

MARKET OPPORTUNITY STUDY ON THE EU FRESH AVOCADO MARKET

For the benefits of Kenyan & Tanzanian public and private stakeholders



About the paper

The International Trade Centre (ITC) is a joint agency of the United Nations and World Trade Organisation (WTO) based in Geneva. ITC's mission is to enable small businesses in developing and transitional-economies to successfully export, by providing, with partners, sustainable and inclusive development solutions to the private sector, trade support institutions and policymakers.

ITC, jointly with the European Union (EU), the East African Community (EAC) Secretariat and the governments of the EAC Partner States (Burundi, Kenya, Rwanda, Tanzania and Uganda), Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), the United Nations Industrial Development Organisation (UNIDO) and other national partners, is implementing the Market Access Upgrade Programme (MARKUP).

MARKUP is a regional development initiative that aims to contribute to the economic growth of the EAC. More specifically, it aims to support increased exports of agribusiness and horticultural products, promote regional integration and access to the European market. MARKUP assists small and medium-sized enterprises (SMEs) in Burundi, Kenya, Rwanda, Tanzania and Uganda by targeting specific agricultural commodities (i.e. avocado, cocoa, coffee, spices, tea and horticulture). This four-year programme is funded from the Regional Indicative Programme for EAC under the 11th European Development Fund. At the regional level, ITC supports EAC's efforts to improve regional trade and the business environment for selected commodities. This includes advocating for the removal of sectoral trade barriers, as well as strengthening SME export competitiveness and business development.

The intervention of ITC will entail the implementation of the activities to improve product quality compliance, value addition, access to finance and export promotion as well as business advocacy to facilitate trade in the EAC region.

Under result 3 “Export competitiveness enhanced for sector SMEs” of the Kenyan and Tanzanian work plan, under the activity 3.1 improved awareness of market requirements, the activity 3.1.1.2 will focus on the completion of a market opportunity study for fresh avocado on the EU market.

The market opportunity study was carried out to with the aim to address the demand and opportunities for avocado in targeted markets within Europe, analyse the attractiveness of various market segments, identify constraints to market penetration, highlight options and priority actions for exporters and to analyse and learn lessons from competing countries.

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Disclaimer

This document was produced with the financial assistance of the European Union. The views expressed herein can in no way be taken to reflect the official opinion of the European Union.

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Acronyms

ABPA	Brazilian Avocado Growers Association
AIS	Approved Inspection Services
APEAM	Asociación de Productores y Empacadores Exportadores de Aguacate de México.
APHIS	US Animal Plant Health Inspection Service
ATTT	Association of Tanzania Tobacco Traders
BPA	Bisphenol A
BRC	British Retail Consortium
CA	Controlled Atmosphere
CAIA	Chilean Avocado Importers Association
CCP	Critical Control Points
C.I.F	Cost, Insurance and Freight. Incoterm
CIRAD	French Agricultural Research Centre for International Development
COMTRADE	United Nations International Trade Statistics Database
CORPOHASS	Avocado Antioqueña Corporation
CORPOICA	Colombian Agricultural Research Corporation
CPA	Avocado Production Chain
CSR	Corporate Social Responsibility
DEFRA	Department for Environment, Food & Rural Affairs
DSD	Duales System Deutschland DmbH
DV	Daily Value
EAC	East African Community
ETI	Ethical Trading Initiative
EU	European Union
EFTA	European Free Trade Association
FAO	Food and Agriculture Organisation
FOB	Free on Board
FPC	Fresh Produce Consortium
FPEAK	Fresh Produce Exporters Association of Kenya
FEDA	Fund for Agriculture Support
GAP	Good Agriculture Practice
GCC	Gulf Cooperation Council
GDP	Gross Domestic Product
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
G.R.A.S.P	Global GAP, Risk Assessment on Social Practise
HAB	Hass Avocado Board
HACCP	Hazard Analysis and Critical Control Point
HCD	Horticultural Crops Directorate
HAL	Horticulture Australia Ltd
IMF	International Monetary Fund
ISO	International Organisation for Standardization
ITC	International Trade Centre
KEPROBA	Kenya Export Promotion and Branding Agency
MARKUP	Market Access Upgrade Programme
MAFC	Ministry of Agriculture, Food Security and Cooperatives
MHAAIA	Mexican Hass Avocado Importers Association

MRL	Maximum Residue Levels
MT	Metric Tons
NIR	Near Infra-Red
PEACH	Electronic Application for Certificates
PPECB	Perishable Products Export Control Board
QC	Quality Controller
RH	Relative Humidity
R&D	Research and Development
SMEs	Small and Medium-sized Enterprises
SAAGA	South African Avocado Growers Association
SIFAV	Sustainability Initiative Fruit and Vegetables
TAHA	Tanzania Horticultural Association
TanTrade	Tanzania Trade Development Authority
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
UNECE	United Nations Economic Commission for Europe
UNIDO	United Nations Industrial Development Organisation
USAID	United States Agency for International Development
WAO	World Avocado Organisation
WTO	World Trade Organisation

Executive summary

Key findings from the demand side (EU fresh avocado market)

- European consumption of avocados was over 1 million tonnes of fruits, meaning that the quantity doubled over the last 5 years.
- The World Avocado Organisation (WAO) predicts that the growth in the European market will continue over the next ten years and catch up with the USA's consumption. If this target is achieved this would increase EU demand by 50% or between 500,000 tons and 700,000 tons for the whole Europe.
- The UK, Germany and East Europe are markets that offer the highest potential as current consumption per capita is relatively low.
- The EU market was dominated by a few large-scale retailers and food service supply companies and to counter this, importers and wholesalers have consolidated thereby changing the traditional dynamics of the market.
- Demand in Europe is fuelled by health concerns, a rise in vegetarian, vegan diets, and celebrity endorsement for healthy living and has increased since the introduction of value-added initiatives offering ripened and ready to eat fruit that has gone some way to countering consumer resistance to purchasing hard avocados.
- Studies have found a significant link between affluence and demand for avocado.
- The general market prefers the dark skin Hass variety to the green skin varieties

Key findings from the supply side (International fresh avocado sourcing)

- Global production of avocado has increased 178% from 891.2 thousand tons in 2011 to 2.5 million tons in 2018.
- Driven by an insatiable demand for fresh avocado in the USA and Europe, production areas are increasing in South America, Europe and North Africa: new orchards that will add to the volumes of high-quality fruit on the world's markets.
- The global avocado market is divided by traders into two supply seasons. The "summer season" from April to September and the "winter season" from October to March. This is significant as both Kenya and Tanzania produce during the summer season competing thus competing against important exporters, South Africa and Peru.
- South Africa and Kenya were the traditional suppliers of avocado to the European market during the summer season. Kenya has doubled its supplies over the last ten years and Tanzania has recently entered the market assisted by South African exporting companies such as Westfalia and Halls International. Adverse weather, particularly draught and recent hailstorms have induced biennial bearing that have caused production and supply problems in South Africa. Peru's exporters have capitalised on the market shortages and the increasing demand in Europe by aggressive promotional marketing, imposing supply chain discipline, introducing mandatory quality standards and gaining a reputation as the foremost reliable supplier.
- Tanzania managed to grow its exports from 1,877 tons in 2014 to 7,551 tons in 2018, demonstrating a positive trend.
- As both Kenyan and Tanzanian exporters rely on sourcing from several small farmers creates supply problems as these farmers lack the resources to shift from local varieties to Hass.
- Both Kenya and Tanzania are dependent upon sourcing from small farmers. An orchard crop, such as avocado, takes 3-4 years to produce an income and 8-10 years to reach full production and small farmers, dependent upon regular cash income, are reluctant to plant orchard crops. Both countries, therefore, face difficulties in responding speedily to market demand.
- These increases in hectares are fuelling concerns from environmental groups over deforestation and its impact on climate change, and water security. These concerns are becoming a threat to

future market expansion highlighting the need for due diligence by exporters to ensure ethical sourcing and transparent traceability.

Some of the key challenges for suppliers, including Kenyan and Tanzanian ones, are:

- Fruit harvested prematurely resulting in fruit that becomes shrivelled and impossible to ripen becoming inedible at destination;
 - Mix of varieties in container loads;
 - Variable sizing; and
 - Inconsistent supply.
- Peruvian fruits are sold at higher prices as their exporters enjoy a reputation for good quality and reliability of supply.
 - Competitors are well organised and, in many cases, vertically integrated large organisations that have adapted to the changing market and supply importer needs.
 - Major marketing organisations such as Fresco (UK) and Westfalia Fruit (South Africa) have formed affiliations with South American producers in Peru, Chile and Colombia to enable them to market avocado all year round in Europe.
 - Major exporters and companies in competing countries market through European market offices.
 - Exporters in all competing countries have strong grower/exporter organisations that can impose market discipline, monitor quality standards and finance promotional activities.
 - Highly successful international avocado suppliers such as South Africa and Peru have invested heavily in mechanisation, cold storage, Control Atmosphere, transportation, chemical retardant; imposing discipline through the supply chain and introducing export enforceable quality standards.

The product

For centuries, the avocado has been a staple fruit of the Mexican cuisine and it has become popular in the warm tropical and sub-tropical countries that have been influenced by Spanish culture.

The avocado plant (*Persea americana*) has many commercial uses:

- As a nutrient-dense fruit high in fibre, rich in monounsaturated fats healthy omega 3, vitamins A, C, E and potassium.
- As a source of cooking oil where its high smoke point and keeping qualities makes it a preferred choice for high-temperature cooking.
- As an ingredient in the pharmaceutical industry.
- Cosmetic industries, as a moisturiser, in specialised soaps and hair products.
- As a dye extracted from the stone.
- As a source of energy from the processed waste product.

Although avocados do not have the immediate appeal in looks of other fresh fruits, they have one major advantage in that they are very nutritious supplier of all the major nutrients. 77% of the calories in it are from monounsaturated fatty acid making the fruit valuable for diabetics. The avocado has become a popular food among health-conscious individuals and it is often referred to as a superfood.

The avocado is a climacteric fruit that does not produce large amounts of ethylene on the tree and unlike most fruits it does not ripen until harvesting. The stage of harvesting is critical in successfully marketing the fruit and many growers are tempted to either harvest prematurely or harvest late in attempts to chase market prices. The degree of the ripeness of the avocado is determined by the dry matter content in the fruit. Dark cultivars such as Hass fruit should contain at least 23% dry matter and green cultivars such as Fuerte should contain 21% dry matter. Most exporting countries enforce minimum dry matter for all export fruits.

The fruit in its fresh form is less versatile than most fruits; it cannot be cooked or used in fruit salads and is purchased mainly for special occasions, gourmet dinner parties and as a health food. Some describe the fruit as a vegetable – and major supermarkets in the UK often display avocado in the vegetable section.

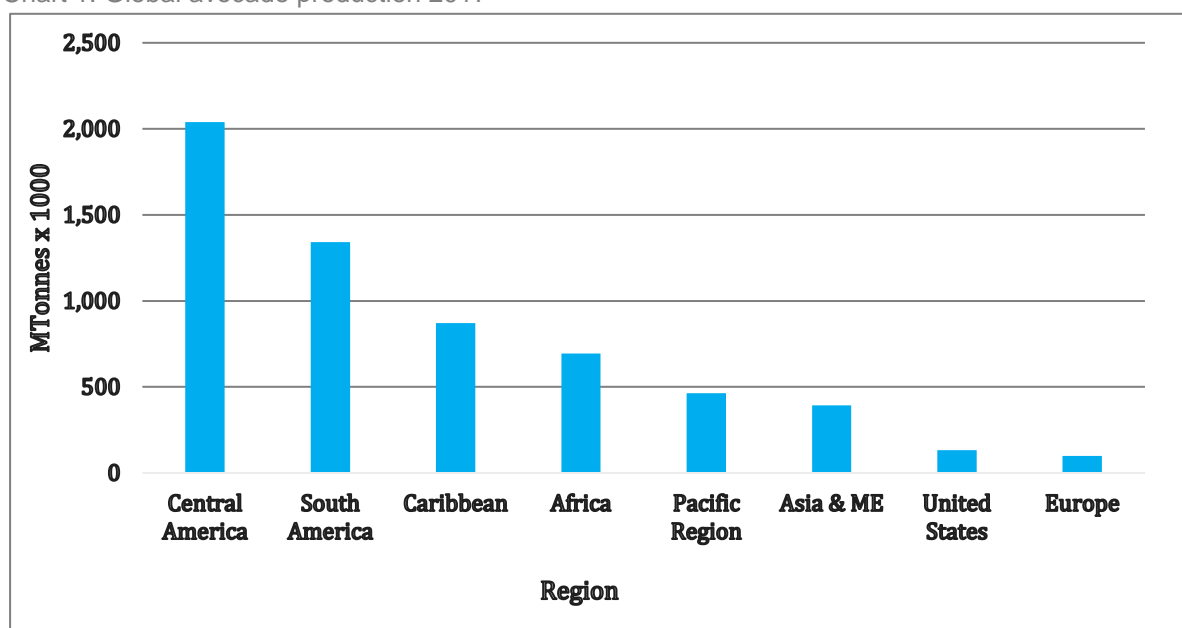


Avocados were very popular in the 1970's and 1980's as a "starter" dish at home and in restaurants, usually stuffed with a prawn cocktail but this use has waned over recent years. The popular use of the fruit today is sliced in sandwiches, on bread or tortillas or in salads often with lemon juice, salt and pepper - some sprinkle the fruit with sugar. Perhaps its main use in Europe is in preparing a sauce called Guacamole that is used as an avocado-based dip that began with the Aztecs in Mexico. Avocado oil is in great demand in the cosmetics industry and the seed is used as a dye or converted into chicken feed.

These limitations play a major role in the marketing of the fruit especially as it is frequently reported in the media in Europe that finding a fruit that is ready to eat is difficult to achieve. This, in recent years, has been countered by the introduction of specialist fruit ripening companies and the sale of "ready to eat" fruit, a process that can only be carried out within the importing countries.

Global production

Chart 1: Global avocado production 2017



Source: ITC Trade Map

Avocado production has steadily increased over the years and rose 5.5% between 2016 and 2017 from 5.62 million tonnes to 5.92 million tonnes. Commercial avocado production is very susceptible to local weather and climatic conditions. Latin and North America along with South Africa have experienced droughts, biennial bearing issues, and inclement weather in 2017. Soil borne diseases such as *Phytophthora cinnamomi* have devastated many orchards in Latin American, Australia and South Africa.

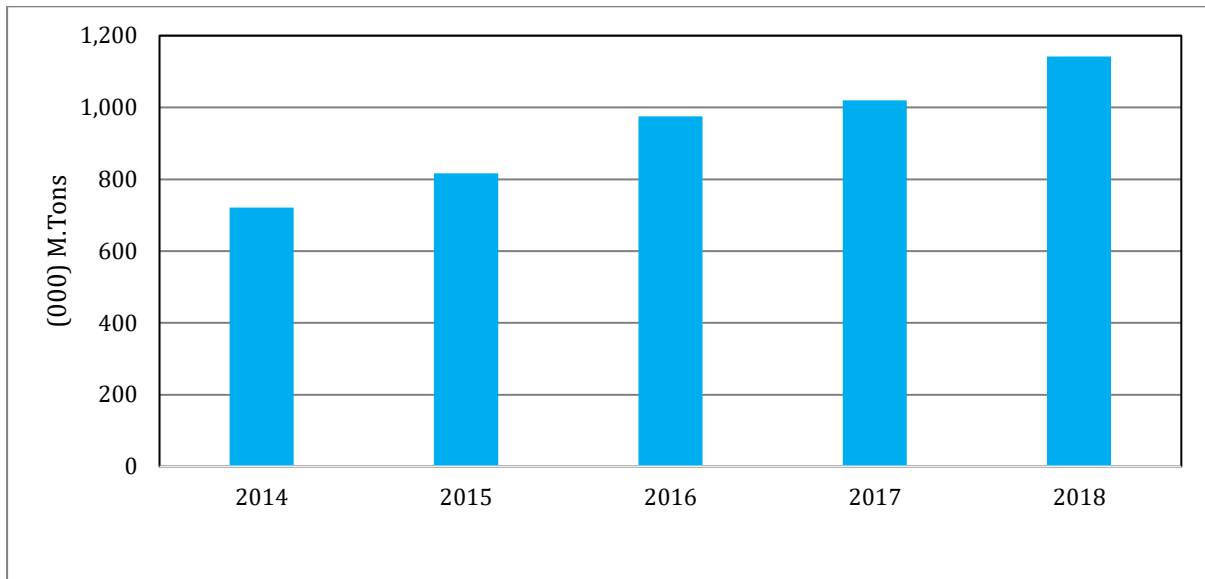
Production areas in Mexico are reported to have increased with the Michoacán region expanding to over 9000 ha and Jalisco region expanding to over 2000 ha per year over the last four years. Similarly, production areas in Peru have expanded by over 2,500 ha over the past four years. Northern African countries especially Morocco have increased production and possibly due to the attractive market prices increased production areas are reported in Spain and Portugal. Despite these increases, prices have remained stable but could be under threat when these young orchards come on stream with high yields of high-quality fruit. Young orchards produce high yields and good quality possibly due to the attractive market prices increased production areas are their older orchards with quality nursery stock on grafted rootstocks.

Although many African countries reportedly produce avocado, only Kenya, South Africa, Tanzania and Zimbabwe are currently the main Southern African suppliers of avocado to export markets with Ivory coast and increasing supplies from Morocco supplying fruit mainly during the winter months.

Seasonality

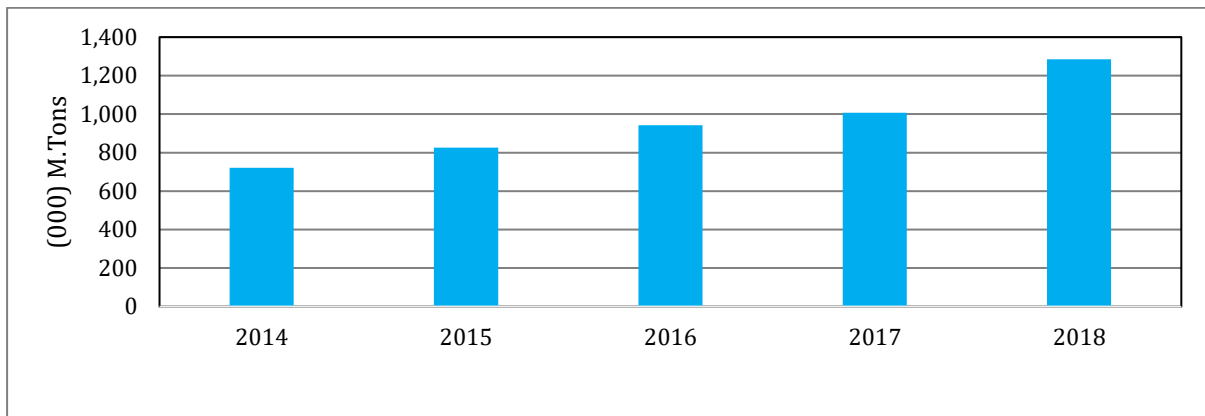
Avocados are available in the world market all year around with Mexico being one of the few countries to regularly produce the variety Hass over twelve months. The trade now refers to two distinct seasons of supply especially for Hass. The summer season is from April to September and the winter season is from October to March. There is, however, a seasonal difference between the various varieties with countries producing both dark skin and green skin, that ripen earlier, extending their season. Although there is a considerable overlap from supplying nations, generally buyers switch purchasing as soon as the new seasons commence.

Chart 2: Global winter season exports



Sources: Based on ITC Trade Map quarterly series: Winter – Quarters 1 and 4

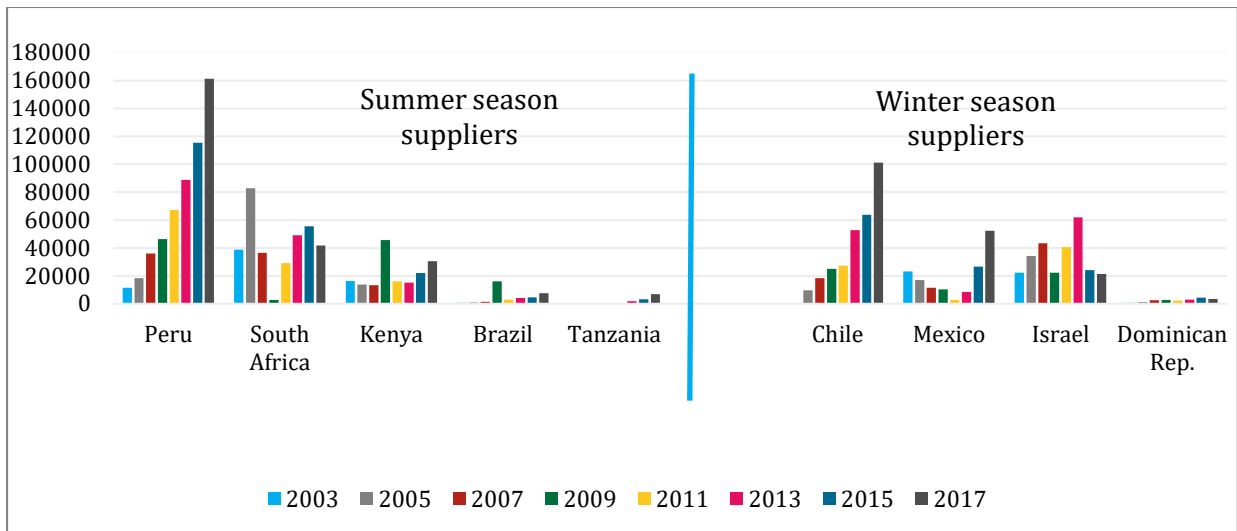
Chart 3: Global summer season exports



Sources: Based on ITC Trade Map quarterly series: Summer – Quarters 2 and 3

Kenyan and Tanzanian avocados are exported mainly during the summer months in competition with Peru, South Africa, and Brazil and more recently with Mexico. South Africa has been affected by recent droughts and biennial bearing issues and the resulting shortfalls in the market have been made up with increased exports from Kenya and Peru.

Chart 4: European avocado import trends – 15 years – MT

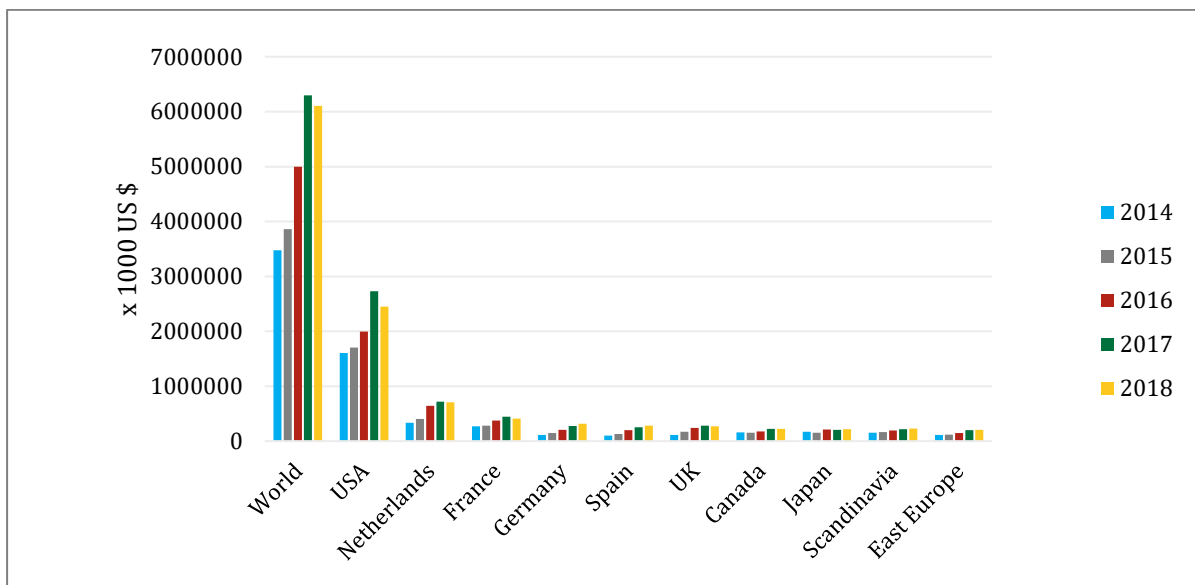


Source: ITC Trade Map

World Trade

The world trade in avocado has risen from a valuation of US\$ 3.4 billion in 2014 to US\$ 6.1 billion in 2018. When compared with other tropical or exotic fruits such as mango currently valued at US\$ 3.0 billion and pineapple valued at US\$ 2.5 billion, the importance of avocados in today's fruit trade in exotics and tropical fruit becomes apparent. However, when compared with Banana, one of the most consumed and cheapest fruits worldwide and the most traded fruit with an exported value in 2018 of \$13.2 billion the value of avocados is relatively low.

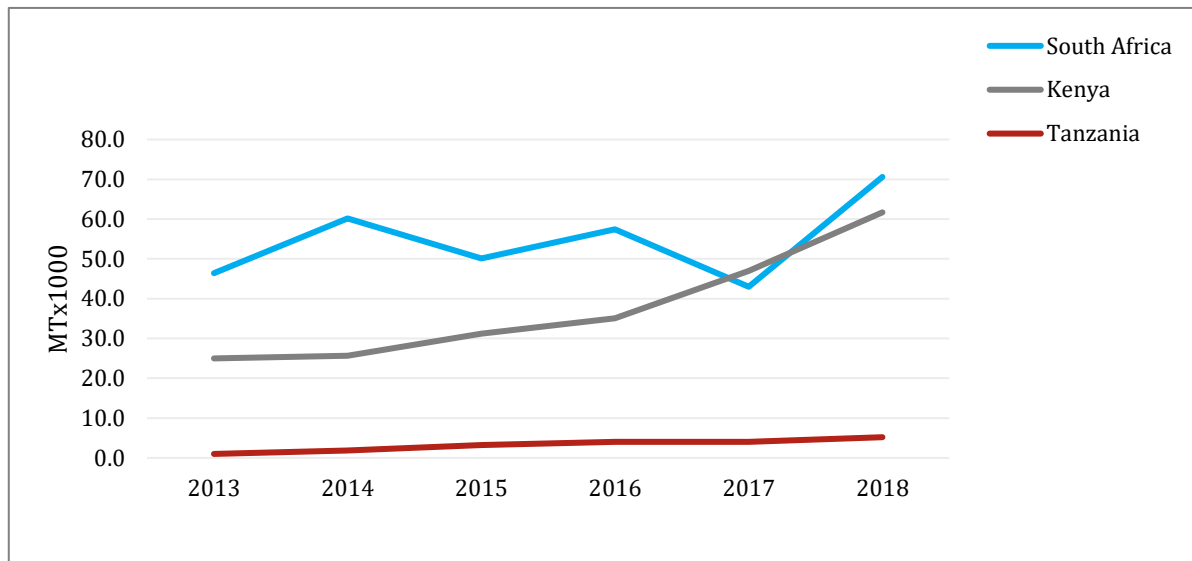
Chart 5: Global avocado trade & major importing nations



Source: ITC Trade Map

The increase in global avocado trade is fuelled by increasing demand from the health-conscious sector, celebrity endorsements and by insatiable demand from USA and Europe.

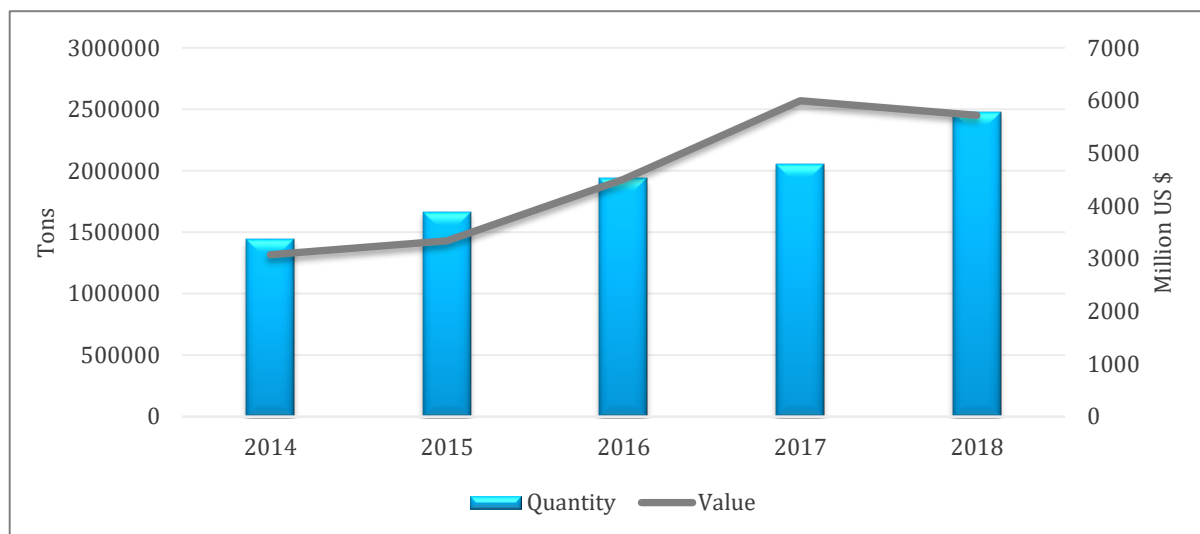
Chart 6: Global avocado market trends



Source: ITC Trade Map

World exports reached a peak in historic levels in the season 2017/18 with the Hass variety exceeding 3 million tons, a 25% increase over the past season and this increase is attributed to good harvests in Latin America.

Chart 7: South and East African summer export trends – 5 year



Source: ITC Trade Map

Global trade has been influenced by a recent expansion of production areas especially in Latin America, unfavourable weather - drought in Southern Africa, biennial bearing in USA and Mexico, and these factors have contributed to a very uneven supply situation affecting the two main markets of the USA and Europe.

To add to the uncertainty of supply, there are two important political problems that could affect the current and future supply problems:

- Mexican Border issues with the USA Government; and
- The UK leaving the European Union (Brexit).

East and South African avocado trade

East and Southern African states are major players during the European summer months. The increased focus on the opportunities for avocado exports to Europe has given rise to considerable interest in neighbouring countries such as Zimbabwe, Uganda, Rwanda, and Burundi in investing in commercial export avocado production. Kenya and South Africa are established exporters, but there is a risk that the orchards become obsolete and less fruitful, thus worsening the quality.

Tanzania is a relative newcomer with recent plantings that offer the potential for high yields and superior quality. However, both Kenya and Tanzania's production basis are fragmented as exporters rely on sourcing from a multitude of small farmers, a system that demands exacting discipline throughout the supply chain to ensure consistent supplies and quality and traceability. This has been a major weakness and has greatly affected the reputation of both countries in the demanding European markets less so in Middle Eastern markets where traceability and consistent quality are not so demanding.

Both Kenya and Tanzania enjoy intercompany cross border co-operation and commercial ties with South African exporters. These links need cultivating to exploit the benefits of volume of scale and extended season necessary to satisfy the demands of the modern European importing companies who in turn are consolidating to provide the services demanded by the powerful retailers and the service industry suppliers. Both countries are maintaining their European market share due in part to production problems in South Africa but are under increasing pressure from Latin American producers who are well organised in addition to having the benefit of young highly productive orchards producing high quality and have conducted vigorous promotional campaigns.

The markets

Imports to Europe during Kenya's season have shown a steady increase especially during the last three years with France being the largest market followed by the UK. Demand in France is steady and there are indications that this market along with the Scandinavian markets are probably having the lowest opportunities for expansion as present per capita consumption is high. Germany, the financial driving force in Europe, currently a low consumer of avocados, should become a potential market for Kenya and Tanzania as demand increases. All indications are that consumption will rise and demand for more fruit will increase in these traditional markets. Other markets in Europe especially Eastern Europe are worthy of targeting if efforts to diversify do not compromise the activities in the main markets. There is a danger for exporters adopting the old horticulture marketing philosophy of "chasing markets", which assumes that reported higher returns would lead to increased prosperity.

South Africa and Kenya were the traditional suppliers of avocado to the European summer market. Kenya has doubled its supplies over the last ten years and Tanzania has made a recent entry encouraged by marketing through South African marketing companies such as Westfalia and Halls International. South Africa has experienced adverse weather conditions including draught and recent hail storm damage that have contributed to biennial bearing that has seriously affected their supplies. Kenyan exporters are experiencing challenges in addressing the key issues of supply and post-harvest problems of quality and reliability that have unfavourably affected their reputation in European markets.

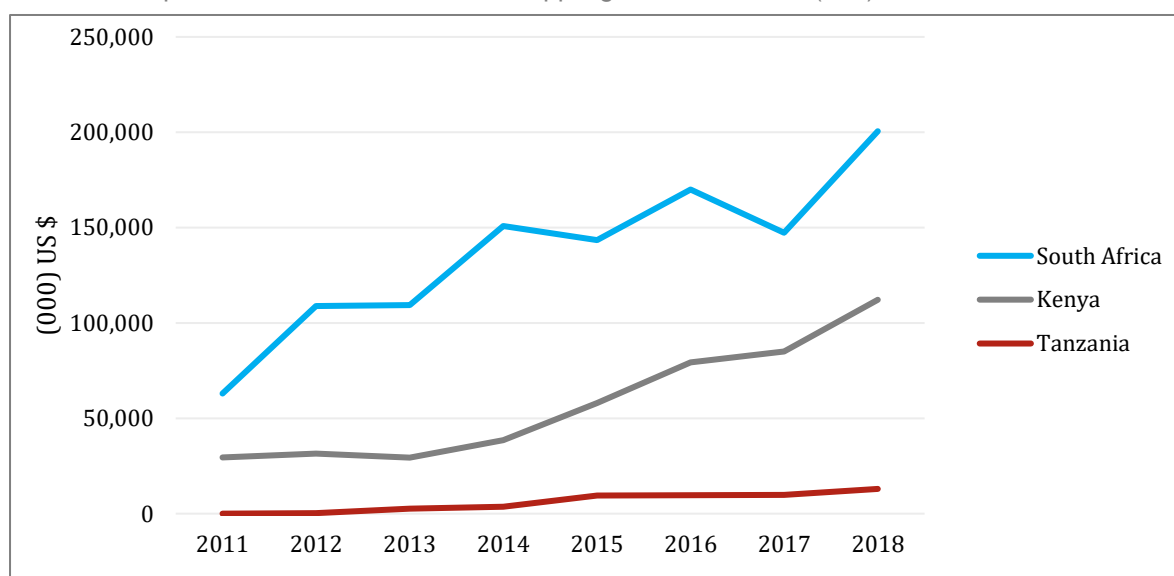
South African and Peruvian exporters have pioneered mechanisation, cold store, grading and packing practices, chemical fruit ripening retardants, traceability and quality control at every stage along with developing Controlled Atmosphere (CA) transportation after recognizing the importance of due diligence throughout the procurement and supply chains, as well as to address the quality and transportation problems associated with shipping avocado over long distances. Peru has introduced mandatory export quality standards. As a result, Peruvian avocados have gained a reputation in the market for reliability and high quality and along with South Africa are the favoured summer season suppliers of avocados to Europe. These are lessons that Kenyan and Tanzanian exporters must address to maintain and/or improve their market share.

