 percent above their average of 2022. Prices stood as low as USD 1.08 in January 2023, reached a peak of USD 2.94 per kilogram in April 2023, ranged between USD 1.60 and 1.80 per kilogram from May to August, when competition from cheaper summer fruits exerted downward pressure, then rose again to USD 3.61 per kilogram in December 2023. At an average of USD 2.28 per kilogram over the full year of 2023, the United States of America wholesale prices thereby ranged some 25 percent higher than their five-year average registered before the pandemic.

## Pineapple

### Exports

Based on available trade data, global exports of pineapples grew by 3.9 percent in 2023, to 3.2 million tonnes, determined largely by higher supplies from Costa Rica, the world's largest exporter at a market share of some 65 percent. According to industry information, weather conditions in key Costa Rican growing areas were favourable for the cultivation of pineapples throughout 2023, resulting in higher yields and thus higher supplies for export. Lower freight costs, in particular to the United States of America, additionally supported export growth from the country. Shipments from Costa Rica accordingly increased by 5 percent in 2023, to 2.1 million tonnes, in strong contrast with the near 5-percent drop experienced in 2022. However, industry sources reported that despite this positive performance, there was a noticeable reduction in planted area in Costa Rica, as smaller pineapple farmers had been discouraged from continuing their operations in view of the low profit margins that had prevailed in this industry for many years. In terms of leading destinations, pineapple shipments from Costa Rica continued to be almost exclusively destined to the

Figure 6. Pineapple: Export quantities from the leading exporters, 2019 to 2023, thousand tonnes



United States of America and the European Union, where demand reportedly remained firm. The average export unit value of shipments from Costa Rica to world markets was USD 554 per tonne in 2023, a year-on-year increase of 12 percent.

Exports from the Philippines, the second leading exporter of pineapples to global markets, expanded by a reported 2.7 percent in 2023, to some 600 000 tonnes. Trade data by destination show a 3-percent increase in shipments to China in 2023, the leading recipient of pineapples from the Philippines at a share of some 43 percent. Industry sources reported that imports of pineapples from the Philippines to China benefited from higher Chinese demand for premium quality pineapples. In this regard, the long shelf life, year-round production cycle and attractive price-to-quality ratio of the MD2 pineapples, the main variety cultivated in the Philippines, proved to be a particularly strong selling point. Further key import markets for pineapples from the Philippines remained Japan and the Republic of Korea in 2023, at quantity shares of some 30 percent and 14 percent, respectively. Shipments of Filipino pineapples to both destinations expanded by some 6 to 8 percent in 2023. The average export unit value of shipments from the Philippines to world markets was USD 593 per tonne in 2023, an increase of 3.8 percent from the previous year. Shipments from Ecuador, the leading exporter of pineapples from South America, grew by a reported 13.7 percent in 2023, to approximately 110 000 tonnes. Data on trade flows by destination indicate that Ecuador sent approximately 42 percent of its total exports in 2023 to the European Union, some 23 percent to Chile, and some 21 percent to the United States of America. On account of firm demand from the United States of America, pineapple exports from Ecuador to this destination expanded by nearly 200 percent in 2023, accompanied by an 18-percent increase in the average export unit value, to USD 704 per tonne. As regards global exports, meanwhile, the average export unit value of shipments from Ecuador was USD 558 per tonne in 2023, an increase of 4.6 percent from the previous year.

Pineapple exports from Mexico, a comparatively small exporter of pineapples to global markets, fell by nearly 13 percent, to approximately 40 000 tonnes in 2023, as supplies continued to be affected by weather-induced shortages. Shipments from Mexico

are almost exclusively destined for the United States of America, where the country ranks as the third leading origin of pineapple imports behind Costa Rica and Honduras. The average export unit value of shipments from Mexico to world markets stood at USD 788 per tonne in 2023, an increase of 7.8 percent from 2022.

Exports from Côte d'Ivoire, the leading African supplier of pineapples to world markets, declined by nearly 30 percent in 2023, to around 23 000 tonnes, well below their previous five-year-average of 30 000 tonnes. While at the time of writing no confirmed information on the underlying causes was available, it is assumed that adverse weather conditions resulted in a reduction in supplies in terms of both quantity and quality, causing difficulties to cater to import demand from European Union markets. Trade data by destination suggest that France and Belgium continued to be the two key destinations of pineapples from Côte d'Ivoire, jointly procuring some 68 percent of the country's total shipments in 2023. The average export unit value of shipments from Côte d'Ivoire to world markets was at USD 451 per tonne in 2023, a year-on-year increase of 1.5 percent.

## Imports

Available full-year trade data point to an increase of global imports of pineapples by 2.2 percent in 2023, to 3 million tonnes. According to industry information, demand in the United States of America and the European Union continued to be firm throughout the year. In both markets, a large share of pineapples is consumed outside of the home. Estimates for the United States of America, for example, indicate that food service sales account on average for some 60 percent of total sales. While availability from the main global supplier, Costa Rica, increased substantially compared to 2022, industry sources reported that this was not enough to satisfy demand in 2023.

Aided by relatively stable sales in the hospitality sector, imports by the United States of America grew by 2.8 percent in 2023, to 1.2 million tonnes. Conversely, imports by the European Union, the second largest importer, contracted very slightly at a rate of 0.1 percent, as importers reported issues to procure supplies from Costa Rica. Imports by the European Union accordingly stood at approximately



770 000 tonnes, some 17 percent below their previous 5-year-average. In terms of global market shares, the United States of America procured about 39 percent of global export supplies in 2023, and the European Union some 26 percent.

Imports by China, the third leading global importer of pineapples, grew by 2.6 percent in 2023, to 220 000 tonnes, as consumer demand for high quality fresh pineapples continued to rise. Official crop data from China show that pineapple production grew by 4.6 percent in 2023, to some 2 million tonnes, almost exclusively destined to the domestic market. However, amid changing consumer preferences, import growth continued to be driven not only by the need for higher volumes but also by growing demand for more premium pineapples, with the MD2 variety from the Philippines particularly sought after.

Indicative average wholesale prices of pineapple in the United States of America (Figure 7) varied considerably throughout 2023, starting off at USD 1.17 per kilogram in January, then rising to a peak of USD 2.08 per kilogram in July, and declining thereafter to USD 1.13 per kilogram in December. Over the full year of 2023, average wholesale prices thereby stood at USD 1.47 per kilogram, some 18 percent higher than in 2022.