Table 1: Kenyan and Tanzanian avocado markets

European avocado markets	
Kenya	
Importing Nations	Share of Exports
France	21.89%
The Netherlands	18.04%
United Kingdom	9.31%
Spain	3.55%
Belgium	0.21%
Tanzania	
France	42.17%
The Netherlands	30.79%
United Kingdom	17.38%
Germany	1.97%
Belgium	0.72%

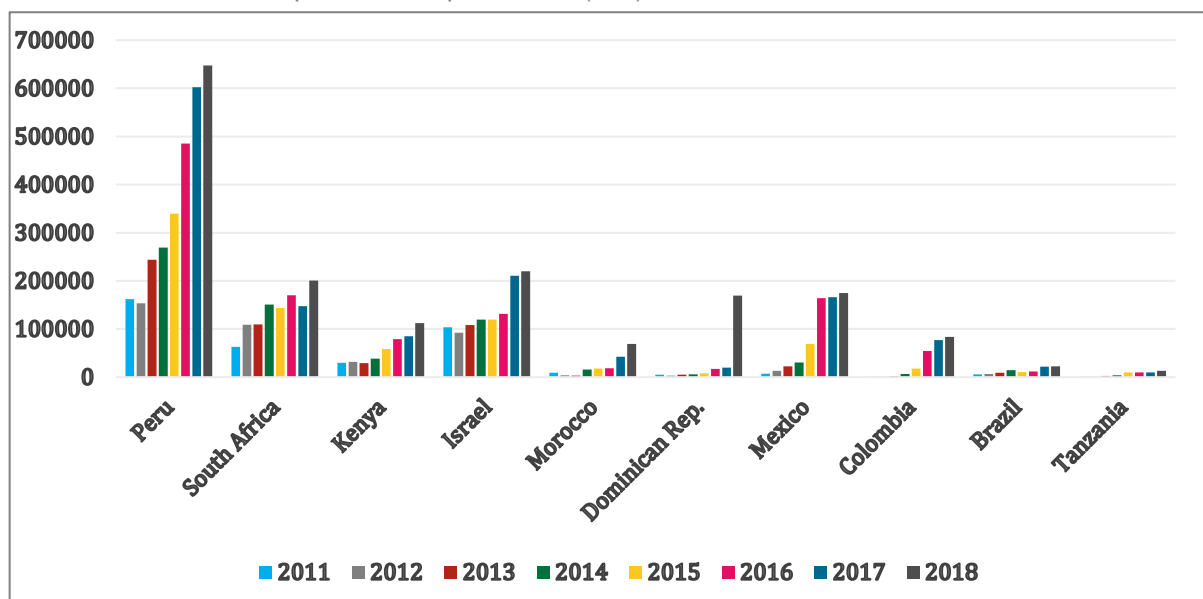
Source: ITC Trade Map

Chart 8: European avocado market – main supplying nations – Value (000) US \$



Source: ITC Trade Map

Chart 9: East African exports to Europe – Value (000) US \$



Source: ITC Trade Map

An orchard crop, such as avocado, takes 3-4 years to produce an income for growers and 8-10 years to reach full production. Since small farmers are dependent upon regular cash income, they are reluctant to plant orchard crops. Since both Kenya and Tanzania are reliant on sourcing from small farmers, they face difficulties in responding speedily to market demand. Peru's production is more plantation-based although small farmers are involved and large-scale plantings have provided the base for the nation's rapid expansion over the past few years.

Market Hubs

The Netherlands, France, Spain and the UK are the primary ports of entry for avocado imports to Europe. Belgium has recently become a player in the market.

The Netherlands has a small domestic market but is the major distribution hub for all fruit throughout Europe offering a gateway to Europe for exporting nations. Dutch exporters offer a door to door delivery system to any destination in Europe and customers can receive exactly what they require in the exact quantity and range, almost within a day of ordering; a system unrivalled worldwide. The UK offers a speedy port clearance system and access to an efficient distribution system servicing supermarket that control over 80% of the fruit trade in Europe as well as servicing markets within Europe and France whose importers offer services both locally and throughout Europe.

Spain is both a producer and an importer and as a major supplier of horticulture crops to other European nations, it has developed a transport distribution system that rivals the Netherlands.

Demand drivers:

The fruit is not attractive for instant refreshing purchase and is used primarily by affluent households for special occasions and by gourmet chefs. Demand is affected by:

- An atypical flavour which causes consumers to resist tasting the fruit;
- Purchases of poorly presented and unripe hard fruit that causes the consumer to resist buying repeats sooner;
- Lack of promotion directed at the consumer;
- The health benefits of the fruit are not well communicated in the media;
- Consumer concerns over environmental and ethical sourcing issues;

Demand in Europe is driven by:

- Consumer awareness over health issues;
- A consumer move towards a vegetarian and vegan diet substituting animal protein for vegetable protein;
- Governments desire to reduce obesity that is becoming a major health issue;
- Celebrity endorsement for a healthy lifestyle.

CHAPTER 1: EUROPEAN MARKET OPPORTUNITY ASSESSMENT FOR FRESH AVOCADO

Summary

The report describes the markets in Europe, the EU 28, and the European Free Trade Association (EFTA), Scandinavia, and the East European countries. The study relates only to fresh produce and do not include the value-added segments of the avocado trade such as the frozen segment, oils, pharmaceutical and cosmetic uses and sauces such as Guacamole which is extensively used in Mexican cuisine and widely used as a dip. The report key findings are:

- Avocado is an atypical fruit that does not belong to the normal fresh fruit basket and has limited uses.
- Europe produces just 1.6% of the world of avocado production, which according to Food and Agriculture Organisation (FAO) statistics totalled 5,924,398 tons in 2017.
- The USA and Europe are the major destinations for avocados. In 2018, Europe imported 1.09 million tons of avocado valued at \$2.7 billion whilst the EU 28 imported 1.02 million tons valued at US\$ 2.5 billion and is a market that has shown growth over the last 10 years.
- Emerging markets in China and Japan as well as established markets in the Middle East offer potential for Kenyan and Tanzanian exporters.
- Demand for avocados is highest in southern Europe. In most Northern European countries where consumption is very low, demand could be increased by promotion of the healthy aspects of the fruit.
- Purchases of poorly presented and unripe hard fruit causes the consumer to resist buying repeats.
- The health benefits of the fruit especially its use in diabetic management could be better exploited.
- Obesity, diet and health issues are now of concern and being addressed by all EU governments
- The retail trade in all countries is now dominated by a few major supermarket groups that enjoy a share between 60 and 85% of the retail sector. To address this, the traditional market importers/wholesaler have consolidated into large groups and many got representation or formed alliances throughout Europe.
- Food service supply companies have also consolidated into large buying groups.
- The traditional wholesale market is in decline and has refocused on supplying the smaller food service players.
- The key to successful market penetration is quality and strict adherence to traceability, certification, social responsibility, Global Good Agriculture Practice (GAP), and environmental awareness.
- Good post-harvest management is particularly important especially when it comes to the correct harvesting stage.
- Demand is increasing for ripened “ready to eat fruit”. This can only be achieved in the exporting countries by exporters shipping by airfreight.
- Most avocados are now shipped in controlled atmosphere sea freights and are ripened in the destination country. Airfreight is expensive and only resorted to in times of acute shortages.
- Importers and ripeners in this market require fruit that has been harvested correctly, is at the right stage of development to allow even ripening and avoiding fruit shrivelling.
- Fruit must be consistent throughout the load with no mixed varieties or uneven grading.
- Consumption of avocado is highest in France and Scandinavia but demand in these countries has probably levelled out.
- Many exporters in South and Central America have close links or affiliations with European marketing companies.

- With improvements in post-harvest handling and controlled atmosphere containers, most avocados are now shipped to Europe by sea through three main hubs, Rotterdam in the Netherlands, Felixstowe in the UK and Marseille and Le Havre, in France. The Belgian port of Antwerp is also an entry port for fruit destined to the Netherlands, France and Germany.
- The Netherlands is the main gateway to all Europe with many key exporters forming alliances with the Dutch exporters.
- All the European countries now place emphasis on sustainable, ethical sourcing.

The British and the German market:

- Based on current consumption with the USA paving the way with an estimated consumption of 3.3 Kg per capita and using this as a benchmark, the markets with greatest potential in Europe are the UK and Germany.
 - Both have a relatively low consumption/head; the UK at 1.8 kg per capita and Germany 1.1 kg per capita;
 - Both have strong economies;
 - Both could respond to promotional activities;
 - Both are particularly health conscious; and
 - Both place increasing emphasis on ethical sourcing, environmental and social issues.

CHAPTER 2: INTRODUCTION

The trade data and resources described in the methodology of the earlier introductory section and compiled from official sources require care for analysis and interpretation by Kenyan and Tanzanian exporters. Reported statistical data distorts the true picture of the import/export trade within Europe as there are situations of double reporting as exports from individual countries include cross border imports, e.g. exports from Peru into the UK may be underestimated as some of these exports may be reported in data of exports from the Netherlands and France. This has an impact on the value for produce originally entering the Netherlands, which are then re-exported to other European countries and accounted as Netherlands exports. Produce from supplying countries will reflect the base value in terms of producer costs and margins but if this produce is subsequently re-exported, the costs will be inflated by the importer and distributor costs and margins.

The monetary unit in the EU is the Euro, in the UK the £ sterling. Attention must be paid when interpreting the data in this report. In fact, exchange rates, especially £ sterling, were affected by the decision of the UK to leave the European Union, leading to consistent fluctuations over the last few years.

Table 2: Euro, US\$ and Sterling exchange rates

Year	GBP/Euro	Euro/GBP	GBP/US\$	US\$/GBP	Euro/US\$	US\$/Euro
2019	1.1505	0.8579	1.3026	0.7677	1.1322	0.8832
2018	1.1300	0.8858	1.3348	0.7501	1.1810	0.8475
2017	1.1410	0.8470	1.2886	0.7767	1.1300	0.8867
2016	1.2218	0.7685	1.3556	0.7405	1.1065	0.9041
2015	1.3779	0.7090	1.5285	0.6544	1.1097	0.9016
2014	1.2405	0.8133	1.6477	0.6073	1.3291	0.7536

Source: xe.com

Table 3: Kenyan and Tanzanian exchange rates

Year	Kenya		Tanzania	
	US\$/KES	Euro/KES	US\$ TNS	Euro/TNS
2019	101.1099	110.915	2,288.50	2,574.60
2018	100.6	119.6308	2,245.53	2,734.76
2017	103.2534	116.8676	2,227.96	2,450.02
2016	101.0542	112.3347	2,144.62	2,389.51
2015	94.9714	109.0145	2,208.47	2,220.66
2014	86.9256	116.7551	1,660.49	2,261.39

Source: xe.com

2.1 Avocado profile

Product	<p>Avocado (Persea americana): Family Lauraceae</p> <p>HS Number: 08044000</p> <p>3 races: 1.Mexican, 2.Guatemalan,3.West Indian with much hybridisation</p> <p>Dark Skin: Hass (seedling) – Over 85% world trade, Gem (seedling)</p> <p>Green-skin Fuerte(Hybrid),Pinkerton (2), Ryan(1x2), Edanrol(1x2).</p> <p>Others: Bacon(1),Lula(1x2),Lewis(3),Reed(2),Ardith(2 hybrid)</p> <p>Fruit does not ripen until harvested.</p>
Uses	<p>As a fresh fruit sliced in salads, half-stuffed (prawns etc), on toast or in sandwiches, Prepared as guacamole sauce. Extracted oil used in cooking, As a dye and used in cosmetics and pharmaceuticals.</p>
Quality standards	<p>No longer covered by specific EU quality standards;</p> <p>United Nations Economic Commission for Europe (UNECE) standard for avocado describes 3 classes: Extra (superior), Class1 (good quality – the industry standard) and the minimum Class 3.</p> <p>Minimum requirements: fruits intact, sound, clean, free from pests and disease and from low temperature damage, external moisture, foreign smell and off flavours. Avocados must be free from bitterness. Stalk cleanly cut off & not over 10 mm.</p> <p>The condition & development of the fruit must be in a state to withstand transportation & handling and arrive at place of destination in satisfactory condition.</p>
Market requirements	<p>Packaging:</p> <p>No standard exists but all cartons must be new with no print in contact with fruit. Single layer cartons preferably in 4Kg telescopic or single layer tray (30x40x10 cm). 5.5Kg and 11 Kg Double layers are also used.</p> <p>Sizing:10 (400 gm)/16 (250 gm)/20 (200 gm) 18 (220 gm) 22 (180 gm). Minimum fruit weight is 123 gms for most varieties except Hass, which stands at 80 gm. Organic produce should be physically separated from conventional fruit.</p> <p>Minimum labelling:</p> <p>Exporter/packer/dispatcher name, address</p> <p>Nature of the product</p> <p>Variety</p> <p>Origin</p> <p>Class</p> <p>Size of fruits by count or both minimum and maximum weight</p> <p>Number</p> <p>Net Weight of carton in metric units</p> <p>Additional Labelling:</p> <p>To enable traceability (one of the required conditions of the supermarkets).</p> <p>In addition to the mandatory EU labelling traceability, codes together with batch codes are encouraged.</p> <p>Organic or Fairtrade if relevant including name or code of inspection body and certification number.</p>

Documentation	<p>Europe: (all documentation should be in English)</p> <ul style="list-style-type: none"> • Airway bill or Bill of Lading. • EUR1. • Commercial invoice. • Certificate of Conformity (Kenya has been certified by EU as having approved Inspection Services (AIS) and can issue their own certificates that will be accepted a proof of conformity.).
Legal requirements	<p>General Food Law – Food safety is the key issue in EU Food legislation</p> <p>Regulation (EC) 178/2002</p> <ul style="list-style-type: none"> • Contaminants: Commission Regulation (EC) No 1881/2006 has set maximum levels for certain contaminants. These include Nitrates, fusarium & other fungal toxins, and heavy metals. • Contamination. <p>Hygiene of foodstuffs Hazard Analysis and Critical Control Point (HACCP) is legally binding.</p>
Importer requirements	<p>Certification: For importers servicing the major retailers</p> <ul style="list-style-type: none"> - Maximum Residue Levels (MRL) – some retailers demand stricter MRL's than the minimum. - GlobalGap. <p>The British Retail Consortium (BRC) is mandatory for suppliers supplying UK supermarkets and a standard for all exporters.</p> <p>International Organisation for Standardisation (ISO) to ensure compliance with food standards.</p> <p>CSR & sustainability.</p> <p>Organic and Fair-trade certification.</p> <p>Product and company documentation including fumigation, Product Data, cultural and post-harvest practices & chemical records.</p>
Post-Harvest	<p>Avocado do not ripen on the tree and harvested fruit is very sensitive to temperature and bruising.</p> <ul style="list-style-type: none"> • To prevent shriveling and off tastes a harvesting standard of 23% dry matter for Hass and 21% for others (preferred by most ripeners). • Quality deteriorates speedily after harvesting. • Poor harvesting and careless handling and transportation between the field and the packhouse results in latent bruising which becomes evident until final point of delivery. • High temperature of the fruit & field heat will increase respiration and advance ripening • Fruit should be cooled in the field and rapidly pre-cooled before packing then kept at 40 C at 85% Relative Humidity (RH). • Maintain the cool chain during loading into pre-cooled containers. • Use chemical ethylene inhibitors such as SmartFresh. <p>Washing, waxing and any chemical used in shipping must comply with MRL's.</p>

Market development	<p>Transportation: Advances in containerised computer-controlled CA sea freight has seen a shift from airfreight to bulk deliveries and competitive prices. With more countries now, able to ship successfully by sea the fruit is available all year round.</p> <p>Demand & Potential: Demand is linked to affluence with the main European importing countries being the UK, France, the Netherlands and Germany. Consumption is highest in Scandinavia 1.8 Kg pp/year followed by France and Portugal at 1.4 & 1.3 kg pp/year.</p> <p>Health aspects: obesity and heart condition and diabetes are of increasing concern, the beneficial health aspects of avocado are now being taken seriously.</p> <p>Ripening: Ripening has to be undertaken in the importing country and has become an essential part in the supply chain. There are 5 ripening stages with each market segment requiring a different stage according to whether the fruit is for immediate use or for keeping a few days.</p> <ul style="list-style-type: none"> • Exporters have to ensure that each fruit in any shipment has been harvested at the correct stage and arrives in a condition that ripeners can ripen according to the exact requirements of their customers with certainty and without excessive wastage.
Consumer preferences	<ul style="list-style-type: none"> • Households want “Ready to Eat” fruit. • The service sector requires fruit that ripens after 2-3 days The sandwich industry requires fully ripe fruit. • Twin packs and multipacks are being introduced by retailers to stimulate sales. Multi packs of “Baby fruit” are also being promoted.

CHAPTER 3: OVERVIEW OF THE AVOCADO MARKET

3.1 Product description

The avocado (*Persea americana*) belongs to the Lauraceae, a family that includes laurel, sweet bay, sassafras and cinnamon. They are mainly tropical and subtropical trees and shrubs.

There are three races of avocado, Mexican, Guatemala and West Indian signifying their ecological requirements rather than origin. The Mexican race exhibits tolerance to cold while the other two races have low cold tolerance.

Examples of avocado varieties :

A. Mexican



Variety Bacon

B. Guatemalan



Variety Reed

C. West Indian





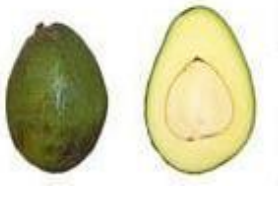
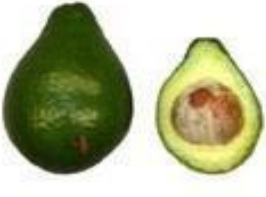
Variety Lewis



There is much hybridisation between the races and most of the commercial cultivars are hybrids of Mexican types crossed with Guatemalan types.

Commercial cultivars can be grouped into two main groups, Greenskin and Dark skin:

Greenskin varieties



Variety	Description
<p>Fuerte</p>	<p>Hybrid type. The name means “strong” in Spanish. It is an original California avocado which can withstand severe frost; hence the name. The fruit is pear-shaped with medium seed and weighs approximately 150 to 350 gms. The skin is thin, soft, and green in colour. The flesh is creamy and has 18% oil content.</p>
<p>Pinkerton</p>	<p>Pinkerton appears to be 98% Guatemalan and a chance Californian seedling patented in USA in 1975. The skin is thin, pliable, and easy to peel. The flesh is smooth, oily, and is excellent eating quality. Average Fruit Weight 250 to 450 gms.</p>



<p>Edranol</p> 	<p>A Californian hybrid cultivar Introduced in 1932. Frost resistant. Skin can russet badly. Raised bumps on skin are a bright green. Skin is medium thin. Has excellent flavour. Average Fruit Weight 250 gms to 500 gms.</p>
<p>Ryan</p> 	<p>Guatemalan x Mexican hybrid. Popular in South Africa and Chile. A medium to large sized green skinned, egg-shaped avocado. Ryan is a late-maturing variety, which resembles Hass with quite a thick skin, though not as pebbled, but remains green when ripening. The flesh is tasty with a good flavour. Average weight 275 gms to 400 gms.</p>
<p>Bacon</p> 	<p>Mexican type. Ovoid in shape with a green, thin, smooth skin. Good flavour with an unusually pale yellow-green flesh; The oil content is high. Fruit: 200 gms to 340 gms.</p>
<p>Lula</p> 	<p>Guatemalan. X Mexican Hybrid. Almost smooth, dark, glossy green skin. Seed tight in cavity. Very susceptible to scab. Average fruit weight 450 gms to 675 gms.</p>

<p>Ettinger</p> 	<p>A large, pear-shaped, green-coloured fruit with smooth skin and a big seed of the Mexican type. This variety originated in Israel, in 1947, Apart from having a pale-green flesh, it is similar to Fuerte in appearance but is similar in nutrition to the Hass but with a slightly milder flavour. Average weight 250 gm to 550 gm.</p>
<p>Reed</p> 	<p>A Guatemalan type introduced in 1960 from a chance seedling planted in 1948. Sets fruit yearly. Fruit may remain on tree for a relatively long time after reaching maturity. Resistant to salt burn. Cold tender. Average weight 450 gm to 650 gm.</p>

Dark skin varieties

Dark skin cultivars are green in colour at the time of harvest but as they ripen, the fruit's skin turns dark purple to black. The fruit is textured. 'Pebbly' skin is thicker than the greenskin and cannot be as easily peeled. The harder skin protects the fruit from bruising and are thus easier to handle and transport throughout the supply chain, making them the ideal varieties for the ready-to-eat retail market.

Variety	Description
<p>Hass</p> 	<p>Introduced in 1936. Oval/pear shaped fruit. The leading commercial variety exported worldwide. Long harvest season. Excellent flavour and very good shipping qualities. Average Fruit weight 170 gms to 400 gms.</p>
<p>Carsbad</p> 	<p>A Guatemalan type introduced in 1912 from Mexico. Green when harvested then matures to dark brown. Good flavour. Average weight 275 gm to 425 gm.</p>

<p>Dickenson</p> 	<p>A Guatemalan Hybrid. Black when harvested and when ripe Medium thick skin. Fruit texture is rough with fine, seed-like raised bumps. Small, pebbly fruit sometimes appears immature when actually it is ready to be harvested. Average weight 170 gms to 340 gms.</p>
<p>Gem</p> 	<p>A Guatemalan type from a "Gwen" seedling selection. Tree exhibits less alternate bearing than that of the "Hass". The fruit has excellent flavour and tends to oxidize much slower than the "Hass" variety. Average weight 200 gm to 300 gm.</p>

3.2 Overview of the world trade of avocados: commercialization

The avocado has been for centuries a staple fruit in Mexican cuisine and it has become popular in warm tropical and sub-tropical countries that have been influenced by Mexican and Spanish cultures. The avocado is native to the area stretching from the eastern and central highlands of Mexico through Guatemala to the Pacific coast of Central America. In the 1700s, it was called midshipman's butter by European sailors and was probably first introduced to Europe by these sailors. In 1911, Carl Schmidt, a plant explorer, collected bud-wood of a seedling that eventually became the first major commercial variety Fuerte. This variety has been the basis of the avocado industry for many years. Avocados were introduced in Florida by 1850, Brazil in 1809, Israel in 1908 and South Africa and Australia in the late 19th century. In the late 1920s, Mr. Rudolph Hass discovered what would become the Hass variety that has become the most widely grown commercial and popular avocado variety. Recent breeding has produced new selections of Hass, such as Lavi Hass, Lamb Hass and Gem Hass.

The Israelis have been in the forefront of breeding, introducing varieties such as Arad and Ardith. They claim to have opened the European market to the fruit through a programme of intense advertising of the brand "Carmel" by the Israeli co-operative, Agrexco in the early 1980's but the fruit has not enjoyed the success of other tropical fruits such as mango.

As said before, the fruit was very popular in the 1970, and 1980s as a starter dish. The cold pressed oil extracted from the fruit pulp is gaining in popularity and marketed as virgin avocado oil. The oil is claimed to be by far the safest oil for high heat cooking, such as frying, due to its extremely high smoke point (as high as 2600C). Some avocado have high nutritional health-giving properties, some beingsuperior to olive and other vegetable oils.

Current environmental concerns over global warming and its association with meat eating have encouraged an uptake in vegetarianism and veganism throughout Europe and because of the high level of protein and healthy fats found in avocados the fruit is promoted as a substitute for meat.

Unlike banana, for which the post-harvest technology of harvesting $\frac{3}{4}$ ripe, the transportation in specially designed banana boats and the ripening in specially designed warehouse ripening rooms was developed in the 1920's, avocados were considered too difficult to transport long distances and shipments were restricted to airfreight until the 1980's. Early shipments to Europe by sea-freight often met with disaster in post-harvest problems of bruising, shrivelling, uneven ripening, stem-end rots and anthracnose. Even the comparatively short sea transport route from Israel to Europe was considered

difficult in the 1980's. The advent of the Jumbo-jet and low-cost airfreight enabled ripe fruit to be exported into Europe in a more economical and gradual way making the fruit acceptable. The legacy of this has lingered on with many environmentalists assuming that all avocados are shipped by air and thus the fruit has a very large carbon footprint due to the air miles involved in supplying Europe.

One of the main problems with avocado production is that the fruit does not ripen on the tree, a process that is initiated after harvesting and this creates a multitude of post- harvest problems. The fruit ripens very quickly when exposed to ambient temperatures, thus when containers get to their destination, the fruit has to be sold quickly.

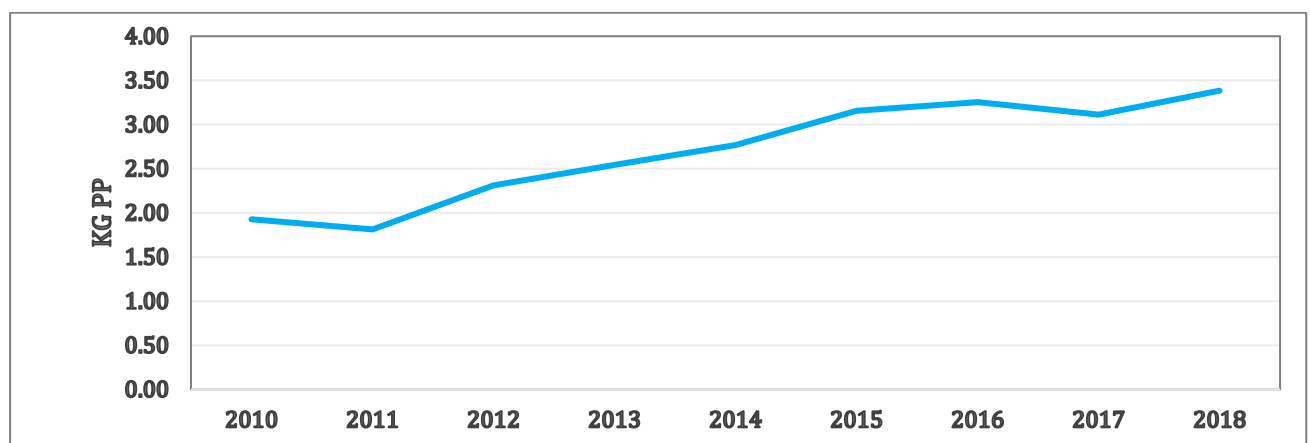
Extensive research by South African growers into perfecting sea freight using Controlled Atmosphere (CA) refrigerated containers enabled shipments of reasonably priced fruit to enter the European market and the techniques developed have been successfully used by South American growers to export to Europe and North America.

Thus, most fruit is now shipped by sea and like banana, is ripened in the destination country by specialized ripeners who can market the fruit as "ready to eat" satisfying a consumer resistance to experiences of purchasing unripe fruit that does not store well in the home. The development of CA refrigerated container shipping and new chemical treatments prolonging the shelf life, combined with the insatiable demand for avocados in the main markets of the USA and Europe has encouraged significant new orchard development in many developing countries particularly in South and Central America and North Africa. These new orchards have the potential for very high yields of high-quality fruit that could pose a major threat to traditional supplying nations whose orchards are ageing and, in many cases, have lacked investment in replanting with quality stock.

The world trade in avocados was valued at over nearly US\$ 6 billion in 2018. When compared to other tropical or exotic fruits such as mango valued at US\$ 3 billion and pineapple valued at US\$ 2.7 billion, the importance of avocado as a major commercially traded tropical or exotic fruit becomes apparent. However, the value is relatively low when compared to banana currently valued at US\$ 15.8 billion.

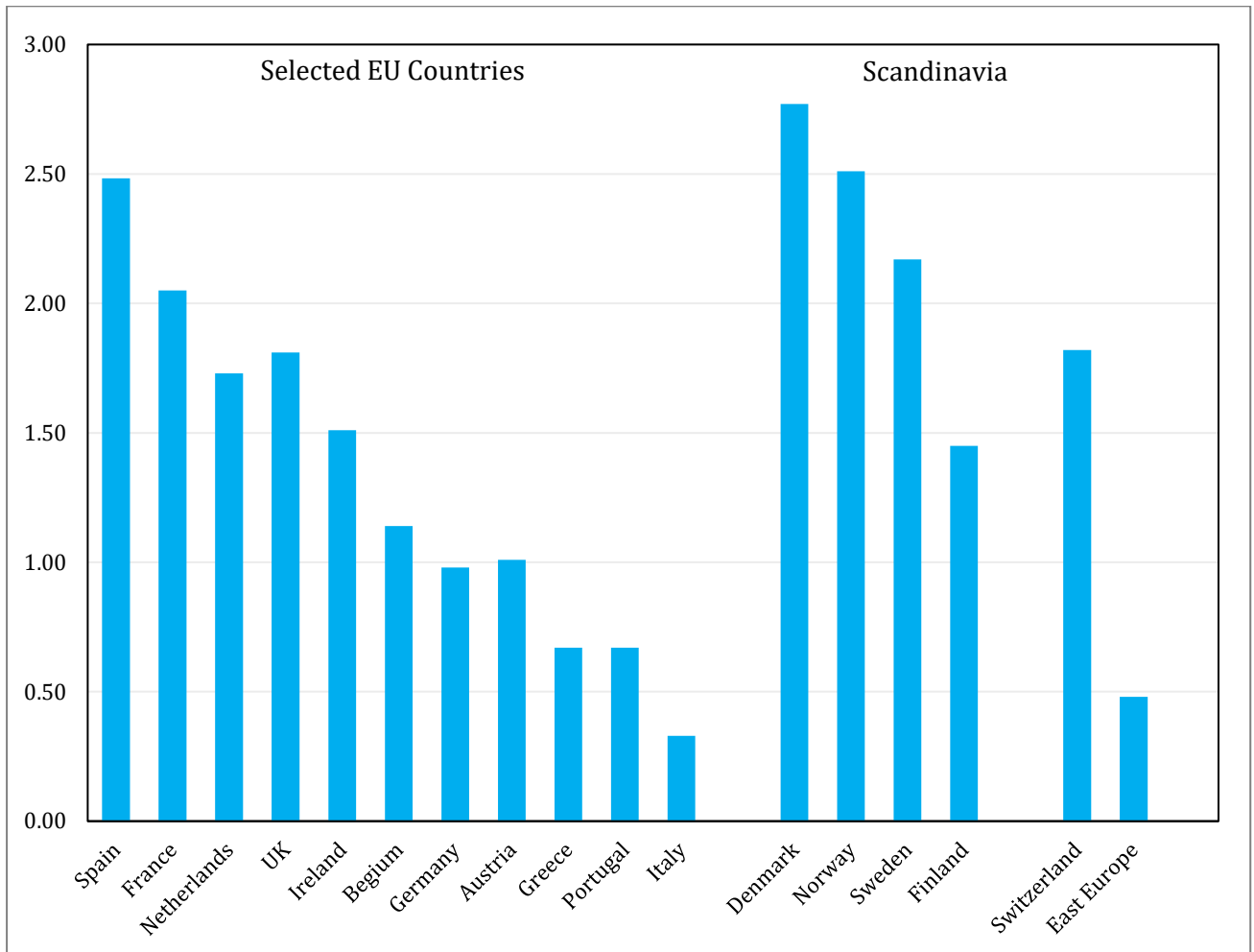
3.3 Consumption

Chart 10: USA per capita consumption trends



Source: Hass Avocado Board

Chart 11: European per capita annual consumption Kg pp.

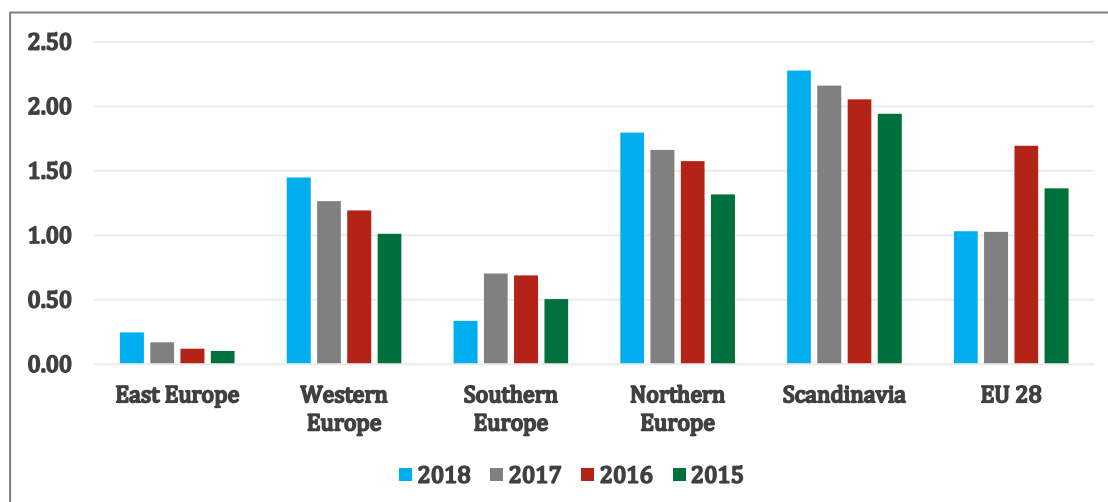


Source: Consultants calculation based on Official country statistics & ITC Trade Map

Mexicans consumes over 8 kg per person and the country is the largest consumer of avocado in the world. Scandinavian countries consume over 2 kg per head, France and Portugal over 1.5 Kg whilst the rest of Europe consume less than ½ Kg. The Eastern European consumption of avocado is very low. Consumption in the USA has risen in recent years mainly in response to heavy promotions by the HASS Avocado Marketing Board, a 12- member board representing domestic producers and importers of Hass avocados to promote the increased consumption of the fruit in the USA. The success of their activities provides a model for the promotion of avocado in Europe and as the graph shows a small increase in per capita consumption can have a dramatic effect on demand and increased imports.

In Europe consumption is rising consuming over 650 million tons in 2018.

Chart 12: Annual European consumption trends KG/person



Source: Consultant's calculation based on ITC Trade Map. Official statistics

The World Avocado Organisation (WAO) observes that the EU is now one of the fastest growing markets. Exporters are forming strategic partnerships with key retailers such as Tesco and embarking on effective promotional campaigns and effective promotion of “Ready to eat” and “Ripe Now” fruit and multiple packaging have achieved this.

WAO also predicts that the growth in the European market will continue over the next ten years and catch up with the USA consumption. This should be the target for all avocado promotional activities and if a European wide increase of just 1Kg pp per year were achieved over the next ten years. This would amount to total European demand increasing by over 500,000 tons, a 50% increase on current demand. As Kenya and Tanzania are principal suppliers, albeit during the summer season, these opportunities are substantial.

3.4 Health benefits

Avocado is perhaps the most nutritious of all fruits and from a simple nutritional aspect, the fruit has all the essential ingredients and benefits to maintain and enhance a healthy lifestyle. Shippers and major exporters such as “Mission” in the USA have engaged in promotional activities extolling the health benefits of the avocado and these campaigns may be one of the contributing factors in increased demand. Grower organisations such as the HASS Avocado Board have heavily invested in very successful promotional campaigns extolling the health benefits of the fruit.

The fruit exhibits a somewhat unusual chemical composition in that it is rich in oil and vitamin B but is low in sugar. It is a very nutritious fruit containing up to 30% oil – similar to olive oil – and high in Vitamin A, B and C. The calorific value is high and as the sugar levels are low, it is recommended as a high-energy food for diabetics.

A 100-gram serving provides :

- **Vitamin K:** 26% of the Daily Value (DV);
- **Folate:** 20% of the DV;
- **Vitamin C:** 17% of the DV;
- **Potassium:** 14% of the DV;
- **Vitamin B5:** 14% of the DV;
- **Vitamin B6:** 13% of the DV;

- **Vitamin E:** 10% of the DV.

Small amounts of magnesium, manganese, copper, iron, zinc, phosphorous and vitamins A, B1 (thiamine), B2 (riboflavin) and B3 (niacin).

In addition, the portion contains 160 calories and 77% are from fat making. It is one of the fattest plant based-food with 2 grams of proteins and 15 grams of healthy fats. It does not contain any cholesterol or sodium and has low saturated fat.

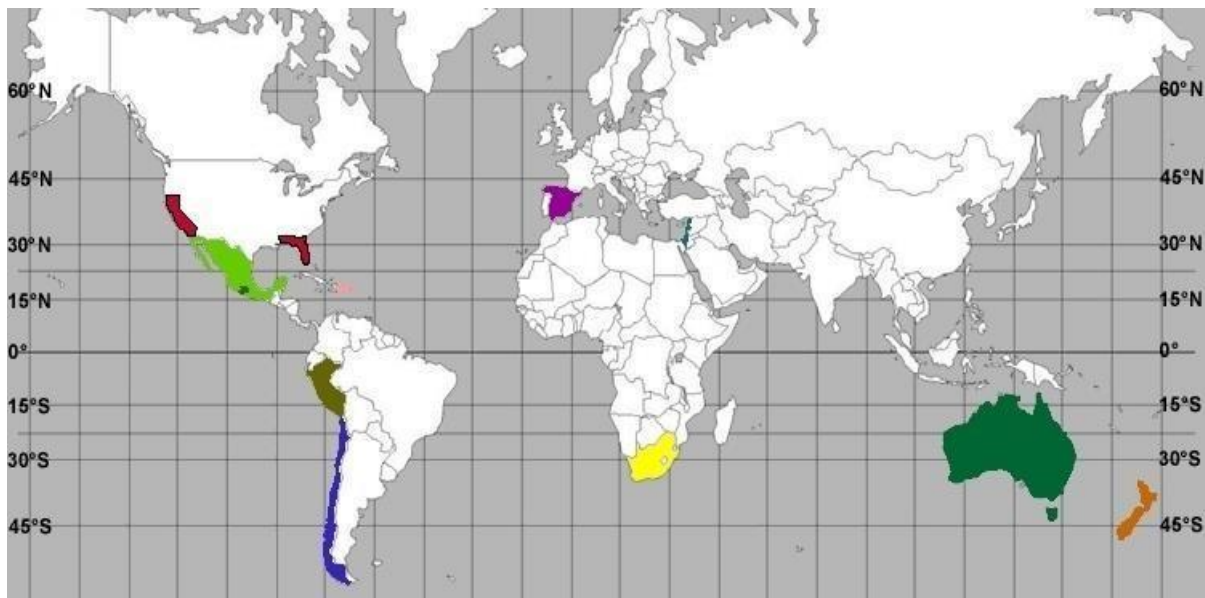
Eating avocado was shown to lower cholesterol levels and the fruit represents a rich source of monounsaturated fatty acids, including oleic acid, which is claimed to offer significant protection against breast cancer.

The potassium content in avocado regulates blood pressure and helps guard against heart diseases and strokes, as well as aiding digestion and helping the body flush out toxins.

The current strive to tackle an obesity epidemic crisis in Europe and the drive towards healthy eating could be exploited by exporters to increase demand for avocado.

3.5 World production

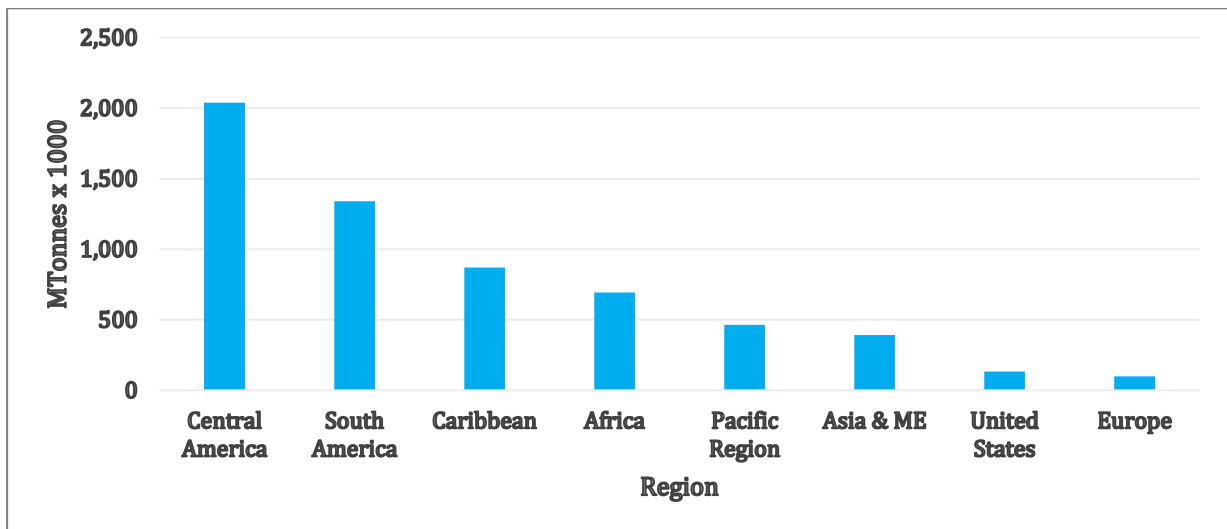
Largest avocado producing countries



Source: Hass Avocado Board

Most commercial avocados are grown in areas similar to those where citrus is grown in tropical and sub-tropical zones. Tropical cultivars are generally of the Guatemalan and West Indian races, but sub-tropical cultivars can also be grown in tropical countries at elevations above 1500 mtrs and these include the major commercial varieties traded on export markets Fuerte, Hass, Bacon, and Ettinger.

Chart 13: Global avocado production by region 2017



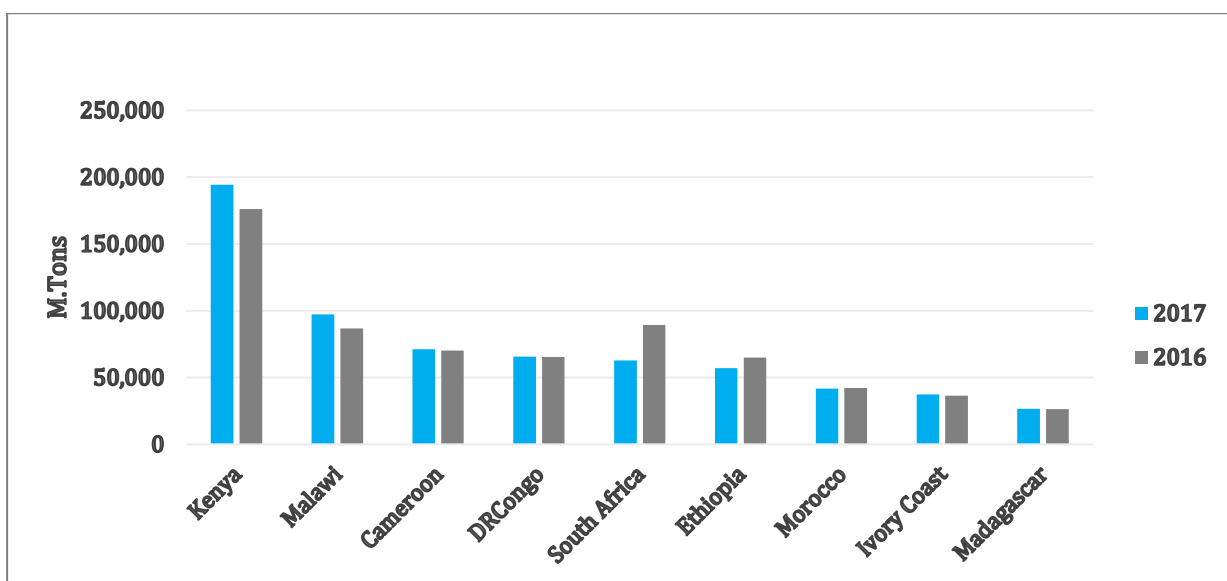
Source: FAOSTAT

The production of avocados can be grouped into three methods of production:

- Commercial developed orchards;
- New and developing orchards;
- Reworked existing orchards native plantings.

These groupings have significant influence on the quality of fruit harvested and impact greatly on all post-harvest aspects. Young trees generally produce larger fruit, ageing or native plantings. Commercial orchards are well laid out and managed allowing for mechanisation, especially in harvesting, nutritional control and water management all having an impact on yield, shelf life and quality and contributing to a uniformity in fruit development and quality. These farms are typical of the production in Mexico, the USA, Israel, and South Africa.

Chart 14: Principal African avocado producing nations



Source: FAOSTA

Developing plantations include new plantings and reworked older plantings where new varieties are grafted onto established trees. These farms are based in Australia, Spain, Chile, Peru and Brazil.

Generally, native plantings are located on land not suitable for mechanisation and they are managed by several small rural farmers. Fruit quality and shelf life can be good but only if the rural farmers are well supervised and managed by exporters and there is a high risk of considerable variability in fruit development and quality. These farms are typical in North, West and East Africa, the Caribbean, and some South American countries. Kenya and Tanzania exporters are heavily dependent on sourcing from these out growers placing emphasis on full, transparent and disciplined due diligence in exporters supply chain management. Avocados are quite demanding as to their climatic, geographical, soil and water requirements. Around the world, avocados are grown in warm climates between 45° North and 60° South latitude. The fruits need a lot of sunlight and relatively dry soil conditions in order to thrive.

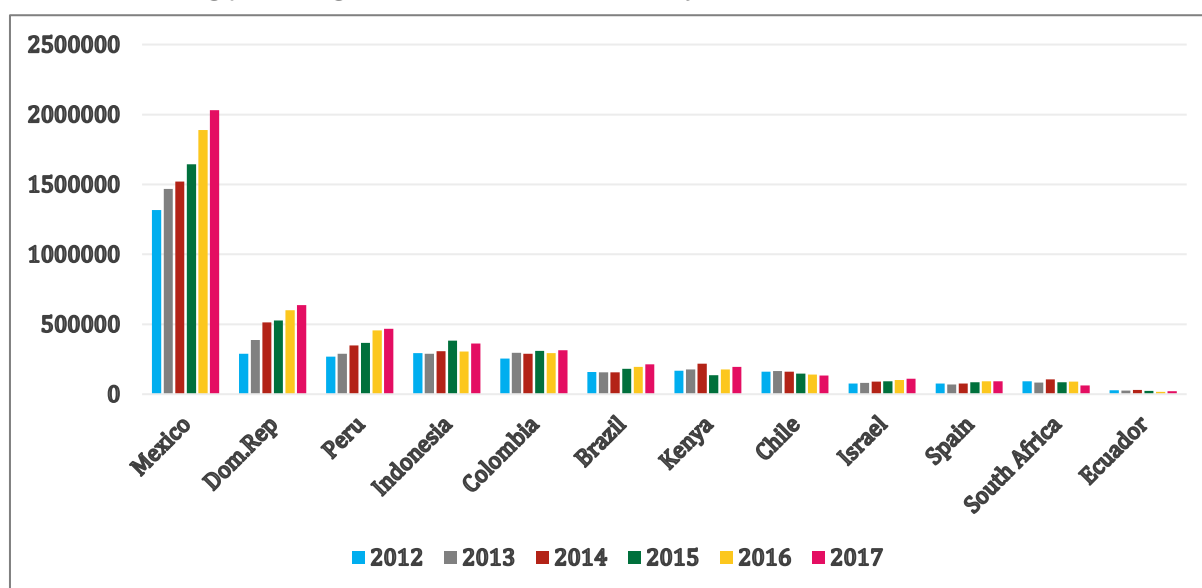
As with most horticulture crops, avocado can be grown successfully under less than optimal conditions but any deviation from the ideal will inevitably result in higher costs of production, yield and quality problems. New plantings in Mexico, Dominican Republic, Colombia and Peru have recently come into bearing with Peru recording the largest increase: over 150% over the last 8 years.

South Africa almost doubled its production in 2018 due to a recovery from earlier drought and considerable recent investment in orchards in the late regions that have enabled a longer production season.

It is reported that Colombia has been establishing 1,500 to 2,000 ha annually and now has a production area of over 15,000 ha and other South American countries such as Brazil, Honduras, and Chili are investing in increasing the production areas whilst Peru continues to expand its production

Avocados are grown all year round in the Dominican Republic with over 20 varieties now being grown and the country is the second largest producer. However, most of the production is consumed on the local market. Within Europe, the Spanish acreage including the Canary Islands continues to rise with current acreage at over 10,000 ha. Greece is the second largest producer with approximately 1,000 ha followed by Italy, the third largest European producer with a modest 260 ha.

Chart 15: Leading producing countries and trends over 6 years - Production M.tons



Source: FAOSTAT

Morocco is a relatively new player with a production area of over 3,500 ha.

Many of the producers are small-scale farmers dependent on an income from cash crops. It takes 3-5 years for a newly planted orchard to commence harvesting and start providing an income to growers. Small-scale growers may not have the resources to wait for a return on their investment and are thus reluctant to plant new orchards of the new varieties exporters need. The exporters in Kenya and Tanzania are dependent upon sourcing much of their export requirements from these farmers and this understandable reluctance to replant or extend, is a major handicap for exporters in attempting to meet the increasing demands of the European market for quantity and for avocado of the Hass variety. Despite this, in the case of Tanzania lead farmers in Mbeya, Kilimanjaro, Arusha, and Songwe, new entrants with greater surface, above 50 hectares will contribute to increasing the supply available.

3.6 Seasonality

Diagram 1: Availability of avocado from major producing countries

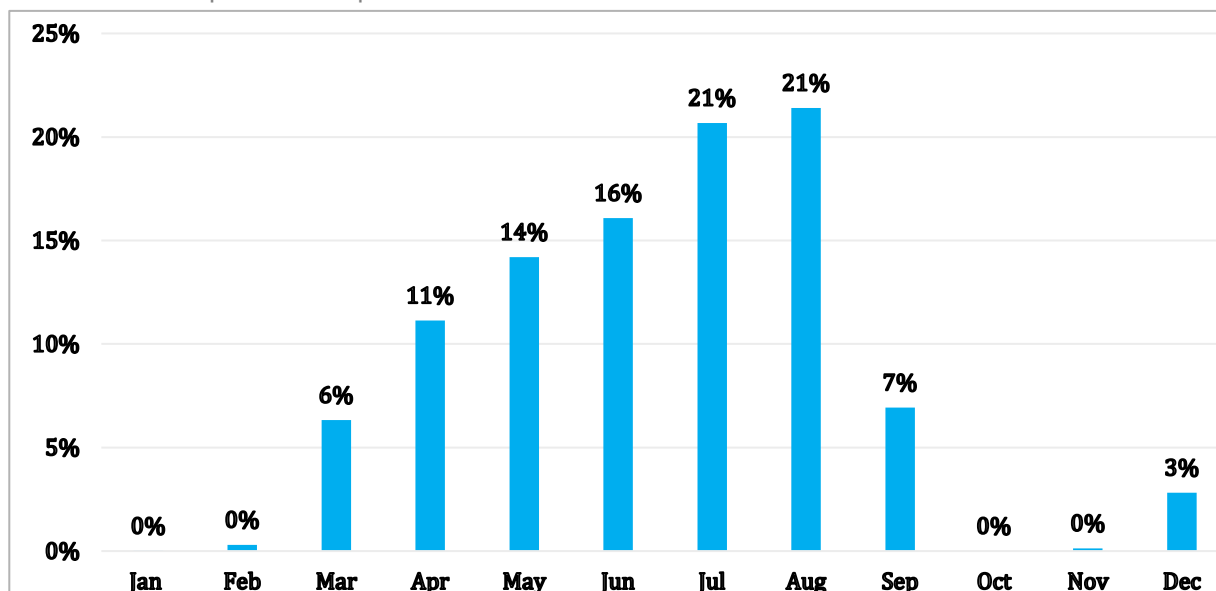
	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Kenya				Kenya/Tanzania Season								
Hass												
Fuerte												
Tanzania												
Hass												
Various												
South Africa												
Hass												
Fuerte												
Pinkerton												
Ryan												
Edranol												
Israel												
Hass												
Fuerte												
Pinkerton												
Ettinger												
Ardith												
Reed												
Mexico												
Hass												
Fuerte												
Peru												
Hass												
Fuerte												
Nabal												
Spain												
Hass												
Fuerte												
Bacon												
USA California)												
Hass												
Fuerte												
Chile												
Hass												
Fuerte												
Bacon												
Dominican Republic												
Hass												
Fuerte												
Bacon												
Pinkerton												
Reed												
Australia												
Hass												
Fuerte												

Source : FPJournal

Fuerte generally ripens before Hass in most producing countries growing both varieties and helps extend the production season. Mexico now exports all year round and is increasing shipments to Europe.

The global trade recognises two distinct seasons – the summer and winter seasons – each signifying a general shift in supply by importers.

Chart 16: Annual pattern of exports



Source Tanzania Revenue Authority

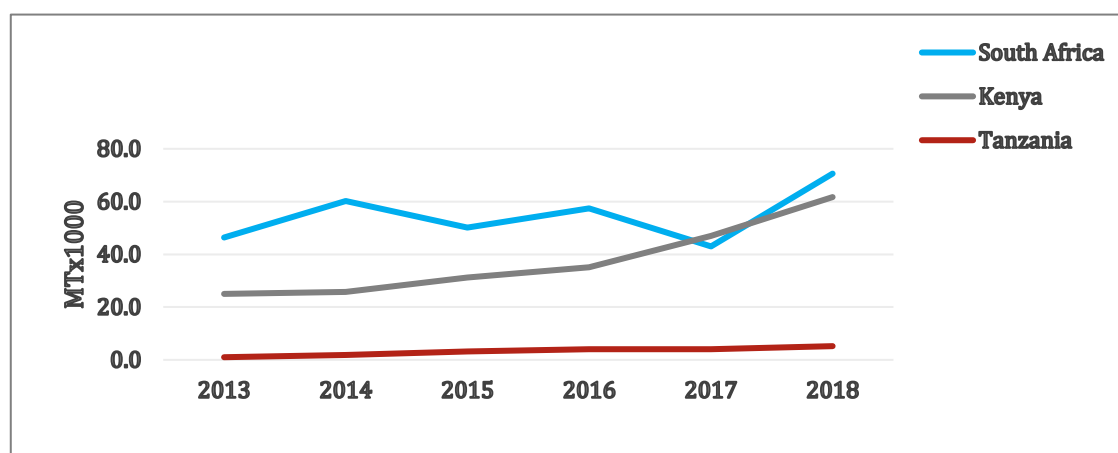
Table 4: Major summer and winter supplying nations

Summer Supplying Nations						
1000 MT	2013	2014	2015	2016	2017	2018
Latin America						
Mexico	224.1	283.8	415.0	380.7	384.3	476.6
Peru	114.5	179.0	174.3	194.1	246.0	321.0
Chili	36.2	34.2	36.4	63.5	96.2	60.3
Brazil	4.3	5.8	4.6	5.0	8.0	7.3
Africa						
South Africa	46.4	60.2	50.1	57.4	43.0	70.6
Kenya	25.0	25.7	31.2	35.1	47.0	61.7
Tanzania	1.0	1.9	3.2	4.0	4.0	5.2
USA	25.0	19.3	19.0	26.7	24.5	33.9
Total Summer	476.5	609.9	733.8	766.5	853.1	1,036.6

Winter Supplying Nations						
Latin America						
Mexico	339.4	364.9	445.8	533.0	517.4	609.1
Chile	60.5	87.1	61.4	97.3	97.1	84.2
Dominican Rep	19.8	18.9	20.4	13.2	26.3	34.0
Colombia	0.5	1.2	4.5	10.9	24.0	30.0
USA	18.3	17.6	18.9	26.6	26.3	34.5
Mediterranean						
Spain	49.8	44.4	59.6	42.5	60.4	52.0
Israel	44.8	53.1	51.6	41.2	62.0	54.2
Morocco	1.1	5.4	7.6	7.5	9.5	23.4
New Zealand	6.7	17.3	24.7	14.0	26.0	12.0
Australia	1.3	0.9	0.8	1.8	1.3	1.6

Source: ITC Trade Map – based on global summer exports April to September

Chart 17: African summer exports

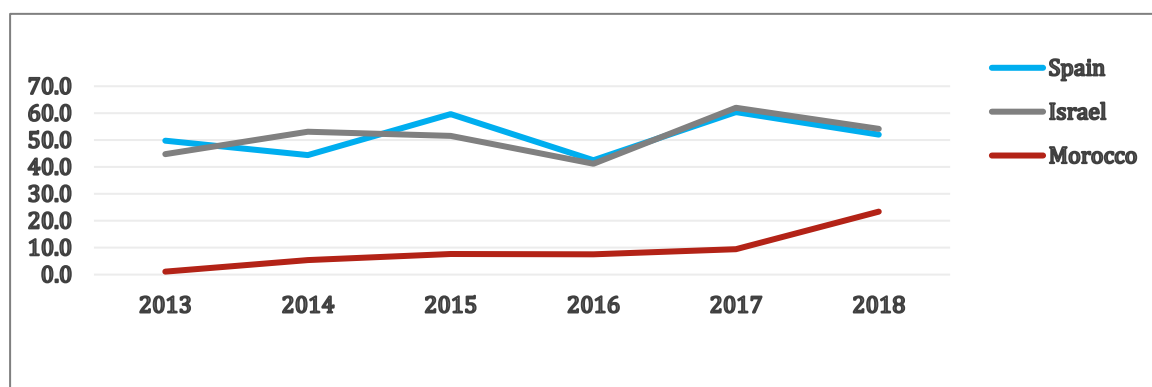


Source: Fruitropic

Ideally, all major importing countries require supply all year round. In theory, this can be achieved by varietal choice. In practice, reliable supply each month cannot be provided by any one source, thus importers have to source from a multitude of supplying countries to maintain year-round supply. Furthermore, since the demand from European markets is predominantly for Hass, whose supply seasons do not conveniently overlap seasonal shortages do occur. As with most horticulture crops, weather and climate cause importers supply problems and recent droughts in South Africa and heavy rains in South America have caused major supply issues.

African countries are significant suppliers of avocados during the summer season but are facing increasing competition from Mexico, Peru and Chili.

Chart 18: Mediterranean winter avocado suppliers



Source: Fruitrop

North African avocados are now competing strongly with the traditional winter suppliers Spain and Israel but as the Kenyan and Tanzania season is mainly the European summer season.

3.7 Post harvest

Perhaps the major key issue in avocado marketing is the handling of fruit from the tree to the marketplace, premature harvesting, inconsistency within a consignment and that creates ripening issues and increased cost in wastage and re-packing for importers. This issue is so important that a more detailed description of Post-Harvest Management is provided in Appendix 1.

Competing countries have long recognised the importance of adopting good post harvest management. South African exporters, the pioneers of sea freight, have researched sea-freight shipments especially the design of cartons to ensure an airflow throughout each pallet and the use of SmartFresh technology, a patented chemical process to inhibit the naturally occurring fruit ripening ethylene gas, whilst the fruit is in refrigerated containers.

Peruvian authorities consider harvesting standards so important that the Government has introduced mandatory minimum quality standards. These developments are an important lesson for Kenyan exporters to adopt if they are successfully to compete in today's modern avocado marketing environment. Post-harvest management and discipline throughout the procurement and supply chains are key and lessons for Kenyan and Tanzanian exporters to adopt if they are to successfully compete in the increasingly competitive world market.

Harvesting

Commercial plantations of avocado usually start to bear fruit in the second year; generally, commercial quantities are not available until the third year.

Table 5: Average commercial orchard yields for Hass avocados

Year	3	4	5	6	7	8	9	10
Yield/tree (kg)	12	26	38	45	51	45	51	45
Yield/hectare (tons)	4	8	12	14	16	14	16	14

Source: NZ Dept of agriculture

The average yield can be up to 20 tons/ha but in many older orchards yield as low as 10 tons/ha are found. Avocado is susceptible to climate vagaries, especially wind and drought and biennial bearing is common in older orchards when the trees have formed a hedgerow and often the result of stress, late harvesting or a heavy crop followed by a barren crop. Low yields are often the result of:

- Poor management of phytophthora root rot disease;
- Poor management of soil moisture;
- Poor and variable rootstocks; and
- Poor nutrition management.

Growers using good rootstocks and good management of root rot, irrigation and nutrition can achieve average yields of over 20t/ha.

Although avocados do not ripen on the tree, they must have reached a stage of maturity before picking otherwise they will shrivel, a common complaint from interviewed importers. It is now recognised that the safest way of determining the harvesting stage is by testing oil content and dry matter. The percentage dry matter is the easiest of the reasonably accurate maturity tests. The ideal dry matter can vary between varieties but there is considerable evidence that Hass is best when it reaches at least 23% dry matter. Varieties also have an upper level of dry matter (maturity), after which palatability declines.

Although the fruit appears robust, it is easily damaged by bruising, which effects are not manifest until the fruit has reached the consumer in a fully ripe condition. The picking process itself is important and often casually carried out especially amongst the small growers who may provide a high percentage of an exporters' shipment inventory and educating and supervising these growers is an essential part of the due diligence exporters must exercise to enhance their reputation in the market.

Packhouse, cool chain and storage

Fruit should be packed and cooled within 24 hours of harvest. The temperature for cooling hard, green mature fruit depends on the variety:

- 4°C to 5°C for Hass with a maximum storage time of 4 weeks;
- 6°C to 8°C for other varieties with a maximum storage time of 2 weeks.

Ripening starts when the fruit produces Ethelene, which is followed by an increase in respiration. With avocados, respiration can increase rapidly generating heat. Many growers assume that keeping the fruit cool will prolong the storage life and fail to understand that the refrigeration plant has to be able to remove the field heat and the heat of respiration. A rogue fruit in the ripening phase can trigger the ripening of an entire consignment and the heat generated may be more than the refrigeration equipment can cope with, especially in the confined space of a store or container. Thus, fruit in a store or shipping container set at 50C can have a core temperature significantly higher.

Forced air-cooling should be an essential in any packhouse, used on the arrival of the warm fruit before packing. Avocado needs cooled and target temperatures maintained throughout the entire cool chain to ensure the preservation of fruit quality. It is important to cool fruit before transportation, and not to rely on refrigerated trucks for this as these trucks can at best only maintain the existing temperature. The ideal temperature is 50C Controlled Atmosphere (CA) where the oxygen is maintained at 5% and carbon dioxide 10% (now widely used).

Fruit Ripening

Stage 1	Stage 2	Stage 3	Stage 4	Stage 5
hard green	turning firm	breaking	firm-ripe	ready to eat
days to eat	days to eat	days to eat	days to eat	days to eat
5 – 7	3 – 5	2 – 3	1 – 2	24 hrs

Each of the three market segments – Wholesale, Service/Catering and Retail require fruit at different stages of ripeness

There are five accepted stages of ripening:

Stage 1 = Hard green. Fruit will withstand 25 lbs pressure and be ready to eat after 4-5 days

Stage 2 = Preconditioned 15-25 lbs pressure and ready to eat in 3 days

Stage 3 = Breaking (pre-ripened) 10-15 lbs pressure, ready to eat in 2 days

Stage 4 = Firm ripe, 5-10 lbs pressure ready to eat in 1 day

Stage 5 = Ripe, 5 lbs pressure, can be kept for 2-3 days at room temperature

Table 6: Market segments for avocado and their ripening requirements

	Organic	Fairtrade	Combined	Ripening
	A	B	A + B	Stage
The Wholesale Market :	Yes	Yes	No	1
The Catering Sector:				
Restaurants inc QSR*	Yes	Yes	Yes	2 - 4
Hotels	Yes	Yes	Yes	2 - 4
Leisure				4
Health care				3 - 4
Education				3 - 4
Sandwich makers				4
The Retail Sector:				
The multiple supermarkets	Yes	Yes	Yes	4
Independent supermarkets				4
Convenience stores				4
Co-operative stores	Yes	Yes	Yes	4
Local greengrocers				2 - 4
Farm shops				2 - 4
Farmers markets				3 - 4
Market stalls				3 - 4
E-commerce	Yes	Yes	Yes	3 - 4

Note * = Fast Food Outlets

Source : UK Retail Magasine

To offset some of the difficulties of ripening, some importers heat the fruit to speed up the ripening process so that by the time the fruit reaches the consumer it is fully ripe in a process known as “Triggering”.

The biggest problem ripeners face is fruit that has been harvested prematurely (which causes the fruit to shrink and becomes inedible) and is at various stages of ripeness within a consignment, within an individual pallet and within an individual box.

This makes even ripening extremely difficult and can result in costly repacking. This accounts for the discounted market price of Kenyan avocados and is key to successful marketing by Kenyan and Tanzanian producers.

Traceability

After damaging publicity over food contamination and modern chemical agricultural production processes, scare stories about overseas shipments infected with pathogens and insects such as the “Black Widow” spiders the major retailers and food service suppliers demand that products purchased by them have been subject to a supply chain in which each link is accountable, recorded and transparent. This process of due diligence has become a critical feature of procurement in Europe. Large-scale producers can readily police protocols in their orchards, pack-houses and local transport systems but in the case of exporters in developing countries such as Kenya and Tanzania exporters are reliant upon sourcing from a multitude of small farmers. Despite the apparent difficulty in administrating protocols, they need to be introduced so that each farmer is clearly identified in the recording procedure, as well as the orchard and harvesting supervisor. In addition, the exporter needs to record, monitor and advise on all cultural procedures such such as in the event of any complaint, the box of fruit can be traced right back to the orchard where it was harvested and all chemical and fertilizer inputs can be identified. This may appear a momentous task but is now essential for successful market penetration into Europe.

Transportation

One of the major weaknesses in the supply chain is the transportation of fruit. The avocado may appear robust but any mishandling causing bruising or damaged skin will manifest when the fruit ripens. Field heat in tropical and warm regions can be high and a frequent sight in orchards is fruit dumped into the back of a small pick-up truck. All fruit should be placed gently into clean strong field crates, placed in the shade and ideally transported to the pack house in a refrigerated vehicle. It is recognised that for practical and commercial reasons this may not be possible and in these circumstances every effort should be made to keep the fruit shaded, allowing airflow around the crates to avoid the build-up of heat within the load.

Another sight frequently seen is open containers being loaded outside in the heat. Ideally, the container should back onto the pack house, be pre-cooled to the shipping temperature and loaded with pallets of pre-cooled fruit in their export cartons.



Containers are usually shipped by road to the ports waiting for loading onto the boats. Another weakness observed is that of refrigeration units waiting to be connected to the standby electricity supply. Any reduction to refrigeration will accelerate ripening and spoil the quality before arrival at the port of destination. The shipping companies today are reliable as well as the offloading facilities in the receiving ports but there are occasions where European lorry drivers switch of the refrigeration units when they are on their official rest period to reduce noise. It is therefore vital that all containers are fitted with Ryan temperature recorders when

they are loaded on the farm so that there is an accurate record of the load temperature throughout the entire journey.

3.8 Constraints to trade

There is increasing pressure upon European governments to address issues such as climate change, global warming, exploitation of child labour and gender issues. Recently, extremely graphical television programmes have highlighted the damaging effect of plastics on wildlife that is leading to a consumer revolt against plastics. Hard black plastic containing Bisphenol A (BPA) often used in fruit packaging cannot be recycled.

Political uncertainty over the UK leaving the EU and the USA trade with Mexico, issues outside the scope of this report but issues that all exporters should be aware of the following issues.

Social issues & ethical sourcing

Recent adverse publicity of links between Mexican and South American producers and organised crime, publicity endorsed by some celebrities, has resulted in some fashionable restaurants to remove avocado dishes from menus and substitute them with other high protein vegetable products.

As the demand for avocado has been fuelled by celebrity promoted vegetarianism and veganism. This has become a concern and may dampen future demand unless challenged by the industry.

Worker exploitation, child labour, housing and farmer returns are concerning issues to the consumer and many initiatives have been introduced such as:

- Fairtrade, which promotes a fair payment to small farmers.
- The Ethical Trading Initiative (ETI), a leading alliance of companies, trade unions and NGOs that promotes respect for workers' rights around the globe.
- Kenyan and Tanzanian exporters should support these initiatives and be aware of the growing concern in Europe over where their food comes from.