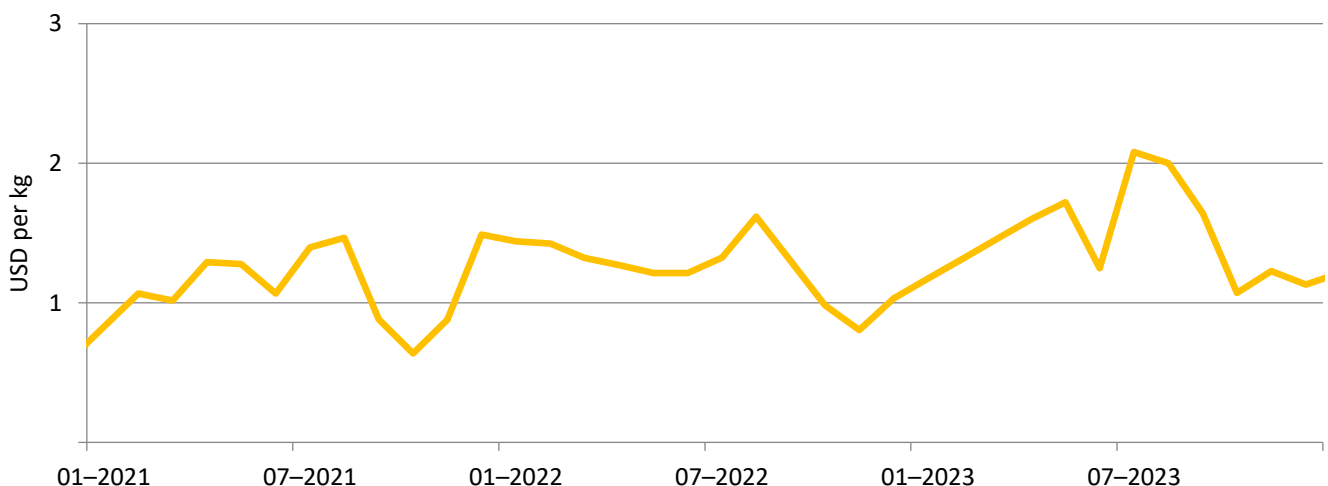
## Avocado

### Exports

Global exports of avocado expanded by 10.6 percent in 2023, to slightly over 2.8 million tonnes, on account of a very positive supply situation in Mexico, the world's leading exporter. Available data and information further indicate that exports from several other origins, importantly Peru and Kenya, also grew at fast rates, as further described below.

Available data for exports from Mexico indicate an expansion in shipments from the country of 16.4 percent in 2023, to 1.4 million tonnes, some 200 000 tonnes above the previous year's level. This marked a strong recovery from the weather-induced production losses and shortages in export supplies experienced in 2022. Data provided by the Mexican government in May 2024 indicate that avocado harvested area in the country expanded by 7.2 percent in 2023, and that production quantities grew by 17 percent. These figures illustrate the significant investments that this sector continues to receive in Mexico. However, on the back of high supplies, the average export unit value of shipments from Mexico dropped to USD 2 296 per tonne in 2023, some 30 percent lower than in the previous year. Approximately 80 percent of Mexico's avocado exports were destined to the United States of America in 2023, some 7 percent to Canada, and the remainder mostly to Japan and the European Union. In global trade, Mexico, where avocados originate, typically accounts for some 50 to 55 percent of total avocado

Figure 7. Pineapple: United States of America, Indicative average wholesale prices January 2021 to December 2023, USD per kg



export quantities. This is due to Mexico's ability to produce the fruit in all seasons and its focus on the higher quality Hass variety, which is in greater demand in world markets than other varieties.

Exports from Peru, meanwhile, continued to benefit from favourable weather and successful prior investments in production expansion, the combination of which stimulated not only higher supplies but also better quality of produce. Available trade data suggest that exports from the country expanded by 2.7 percent in 2023, to some 600 000 tonnes. Peru thereby further consolidated its position as the second leading supplier of avocados to world markets, behind Mexico, at a quantity share of 21 percent in 2023. The positive trade performance was further enabled by the comparatively low prices for shipments from Peru, reflected by export unit values which averaged USD 1 610 in 2023, an increase of 5.7 percent from the previous year but a remarkable 30 percent lower than the average export unit value for avocados from Mexico. Peruvian avocados are predominantly sold through previously agreed contracts instead of the spot market, meaning that prices received tend not to follow the most recent market developments. Approximately 50 percent of shipments from Peru continued to be destined for European Union markets in 2023, mainly to the Kingdom of the Netherlands, an important trade hub in the European Union, and Spain.

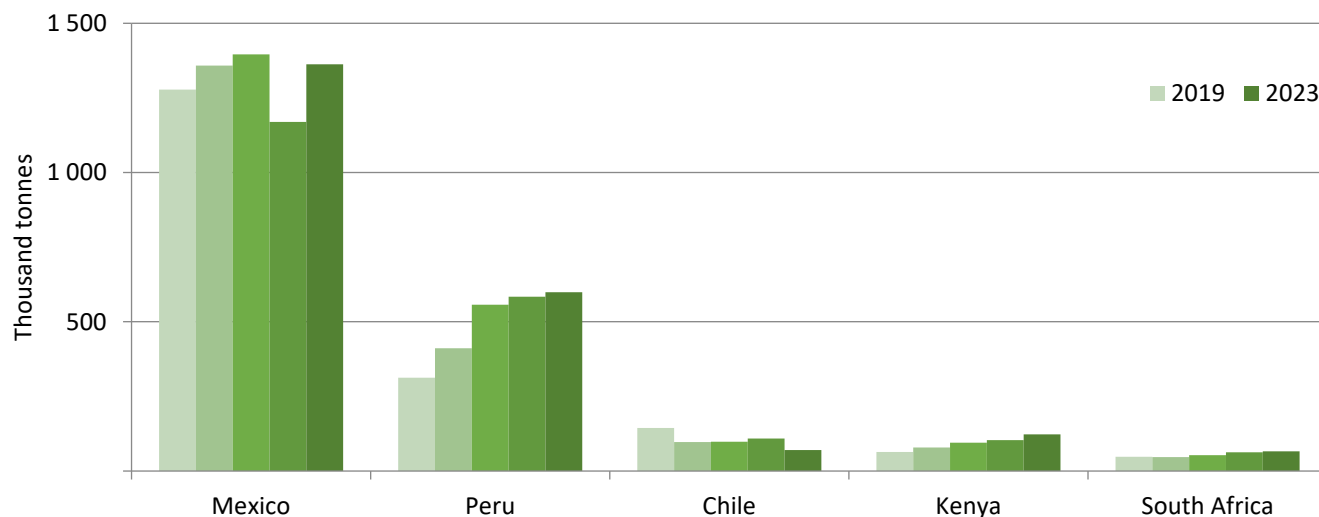
Exports from Kenya, an emerging supplier to global markets and the leading African avocado exporter, grew by 18.7 percent, to 120 000 tonnes in 2023. The