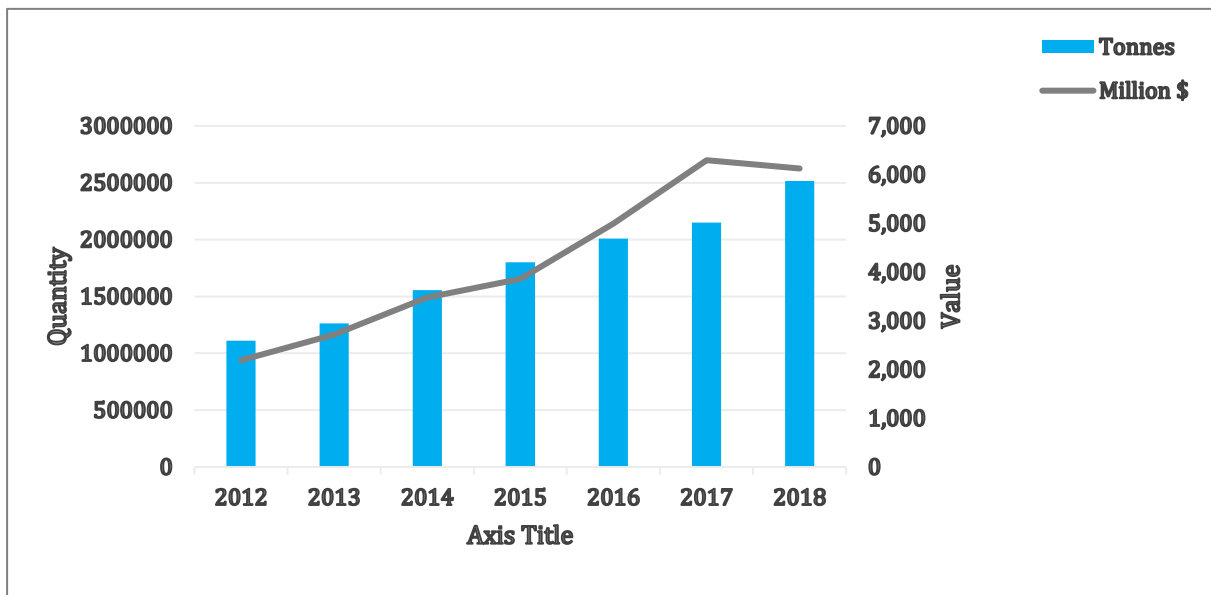
Environmental issues

Deforestation and water security are issues of concern throughout Europe over the production of fruit and vegetables especially in developing countries.

Sustainable production is becoming a major influence in market development and has led to the formation of The Sustainability Initiative Fruit and Vegetables (SIFAV), which aims to drive 100% sustainable imports of fruits and vegetables from Africa, Asia and South America by 2020.

A recent report claimed that tropical fruit and especially avocado is shipped by airfreight adding significantly to their carbon foot print and thus unsustainable. Most avocado are shipped by sea as system with a very low carbon footprint but such emotive and poorly researched reporting damages consumer confidence that needs addressing by the industry and underlines the importance of Global GAP certification.

Chart 19: World production and value trends



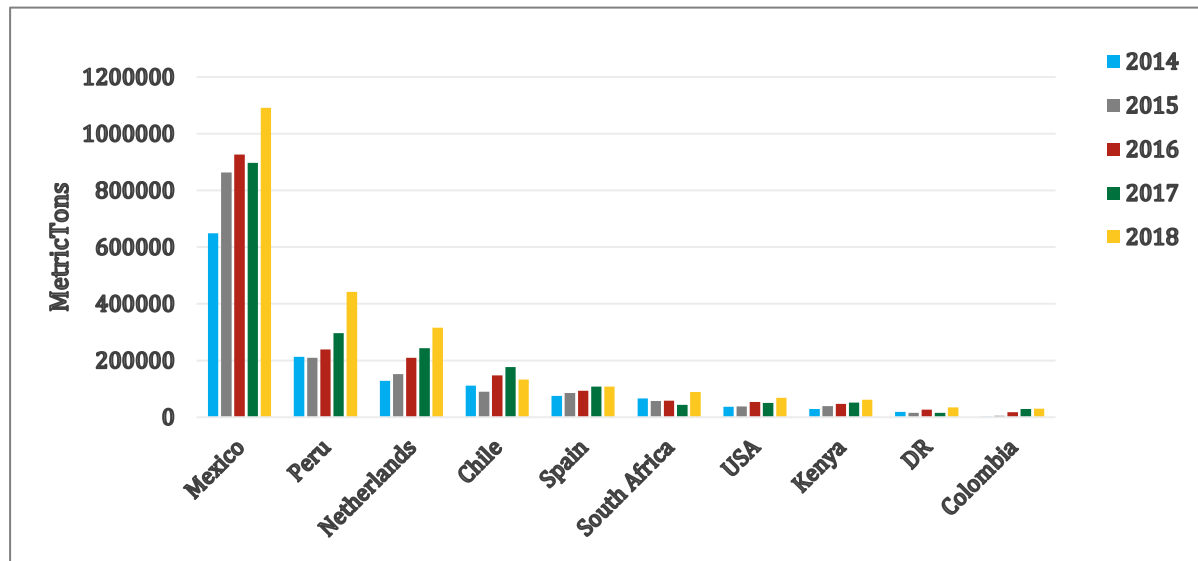
Source: ITC Trade Map

The USA produces avocado but it is nevertheless by far the world's largest importer, importing over US\$ 2.5 billion nearly half of the total trade. The USA's imports have almost doubled since 2012. This is attributed to an increase in demand created by focused promotion by the Hass Avocado Board competing overseas grower associations and industry bodies and a raise in awareness for healthy living encouraged by celebrity endorsement.

The American experience is an example that Kenyan and Tanzania producers could follow to improve their market presence in Europe.

Chart 20: Leading avocado exporting nations – M. tons

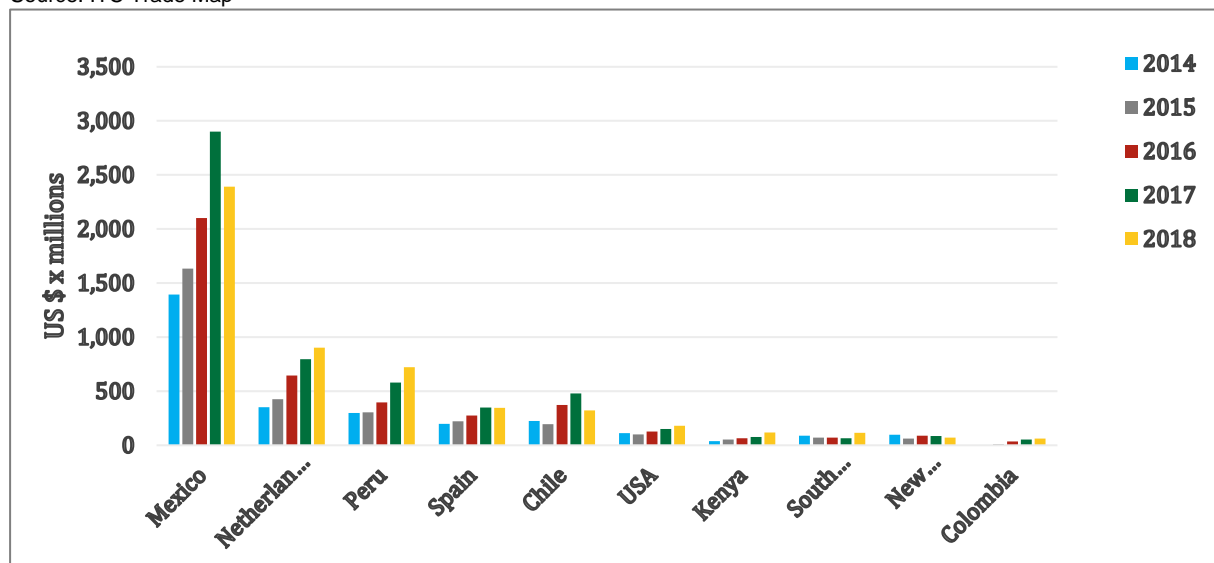
Source: ITC Trade Map (Note Peru 2015 data mirror image)



Despite the increased production values have kept up with the pace and remain strong, as demand appears to be ever increasing. Traders describe the market as “dynamic”.

Chart 21: Leading avocado exporting nations – Value x Million US\$

Source: ITC Trade Map



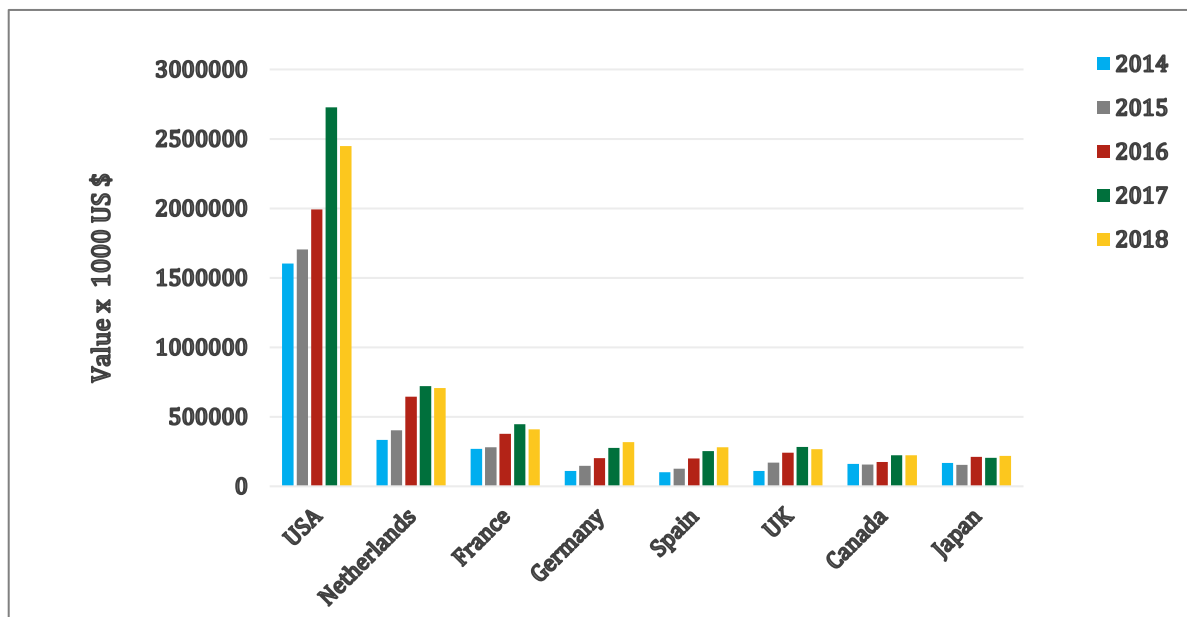
Mexico is the world’s largest exporter of avocado. The decline in production combined with an increase in consumption are the main driving factors that resulted in the USA becoming Mexico’s main market. Mexican exports have doubled over the last five years reaching 650 during the same period Peru’s exports have trebled from 59,521 tons in 2010 to a total of 178,999 tons in 2014.

Mexican and Peruvian growers have invested in new orchards, improved post- harvest management and mechanisation that is now reflected in their exports at the expense of the other main traditional exporters.

The success of Peruvian exports can be attributed to highly disciplined marketing in adopting strict quality and harvesting standards, an understanding of the complexities of the modern cool chain distribution systems especially in computerised container shipping and an investment in technology.

Peru is rapidly becoming a major player, currently being thesecond largest exporter vigorously targeting the European market where an increase in demand in most European countries especially in Scandinavia combined with increases in consumption in Eastern Europe. The progress of Peru on the world scene has been achieved by considerable new investment in commercial well-managed orchards combined with vigorous promotional programmes, financed by the industry, in both the USA and Europe.

Chart 22: Leading avocado importing nations



Source: ITC Trade Map

All major importing countries report significant increases in the volume of avocado imported over the past five years, which again reflects the buoyancy of the market and an increasing demand for avocado. Kenya’s exports managed a 48% increase over the five-year period ending 2018 and Tanzania exports continue to expand.

Dutch imports have almost doubled during the period that the trade attributes to the development of the East European and Scandinavian markets coupled with increased consumption of imports to Europe through the Netherlands, highlight the importance of the country as an entry hub and distribution hub for the whole of Europe. Dutch imports are mainly through the homeports of Rotterdam now being equipped with state-of-the-art fruit cold store warehousing and fruit processing facilities and Amsterdam with a significant volume now imported through the Belgian port of Antwerp. This reduces the sea freight time and to capitalise on this advantage several importers have located to the City of Breda in the Netherlands, which is close to the Belgium border, and the Port of Antwerp.

The import value in terms of US\$/Kg reflects the costs of production in the more developed nations particularly Australia, New Zealand and the Mediterranean countries.

By comparison, African producers appear to be more competitive. Quality and importantly, variety have some influence on this analysis, as Hass demands a higher market price over Fuerte a major variety in the product mix of African and Mediterranean exporters.

Table 7: Value of exports from selected avocado exporting nations US\$/Kg

Country	2014	2015	2016	2017	2018
Australia	4.28	4.40	3.65	5.26	4.52
New Zealand	3.41	3.28	3.39	4.87	4.31
Morocco	2.13	2.22	2.72	2.80	3.34
Israel	2.44	2.18	1.65	3.22	3.26
Spain	2.64	2.61	2.93	3.24	3.21
USA	3.02	2.62	2.41	2.99	2.62
Chile	2.00	2.17	2.53	2.70	2.44
Brazil	1.64	1.42	1.37	1.39	2.17
Mexico	2.15	1.89	2.27	3.23	2.19
Peru	1.68	1.98	2.04	2.35	2.01
Kenya	1.28	1.34	1.37	1.51	1.94
Dominican Republic	1.17	1.09	1.27	3.22	1.72
South Africa	1.37	1.23	1.25	1.47	1.31
Tanzania	0.48	0.39	0.55	1.06	1.14

Source: Consultants calculation. ITC Trade Map

CHAPTER 4: THE FRESH EUROPEAN AVOCADO MARKETS

Introduction

Europe comprises the 28 nations of the European Union – the EU – 28, the EFTA nations of Norway, Switzerland and Iceland, the non-EU Eastern European countries that include the large markets of the Russian Federation and Ukraine. In this report, Scandinavia refers to Norway, Sweden and Denmark, thus excluding the broader Nordic regional countries namely Iceland and Finland. Imports of avocado into Europe during 2018 were valued at over 2.8 \$ million. Europe is also a producer of avocado, the main EU producers being Spain, Portugal, and Greece. The avocado is classified in the trade as an exotic but a fruit that does not enjoy the popular demand of other tropical and exotic fruits such as banana and pineapple.

Table 8: Selected European country profiles

	Population	Area Km2	GDP Billion	GDP/Capita (PPP) \$
The EU 28	511,522,671	4,324,782	19,100	38,370
Netherlands	17,081,507	41,526	826	48,223
Germany	82,521,653	357,021	3,677	44,469
Belgium	11,351,727	30,510	493	43,323
The United Kingdom	65,808,573	242,495	2,622	39,720
France	66,989,083	643,548	2,583	38,476
Italy	59,216,525	301,320	1,935	31,952
Spain	46,441,049	504,782	1,311	28,156
Scandinavia				
Norway	5,295,619	384,802	399	75,504
Denmark	5,748,769	43,094	325	56,307
Sweden	9,995,153	449,964	538	53,442
EFTA	8,985,719			
Liechtenstein	38,114	160	6	168,146
Switzerland	8,599,125	41,285	679	80,189
Iceland	348,480	103,000	24	70,056
East Europe	215,317,570			
Russia	143,895,551	16,380,000	1,578	14,832
Hungary	9,655,361	89,610	139	14,224
Poland	38,028,278	304,205	525	13,811
Ukraine	43,795,220	579,330	112	2,639

Source: ITC Trade Map

1,094,761 tons of avocado were imported into Europe in 2018 valued at \$ Billion 2.7. This volume has increased by just over 52% over the last 5 years.

Table 9: Selected European avocado importing countries. M.tons

The EU 28	2014	2015	2016	2017	2018
Netherlands	168,762	187,336	246,567	267,197	344,998
France	119,098	116,304	134,360	145,967	157,486
Spain	52,747	60,989	87,810	98,763	129,326
United Kingdom	53,128	77,391	99,882	107,598	117,663
Germany	37,715	48,436	58,453	72,710	92,765
Belgium	17,127	20,379	29,247	28,448	27,957
Italy	9,109	10,989	14,255	16,734	21,800
Scandinavia					
Denmark	11,023	14,190	16,046	17,615	21,208
Sweeden	19,372	17,878	18,922	20,676	21,203
Norway	10,496	11,673	12,411	12,422	12,779
EFTA					
Switzerland	9,516	11,376	13,823	14,694	15,528
Iceland	588	697	886	1,099	1,053
East Europe					
Russian Federation	14,404	11,837	12,248	19,120	29,242
Poland	7,222	9,270	11,607	14,885	19,845
Ukraine	1,852	1,231	1,685	2,218	4,793
Hungary	1,966	1,763	1,416	2,365	3,527

Source: Trade Map

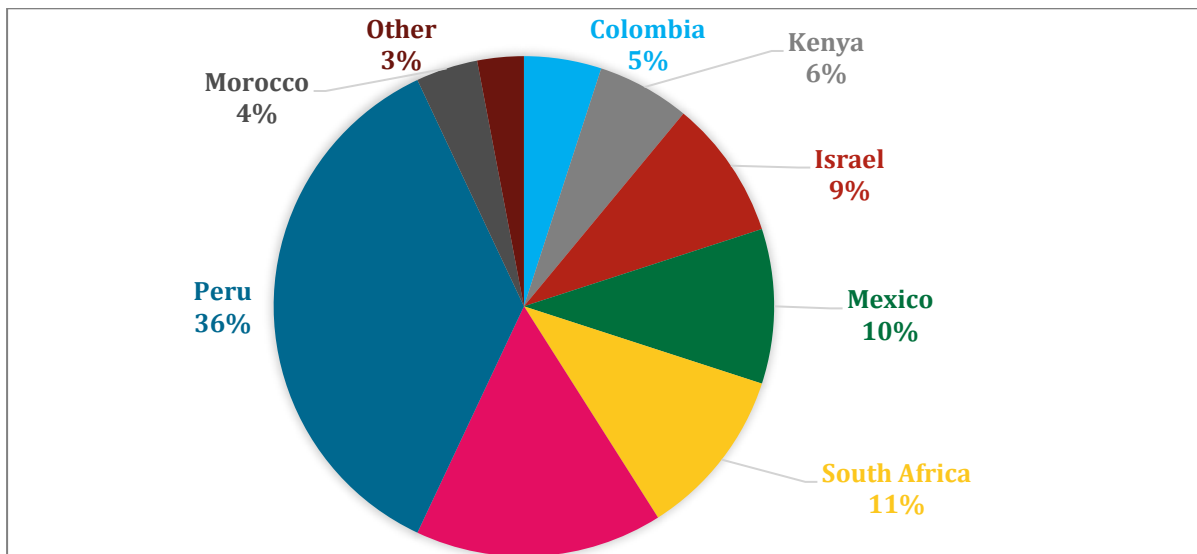
The Scandinavian countries have been the highest consumers of avocado for some years. The trend in their imported volumes has been lower than most of the other European countries, indicating that the bench mark is of 2.5 Kg/person. A target suggested in this report that indicates achievable growth, may be the limit but a target for other countries to aim for and indicates that despite the increasing volumes of avocado imports in Europe, there is still ample room for additional volumes.

Table 10: Selected European avocado importing countries- Value x \$1000

The EU 28	2014	2015	2016	2017	2018
United Kingdom	111,335	169,549	242,375	282,524	267,328
Netherlands	332,953	403,647	643,810	720,095	706,109
Germany	111,557	148,032	203,410	275,453	317,810
France	270,289	280,943	376,780	447,248	409,856
Italy	20,480	27,147	39,370	50,079	54,124
Spain	100,631	127,538	200,179	252,285	280,312
Belgium	35,116	45,171	70,933	81,964	77,603
Scandinavia					
Sweden	55,114	52,256	63,307	71,665	70,906
Denmark	36,105	43,058	46,031	51,783	61,962
Norway	42,064	42,814	52,739	60,937	59,670
EFTA					
Switzerland	27,467	32,265	46,776	58,368	57,409
Iceland	1,933	2,211	3,147	4,738	4,956
East Europe					
Russian Federation	24,029	19,072	20,907	36,253	59,010
Ukraine	4,048	2,726	3,791	5,185	10,859
Poland	17,189	23,247	30,619	43,831	52,164
Hungary	2,691	2,805	2,858	3,851	5,513

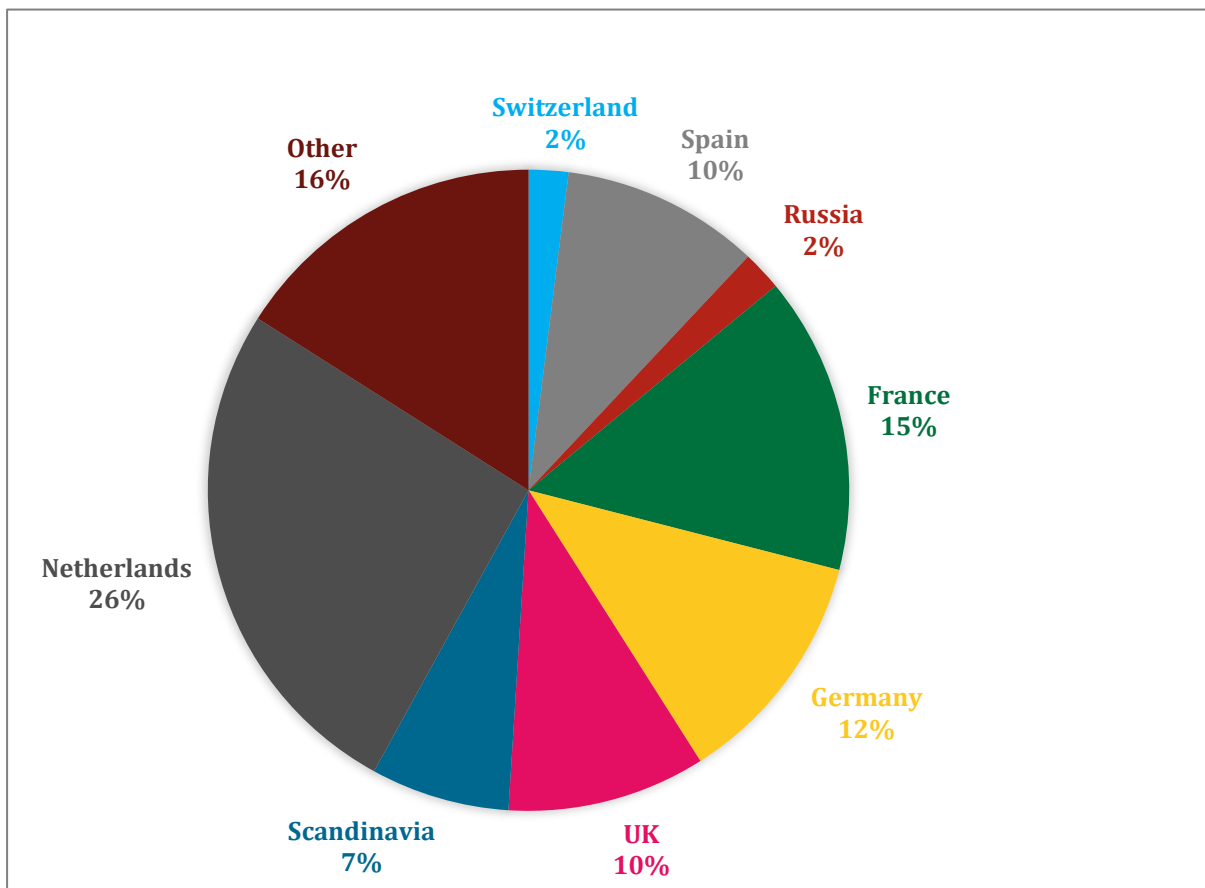
Source: ITC Trade Map

Chart 23: Market share of major supplying nations to Europe



Source: ITC Trade Map

Chart 24: European avocado importing nations share



Source: ITC Trade Map

4.1 The EU market



The Fruit Trade

The EU – 28 imported 32 million tons of fresh fruit valued at over \$ 49 billion, an increase of over 80% over the previous 5 years

Table 11: Selected exotic and tropical imports into the EU – Value x \$ 1000

Fruits	2014	2015	2016	2017	2018
Banana	6,487,434	5,868,636	6,040,092	6,798,758	6,989,876
Avocado	1,182,804	1,423,731	2,059,891	2,459,253	2,507,880
Kiwi	1,139,934	1,048,992	1,065,863	1,360,992	1,418,639
Pineapple	1,274,635	1,096,911	1,155,496	1,245,283	1,277,216
Mango	941,805	981,843	1,076,149	1,158,609	1,262,638
Watermelon	693,543	705,437	757,138	862,414	1,137,212
Melons	1,083,315	948,679	977,104	1,048,625	1,113,213
Papaya	117,242	116,285	118,760	131,413	131,326

Source: ITC Trade Map

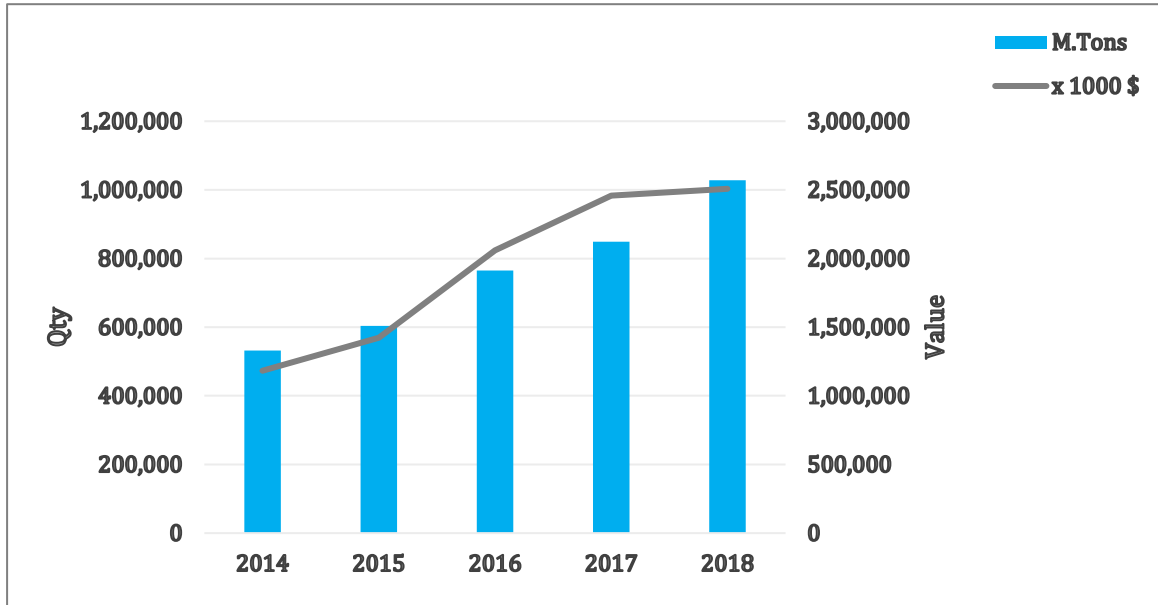
Table 12: EU avocado imports

	2014	2015	2016	2017	2018
x 1000 \$	1,182,804	1,423,731	2,059,891	2,459,253	2,507,880
M.Tons	532,351	603,343	765,239	849,451	1,028,397

Source: ITC Trade Map

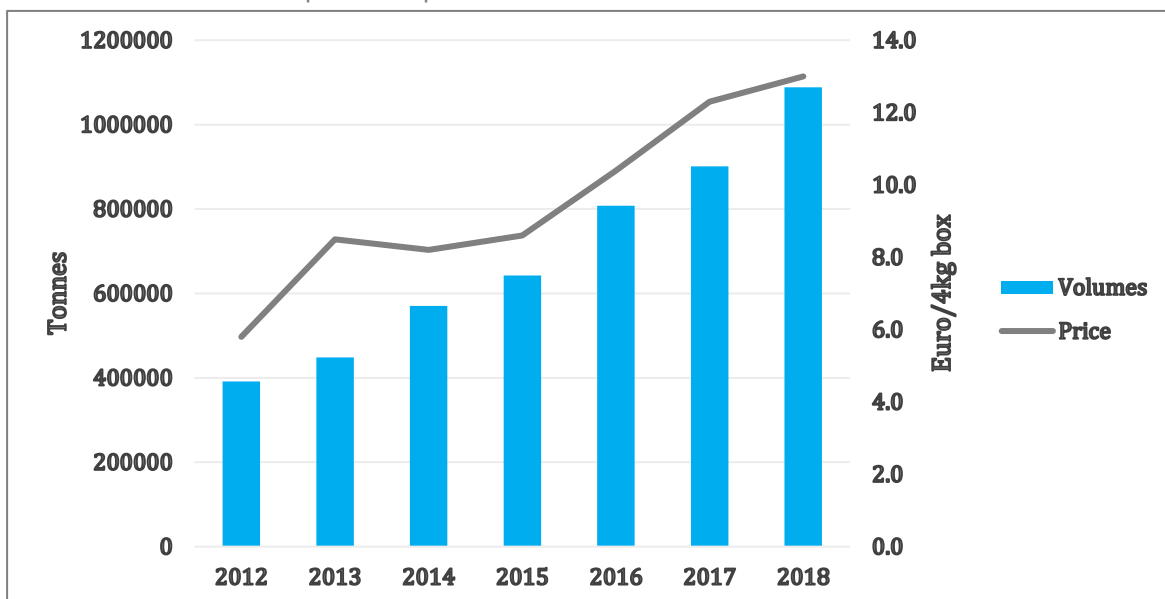
Most of Europe's avocados are imported and consumed in the EU-28 states. Although volumes have doubled over the last five years, the value has kept pace.

Chart 25: EU avocado import and value trends



Source: ITC Trade Map

Chart 26: EU avocado imports and price trends



Source: ITC Trade Map

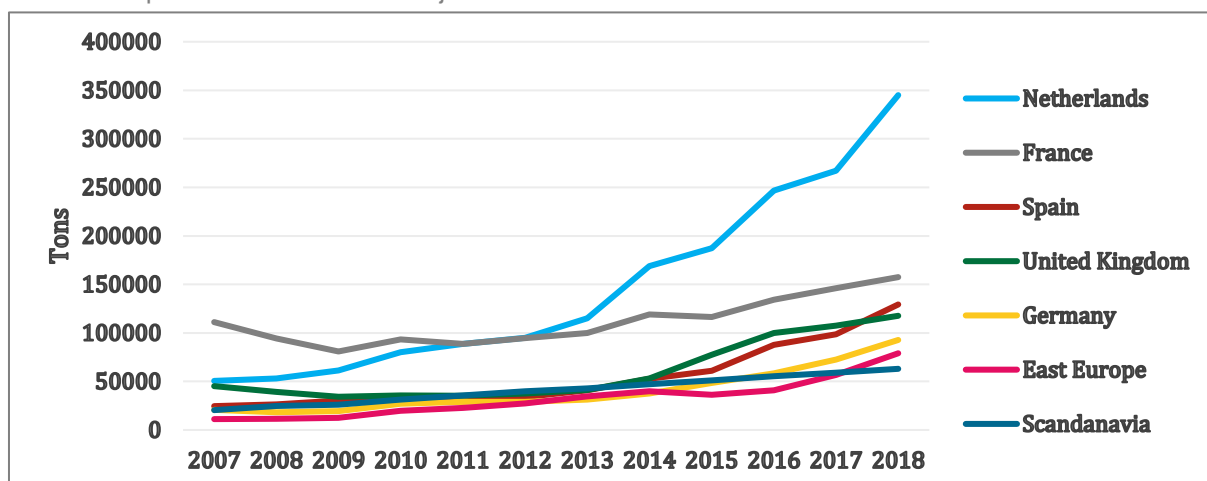
Despite the four-fold increase in volumes over the last 10 years, the market prices have remained very strong with Hass achieving Euro 12.00 to Euro 14.00 per 4 Kg box. Fuerte and the other greenskin varieties average around Euro 8.50 to Euro to 10.50 per 4 Kg box. With demand still on the rise, the forecasted price should remain firm.

Table 13: EU imports of avocado – M. Tons

Importers	2014	2015	2016	2017	2018
Netherlands	168,762	187,336	246,567	267,197	344,998
France	119,098	116,304	134,360	145,967	157,486
Spain	52,747	60,989	87,810	98,763	129,326
U.K	53,128	77,391	99,882	107,598	117,663
Germany	37,715	48,436	58,453	72,710	92,765
Belgium	17,127	20,379	29,247	28,448	27,957
Italy	9,109	10,989	14,255	16,734	21,800
Denmark	11,023	14,190	16,046	17,615	21,208
Sweden	19,372	17,878	18,922	20,676	21,203
Poland	7,222	9,270	11,607	14,885	19,845
Austria	4,420	5,810	7,680	8,294	10,086
Others	32,628	34,371	40,410	50,564	64,060
Total	532,351	603,343	765,239	849,451	1,028,397
% annual trend		13.34%	26.83%	11.00%	21.07%

Source: ITC Trade Map

Chart 27: Import volume trends in major EU-28 nations



Source: ITC Trade Map

Dutch imports have risen significantly indicating the country has increased in importance as it became a major hub for produce. Consumption in the Netherlands is relatively low compared to the rest of Europe so that majority of the imports are re-exported throughout Europe and especially to the emerging East European nations and Scandinavia. The country's success is due to a combination of aggressive marketing backed up by a superb transport and distribution system along with establishing state of the art cool store and ripening facilities to handle sea freight fruit.

Table 14: Non-European avocado supplying nations to the EU-28 -M.tons

Countries	2014	2015	2016	2017	2018
Peru	104,670	114,787	143,875	160,196	229,076
South Africa	62,485	54,555	54,731	41,368	83,729
Chile	54,521	63,361	90,723	99,607	76,995
Mexico	11,152	26,180	52,887	52,289	53,278
Colombia	1,717	5,520	17,967	28,147	28,98
Morocco	7,481		6,049	16,216	16,797
Israel	27,961	19,543	20,751	16,374	12,514
Kenya	3,959	3,256	5,119	10,282	10,557
Brazil	5,465	4,493	4,828	7,498	7,114
Tanzania	1,757	3,178	3,162	3,384	6,768
Dominican Republic	2,911	3,348	4,341	7,223	3,432
Total	284,079	305,593	404,433	442,584	442,584

Source: ITC Trade Map

Spain produces, imports and exports avocado. The country is a very large producer of all types of horticulture produce and exports large volumes throughout Europe. Over the last decade, Spain has developed a modern distribution system servicing all the fruit and vegetable sectors, and is developing this network of outlets to redistribute avocados throughout Europe.