country had invested in significant area expansion for avocados in recent years, more than tripling the harvested area since 2015, to 27 806 ha in 2022, as indicated by the latest official production data reported to FAO. More than half of Kenya's exports are supplied to European Union markets, where the country has been able to compete well on account of very low average export unit values, which ranged around USD 1 166 in 2023, some 27 percent lower than the average unit values of shipments from Peru to the European Union, for example.

Other globally significant exporters of avocado continued to be Chile and South Africa, which also primarily supply the European Union. Exports from Chile dropped by a reported 36 percent in 2023, to some 70 000 tonnes, as spring frosts in September 2022 had reportedly damaged the growing cycle. Another factor restraining avocado exports from Chile was the relatively strong domestic demand for avocados, which continued to divert produce away from export markets.

Exports from South Africa, meanwhile, grew by 4.5 percent in 2023, to some 66 000 tonnes. Available trade data show that nearly 80 percent of supplies from South Africa were destined to the European Union in 2023, where avocados continued to be met with rising consumer demand. Available data for 2023 indicate a 6.8 percent year-on-year rise in the average unit value of shipments from South Africa, to USD 2 030 per tonne.

Figure 8. Avocado: Export quantities from the leading exporters, 2019 to 2023, thousand tonnes



## Imports

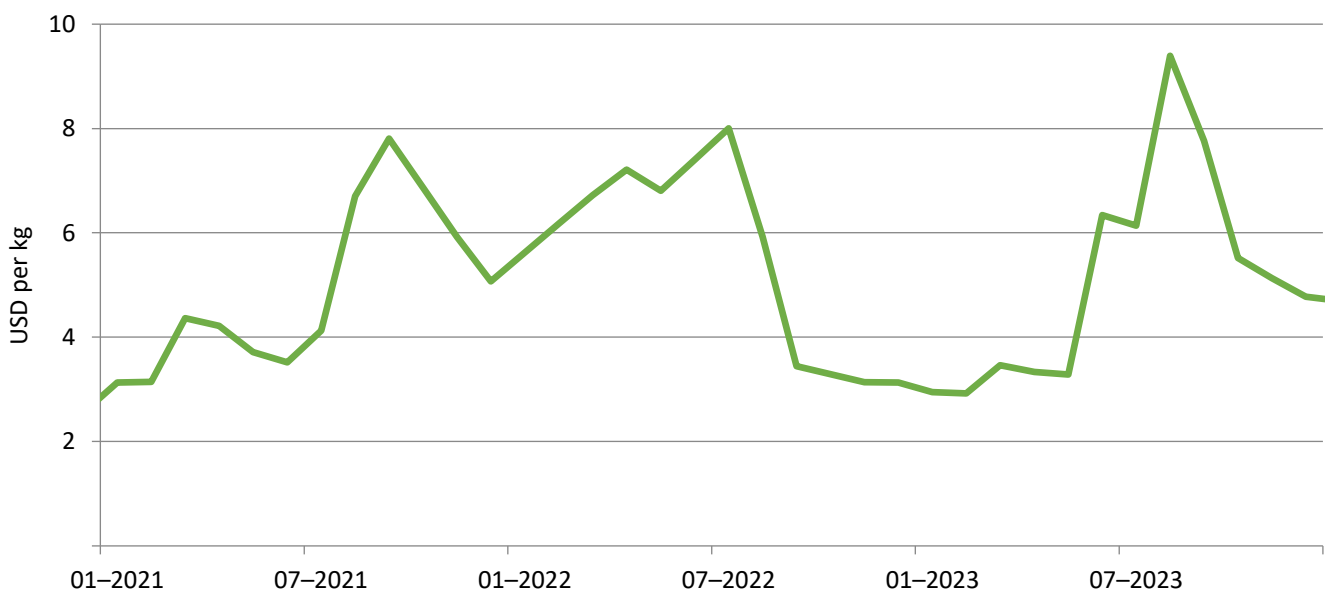
Available data and information indicate that global imports of avocados rose by 14 percent in 2023, to slightly below 2.8 million tonnes. Continuously firm demand in the two major import markets, the United States of America and the European Union, which respectively accounted for 43 percent and 27 percent of global imports in 2023, as well as significant growth in global supplies, were the main reasons supporting this fast expansion in imports. As such, imports by the United States of America rose by 11.5 percent in 2023, to 1.2 million tonnes. The country typically imports some 90 percent of avocados from Mexico and benefited from the positive supply situation in this origin in 2023. In the face of high supplies, which outstripped growth in demand, available trade data show a year-on-year decrease in the average US import unit value of 18 percent in 2023, to USD 2 447 per tonne.