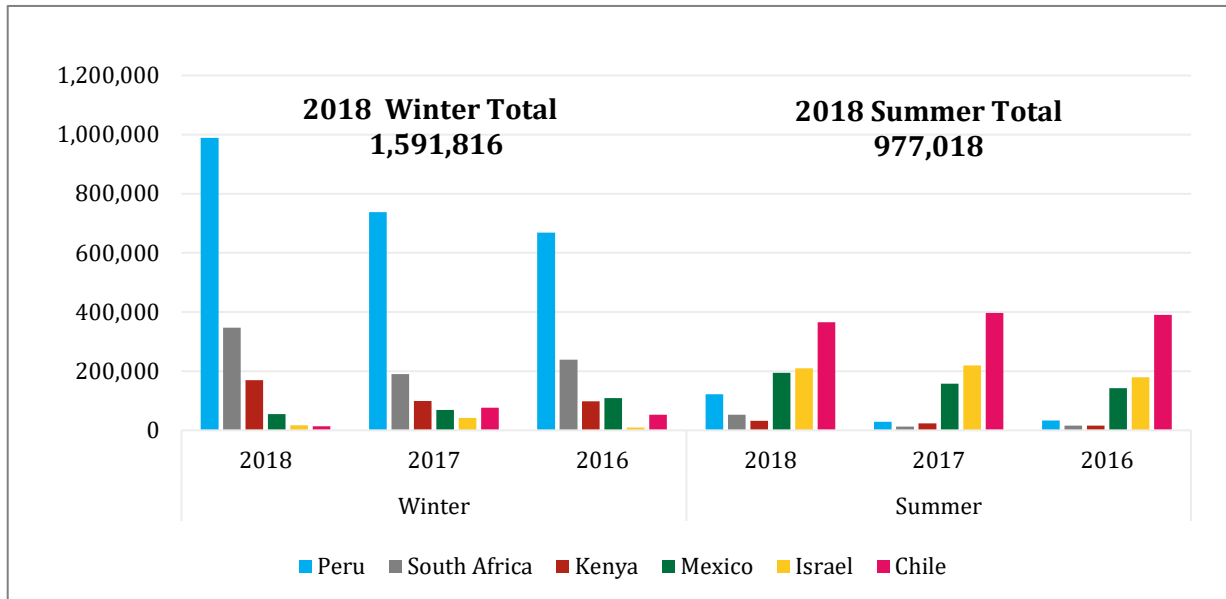
Table 15: Spanish imports and exports of avocado. M.tons

Imports				Exports			
Countries	2016	2017	2018	Countries	2016	2017	2018
Peru	78,130	88,964	110,396	France	34,836	37,020	39,089
Morocco	12,791	33,843	39,096	Netherlands	9,373	11,968	14,305
Mexico	40,574	45,634	35,086	Morocco	4,807	12,445	12,120
Netherlands	20,879	25,962	33,170	Germany	9,612	12,075	11,248
Colombia	6,085	13,101	12,062	UK	9,297	14,757	8,446
Chile	18,550	24,881	11,606	Portugal	2,533	2,676	4,419
Brazil	2,469	6,206	8,552	Belgium	2,480	2,701	2,655
France	5,623	4,810	5,009	Denmark	2,169	2,103	2,097
Kenya	1,325	1,560	2,765	Poland	2,570	1,485	1,808
Tanzania	1,325	1,560	2,765	Sweden	2,015	2,131	1,680

Source: ITC Trade Map

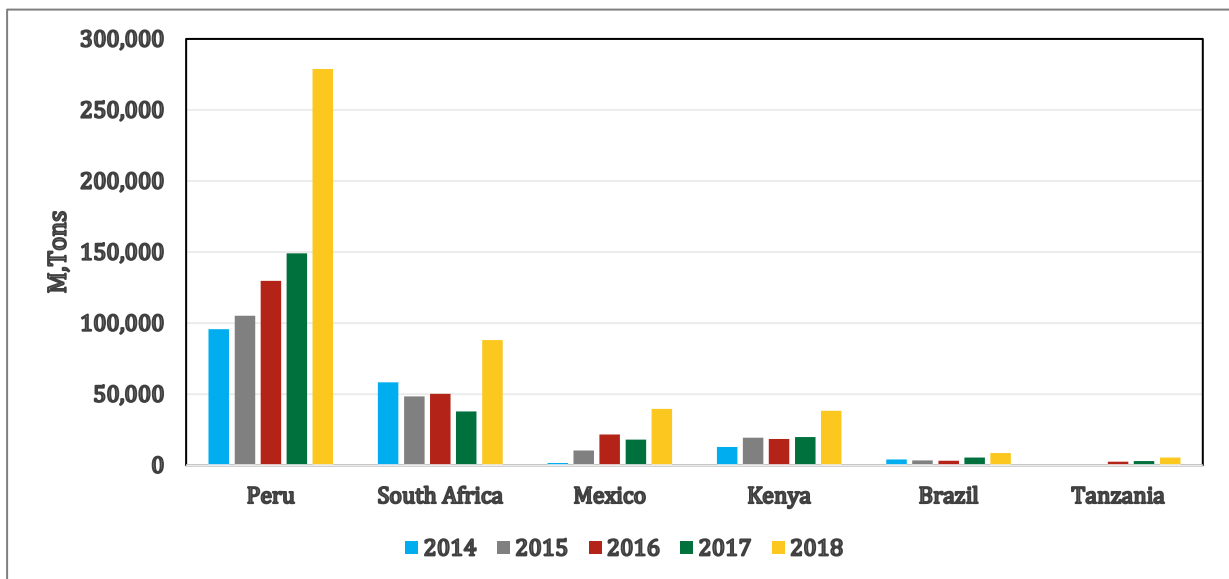
4.2 EU-28 import and price trends

Chart 28: Seasonal Hass European avocado import trends



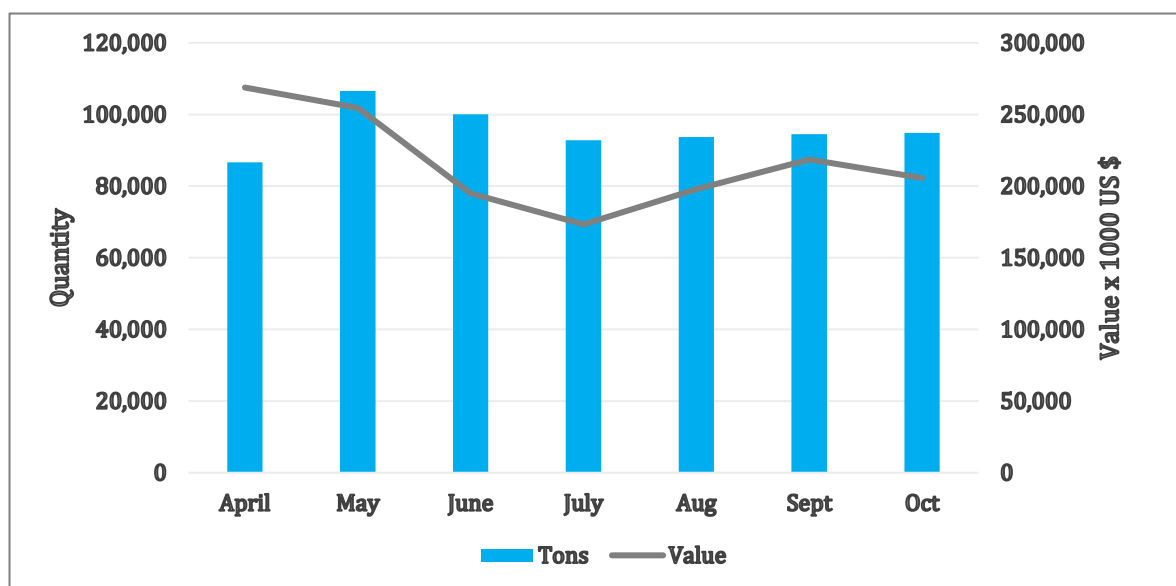
Source: ITC Trade Map

Chart 29: Summer season avocado imports during Tanzania & Kenyan main export season



Source: ITC Trade Map

Chart 30: EU imports during the Tanzanian and Kenyan export season

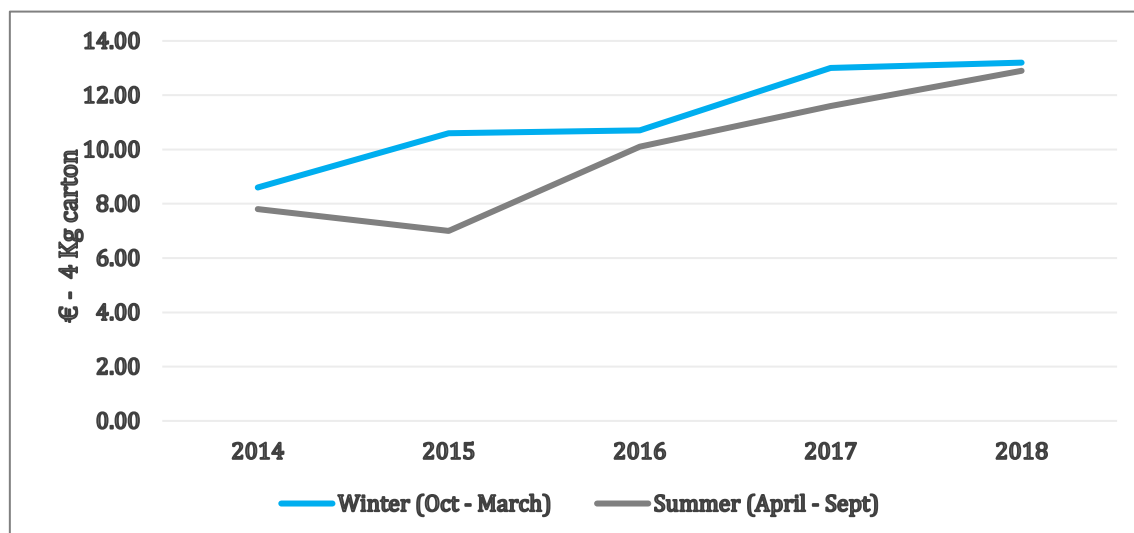


Source: ITC Trade Map

European summer season imports of avocado during the Tanzanian and Kenyan main season - April to September- show strong growth over the last five years. This is attributable to highly effective promotional campaigns undertaken by the major suppliers especially in South Africa and Peru, along with demand fuelled by the move towards healthy lifestyles supported by celebrity endorsements.

These increased supplies have been accompanied by the maintenance of strong prices until 2014 where an additional 20,000 tonnes resulted in a fall in average prices from highs of over €8.00/4 kg box to around €6.50 per box. Despite increasing supplies from 2015 to 2018, the prices have strengthened reaching an average of Euro 12.5 per 4 kg box.

Chart 31: EU avocado prices of avocado during the Tanzanian & Kenyan export seasons

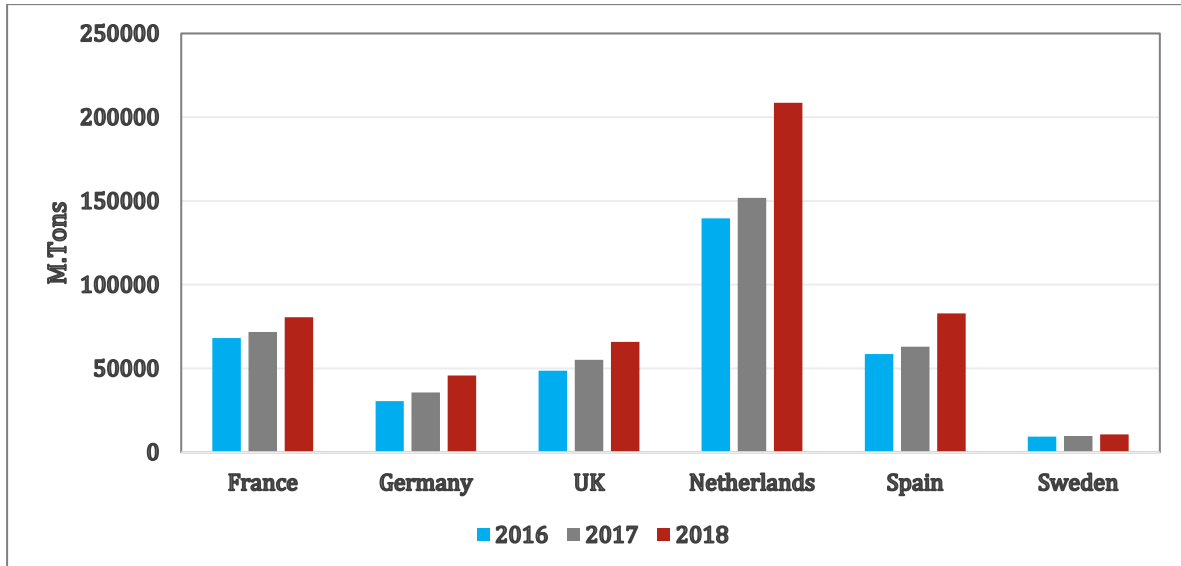


Source: French Agricultural Research Centre for International Development (CIRAD)

The Netherlands is by far the largest importer of avocado in the EU followed by France and Spain. However, these three countries are major re-exporters and distributors of avocado throughout Europe

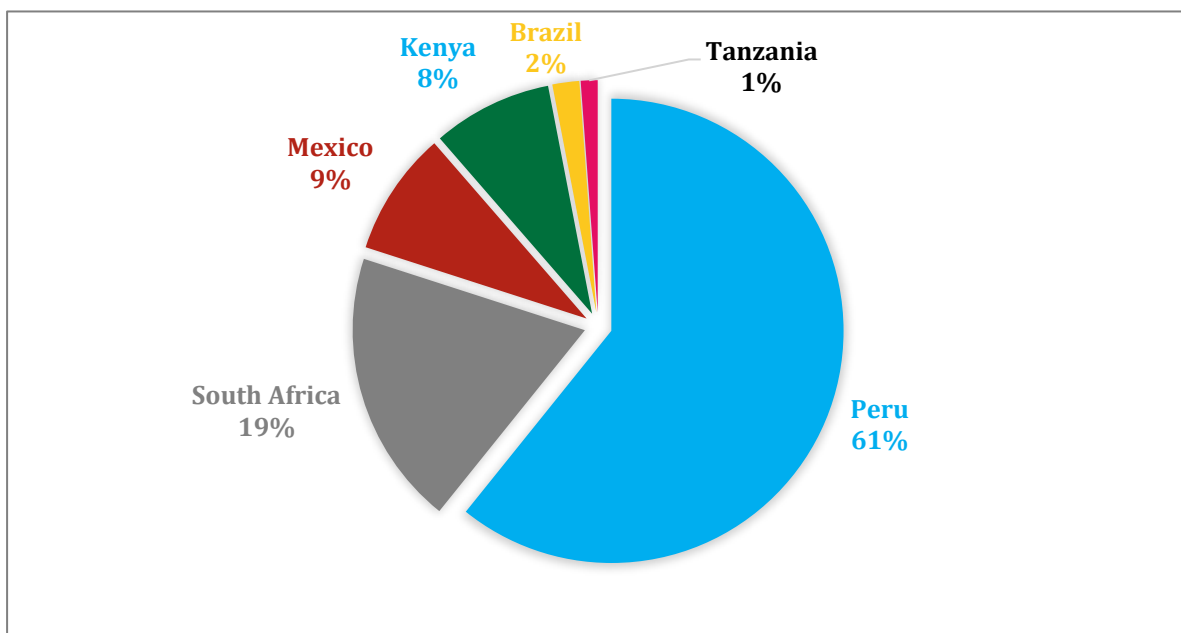
and imports do not reflect consumption in the respective countries. While the UK does re-export avocado, most of the imports are for local consumption.

Chart 32: Principal EU importing nations



Source: ITC Trade Map

Chart 33: Share of EU market by supplying nations



Source: ITC Trade Map

Peru is the foremost exporter and supplies from Peru have mirrored the increasing demand for avocado. South Africa once the largest European supplying nation has regained some of its market share having overcome recent droughts and biennial bearing problems. Kenya has doubled its supplies but has failed to keep up with Peru as it gained market share.

The Netherlands has seen a large increase in imports over the last few years for redistribution as exports to countries throughout Europe. This expansion can partly be attributed to multinational companies such as the USA Company, Mission Produce Europe bv and the South African company Westphalia, establishing marketing offices, ripening facilities and distribution centres in the Netherlands.

These companies and the major co-operatives and producing farms in Chile and Peru such as Camposol, have recognised that the Netherlands offers access to all the major European countries, a key example for Kenyan & Tanzanian producers.

4.3 Market import hubs

Three European countries, the Netherlands, France and Belgium act as the major hubs or redistribution centres for imported avocados into the EU market. Spain is increasingly active as a producer, importer and exporter and should be considered as an import hub.

Table 16: EU import hubs

The Netherlands			
	Imports	Exports	Re-exports
2016	246,567	209,970	85.16%
2017	267,197	243,811	91.25%
2018	344,998	315,521	91.46%
France			
2016	134,360	20,292	15.10%
2017	267,197	22,811	8.54%
2018	344,998	21,766	6.31%
Belgium			
2016	29,247	18,563	63.47%
2017	28,448	14,264	50.14%
2018	27,957	15,830	56.62%

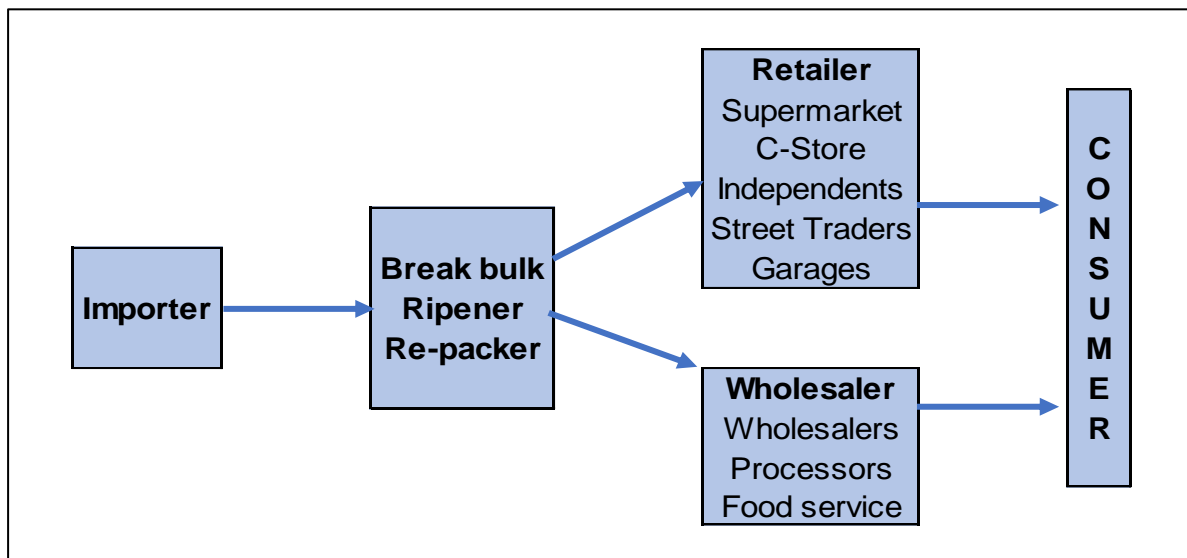
Source: ITC Trade Map

4.4 European trade channels

The trade structure has undergone significant change over the last decade. Traditionally producers and importers marketed fresh produce through the wholesale markets. The principal city markets supplied the retail and catering trade and serviced the provincial wholesale markets who in turn supplied the local retail and catering trades. Driven by the huge purchasing power of a few major retailers.

In recent years, the market has shown a strong move towards concentration and consolidation with a focus on shortening and efficient management of the supply chain.

Chart 34: European trade channels



Source : International Consultant Research

4.5 Market sectors and segments

The European market can be divided into two main sectors each enjoying 50% of the fresh fruit trade

- a) The Retail sector comprising, supermarkets, convenience or C-Stores, garage forecourts, street traders and e-commerce
- b) The wholesale sector comprising, market traders, secondary wholesalers and Food Service, a segment that includes catering and leisure.

Many commentators especially exporters in developing countries, seeing the role the supermarkets play and their increasing domination in most of the European markets suggest that these outlets should be the ones to target directly. However, few of these companies import directly, using a panel of specialist-approved suppliers who can satisfy their strict technical audit requirements, manage and control the cool-chain and most importantly, are able to provide the full service of bar coding, labelling and pricing and deliver exact loads to their regional warehouses and on time.

The Retail sector

Supermarkets

There has been considerable re-organisation, consolidation and rationalisation within retail sectors with the major super/hypermarket groups dominating the retail sector. Supermarkets have a share of between 60% and 85% of the retail sector and is highest in the Northern European countries. Smaller family-run greengrocers and market street traders are part of continental Europe culture, but their share is estimated to have declined to less than 10% of the retail sector. Few no longer go to the “wholesale market” to source products but rely on the service of secondary wholesalers. Throughout Europe, the Dutch distributors offer prompt door-to-door delivery service.



European supermarkets categorise avocado as “undifferentiated” product lines and as such give less prominence to the fruit compared with branded fruit such as “Chiquita” or “Fyffes” banana.

Supermarkets are adopting value added strategies such as own branding, encouraging healthy eating habits, introducing new packaging – especially twin packs of ripe fruit, promoting “ready to eat fruits”, baby fruits, Fairtrade, Organic and ethically sourced products all of which will have a significant impact on Kenyan exporters and Tanzanian exporters and producers. Exporters cannot undertake market development and value added through ripening but have to ensure that the fruit delivered to the importer is in condition for ripening.

The FairTrade and Organic segment is a premium segment and sales have suffered during the recent recession in Europe, although there are signs of a recovery.

Convenience stores

These are small high street stores based in a local community. Most are independently owned, or franchised but large-scale companies specialising in this area such as Costcutters in the UK and the major supermarkets are now heavily involved in this sector.

Garage forecourts

Throughout Europe, there has been a growth in general sales at garage forecourts. In order to enhance their trade and improve cash flows, most garages now have a range of grocery and foodstuffs including fresh fruits and vegetables.

Street traders

These were the traditional outlets in all European markets and once dominant until the advent of the larger retail outlets. They still play a significant role in the European mainland but have declined in importance in the UK.

E-Commerce

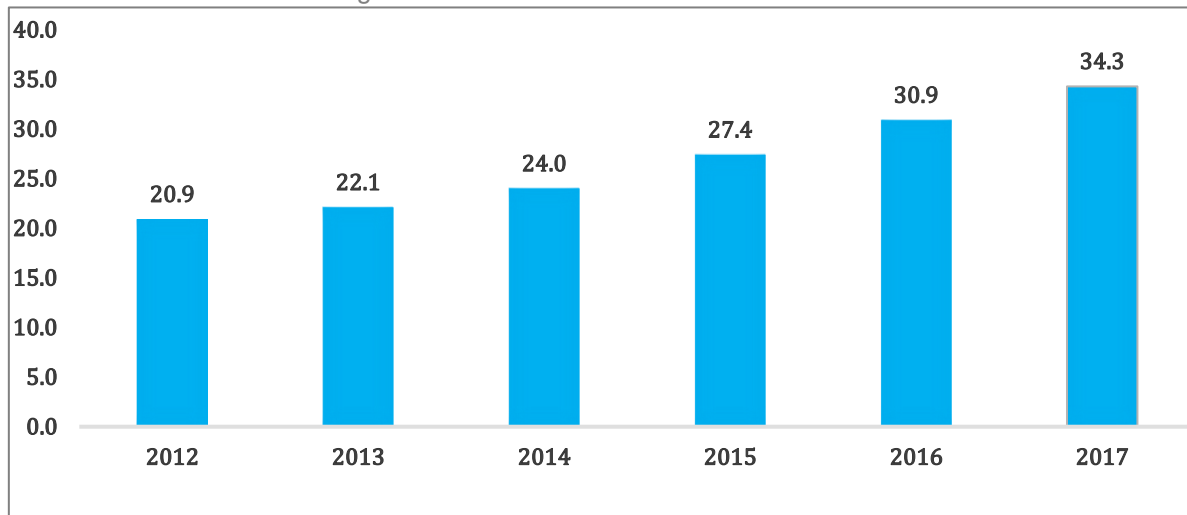
Internet sales are fast becoming the favoured method of shopping. All the major supermarkets now offer the service of on-line ordering with doorstep deliveries. Major retailers such as Ocado, an online supermarket in the UK are solely based online retailers with a well-developed distribution hubs and door-to-door delivery. Multinational players such as Amazon are looking to develop online retailing. Although Kenyan and Tanzanian exporters may still not be in a position to exploit online trading, this is a segment that has to be taken seriously in the future.

The Organic market



Concerns in Europe about modern production methods and the public’s perception that all farmers rely on fertiliser and chemicals for high production, combined with increased awareness of diet and nutrition, have increased the interest in “organically” produced food. Organic food is grown on land certified as free from chemical fertiliser and pesticide residues and is grown under strict rules for the use of any pesticide or chemical that is not of organic origin. The EU has a directive EC 2092/91 covering the production of organic foods and The Soil Association is the certifying body in the UK. Over the last decade, organic produce has enjoyed a double-digit annual growth. There is limited data on the avocado organic market but an analysis of the total retail sales provides an indication of the growing importance of this sector. A sector that enjoyed high profile celebrity endorsement and the public’s concerns over environmental issues related to agriculture practices.

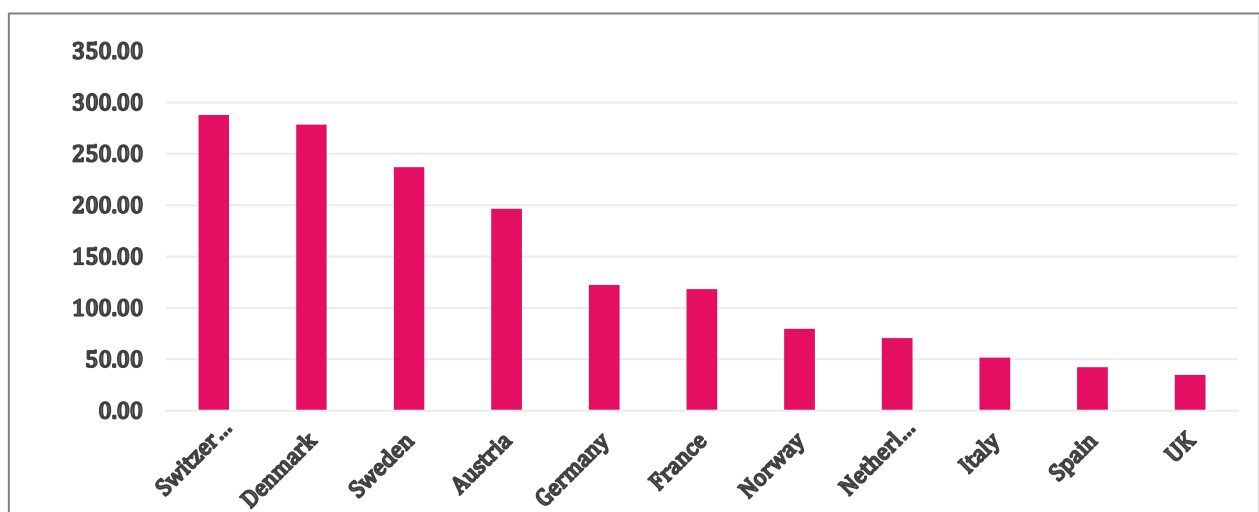
Chart 35: EU retail sales of organic food



Source: FiBL Statistics Organic Surveys

The organic sector is now a very important and growing market segment fuelled by the same demand drivers that fuel avocado demand – healthy living and environmental concerns. Many producers find the strict and costly certification schemes unwarranted and in countries such as Kenya where traditional agriculture with high chemical usage has been the normal practice and complying with the qualification requirements may be difficult. However, the industry in Tanzania is in its infancy and to develop it will require significant investment into new orchards. There may be an opportunity to develop virgin land for this purpose and target the organic sector, a sector that is regarded a premium sector about price realised. There are examples of developing countries exploiting the organic market “very successfully”. One example would be the Dominican Republic banana growers have taken on the international conglomerates in penetrating the international banana trade by focussing on “organic” and Fairtrade and until the devastating earthquake, Haitian mango exporters gained a reputation for organic mangoes in the highly competitive USA market from fruit sourced entirely from small-scale farmers.

Chart 36: EU consumption of organic food Per capita, in Euros



Source: FiBL Statistics Organic Surveys

Fairtrade and social concerns



Concerns over income distribution within developing countries and the perceived imbalance of margins that favour the buyer over the local producer has created an increased awareness of the Fair-Trade movement. Fairtrade offers the opportunity to both fresh fruit plantations and small farmers to get a price, which aims to cover their average costs of sustainable production. Additionally, producers can invest in the Fairtrade

Premium to improve their businesses, social and environmental conditions and many producers have chosen to use these funds to convert their production to organic.

Both smallholder organisations and large-scale plantations can take part in Fairtrade programmes. However, the Fairtrade system gives preference to small farmers as they are more restrained by conditions of trade.

Corporate Social Responsibility (CSR)

CSR and sustainability are becoming a major feature in all the EU markets with Germany leading the way. Global GAP certification is a minimum requirement for entry to the European market and Kenyan, Tanzanian exporters are encouraged to become ISO, and BRC certified if they are to target the major supermarkets.

The wholesale sector

This sector has also undergone significant change in the past decade with consolidation and rationalisation to counter the growing dominance of a few large retailers. The traditional wholesale markets with their multitude of small traders and importers are in decline throughout Europe and no longer supply the daily needs of the major retailers and food service companies. Many traders have changed their business models and now focus on the local food service sector. In the past, most imported produce was sourced by relatively small importers based in the wholesale markets such as Covent Garden, London and Rungis Wholesale Market in Paris, who broke bulk and redistributed produce to the local market traders and secondary. They worked on a commission basis.



Continental Europe still has a culture of family-run individual stores and fruit and vegetable markets but major hypermarket chains such as Carrefour, Aldi, Lidl and Albert Hein are making an impact with these stores purchasing, in general, directly from the importers and ripeners. Many exporters in the developing world liken the overseas markets with their traditional domestic fruit markets. The grower grows his product and sells it to a wholesaler who then sell it on to a retailer or to the consumer.

Wholesale segments

Conventional

This segment is the traditional market segment for fruit producers where fruit produced is sent to importers/wholesalers for re-sale to the retail or catering sectors. Faced with the supermarket competition, the segment is becoming more demanding as to quality standards but servicing this segment at present does not require the certification required by the other segments. However, a long-term view would indicate that if exporters can demonstrate compliance with Global GAP, Maximum Residue Levels and sustainability issues they would have a stronger case for premium prices and customer satisfaction.

It is very important for Kenyan and Tanzanian exporters to understand that important changes are taking place in the developed markets of Europe where the traditional wholesale markets are in decline, replaced by specialist importers, traders and packers who directly supply the major supermarkets and food service outlets. Furthermore, Europe is progressing along the lines of the USA where shippers are increasingly dominating the distribution chain becoming involved in all stages from production to market.

Food service

This sector includes the sub sectors of catering, hospitality, leisure, fast food, healthcare, education, armed services, airlines etc. and is fast becoming an important segment for fruit as the public becomes more involved in leisure activities especially “eating out” and taking holidays. Multinational fast food outlets are expanding throughout Europe. Hotel Executive chefs and Food & Beverage managers no longer buy at the wholesale markets and rely on the growing number of specialist food suppliers who can cater for all their needs including pre-prepared fruit and vegetables.

The sandwich industry is expanding and flourishing throughout Europe. International companies such as Subway, “Pret a Manger” are making an impact as sandwich bars are developing in all major towns and cities and most of the large hypermarkets and superstores offer a daily choice of sandwiches. Sliced avocado are a feature of many sandwiches on offer. Companies specialising in making sandwiches and providing the fillings have grown to such an extent that in the UK the industry is now valued at over £ 3 billion.

Branding & promotion

Exporters and importers appear reluctant to give generic promotion to avocados, but supermarkets are now promoting “ready to eat” products in response to homemaker complaints of fruit under-ripe at point of sale. The former state-owned Israeli agriculture organisation Agrexco established the brand “Carmel” for all its fruit exports and through extensive promotion is acknowledged as being the driving force in developing the avocado throughout Europe. Now privately owned the company still promotes the Carmel brand and their success in branding the fruit market is an example to follow.

Demand drivers

The fruit is not attractive for instant refreshing purchase and is used primarily by affluent homemakers for special occasions and by gourmet chefs. Demand is affected by:

- An atypical flavour, which causes consumers to resist tasting fruit.
- Purchases of poorly presented and unripe hard fruit that causes the consumer to resist buying repeats sooner.
- Lack of promotion directed at the consumer.
- The health benefits of the fruit are not well communicated in the media.
- Adverse publicity over ethical sourcing, environment issues, water security and sustainability of production.

The key drivers for the continuing popularity of avocado are:

- The popularity of the fruit as a health food.
- The millennial population increasingly consuming fresh foods.
- Increasing popularity of ready-to-eat fresh prepared food products.
- Popularity of Mexican cuisine.
- Celebrity endorsement for a healthy lifestyle.
- Improved market initiatives such as multiple packaging.
- Improved presentation such as “ready to eat”, “Fresh Now”.

4.6 Market access

Quality standards

As avocados are produced in the EU, they are subject to the minimum quality standards as outlined in the UNECE STANDARD FFV-42 for avocado:

- The fruit must be in a state that can withstand the rigours of handling and transportation and arrive in a satisfactory condition at the place of destination.
- The minimum requirements are that the individual fruits are intact, sound, clean and free from any pest and disease, any damage caused physically or by low temperature external moisture and any foreign taste or smell. The UNECE standard classifies avocado into:
 1. Extra Class = fruit of outstanding quality – a category rarely used in the trade
 2. Class 1 = fruit of good commercial quality
 3. Class 2 = fruit that satisfies the minimum requirement

The fruit should have a minimum dry matter content measured by drying to constant weight:

- 21 % for the variety Hass
- 20 % for the varieties Fuerte, Pinkerton, Reed and Edranol

These are the minimum requirements but for consistency and quality, maintenance throughout the transport chain a harvesting standard of no less than 23% should be adopted. The avocado's size is determined by weight or count of the fruit. The minimum weight for HASS is 80 g and all other varieties 123 g Each market or Company importing or packaging the fruit is subject to inspection and produce deviating from the declared class will be downgraded. Although many supermarkets in Europe have their own individual quality requirements, all displayed products have to comply with EU quality and labelling requirements.

Certificate of Conformity

Regulation EC 1148/2001 requires all fruits and vegetables from countries outside the EU and subject to the EC Marketing standards to have a recognized Certificate of Conformity before entering the EU. Recent changes to the legislation have excluded avocado from this requirement.

Phytosanitary certificates

Specific conditions apply to the compilation of a phytosanitary certificate, any violations will render the consignment unacceptable and processing will be rejected:

- The name and full address of the consignee MUST be clearly stated.
- The correct Botanical name of the genus and species MUST be declared in the appropriate box.
- A phytosanitary certificate of inspection of the products referred to in the certificate MUST accompany each shipment and the signing of the certificate MUST have occurred no more than 14 days before despatch.
- The certificates MUST be issued by the official plant protection service of the country. Provincial, regional, state or local government certificates are not acceptable.
- The certificates MUST be signed by an authorised officer of the plant protection service in the country of origin.
- Certificates issued in a language other than English MUST be accompanied by a translation, signed by the authorised officer.

Labelling

The marketing, quality and labelling standards are laid down in the EU regulation EC220/96. Packaging plays an important role in the presentation of the exporter's product at both retail and wholesale level. It also has a significant bearing on the post-harvest shelf life of the product. The EU prescribes under

regulation EC 1953/2004 the principles for food contact materials. These refer to the prohibition of the use of second-hand materials, including newsprint or materials that may endanger health that may be exposed to any food product.

Box labels have to include:

- Product name prominently displayed;
- Variety name Class – Extra, Class 1 or Class 11;
- Batch code – for traceability;
- Name and full address of exporter;
- Size or count of the fruit;
- Number of units;
- Net weight;
- Recommended storage conditions;
- Organic and Fairtrade: name/code of the inspection body and certification number

Plant health regulations

The EU Directive 2000/29/EC establishes the EC plant health regime. It contains measures to prevent the introduction of injurious pests and diseases. The regulations can be summarised as follows:

- Prohibited: material that poses a serious risk.
- Controlled: Material that requires a phytosanitary certificate issued by the plant protection service of the exporting country.
- Unrestricted: Material that presents little or no risk.
- EU regulation No 178/2002 requires traceability throughout the supply chain. This is now a mandatory requirement.

Traceability

EU regulation No 178/2002 which is mandatory requires traceability throughout the supply chain.

Traceability requires accurate recoding and tracking systems from tree to point of loading. Kenyan & Tanzanian producers and exporters have to have such systems in place. If contamination, health or any phytosanitary hazard is found the consignment can be rejected or produce can have a total recall. The financial penalties imposed by the retailer on suppliers are severe and costs incurred will eventually be paid for by the exporter who would also be at risk of losing further business.

4.7 Market and buyer requirements

Packaging and handling

In practice, importers require product to be packed and presented in a way fit for purpose. The appeal and presentation of the carton or box is important. Family importers will accept product in any container – polystyrene box or low cost cardboard packaging – and this is not a barrier to exporting, but to expand and develop exports. Exporters have to consider the promotional benefits of developing a “brand”, a recognition in the market of reliability, conformity and reliability such that their packaging is distinctive and recognised throughout the distribution chain.

The normal accepted packaging in all European countries is a 4 Kg single layer box/carton. Occasionally 5.5 kg single layer and 11kg double layer cartons are used.



Maximum Residue Limits (MRLs)

MRLs fall under the broader category of safety standards. At present they are not part of import regulations but apply to the point of sale and thus they are of concern to both retailers and the catering trades. Pesticide residues in food are controlled by the UK Pesticides Maximum Residue Levels in Crops, Food and Feeding Stuffs Regulations 1999 (as amended). Currently they cover over 28,000 pesticide/commodity combinations covering the UK diet. Under an EU programme, an MRL will be set for all combinations of pesticide and commodities. EU regulation 396/2005/EC proposed a harmonised programme of MRL throughout the EU in September 2008. MRLs are defined as the maximum concentration of pesticide residue likely to occur in or on any foodstuffs, after the use of pesticides. This in accordance with Good Agriculture Practice (GAP) applied in line with the pesticide label recommendations and in keeping with environmental conditions. All the major retailers now adopt their own standards to ensure that any product conforms to EU MRL standards and demand compliance by their trading partners to ensure that these standards are applied throughout the supply chain. Some countries, such as Germany, apply higher requirements than the minimum standard.

HACCP, ISO, GAP and quality management requirements

HACCP is a food safety methodology that relies on the identification of Critical Control Points (CCP) in both food production and food preparation processes to ensure that food is safe for consumption. All major retailers now demand their pack-house suppliers, whether in the EU or at source in producing countries, to comply with HACCP standards. Driven by food safety and contamination issues, the majority of the major catering trade suppliers also demand compliance with HACCP standards. Compliance with Good Agriculture Practice (GAP), now harmonised as a global standard known as Global GAP, is also a food safety methodology to ensure that food is not only safe for consumption but also that methods of production are environmentally acceptable and robust.

The key requirement of both HACCP and GAP is traceability throughout the supply chain. While most buyers, including the supermarket chains, recognise that primary producers in developing countries may not have the needed educational skills to comply with the protocols demanded by these standards, it is assumed that exporters can. If these exporters embrace quality management accreditation such as HACCP and ISO accreditation, traceability through their supply chain is possible and this demonstrates their ability to comply with the exacting standards demanded by major importers.

Environmental issues

Sustainability has become the key environmental issue throughout Europe. Because of the growing need and in response to worldwide pressure to preserve the environment, the EU has made a commitment to achieving sustainable development. Reducing carbon emissions is paramount to combat global warming and the EU now considers the “carbon footprint” of imports from developing countries as a barrier (carbon footprint, i.e. the total carbon dioxide generated throughout the entire production/supply/distribution chain).

This has a considerable impact on developing countries that depend on airfreight produce, as air cargo is considered by many environmentalists as “environmentally unfriendly”. Some pressure groups are monitoring the so-called carbon footprint of all imported produce to argue a case for the prohibition of such imports and this is becoming a major threat to exporters in developing countries. Furthermore, there is a significant movement towards reducing the “air-miles” produce travels. Pressure groups monitor the miles travelled by produce entering the UK and are lobbying against such use of airfreight.

The economies of many developing countries developed on the advent of relatively low-cost airfreight due to the introduction of large “jumbo” aircraft. These economies are now under threat due to environmental concerns.

Social aspects

Of general concern are conditions, such as minimum wage, working hours, wellbeing, health and safety of employees, the exploitation of labour, the exploitation of child labour and the employment of women. These social issues throughout the supply chain are becoming major concerns in the EU. However, these issues are deemed to apply equally to the sourcing of any imports from developing countries. This is in part due to the fact that companies in developing countries only have a legal obligation to comply with the legislation in their ‘home’ country. Nevertheless, the requirements demanded by the private sector are an important issue when looking at accessing European markets, since most importers and consumers demand acceptance and compliance with the accepted social standards of the EC and all regulations regarding the employment of labour especially the exploitation of low paid workers, the use of child labour and the discrimination of women.

CHAPTER 5: THE BRITISH MARKET



5.1 Overview of the UK fresh fruit market

Fruit imports cost £3.9 billion in 2017, a 6.3% increase on 2016 with volumes of over 4 million tons increasing by 3.8%. The total value of fresh fruit including both local and imported fruit exceeded £4.6 billion.

Table 17: UK fruit trade quantity

Qty x 1000 Tons	2012	2013	2014	2015	2016	2017
Local	501	522	731	777	782	743
Imports	4,361	3,836	3,890	3,705	3,867	4,013
Exports	110	143	103	130	142	177
Total Supply	4,752	4,215	4,518	4,352	4,507	4,578
Local %	10.55%	12.39%	16.18%	17.85%	17.36%	16.22%

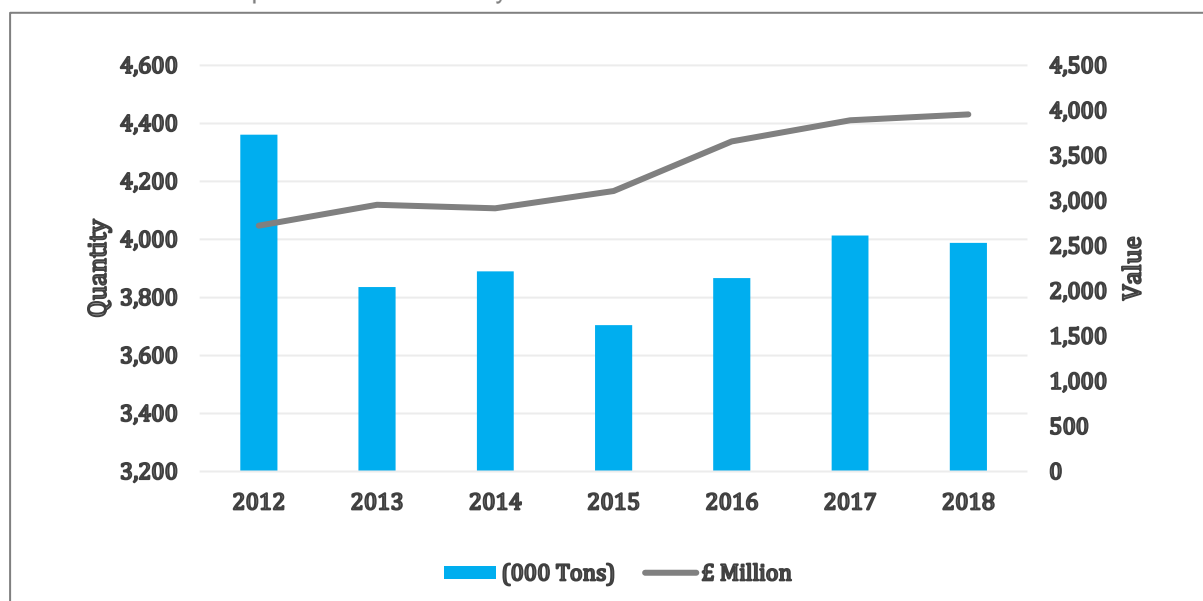
Source: DEFRA

Table 18: UK fruit trade value

Value £ Million	2012	2013	2014	2015	2016	2017
Local	574	576	634	695	700	765
Imports	2,724	2,955	2,916	3,107	3,659	3,890
Exports	83	110	80	99	115	155
Total Supply	3,215	3,421	3,470	3,703	4,244	4,500
Local %	17.86%	16.83%	18.28%	18.77%	16.50%	17.00%

Source: DEFRA

Chart 37: UK fruit import trends – Quantity and value



Source: DEFRA

Table 19: UK imported fruit value

x £ Million	2014	2015	2016	2017
Apples and Pears	426	416	427	467
Stone Fruit	207	199	222	206
Soft Fruit	336	400	548	589
Citrus Fruits	500	517	610	639
Exotic Fruits				
Avocados	68	111	179	219
Bananas	503	544	613	642
Dates and Figs	40	45	54	58
Melons	140	151	183	191
Pineapples	86	90	98	115
Mango, Papaya, Kiwi, Persimmons	50	49	55	64
Grapes	452	440	497	519
Other Fruits	109	143	172	181
Total Value	2,916	3,107	3,659	3,890

Source: DEFRA

The value of the UK's fruit imports has risen significantly fuelled in part by an increasing demand for exotics such as avocado.

Table 20: Imported fruit quantity

x 1000 Tons	2014	2015	2016	2017
Apples and Pears	893	582	555	681
Stone Fruit	177	133	125	119
Soft Fruit	91	106	124	124
Citrus Fruits	740	771	797	767
Exotic Fruits				
Avocados	53	77	96	105
Bananas	1,150	1,152	1,211	1,235
Dates and Figs	23	24	25	26
Melons	239	269	301	306
Pineapples	146	144	148	168
Mango, Papaya, Kiwi, Persimmons	43	47	47	51
Grapes	258	258	275	271
Other Fruits	77	93	106	109
Total Value	3,890	3,705	3,867	4,013

Source: DEFRA

Banana enjoys the highest volume and value of all imported fruit and the UK is a high consumer of citrus fruits and grapes, but these fruits have shown little growth compared to avocado whose share of the total market has doubled over the last four years.

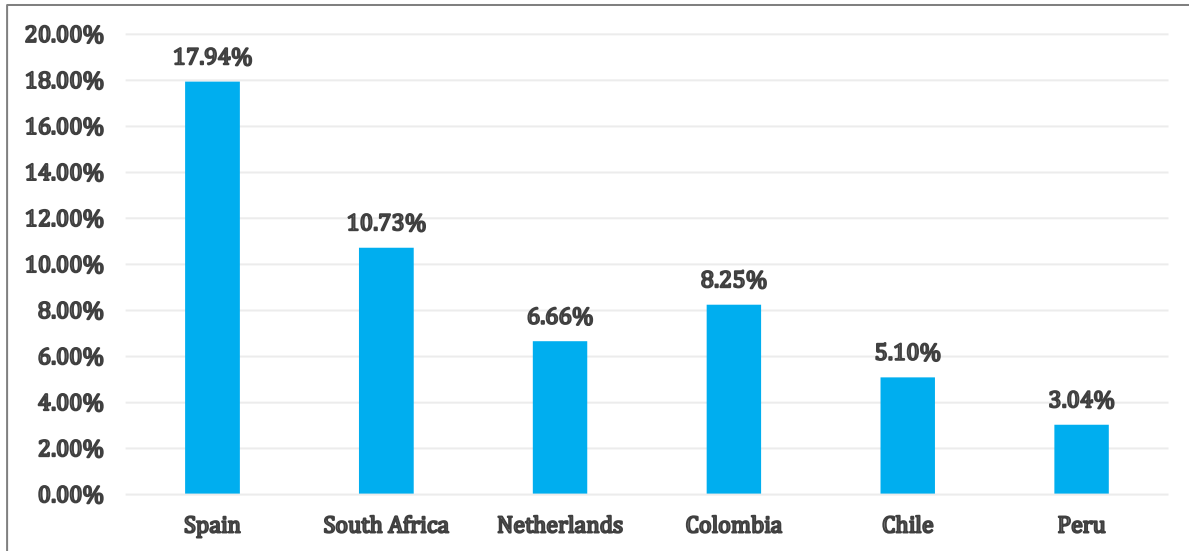
Table 21: Product share of UK imports

Product	2014	2015	2016	2017
Apples and Pears	22.96%	15.70%	14.36%	16.96%
Stone Fruit	4.56%	3.58%	3.24%	2.97%
Soft Fruit	2.33%	2.87%	3.20%	3.09%
Citrus Fruits	19.02%	20.80%	20.62%	19.11%
Exotic Fruits				
Avocados	1.37%	2.09%	2.48%	2.62%
Bananas	29.56%	31.10%	31.32%	30.78%
Dates and Figs	0.60%	0.64%	0.66%	0.65%
Melons	6.15%	7.25%	7.78%	7.62%
Pineapples	3.74%	3.89%	3.82%	4.20%
Mango, Papaya, Kiwi, Persimmons	1.11%	1.27%	1.23%	1.27%

Grapes	6.63%	6.96%	7.12%	6.76%
Other Fruits	1.97%	2.51%	2.75%	2.73%
Total	100.00%	100.00%	100.00%	100.00%

Source: DEFRA

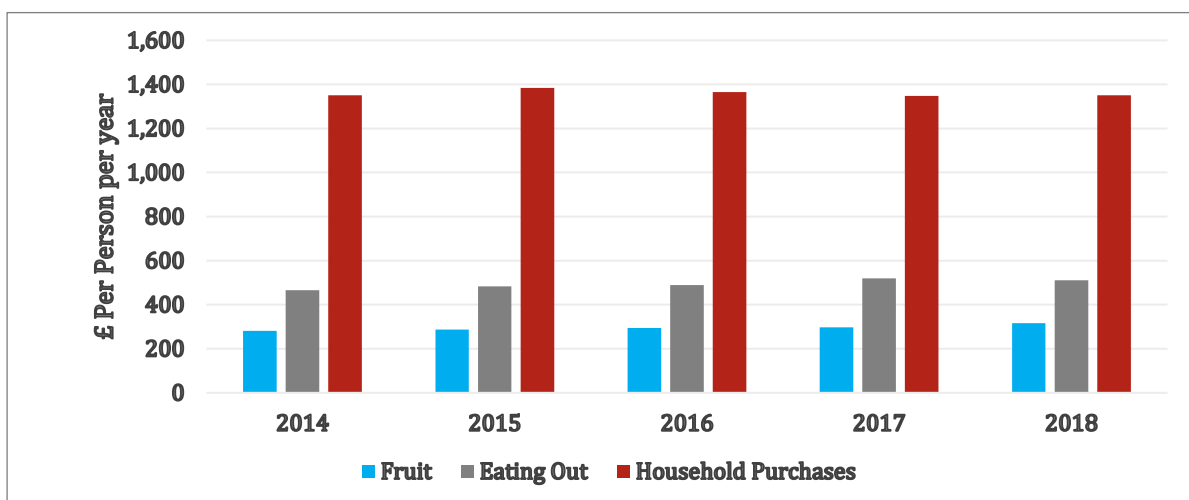
Chart 38: Fruit imports by major supplying country



Source: DEFRA

Spain is the largest beneficiary of the UK's increased demand for fruit and now has nearly an 18% share of the market. South Africa, a country that is a major supplier of citrus and avocado, is the second largest.

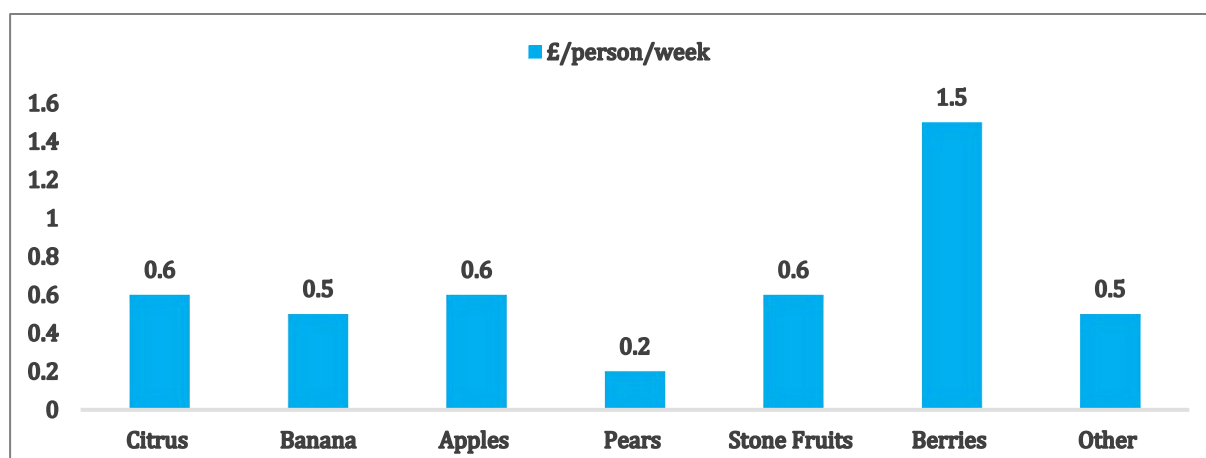
Chart 39: Annual household expenditure £/person



Source: DEFRA

The UK is relatively affluent and high incomes have encouraged an “eating out” culture that has influenced the catering and food service trade that has seen a steady growth in recent years. According to the Department for Environment, Food and Rural Affairs (DEFRA), consumers’ expenditure on “eating out” now approaches £ 550 per person per year.

Chart 40: Weekly spend on fresh fruits



Source: DEFRA

The role of developing countries is significant in the UK market. These countries now account for over 48% of all fruit imports amounting to £2.3 billion. In 2017, Kenya contribution amounted to £ 6.6 million and Tanzania to £ 1.3 million. The Least Developed Countries (LDC) share was £ 6.7 million.

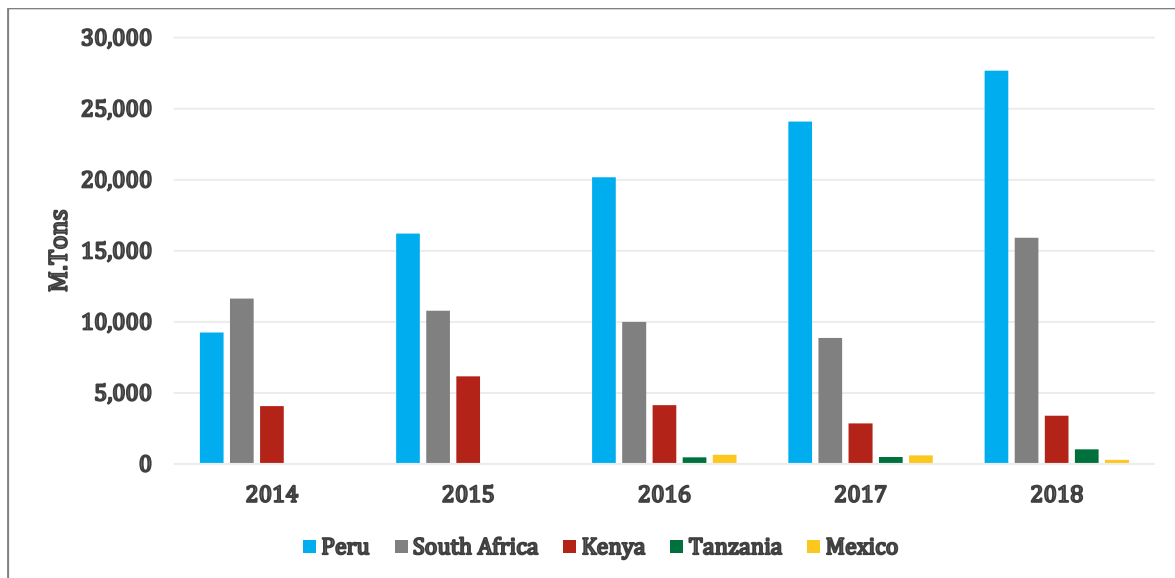
5.2 The avocado market in the UK

Table 22: Avocado imports into the UK – non-European suppliers

M Tons	2014	2015	2016	2017	2018
South Africa	10,782	10,335	10,464	10,022	18,196
Peru	9,196	16,268	21,194	22,457	28,570
Chile	6,880	13,630	21,573	18,886	12,666
Israel	7,488	7,960	8,961	11,781	9,816
Israel	7,488	7,960	8,961	11,781	9,816
Colombia	223	1,219	4,259	6,829	5,293
Mexico	270	458	1,519	2,155	5,137
Kenya	559	664	898	997	1,239
Tanzania	322	566	355	466	719
Others	9,920	18,331	21,698	22,224	26,211
Total	53,128	77,391	99,882	107,598	117,663

Source: ITC Trade Map

Chart 41: Summer season avocado imports into the UK



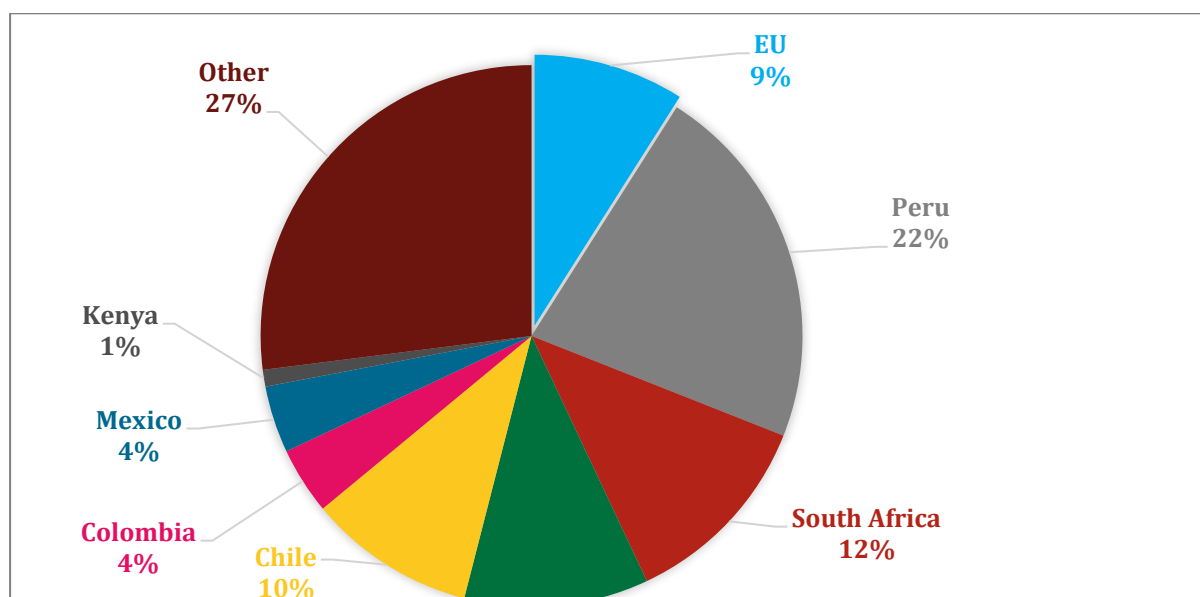
Source: ITC Trade Map

Avocado imports have shown a strong growth of 66% over the five-year period of 2014-2018. South Africa was once the principal exporter but it has been overtaken by Peru. Mexican imports have recently started which poses a major threat to existing suppliers.

Whilst the growth of other tropical fruits such as mango and watermelon can be attributed to the ethnic population in the UK, their increasing demand is not linked to avocado consumption in the UK. The growth in the fruit sector can be attributed to an increase in the population (an annual rate of over 3%). An increase driven by the enlargement of the EU and the EU policy of mobile labour, policies that have attracted a large influx of workers from East Europe and a weakening of the £ sterling caused by the uncertainties of the UK leaving the EU.

However, the impressive growth in the avocado market can be attributed to the increasing affluence of the UK population fuelling a strong expansion of the food-service sector over the past five years. A move towards healthy eating encouraged by the UK government's concerns over obesity, celebrity endorsement, the popularity of vegetarian and vegan lifestyles, climate change and a move away from the protein provided by red meat, and the heavily promoted health benefits of the fruit.

Chart 42: Market share by avocado supplying countries



Source: ITC Trade Map

Table 23: UK European imports of avocados

M.Tons	2014	2015	2016	2017	2018
Netherlands	7,722	10,730	15,743	17,291	22,588
Spain	7,147	6,799	9,297	14,757	8,446
France	1,879	1,875	1,954	1,720	2,242
Belgium	339	449	733	227	309
Total	17,087	19,853	27,727	33,995	33,585

Source: ITC TradeMap

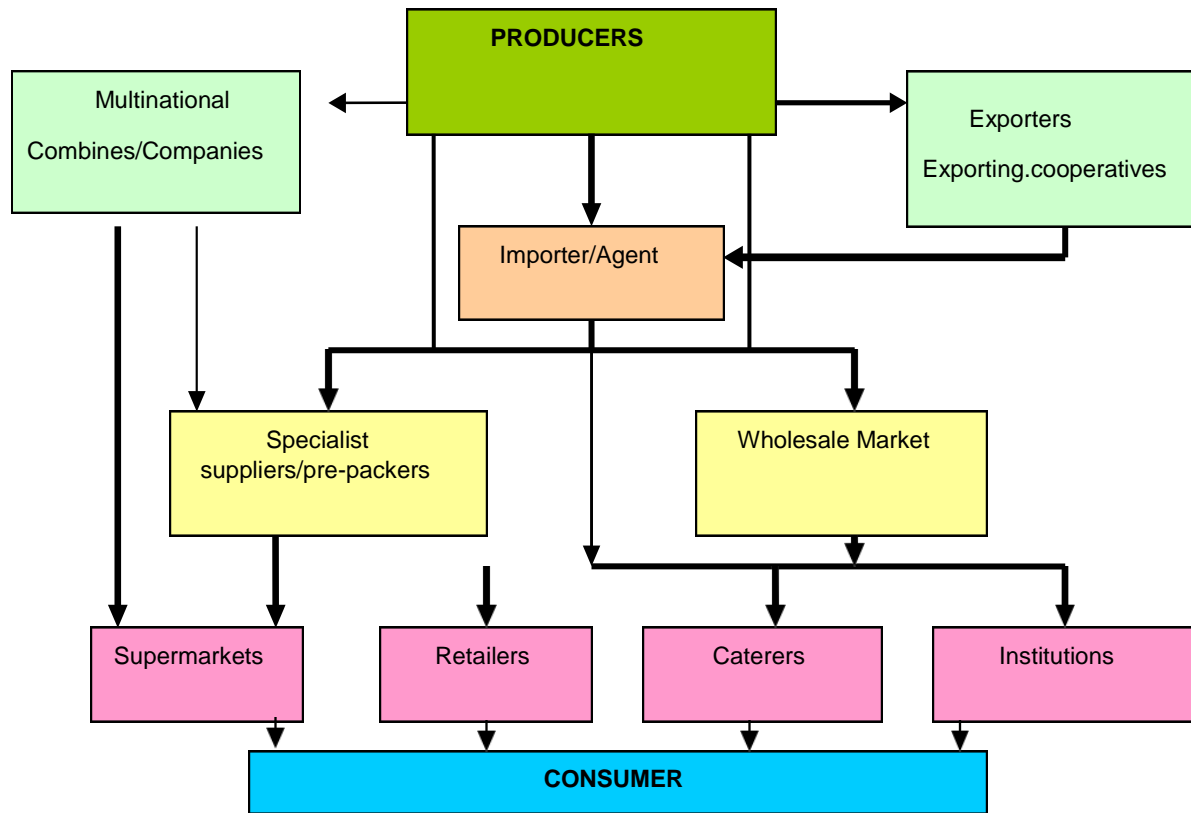
The UK imported 117 thousand tons avocados to the value of £ 197 million in 2018. In this year, South African supplies fell due partly to severe drought and biennial bearing, but this shortfall was taken up by Peru, which was the principal supplier of avocado to the UK. The EU countries, in particular the Netherlands, France, Spain and Germany supplied 28% of the UK imports. Since Spain is the only producing nation amongst the aforementioned, most of these imports are in fact re-exports from major suppliers, in particular Peru, whose exports to Europe are shipped through the Netherlands and Belgium, and Israel, whose avocados are shipped through Marseilles in France.

The table probably underestimates the Peruvian success in penetrating the UK market as the Netherlands exported over 22,000 tons of avocado in 2018 and a third of the country's imports originate from Peru. Spain is a producer and yet imports reached nearly 130,000 tons of avocado from Peru. For similar reasons, the statistics for Chile, a relative newcomer to the market may also be underestimated.

Kenya exported 1,239 tons and Tanzania exported 719 tons in 2018. Kenyan exports have been affected in the past by piracy off the coast of Somalia forcing shipping lines to ship via Oman, but this threat was recently abated by government restrictions on exports due to a shortage of fruit on domestic markets. These issues have disrupted schedules and affected quality. Importers need security of regular supply and Peru and the resurgent Israel are the beneficiaries.

5.3 Trade channels

Diagram 2: Traditional distribution channels for the UK fruit industry



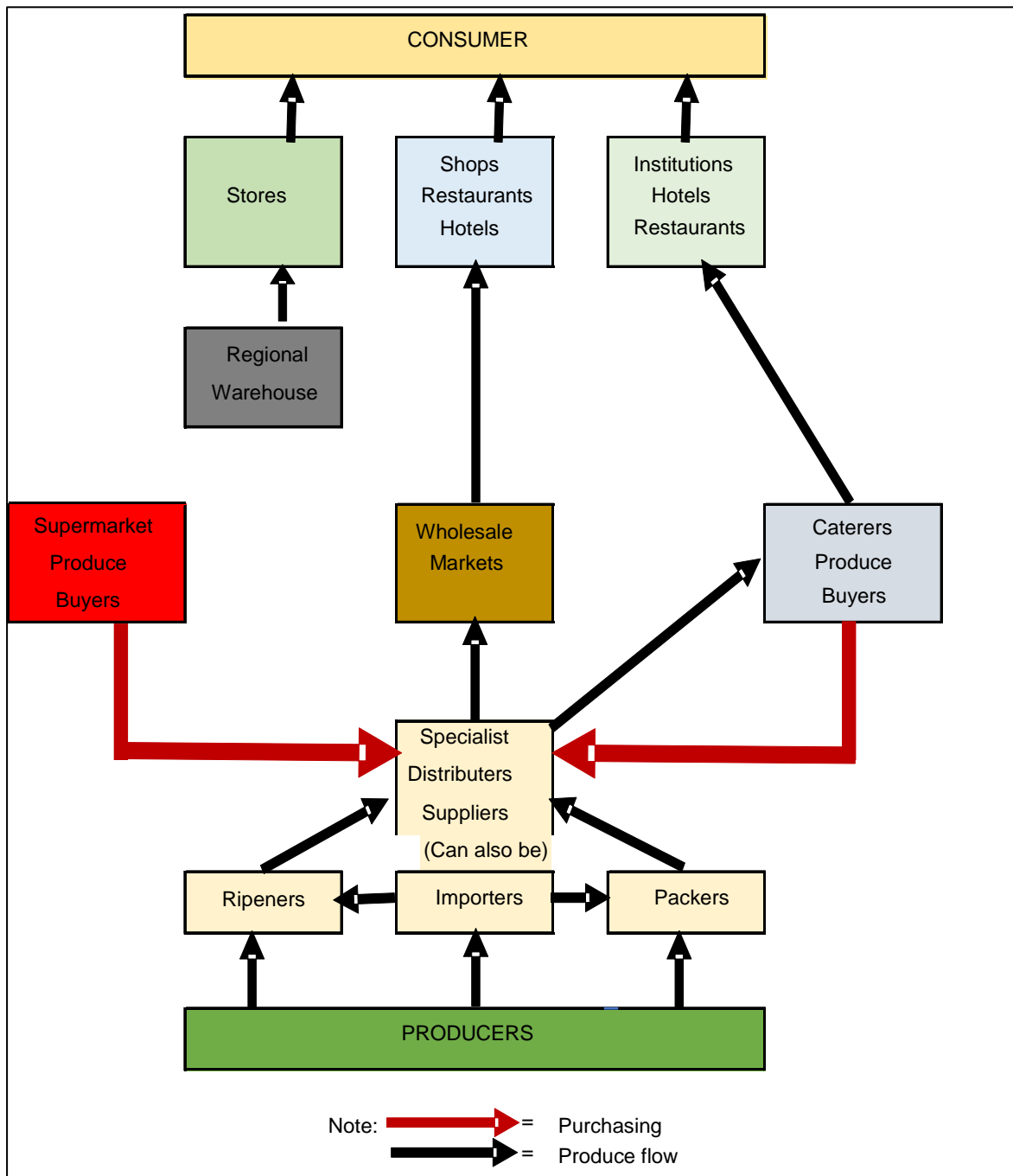
Source: International Consultant Research

The role of the clearing agents is key to the import process for delays in clearance and delivery are crucial to supply chain management.

Clearing agents such as Perishable Movements Ltd that specialises in airfreight and based closely to the London's Heathrow airport have pre-cooling and cold store facilities in house. They currently act for Morrison's – the only supermarket to directly import – and work for most of the major fruit importers. They have invested in modern pre-cooling equipment to return fruit to the ideal storage after shipment for onward transportation to the importer. Temperature, as product delays at the airport frequently result in warming is, they believe, an essential service for importers.

An individual importer will have container produce cleared at the point of entry by specialist transport firms, who then break bulk and distribute it to the importer's customers or directly to the importers packing plant. After processing, such as ripening or repackaging, the produce is then delivered to one of the supermarket or catering company's regional depots. Delivery from the supermarket and catering supply companies' regional hubs to the individual stores or outlets happens with their own transport or hired transport.