Imports into the European Union similarly rose by 12 percent in 2023, to approximately 760 000 tonnes. As in the United States of America, consumption across the European Union continued to gain in popularity among an increasingly health-conscious population, with avocados widely perceived as a highly nutritious fruit. Within the European Union, fast expansion continued to be seen in Poland, an emerging avocado consuming country, which posted import growth of 27 percent in 2023. Growth was also strong in Spain,

where imports expanded by 16 percent, mainly on account of higher procurements from Peru, as Spanish production was heavily impeded by drought in 2023. Avocado imports by Germany, one of the larger importers of avocados within the European Union, meanwhile, registered growth in imports of 20 percent in 2023. However, it is important to note that most countries within the European Union primarily procured avocados re-exported from the Kingdom of the Netherlands, an important regional trade hub, which typically accounts for some 50 percent of the European Union's total imports and on average re-exports some 90 percent of their gross avocado imports.

On account of the ample supply situation, indicative average wholesale prices of avocado in the United States of America (Figure 9) ranged some 9 percent lower in 2023 than in 2022. Prices displayed a strong upward movement throughout the first half of the year, increasing from a relatively low level of USD 2.95 per kilogram in January to a peak of USD 9.39 per kilogram in August 2023, the highest level reported in over one decade, gradually declining thereafter to USD 4.78 per kilogram in December 2023. Over the full year of 2023, the average thereby amounted to USD 5.08 per kilogram, substantially lower than the USD 6.37 per kilogram recorded over the previous year.

**Figure 9.** Avocado: United States of America, Indicative average wholesale prices, January 2021 to December 2023, USD per kg