Diagram 3: The role of the buyer in the trade channels for fresh produce in the U.K



Source: FruitNet

5.4 Transportation

In the past, most avocados were shipped by air and were thus relatively expensive given that a typical airfreight cost is \$2.2/kg (£1.3). This priced the product out of the general supermarket trade. Avocados used to be a difficult crop to ship by sea with a maximum of 28 days shipping time. However, with the introduction of specialist handling, Controlled Atmosphere (CA) storage, ethylene scrubbing and recently, chemical treatments and ripening facilities, sea freight has proven to be very successful, provided the correct post-harvest procedures, which are carried out in sea freight. Rotterdam is a major hub for South American avocado and it has announced plans to launch a “Food Hub” complete with warehousing, cool stores and ripening facilities. The Port’s ability to handle fruit effectively and very efficiently is a major reason for the increase in Dutch exports to the UK in recent years. Marseilles is also a major hub port mainly for African and Israeli avocado, for which shipping times are relatively short.

The bulk of avocado entering the UK occurs by sea and many UK importers of low cost, sea-freight avocado find it cost - effective to import through the Netherlands and France and tranship by road to the UK. The main port of entry is Felixstowe with Heathrow and Gatwick being the main airports for fresh fruits.

Table 24: Normal shipping times from selected countries to the UK market

Peru	Felixstowe	18 days 3 hrs
Colombia	Felixstowe	13 days 10 hrs
Mexico	Felixstowe	14 days 19 hrs
Dominican Republic	Felixstowe	11 days 17 hrs
Chile	Felixstowe	21 days
Kenya (Direct)	Felixstowe	18 days 6 hrs
Kenya via Oman	Felixstowe	24 days

Source: SeaRates

5.5. Distribution chain

Traditionally producers and importers marketed fresh produce through the wholesale markets. The principal city markets supplied the retail and catering trade and serviced the provincial wholesale markets who in turn supplied the local retail and catering trades.

Driven by the huge purchasing power of a few major retailers, the market has shown a strong move towards concentration and consolidation with a focus on shortening and implementing efficient management of the supply chain. As a result, the dynamics of fresh fruit distribution in the UK throughout the supply chain are now influenced by the:

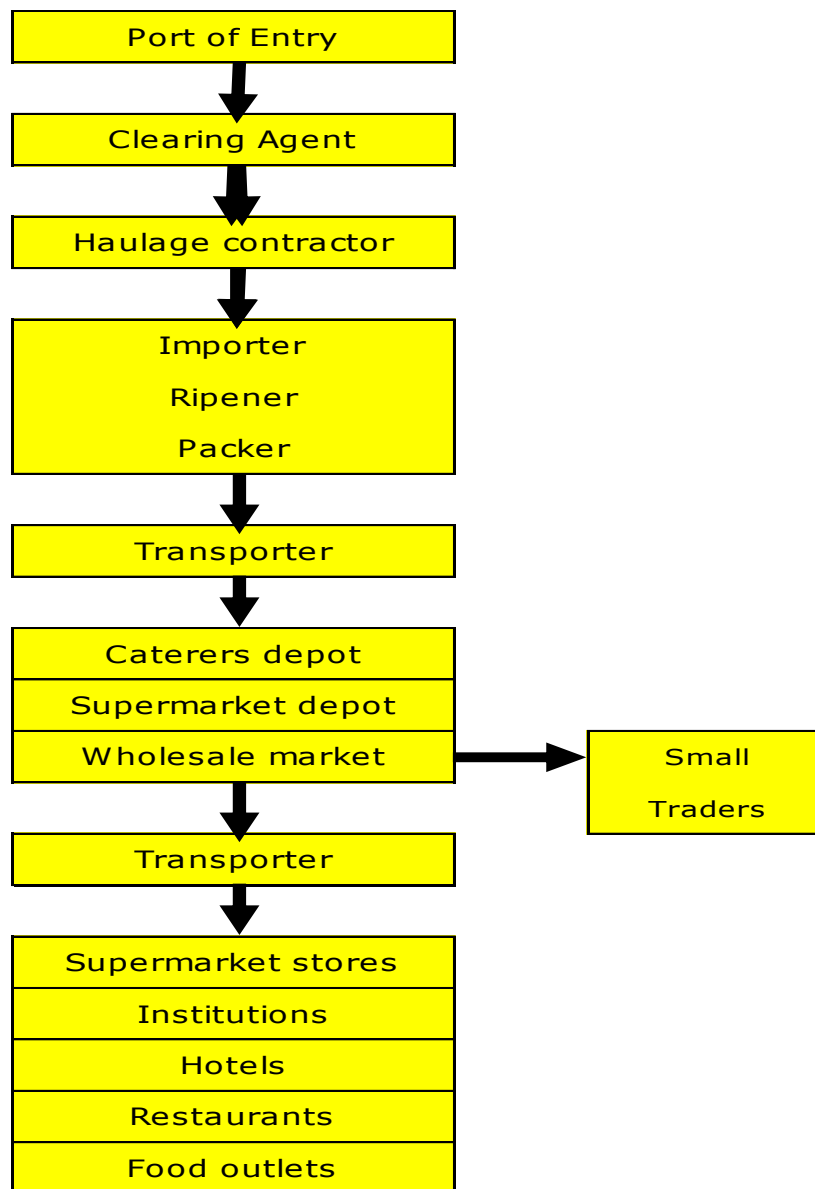
- Dominance of the major supermarkets that now control over 85% of the retail fruit trade; and
- Large catering suppliers.

The two sectors between them now have an equal 50% share of the fresh fruit market.

The demands of both sectors are for fruit to be of the proscribed specification, packed, labelled, bar-coded, and importantly delivered at specific time slots. All the major supermarkets now have fully automated regional warehouses, many of which are operated by robots and they stock individual stores with fruit with orders controlled by the daily shop sales.

Fruit is in demand all year round, daily and the larger supermarkets such as Tesco source avocado from over 12 supplying countries. It is for these reasons that few supermarkets source directly from producers. As with the rest of the EU the trade structure has undergone significant change over the last decade, but the change has perhaps accelerated and affected the UK market most of all due to the dominance of the UK supermarkets.

Diagram 4: Links in the distribution chain



Source: FruitNet

Table 25: The UK fresh fruit supply chain

Link	Responsibility
Producer/Grower	Production: local transportation; quality control; traceability farm to pack-house; grading; packing; SPS; inland transport to seaports, loading containers
Shipping Agent	Transportation exit port to receiving port; traceability
Clearing Agent	Customs payment; clearing; inspection; collection delivery to importer warehouse
Importer	Breaking bulk; repacking; distributing to Supermarket regional warehouse; traceability
Wholesaler	Sales to the small shops, hotels, restaurants etc
Ripener (sea only)	Ripening fruit as service to packers
Packer	Repacking into point of sale packaging, labelling, Bar Coding
Supermarket /regional warehouse	Temporary storage: order selection, distribution to stores

National haulage companies such as Eddie Stobart and BOC, who have regional cool chain depots across the country play an important part in the distribution system and are contracted by Tesco and other supermarkets to make daily deliveries to all their stores. Haulage companies such as Rick White, Spiers and Hartwell in Evesham specialise in cool chain distribution can be found in every distribution Hub providing daily delivery services to all the wholesale markets.

Haulage charges:

- By the pallet that varies according to distance - typically £ 50.00 from Felixstowe to Evesham or
- By the box between £0.15 and £0.50 depending on distance to the point of delivery.

Under the recently introduced Procedure for Electronic Application for Certificates (PEACH) several important requirements are now required when importing fruits into the UK from outside the European Community. Importers now must provide advanced notice through PEACH that a consignment is about to enter the UK.

5.6 Market segmentation

Two main UK market segments are identified as:

The Retail Sector

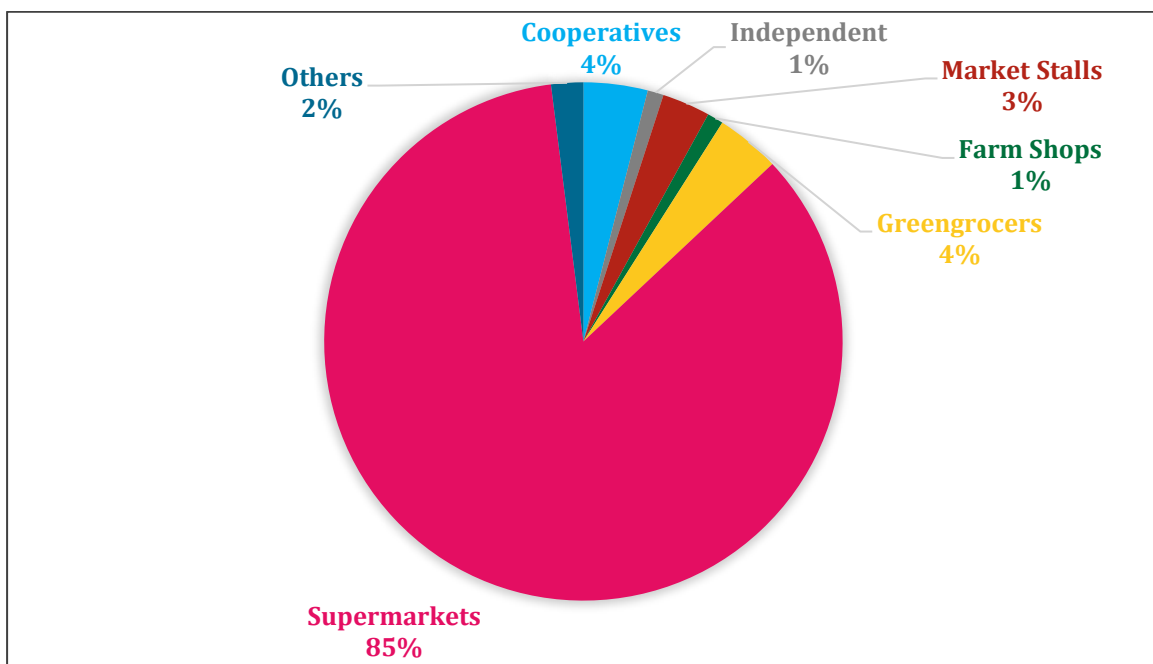
- The multiple supermarkets;
- Independent supermarkets;
- Convenience stores;
- Co-operatives;
- Local greengrocers;
- Farm shops;
- Farmers markets;
- Market stalls;
- E-commerce.

The Wholesale Sector

- Food service;
- Catering;
- Hospitality;
- Institutions;
- Fast Food;
- Education;
- Leisure;
- Health care;
- Airlines;

The Retail sector

Chart 43: UK retail segmentation



Source: FPJournal

Fruit is sold in most grocery food outlets dominated by major supermarkets, small family owned farm shop, farmers markets, and market stalls.

The supermarkets

Supermarkets are stores that have a sales area of over 2,300 M². Supermarkets account for 85% of the fruit trade. Supermarkets have their own quality control standards and subject their suppliers to routine audit, who in turn and in response to the supermarket demands, subject their suppliers to similar audits. These audits extend throughout the supply chain and include farm audits.

Suppliers and farms are often randomly audited directly by the supermarkets to ensure standards are complied with. These standards and farm audits are strict and failure to comply can result in loss of supply status. The standards include:

- Quality compliance
- HACCP compliance
- Farm input controls to ensure the correct use of fertiliser and chemicals

- Maximum residue checks
- Traceability
- Workers' rights
- Ethical sourcing

Table 26: The UK hyper/supermarkets

The Majors	Stores
Tesco	3493
Sainsbury's	1304
Marks and Spencer	852
ASDA	603
Waitrose	344
The discounters	
Aldi	726
Lidl	670
Independents	
Booths	28
Budgens	190
Farmfoods	320
Fultons's Foods	100
Heron Foods	290
Co-op	1914

Source: DEFRA and Fruit Trades Journal

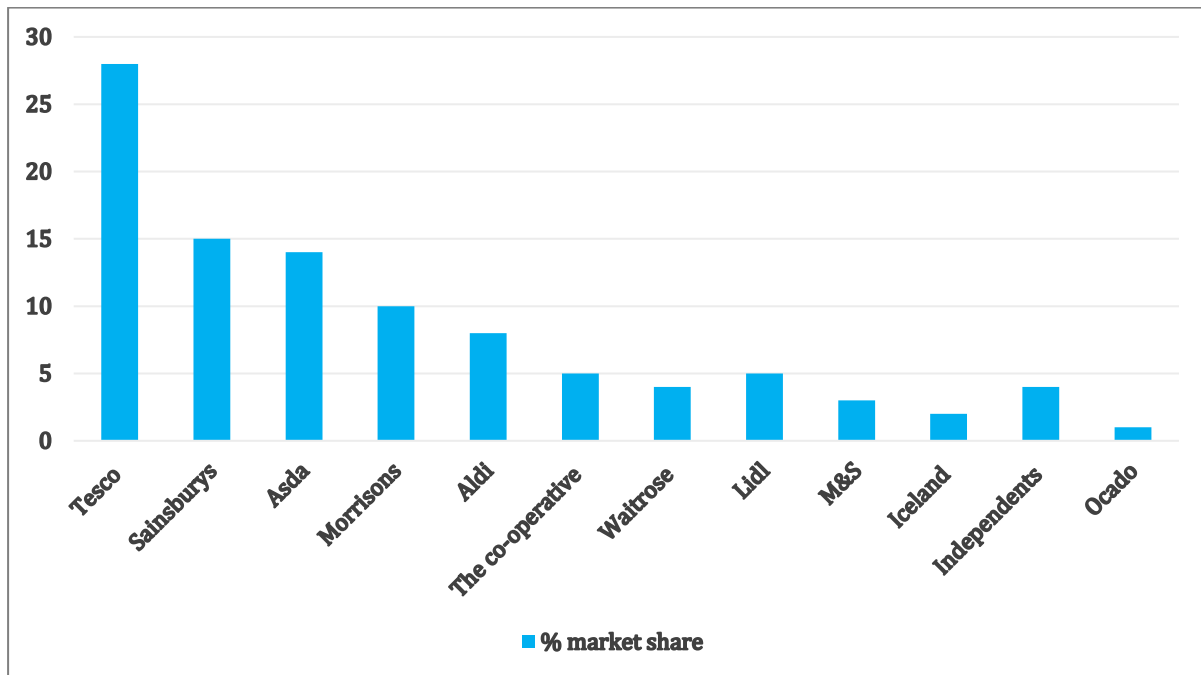
Supermarket supply chain

All major supermarkets exercise complete control of their supply chain. Each supermarket employs a specialist product buyer and this buyer rules supreme at the apex of the supply chain. Avocado buyers will demand the fruit to be delivered to their company's exact specification throughout the year and will expect it to be delivered by their fruit suppliers. Each supermarket employs a dedicated quality control team that ensures suppliers meet their company's standards. Few buyers purchase directly from growers or exporters. For all imported produce, all major purchases happen through approved suppliers.

Avocado displayed in the vegetable section of two supermarkets



Chart 44: Supermarket segment share



Source: FPJ

Supermarkets in the supply chain include the five major ones, Tesco, Sainsbury's, Asda, Marks & Spencer and Waitrose as well as the discounters Lidl and Aldi. Recently, traditional supermarkets have come under financial pressure reporting reduced turnover partly due to the aggressive marketing of the German discounters. In order to address this, the major supermarkets have launched extensive discounting programmes. They also expect their suppliers to co-operate in reducing prices thereby creating downward pressure on prices. However, Aldi and Lidl have increased their market share by capitalising on this and by pursuing an aggressive marketing policy of lower prices with low cost simplified store displays and fruits presented in original boxes.

Buying policies

Apart from some local farm purchases, potentially to address criticisms of unfairly influencing local communities, none of these supermarkets buys directly from the supplier. Many commentators seeing that the multiples have such a large market share erroneously conclude that these should be the target of market penetration. This assumption is wrong and misguided. The UK multiples buy all imported produce from approved suppliers. All impose large penalties for non-supply, late deliveries and quality rejections.

Increasing public concern over environmental issues wastage has become a major issue and the public are now questioning the image of “perfect” fruit in supermarkets concluding that much fruit is wasted, when it does not conform. Morrisons addressed this by introducing a range of “Wonky” produce as a lower priced alternative and the promotion appears to be very successful. The fruit conforms to the Class 2 category in being sound but is slightly misshapen and imported avocado is included in this range.

Pricing

The supermarkets purchase by tender in one form or another. Whilst quality is foremost in their requirements, the tendering process is fierce and based almost entirely on price - price in all cases being the priority as all supermarkets compete in a highly competitive environment. The supermarkets take pride in offering their customers the “lowest price” and it is up to their suppliers to shoulder the cost.

Table 27: Price evolution for avocado sold in the multiple supermarkets

	Per Box	Fruit No	Fruit No	Fruit No	Fruit No
	4 Kg	12	14	16	18
Importer buying price	£10.20	£10.20	£10.20	£10.20	£10.20
Fruit unit price		£0.85	£0.41	£0.36	£0.32
Clearing costs	£0.55	£0.05	£0.04	£0.03	£0.03
Transport to packhouse	£0.30	£0.03	£0.02	£0.02	£0.02
Re-packing	£0.80	£0.07	£0.06	£0.05	£0.04
Importer margin 15%	£1.53	£0.13	£0.11	£0.10	£0.09
Wastage	£0.25	£0.02	£0.02	£0.02	£0.01
Distribution to depot	£0.45	£0.04	£0.02	£0.02	£0.02
Supermarket buying price	£14.08	£1.17	£0.52	£0.46	£0.41
Retail Price		£2.35	£1.04	£0.92	£0.82

Source: Trade interviews

The tendering contract specifies quantity and delivery requirements. Generally the supermarket issues suppliers with a daily quantity and store requirements that must be delivered to their specified regional warehouses, directives that have to be complied with. Shortages are penalised with rates that can exceed £ 1.00 per unit. The delivery slot, usually 30mins, if missed, results in total rejection. Thus, suppliers must factor in buffer stocks and have a network of wholesale merchants who absorb the surplus and rejects.

Branding

Whilst the multiples stock national brands in grocery and household goods, they categorise fruit as undifferentiated produce and do not encourage branding for fresh produce.

Promotions

All supermarkets carry promotions such as “Buy one, get one for free” and “2 for 1” and the suppliers are the ones that pay for these promotions.

Ethical sourcing – Organic, Fair-Trade, Rainforest Alliance

According to DEFRA, the total UK sales in ethical food, including organic, fair-trade, organic, and free-range and freedom foods rose to £ 11 billion in 2017 increasing annually over the last ten years.

Organic produce is promoted in all the supermarkets in response to consumer demand for healthy eating and protecting the environment and is a premium product line.

Fair-trade is very important now with all the multiples actively promoting ethically produced fruit. The Co-op claim to have over 25% of the Fair-Trade market pioneered the move to ethical trading closely followed by Sainsbury's and later by all the multiples. Waitrose have set up the Waitrose Foundation that pays for social, health and educational projects, mainly in South Africa in an initiative to "give something back to the workers". Fair-trade avocados are now available in many of the major supermarkets.

A combination of Fair-Trade and organically sourced avocado appeals to all major importers and being able to source them from Kenyan and Tanzanian exporters would encourage them to purchase.

Consumer concerns over the effects of deforestation have brought to the attention the activities of the Rainforest Alliance, a non-profit international organisation formed to protect tropical forests. Recent publicity targeted avocado production as a contributor to deforestation and is of concern to all avocado exporters, as supermarkets tend to follow consumer concerns.

Packaging and display



In most UK supermarkets, avocados are normally displayed in the vegetable section, usually above sight line and are difficult to find. During promotions or special offers, displays are more prominent. The major multiples now display them in 60 x 40 standard plastic boxes with the loose fruit in black cell packs. It is claimed that this form of in store packaging reduces the wastage of handling loose fruit, provides visual impact and a uniform unit for display for the entire in store fruit aisle. They now offer "ready to eat" ripened avocado in single freefall display or more

usually as twin packs.

After high profile, concerns over plastic waste in the oceans, supermarkets are reducing the use of plastic. The government has introduced charging of £0.5 for each plastic bag used by customers and Sainsbury's has banned black plastic, a commonly used material for pre-packed call packs, throughout their stores. Other supermarkets are likely to follow.

Independent supermarkets

Several high-class grocery stores have a food department along with independent discount stores and small local supermarkets. Asian owned stores increasingly dominate the independent supermarkets segment and avocados are rarely seen there.

High quality independent stores tend to source directly from the wholesale market or from secondary wholesalers. Small independents and discount stores source from the wholesale market and are a major outlet for class 2 produce and the surplus from supermarket suppliers.

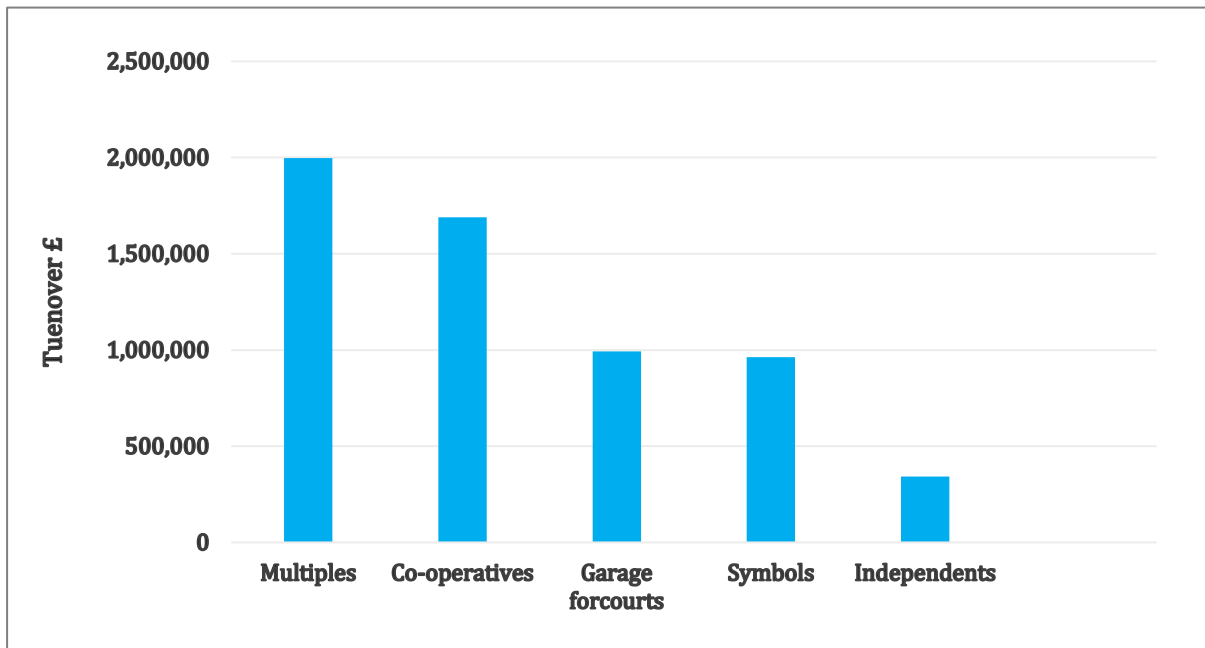
Convenience or C-Stores stores

The UK C-sector entails stores with less than 275 M2 serving local neighbourhoods. The sector is highly fragmented with an estimated 50,000 outlets that are often operating as franchised outlets for larger retailers. A figure that is growing mainly due to the increasing activities of the major supermarket groups returning to the high street operating under brand names such as Sainsbury's local, Tesco Express, Simply Foods (Marks & Spencer). Most stores within the major Co-op group are C-stores.

This sector is divided into six categories:

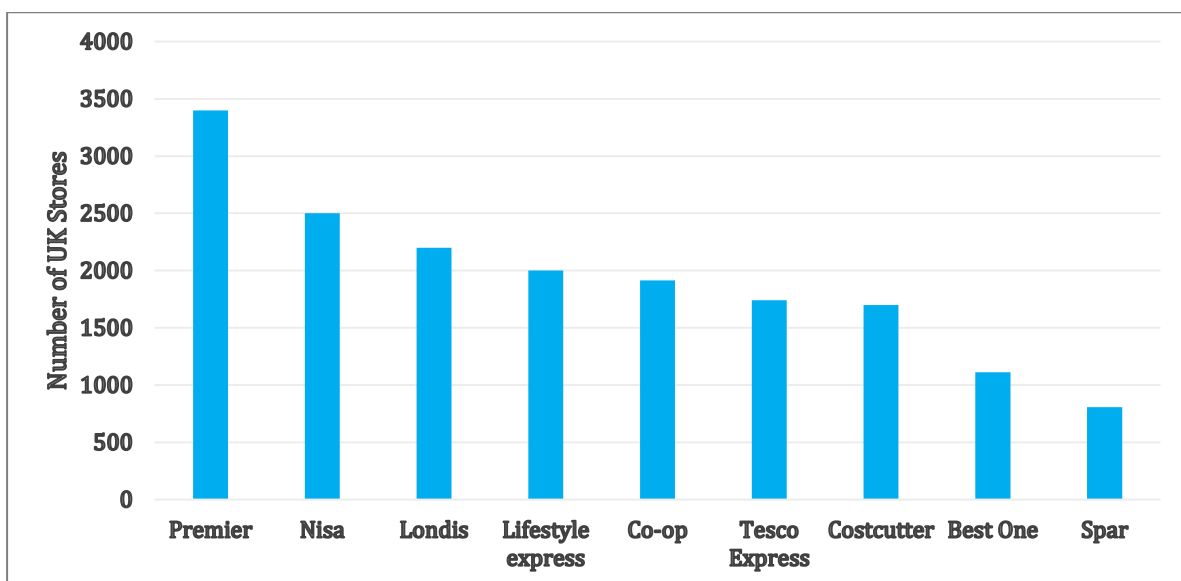
1. Convenience stores – Small neighbourhood stores many operating as franchised outlets for the larger retailers.
2. Co-operatives – Groups of individual retailers co-operating to form larger buying groups.
3. Garage Forecourts – Grocery and greengrocery in-store outlets providing additional revenue streams.
4. Symbol Groups, such as Spar, Budgens & Costcutter, and major retailers selling through a multitude of small franchised outlets.
5. Independents – Small or medium family retail businesses.

Chart 45: Market share of C-store groups



Source: ACS

Chart 46: Top C- Stores on number of stores



Source: ACS

Symbol groups

Faced with fierce competition from supermarkets entering the convenience sector, the number of convenience store affiliated with a symbol group is growing. Symbol groups offer the smaller retailer with more volume purchasing power, marketing, branding, wide product range and the benefits of modern supply chains.

Key players are: Premier, Londis, Budgens, Booke, Costcutter and Landmark.

Co-operatives

There are over 20 co-operatives in the food sector. The Co-operative group was one of the first UK co-operatives and now operates 1,914 convenience stores throughout the UK followed by Southern Co-operative with 197 stores and Mid Counties with 178 stores.

Garage forecourts

The major oil firms play a big role in this sector with Shell operating 569 stores, Esso 198 stores and BP with 313 stores. The supermarket chains also play an important role. They are key players in this sector as many own and supply their own branded fuel. Tesco has 504 petrol stations, ASDA 306, Morrisons 334 and Sainsbury's 308. Supermarkets and larger convenience stores also have collaborative agreements with the oil companies to operate stores on their sites; Tesco Express operates stores at Esso stations and M&S simply food stores operate at BP. Also Londis and Costcutters have arrangements with oil distribution companies such as Taxaco, Jet, Total and Merco.

Convenience store distribution

Supplying C-stores daily is a major challenge for all store operators. Many such as forecourt outlets are not suited for large lorries. They are increasingly supplying these stores, which are being undertaken by specialist distributors, with stock from their regional warehouses using the same supply chain as their main stores.

The Symbol groups have regional depots that source from importers, specialist packers and in some cases from traders in the wholesale markets that can provide the service that these companies demand.

The independents rely on specialist wholesalers situated mainly in the wholesale market that provide a daily delivery service.

E- Commerce

A few years ago, E-sales were considered the future in wholesaling, but they have not caught up. E-sales are however, making a breakthrough at retail level. It is estimated that nearly 30% of customers regularly use click and collect services for purchasing groceries from the major supermarkets. ASDA, Morrisons, Waitrose, Tesco offer internet ordering and delivery services. Ocado, an entirely internet-based grocery retailer has established itself as a major player in offering online home delivered groceries. The giant Amazon is planning to enter the market.

The wholesale sector

Unlike many wholesale markets in Europe such as the Netherlands auctions and Rungis market in France, the wholesale markets in the UK have never been subject to regulation or control. Although the supermarkets in these countries are gaining a hold of retail sales, their wholesalers are protected by legislation that makes it illegal to purchase other than from within the wholesale or auction market. The UK wholesale markets remain a major part of the fresh fruit supply chain. In order to counteract the



purchasing power and service demands of large supermarket groups, their suppliers had to consolidate and reorganise. This has led to the formation of very large importer and wholesaler groups.

Many of the large importer/distributors such as Miner Weir & Willis started as market traders and both still have a presence in the wholesale market. Total Produce, the largest fruit wholesaler in the UK, now owns Leicester wholesale market.

The multiple supermarkets, convenience store chains and large retail and catering companies now purchase supplies directly. Either from producers, importers, or specialist packers such that the traditional wholesale market trade, once the premier source of fruit has fallen to below 50% of the total market.

In the last 20 years, wholesale markets have gained a reputation for being the clearinghouse for supermarket rejects and there was evidence of very poor quality avocado on sale at give-away prices.

Prices in the wholesale markets can be much higher than multiple supermarkets' buying prices and increasingly specialist importers see the market as a buffer market, ordering more than their contractual arrangements with the multiple supermarkets. They deliberately use wholesale markets as a business model that safeguards their supermarket contract and maximises returns to their exporters. The reason behind higher prices is the demand from the food service and catering trades and most market traders have refocused their business models to provide the services demanded by the sector.

Over the last two decades, several events have caused the decline of the traditional wholesale market system. Summarised these are:

- The advent of the supermarkets that have reduced the number of small local retailers;
- The reluctance of the remaining small retailers to rise early to source products;
- A reluctance of local chefs and restaurateurs to source fresh produce from markets; and
- The popularity amongst chefs and restaurateurs for fruit already prepared by catering suppliers.

Local producers have situated most wholesale markets in city centres with easy access. Nearly all shipments in the fresh fruit trade are now made by articulated trucks and imported produce shipped by 40' containers. Thus, logistics and access to city centre sites are compromised.

Traders report declining sales with some interviewed stating that they can barely cover costs and anxiously wait for Thursday when trade is brisk to make a meagre profit. Many provincial markets have closed and, in many markets, there are several empty units. Despite this bad situation, there seems to be overall optimism. Considerable investment has been made in rebuilding and re-siting markets such as the New Spittle fields market in London and a recent investment of £145 million for a new wholesale market in Birmingham. The plans for these new projects recognise the transport limitations of city centre sites and the need for the continuity of the cool chain incorporating best practice in food distribution.

To address access problems, modern importer/wholesaler/packing companies have consolidated and relocated to more accessible regional sites close the motorway network:

- Paddock Wood, Kent for London and the South East;
- Evesham, for the Midlands, North, and South West; and
- Spalding, for the East, North East, Central UK and London.

Traders report a gradual return of retail buyers catering for customers disenchanted by supermarkets.

The trading model in the past was for UK local producers and importers to send consignments to the major city wholesale markets such as Nine Elms (Covent Garden), Birmingham, Bristol etc. where traders, acting as agents, sold consignments on a commission basis to local retailers and secondary wholesalers. As commission agents, these traders depended on volume sales to expand their business.

In this regard, they would willingly get their produce from any source to secure volumes and to ensure profitability. Trading within the markets tended to be secretive. Growers, local producers and senders from overseas had to accept, on trust, the prices returned by these agents. Within a typical trading day the price realised by a wholesale trader would fluctuate and inevitably the price returned to a sender was frequently averaged. This led to mistrust within the industry and exporters, local producers and growers sought greater transparency through independent market data providers providing them with “typical” daily market data.

There are now several reputable providers of market data, but all suffer from a dependence on market correspondents providing them with accurate information. A busy trader, when contacted by a market analyst, will nearly always quote the price of the most recent sale. Exporters and producers need to exercise caution for many receivers of such market intelligence, in attempts to maximise returns “chase” those markets that show a high price. This nearly always leads to disastrous situations, since by the time an individual producer/exporter received such information the price may have changed due to others “chasing” the same market-leading to oversupply. For exporters sending to UK wholesale markets on a commission, this is of concern and often results in disappointing returns.

The import trade today is normally undertaken by specialist supermarket suppliers, who have entered into fixed-price contracts with supermarket buyers, usually on a three-month basis where the price is negotiated. These prices are based on supply and demand. The key issues in modern fruit marketing are the regularity of supply, honouring agreements and short-term opportunism in diverting supplies to a higher-priced market, sadly a complaint voiced by some importers.

Specialist importers-pre-packers

There are three distinct types of specialist fruit importers;

1. Multinational conglomerates
2. International co-operatives
3. Independent specialist importers/fruit distributors

1. The multinational conglomerates

These are the international organisations such as Dole and Del Monte, that trade in the major commodities such as banana, citrus and pineapple. These organisations run their plantations, buy the additional product from private producers, and in many cases have their shipping fleets, ripening rooms, cold storage facilities and marketing and logistical operations throughout the UK or work closely with large associate companies.

The multinationals and conglomerates are key players and have the financial strength and control of product supply to equal the buying power of supermarkets. Many are sourcing a wider range than their traditional or “own produced” crops to enable year-round supply and a wider product range. These organisations like total control over their supply chain and are probably of no significance to Kenyan or Tanzanian exporters unless they engage in joint ventures.

2. International co-operatives

This category includes large international co-operatives such as Unifruiti and Capespan. They all started as grower co-operatives and in most cases originally focussed on one product e.g. Capespan on citrus and Unifruiti stone fruit but the commercial pressure for rationalisation and providing a wide portfolio of product has forced them to widen their activities by buying additional product from private producers or entering into joint venture agreements with producers. They all have marketing operations in the UK but as with the multinationals, it is unlikely that these companies would be of interest to Kenyan and Tanzanian exporters unless they established a joint venture agreement with large commercial producer and avocado exporters such as Westfalia (South Africa), Mission (United States).

3. Independent specialist importers/fruit distributors

Rationalisation within the wholesale sector has resulted in many mergers to form vertically integrated companies offer a full service in from the field to shelf including storage, ripening, pre-packing and cool chain distribution. Companies such as Fresca, Total Produce (an umbrella company merging a number of well-known industry names such as Redbridge, Capespan, Everfresh, and Primafruit), Minor Wier and Willis (MWW) and Ferryfast. All these organisations have invested heavily in the modern state of the art storage, distribution and logistical services adopting, Near Infra-Red (NIR) Grading, IT and GPS tracking systems to service the multiples and foodservice sectors.