## Papaya

### Exports

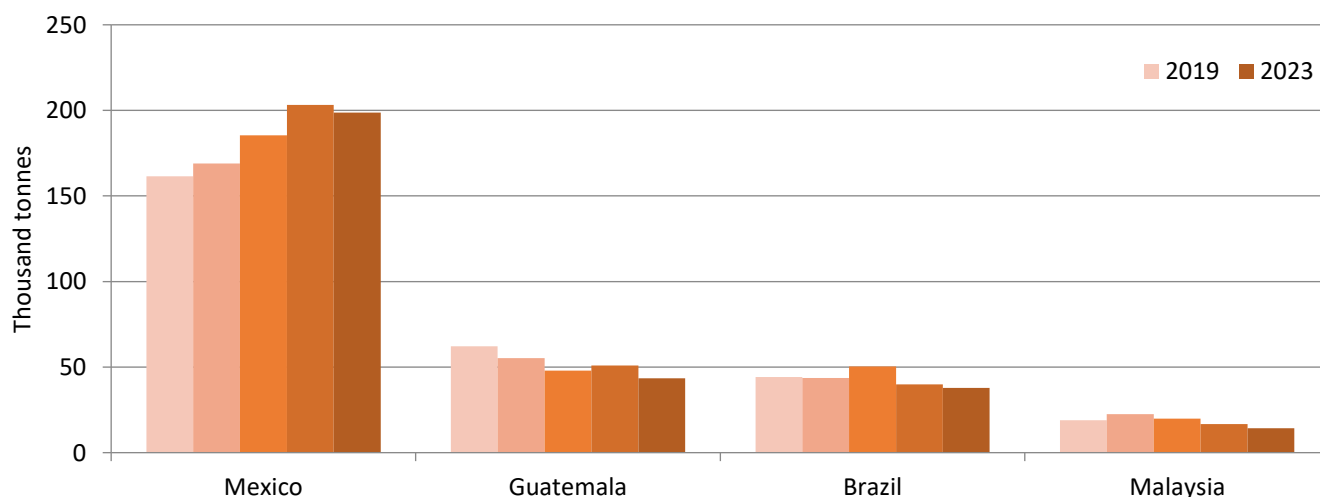
Available trade data indicate a contraction in global exports of papayas by 2.6 percent in 2023, to 370 000 tonnes. Supplies from Mexico, the largest global exporter of papayas, declined by 2.2 percent to just below 200 000 tonnes, on account of adverse weather conditions, including a lack of sunshine during the early autumn months, hindering production. Data provided by the Mexican government in May 2024 indicate that, although the papaya harvested area remained virtually unchanged from 2022, production quantities declined by 4.6 percent, reflecting a noticeable decrease in yields. Virtually all Mexican papaya exports are destined for the United States of America, which globally ranks as the largest importer of papayas, accounting for over half of all global imports in 2023, as indicated by trade data by destination.

The second and third leading suppliers of papayas to world markets continued to be Guatemala and Brazil, which exported some 43 000 tonnes and 38 000 tonnes in 2023, respectively. Exports of papayas from Guatemala contracted by 14.9 percent in 2023, as production continued to suffer from the damage caused by a tropical storm in October 2022. As a result, papaya exports from Guatemala remained lower than the 5-year average of 57 000 tonnes achieved between 2017 and 2021. According to trade data provided by the Guatemala National Institute of Statistics, approximately 63 percent of supplies were

destined for the United States of America in 2023, where papayas of the Tainung variety are well received on the grounds of their versatility, consistency in quality and transportability. The remaining share of Guatemalan papaya exports primarily reached neighbouring El Salvador, where import demand continued to be driven by low domestic production and low average export unit values of Guatemalan papayas, which traded at around USD 215 per tonne in 2023. In view of the production difficulties, however, shipments to both destinations showed large declines over the first seven months of the year.

Shipments from Brazil, one of the leading producers of papayas globally, meanwhile fell by a reported 5 percent in 2023, to some 38 000 tonnes. Industry sources reported that, against a positive supply situation in Brazil, the main obstacle to higher shipments from the country was the decision of a major European discount supermarket chain to discontinue procurements of air freighted produce, alongside generally negative media coverage of this topic. Despite these demand-side difficulties, available data indicate a rise in the average export unit value from Brazil to most European Union destinations of around 20 to 25 percent, with unit values ranging around USD 1 500 per tonne in 2023. As in the case of Mexico, the bulk of Brazilian papaya production caters to the domestic market, where demand for the fruit remains high, but is more price sensitive than for exporters. According to industry information, in view of the strong supply situation, domestic prices for papayas dropped by some 30

Figure 10. Papaya: Export quantities from the leading exporters, 2019 to 2023, thousand tonnes



percent in the first half of 2023, to approximately USD 310 per tonne, clearly demonstrating the significant price differential between domestic and export markets.

Papaya exports from Malaysia declined by 14.9 percent in 2023, to around 14 000 tonnes. Supplies from Malaysia are almost exclusively destined for Singapore, where the fruit enjoys popularity. In international markets, the main papaya variety grown in Malaysia, Sekaki, is reportedly less competitive. According to industry information provided by the International Tropical Fruits Network in December 2023, papaya shipments from Malaysia continued to be hampered by high costs of production and concerns about the impact of bacterial plant diseases, which prompted farmers to switch to planting other cash crops. In particular the bacterial dieback disease caused by phytopathogenic bacteria *Erwinia mallotivora*, which had destroyed the Eksotika variety previously grown in Malaysia and started to affect the newer Sekaki variety, was quoted as another factor impeding Malaysian papaya production in 2023.

## Imports

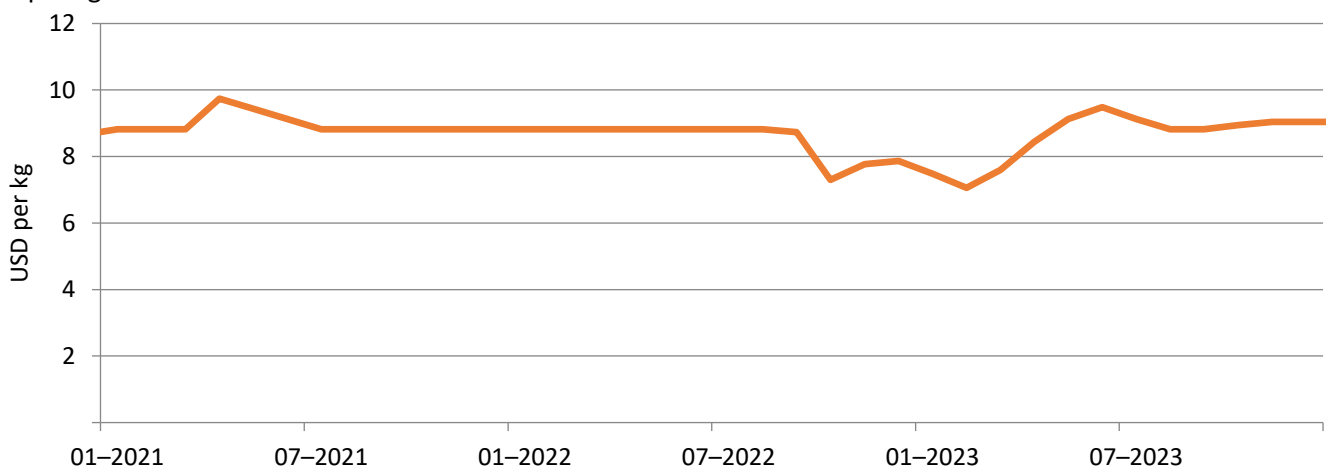
Available data suggest that global imports remained largely stable at some 350 000 tonnes in 2023, with the United States of America ranking as the largest importer at a quantity share of 61 percent. Imports by the United States of America expanded by 7 percent in 2023, to nearly 220 000 tonnes. Industry sources stated that demand for papayas in the United States of America remained solid in 2023, with papayas

benefiting from their reputation of being a rich source of vitamin C. The Mexican papaya industry had furthermore jointly implemented stringent efforts to improve the quality and food safety of their produce, in compliance with the requirements of regulatory authorities, which successfully reduced border reject rates.

The second leading importer globally continued to be the European Union, albeit with a much lower share in world imports of only 9 percent in 2023. Consumer awareness of papaya in the European Union generally remains low, mostly due to the fruit's fragility in transport, which renders a significant expansion in this market difficult to attain. Since the bulk of papayas available in the European Union are imported via air freight from Brazil, the increasingly negative consumer sentiment towards this mode of transport further impeded growth. Available data accordingly indicate that imports by the European Union remained at a relatively low level of 32 000 tonnes in 2023, following a decrease of 1.8 percent from the previous year.

Indicative average wholesale prices of papayas in the United States of America remained at a high level during 2023, especially during the summer months, when they reached a peak of USD 9.48 per kilogram in June. Although prices returned to below USD 9 per kilogram thereafter, averaging USD 8.96 per kilogram between July and December 2023, the yearly average of USD 8.58 per kilogram still remained significantly higher than the average prices recorded in the ten years before the COVID-19 pandemic.

**Figure 11.** Papaya: United States of America, Indicative average wholesale prices, January 2021 to December 2023, USD per kg







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