These specialist importers/pre-packers now play a significant and major role in the supply chain. Most are approved suppliers to the major supermarkets. They import the high value and exotic produce, pre-pack and distribute to the supermarkets; the surplus or rejected produce is then sold on the wholesale market.

Specialist ripeners

As is commonly done within the banana trade, where shipping $\frac{3}{4}$ ripe and ripening on arrival has been standard practice for many years, today all avocados arriving by sea need to be ripened before distribution to the markets. The larger importers such as Total Produce, Miner Wier and Willis, World Wide Fruit and Fresco have invested in their ripening facilities. Containers arrive daily and the continuous ripening process provides ripe fruit for slicing for the packers of ready to eat products and sandwiches.

5.7 The food service and catering sector

The catering and foodservice segment is increasing in importance driven by the rise in disposable income of the UK population, that has fuelled greater activity in leisure and eating out, a culture of preference for convenience foods and Government initiatives for healthy eating in schools. The food service is the fourth largest consumer-spending sector with a 31% share of this market. This very fragmented sector has been the salvation of the wholesale market where many of the traditional traders now specialise in supplying the growing catering sector providing them with a full range of services including the delivery of a full range of products such as pre-prepared pot ready produce. Hotel chefs, local restaurateurs, public house owners, bed and breakfast owners and local hotels buy from the wholesale market where many of the vacant tenancies are now occupied by specialist Catering Companies such as The Personal Catering Company Ltd and Chef's Connection, who buy a range fruits from market traders to satisfy orders taken from local catering establishments. Much of this trade requires food preparation such as sliced fruit. Consumer accountability demands require companies to place greater emphasis on traceability. The main business is in supplying the major hotel groups and institutions such as armed forces, schools, airline companies and hospitals. It is reported that of the £ 2 billion annual spends on food by the public sector approximately 10% is fresh produce of this. The Department of Health's annual spend on fresh produce exceeds £ 50 million but avocado represents a large share of it. However, avocado, along with other tropical exotics is an increasingly important fruit for the high-class hotels and restaurants.

As with the other sectors, consolidation and rationalisation are taking place at a large pace. Large traditional wholesale market companies, such as Reynolds Catering, have invested in the new state of the art warehousing, but these companies still depend on the Wholesale markets for their supplies.



The rationalisation of the sector and the need to provide service and large scale and regular deliveries has spawned large specialist national catering companies such as 3663, Fresh Direct and Sodexo dedicated to supplying all the needs of the larger buyers, institutions, multinational food chains and multinational hotels. These companies have depots around the country and facilities for re-packing and preparing fresh fruits. The large importers and ripeners along with the

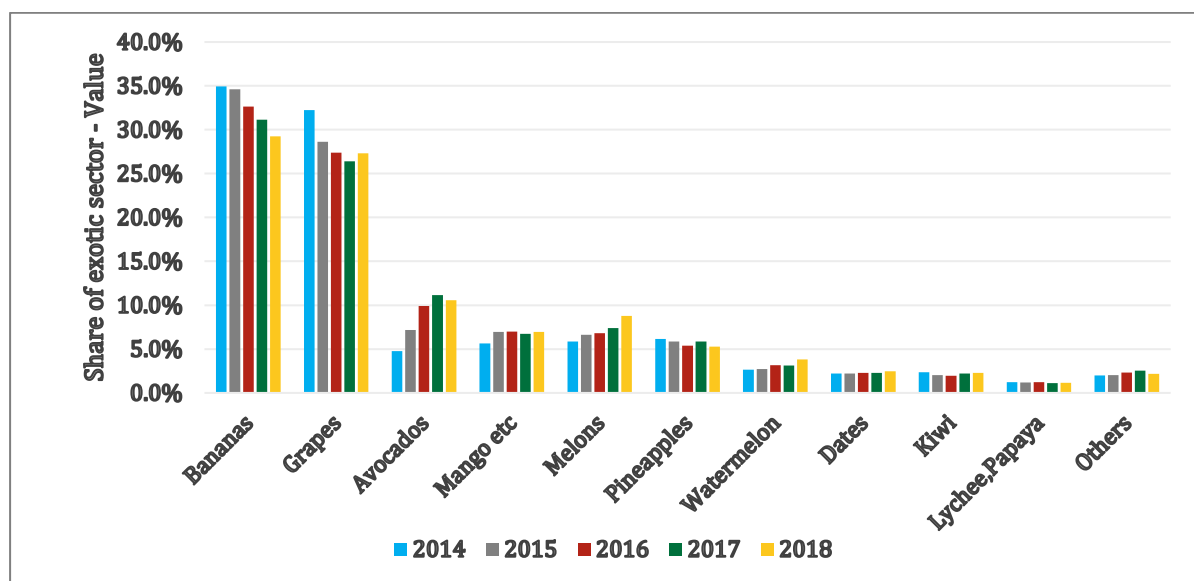
specialist pre-packers supply these specialist organisations.

As with all the other organisations quality and regularity of supply is paramount with price always a factor but not as important as in the retail trade.

5.8 Consumer demands

The UK exotic market is valued at over £2.2 billion dominated by imports of banana and grapes. The avocado share has increased from 4.8% in 2014 to 10.6% in 2018. Avocado has now overtaken mango and pineapple in this market. The insatiable demand for avocado and the increased supplies has not affected the price. The public perceives avocados as being an expensive fruit.

Chart 47: Product share of the exotic UK market



Source: DEFRA and ITC Trade Map

An apple costs £ 0.15p, a banana at £ 0.75p/kg costs less than £0.15p for a single finger, a large super sweet pineapple costs less than £0.75, a five-pack of oranges are priced at £ 1.00, whilst a small single avocado can cost £0.85 each and a large one £2.00 each even at promotional prices.

Surprisingly, all the UK supermarkets categorise avocado as a vegetable and many stores display boxed fruit on the top shelf out of the “sightline” of the shopper which does little to promote avocado as a fruit or even as a desirable healthy product. Avocados are not an attractive fruit nor appear as a succulent fruit and thus do not appeal as an impulse purchase. Avocado purchases are done by the discerning homemaker looking for healthy food recommended by health clubs, celebrity endorsement and as gourmet food for entertaining.

It is interesting to observe that there have been frequent complaints in the press and women’s magazines “that it is impossible to find a ripe avocado for eating that day”. This complaint occurs despite the industry’s efforts to promote “Ripe and Ready” avocados and samples purchased in five of the major supermarkets sold as “ripe” seem to confirm this.

5.9 Government inspired promotional campaigns



Just Eat More
(fruit & veg)



“5 a Day” is a programme by the British government that launched a “5 portions of fruit a day” programme encouraging people to eat more healthily. However, only 25% of the population meets the target of five portions of fruit a day and there is thus scope for further increases in consumption as health concerns receive more publicity.



“Eat in Colour” is a trade promotional activity sponsored by the Fresh Produce Consortium and launched in January 2007 with the idea of promoting the increased consumption of fresh produce.

The “Eat well Plate” is a UK Government promotional campaign for healthy eating.

5.10 Social concerns

The British public is becoming increasingly aware of issues such as food safety, traceability, chemical residues, and the sustainable use of natural resources, deforestation, carbon footprints and environmentally friendly production. All major retailers now limit trade in the fresh produce sector to production that complies with the Global GAP standards (previously EuroGAP). Major retailers and many of the larger catering organisations expect their overseas suppliers to comply with GlobalGAP, BRC and HACCP regulations.

5.11 Packaging and presentation

Exporters perceive packaging as a concern. The sea-freight boxes seen in the market seem perfectly adequate for the purpose. All importers’ main requirement is for robust single layer telescopic, corrugated fiberboard boxes that will withstand the trauma of sea freight and the fruit well presented. The boxes must conform to the safety standards and be glued rather than stapled.

Most importers supplying the supermarkets and service sectors ripen fruit and re-pack into standard supermarket plastic display boxes in a plastic cell inlay with individual cells for each fruit or as overwrapped fruit, thus the aesthetics of the box is not important. However, supermarkets penalize them heavily if they fail to deliver the exact quantity to their depots and to safeguard against shortages, they over-order with the surplus fruit supplied to the wholesale markets. A simple attractive box that appeals to the buyer would be an advantage to help in establishing a brand in these markets.

Importers supplying the wholesale markets, who break bulk and forward fruit to the markets, prefer quality distinctive well presented printed boxes that attract buyers.

Pre-packers and ripeners are not too concerned about the aesthetics of the box and presentation as they will re-pack, provided they are robust enough and fit for purpose.

A recent supermarket survey suggested that packaging adds 20% to the cost of fruit and the government is now pressurising the companies to be more environmentally friendly.

The reputation of Kenyan and Tanzanian exporters

Kenya has a very long tradition of exporting horticulture and floriculture produce to the UK. The characteristics of avocado in not ripening until harvested from the tree and the high prices that can be obtained at the start of the season or during periods of shortages have tempted some exporters to harvest prematurely. Avocados harvested this way will shrink, not ripen properly and have off flavours.

Whilst this practice may have worked for years when the market traders had nothing to lose by working solely on a commission basis, the modern importer/wholesaler now sources supplies at a given price and specified quality delivered on time and especially of uniform and consistent development.

Kenyan fruit has been generally well-received but the recent droughts and ageing trees are producing a higher percentage of small fruits that are of concern to importers.

Restrictions on exports to protect the local market have caused supply issues.

It is, however, the quality issues – especially premature harvested fruit that cannot be ripened, inconsistent ripening at point of delivery, regularity and consistency of supply and commercial management that is worrying importers.

Ripeners require fruit in shipments that are consistent throughout the container with all fruit at the same stage of development and some rogue exporters may appear to be unaware of good post-harvest management and the important issues of traceability. As a result, Peru, South Africa and Israel where exporters have complete and better control over their supply chain and have made significant inroads in the UK avocado market at the expense of Kenyan exporters.

There is interest in the Tanzanian fruit shipped so far but volumes are yet too small to assess.

5.12 Opportunities

Obesity and health issues are now of major concern and are the main drivers for the increases in supply. With environmental issues becoming more important, the demand is likely to grow. Consumption of avocado per capita in the UK is still comparatively low when related to the USA and Scandinavia. The UK is considered a rich country with one of the strongest economies in Europe (competitive exchange rates), the UK offers perhaps the best opportunity for Kenyan & Tanzanian exporters in all the countries covered, provided they recognise the changing environment in fruit marketing, improve their post-harvest practices and adapt to the new challenges.

CHAPTER 6: THE DUTCH MARKET



6.1 Overview of the Netherlands fresh fruit market

The Netherlands is Europe's largest importer of Fresh Produce, accounting for over 15% of Europe is the total fruit imports. The country is also the second-largest exporter of fresh produce in Europe after Spain re-exporting nearly 80% of all fruit imported. Local production of fruits, mainly orchard and soft fruits account for 45% of the countries fruit supply.

Table 28: Fruit supply in the Netherlands

x 1000 tons	2014	2015	2016	2017
Local production	781	765	773	649
Imports	3,540	3,878	4,365	4,627
Exports	2,617	2,919	3,568	3,818
Total Supply	1,704	1,724	1,570	1,458
% Local supply	46%	44%	49%	45%

Source: ITC Trade Map, FAO

Imports of fresh fruits have risen by over 70% over the last five years. The value of avocado imported into the Netherlands has increased by more than 50% since 2014 and compares favourably with the other major tropical fruit crops.

The Netherlands is a major world player in the global fruit trade. It has built a highly developed logistics system whereby buyers can receive orders of any quantity and range of products when they want them. Dutch exporters offer a full range of services from airport/seaport reception right through the supply chain. They offer store and shop delivery that is desirable for the smaller shopkeeper and particularly helpful for penetrating the less developed countries in Eastern Europe. For new and potential exporters, the country offers a unique entry point into all the European markets.

Table 29: The Dutch imports of fresh fruit quantity M.tons

Fruits. Tons	2010	2011	2012	2013	2014
Exotics	681,372	637,141	754,709	782,731	910,478
Bananas and plantains	476,771	742,480	878,886	983,586	1,131,962
Apples, pears and quinces	408,921	375,905	420,113	414,212	457,511
Grapes	409,254	412,513	408,139	440,172	473,686
Melons & papayas	302,771	337,486	362,040	382,297	400,146
Soft Fruit	168,241	184,044	210,686	233,770	254,596
Stone Fruit	100,357	109,843	113,374	132,866	118,707
Citrus	992,545	1,078,794	1,217,913	1,257,453	1,328,909

Total	3,540,232	3,878,206	4,365,860	4,627,087	5,075,995
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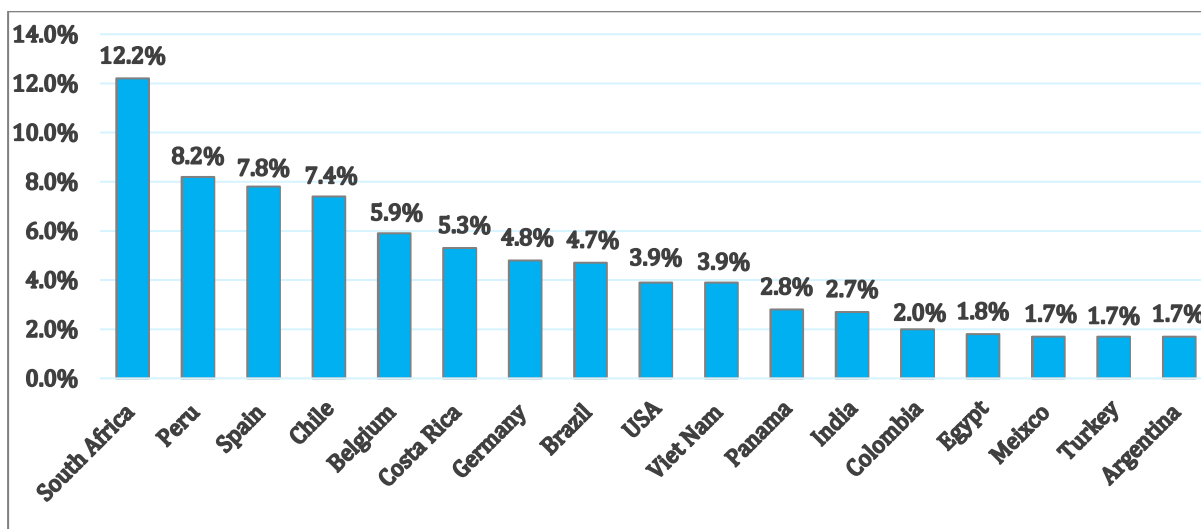
Source: ITC Trade Map

Table 30: The Dutch imports of tropical fruits

X US\$ 1000	2014	2015	2016	2017	2018
Grapes	998,324	832,461	831,130	900,262	1,071,838
Banana	320,022	413,310	467,031	751,520	897,616
Avocado	332,953	403,647	643,810	720,095	706,109
Mango	275,552	274,949	305,788	307,296	317,899
Pineapple	293,699	225,366	243,313	241,524	258,319
Melons	207,582	174,355	180,099	197,702	208,185
Watermelon	88,098	75,647	87,136	101,258	128,127
Dates	22,878	23,705	36,412	40,529	49,661
Figs	19,456	18,457	19,637	23,627	23,801
Papaya	18,983	20,300	19,226	19,918	16,694

Source: ITC Trade Map

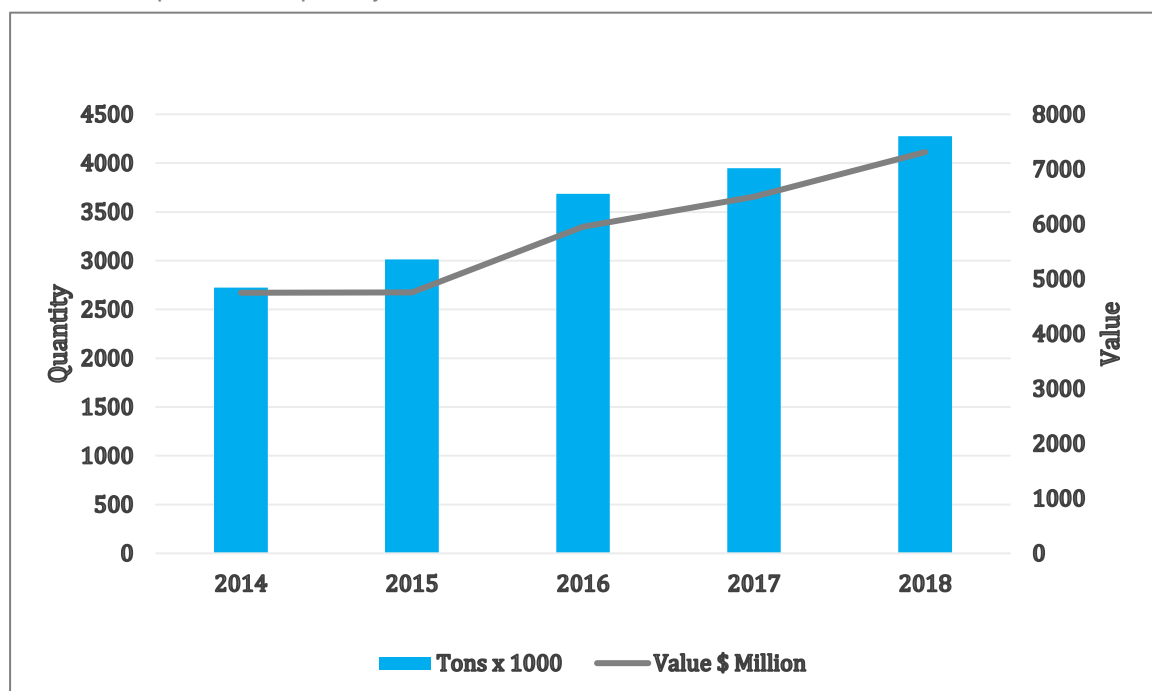
Chart 48: The Netherlands' fruit imports by major supplying countries by value



Source: ITC Trade Map,

South Africa is the principal fruit supplier to the Netherlands, followed by Peru and Spain. Most of the fruit exported by Belgium is a re-export through the port of Antwerp, a major hub for refrigerated cargo.

Chart 49: Imported fruit quantity and value trend



Source: ITC Trade Map

Overall volumes and value have shown a significant increase over the past five years reflecting the Netherlands' increasing role in the fruit trade.

6.2 The avocado market in the Netherlands

In 2018, the Netherlands imported 345 thousand tons of avocado valued at \$707 million and exported 315 thousand tons valued at \$ 904 million, reflecting the magnitude and value to the country of Netherlands re-exports. The re-export value reflects the importer/exporter margins, value-added by ripening and re-packing and transportation costs.

Table 31: The volume of the Netherlands avocado imports

Countries	2014	2015	2016	2017	2018
Peru	44,356	51,633	65,218	77,460	120,946
South Africa	37,819	31,179	33,950	25,460	50,470
Chile	33,197	35,773	54,889	63,476	52,671
Israel	14,732	14,219	11,625	17,568	17,621
Spain	7,318	9,550	6,477	7,934	11,134
Kenya	6,917	9,939	14,064	14,431	24,297
France	5,360	4,426	1,697	2,143	3,308
Brazil	3,557	1,808	1,165	1,826	1,811
Mexico	2,260	6,327	17,856	18,695	20,317

Germany	3,377	7,095	9,677	11,508	8,050
United Kingdom	3,282	2,971	1,441	2,483	2,474
Dominican Republic	681	1,070	2,986	2,776	2,704
Colombia	1,674	4,146	10,799	12,380	16,709
Belgium	1,124	2,870	2,605	3,410	3,170
Tanzania	809	1,988	1,302	1,202	2,184
Other	2,298	2,701	3,369	4,580	7,130
Total	168,761	187,695	239,120	267,332	344,998

Source: ITC Trade Map

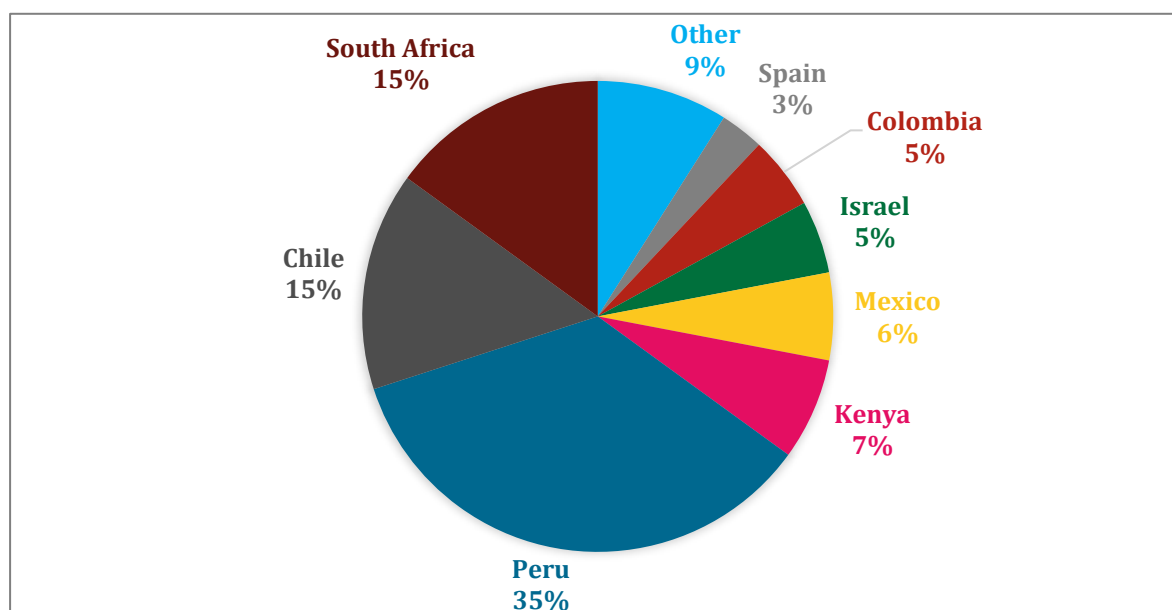
Table 32: The value of the Netherlands' avocado imports

Countries. US\$ x 1000	2014	2015	2016	2017	2018
Peru	89,803	117,672	168,829	216,829	221,859
South Africa	75,345	71,286	93,823	71,952	88,982
Chile	65,856	74,557	153,004	177,475	114,207
Israel	28,368	27,772	31,672	46,134	40,331
Spain	17,816	23,227	18,584	25,511	39,518
Kenya	13,399	21,695	32,941	33,555	44,327
France	10,835	8,416	4,770	6,224	9,228
Brazil	7,069	3,332	2,210	3,648	4,392
Mexico	4,920	15,417	51,715	54,213	52,524
Germany	2,759	6,812	9,594	12,459	8,378
United Kingdom	4,421	5,740	3,690	7,096	6,573
Dominican Republic	1,332	1,991	6,097	5,722	5,324
Colombia	3,198	8,033	27,725	33,298	37,051
Belgium	2,742	6,525	9,451	13,233	13,579
Tanzania	1,546	4,883	3,576	3,616	4,599
Other	4,640	5,607	9,304	12,112	17,076
Total	334,049	402,965	626,985	723,077	707,948

Source: ITC Trade Map

Both volumes and value of avocado imports into the Netherlands has doubled over the past five years fuelled by a huge increase in exports of avocado from Peru rising from 89 thousand tons in 2014 to nearly 222 thousand tons in 2018. The Netherlands is not a large consumer of avocado so most of these imports are destined for distribution throughout Europe.

Chart 50: The Netherlands' principal suppliers of avocado



Source: ITC Trade Map

Table 33: The volume of Netherlands' avocado exports

M.Tons	2014	2015	2016	2017	2018
Germany	31,501	39,065	61,349	78,236	97,718
France	16,215	19,398	23,157	26,389	41,259
United Kingdom	7,722	10,730	15,743	17,291	22,588
Spain	6,027	5,570	9,569	11,117	18,007
Poland	2,835	4,414	5,973	10,033	12,581
Italy	3,628	5,072	7,095	8,033	10,877
Switzerland	4,013	7,258	8,320	7,080	9,229
Belgium	4,452	4,132	7,652	8,014	9,189
Austria	1,726	2,598	4,212	5,418	6,677
Ireland	1,132	1,490	2,977	3,949	4,425
Greece	924	963	1,436	1,560	3,192
Finland	2,602	2,863	3,563	2,751	2,644
Turkey	336	416	715	1,127	1,671
Scandinavia	35,674	37,261	42,451	42,385	45,259
East Europe	8,251	9,219	12,991	16,170	25,580
Others	1,223	1,146	2,765	4,253	4,624
Total	128,262	151,605	209,970	243,811	315,521

Source: ITC Trade Map

Table 34: Value of avocado exports from the Netherlands

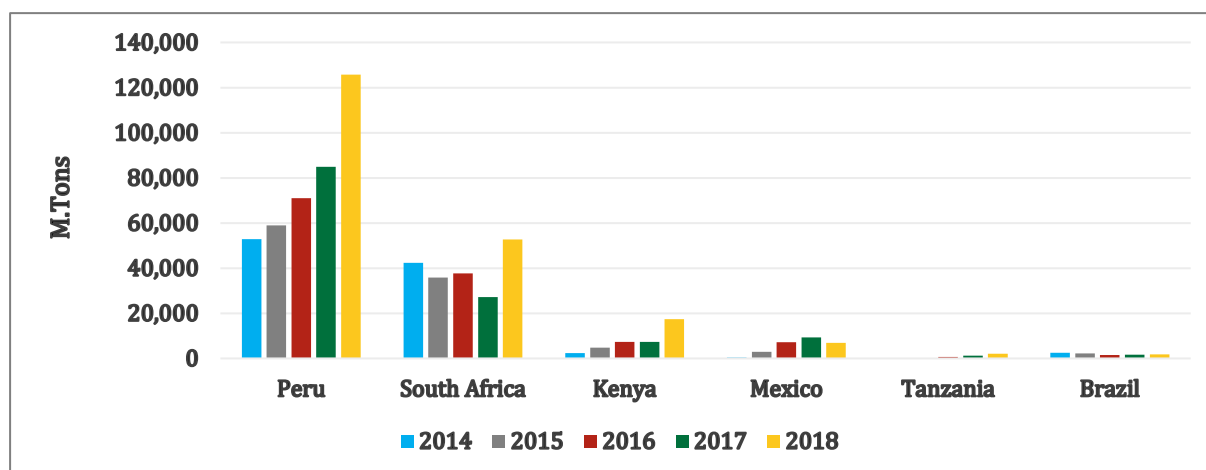
(000) US \$	2014	2015	2016	2017	2018
Germany	93,254	118,174	208,829	270,961	306,207
France	34,697	43,924	58,841	76,032	93,924
United Kingdom	19,948	29,558	47,059	55,551	59,650
Spain	13,757	12,132	20,879	25,962	33,170
Switzerland	10,819	18,619	26,170	28,001	31,525
Poland	6,024	10,940	14,721	27,806	30,789
Belgium	11,634	11,276	22,410	26,006	27,395
Italy	8,779	13,492	20,614	24,390	24,402
Austria	4,764	7,445	14,157	18,198	20,900
Ireland	3,086	4,257	8,284	11,911	14,262
Finland	8,129	8,471	10,733	9,660	8,673
Greece	1,966	2,478	3,751	4,677	6,681
Turkey	287	335	632	1,459	2,021
Scandinavia	506	634	980	2,934	3,941
East Europe	18,998	24,145	34,371	46,192	66,558
Others	3,295	4,120	11,160	21,160	19,469
Total	239,943	310,000	503,591	650,900	749,567

Source: ITC Trade Map

The Dutch exports of avocado have doubled over the past 5 years and are entirely re-exports sourced globally. Peru is the largest exporter to the Netherlands with 35% of the market and South and Central American exporters making a considerable impact. Chile and Colombia are recent players as exporters forming strong relationships with Netherlands marketing companies or, like the USA Mission company, opening marketing offices in the Netherlands.

Imports during Kenya and Tanzania's main export season April to September are dominated by Peru with Mexico beginning to show a market presence.

Chart 51: Summer season avocado imports into the Netherlands



Source: ITC Trade Map

6.3 Transportation and distribution

Transportation

Container shipments of fruit to the Netherlands are made through the ports of Rotterdam (NL) and Antwerp in Belgium. Shipping times from a selection of competing countries are shown above.

Table 35: Normal shipping times from selected countries to the Netherlands

Peru	Rotterdam	18 days 9 hrs
Peru	Antwerp	18 days 9 hrs
Colombia	Rotterdam	13 days 11 hrs
Colombia	Antwerp	13 days 10 hrs
Mexico	Rotterdam	15 days
Mexico	Antwerp	15 days
Dominican Republic	Rotterdam	12 days
Dominican Republic	Antwerp	12 days 1 hr
Chile	Rotterdam	21 days
Chile	Antwerp	21 days
Kenya (Direct)	Antwerp	18 days 11 hrs
Kenya (Direct)	Rotterdam	18 days 12 hrs
Kenya via Oman	Antwerp	23 days
Kenya via Oman	Rotterdam	23 days

Source: SeaRates; Port of Rotterdam

European ports are now highly developed and automated and provided documentation is correct, clearance is fast. The Port of Rotterdam in the Netherlands has launched a “Food Hub” expanding its position as Europe’s largest transit port specialising in the horticulture sector. The hub will cater to

providing full logistical service with warehousing, ripening, cool storage and distribution facilities as well as encouraging shared facilities, attracting importers and exporters to establish their commercial operations at the hub.

Kenya and Tanzania’s normal direct shipping route, via the Red Sea to Europe compares favourably to competitors, especially Peru. The Somali pirate problems that forced shipping lines to ship via Oman seem to have abated but having to trans-ship this way even with no delays in Oman, places even greater emphasis on the need for excellent Post Harvest Management.

Distribution

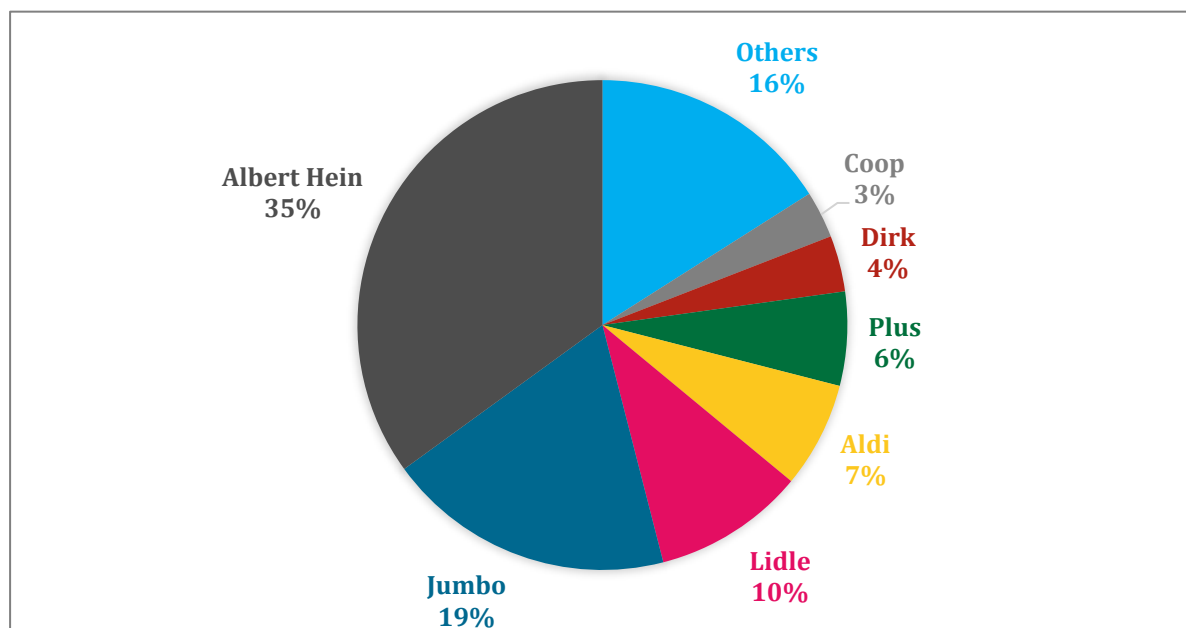
Traditionally all fruits imported in the Netherlands were sold on grower co-operative owned auctions. Exporters purchased fruit on the auctions and distributed produce throughout Europe. Consolidation of importers and exporters together with re-organisation of the distribution chain led to large specialist companies importing and distributing independently. The Netherlands has now one of the largest and most developed supply chains for fruits and vegetables in Europe. Most exporting companies have regional depots throughout the Netherlands and a characteristic of the current system is that they can offer customers the full range of products almost on-demand and delivered within 2/3 days after ordering. The distribution system has become so important that multinational companies, such as the USA based Mission Agriculture, Total Produce (UK) and Westfalia of South Africa have opened offices or formed alliances with Dutch Companies in the Netherlands as a way of entry to the whole of Europe, Scandinavia and the expanding East European markets. Anecdotal evidence suggests that the Peruvian exporters and co-operatives may be taking the same route.

6.4 The domestic market

The retail sector

Supermarkets

Chart 52: Market shares of leading Netherlands supermarkets



Source: ITC Trade Map

The supermarket sector accounts for about 77% of the Netherlands food retail and the traditional small greengrocer is in decline. However, family retailers, and street markets are still a feature of all towns, cities and villages and many Dutch homemakers prefer to buy fruit from local greengrocers and market stalls.

Discounters such as Aldi and Lidl are the fastest growing retail outlets.

One of the major trends in the Netherlands is the growing demand for convenient and timesaving ways of preparing meals. Pre-packed fruits are mostly purchased in supermarkets, but also in greengrocers and markets, in relatively small amounts. There is a growing demand for ripened fruit and the Netherlands has a number of specialised avocado and mango fruit ripeners.

The organic sector is becoming very important with nearly 5% of the fresh fruit market.

The major supermarkets are:

- Albert Heijn – 30 hypermarkets, 832 regular stores and 46 convenience stores;
- Jumbo, C1000, Super de Boer - part of the Bijen 540 stores;
- Aldi – 496 stores;
- Lidl – 400 stores;
- Coop – 183 stores;
- Dirk – 106 stores;
- Plus – 255 stores;
- Superinie – a central purchasing company representing 13 associated supermarkets.

Convenience stores

Convenience stores witnessed a slight decline in value sales in 2018, due to a small drop in stores, which left the category at the level of 2016.

Traditional convenience stores were operated primarily by two grocery retailers: Spar Holding BV and Van Tol BV. Spar Holding BV operates two banners in the Netherlands: Spar and Attent.

Major convenience stores:

- AH To Go
- CoopCompact
- Recreatiemarkten
- Spar City Store
- Attent (part of Spar)
- Lekker Makkelijk
- Buurtwinkels

The Netherlands is home to the original Spar store of the now internationally operating chain, Spar Holding BV remained category leader due to its larger network of stores, compared to competitors – with many small towns and villages still featuring a Spar convenience store.

The service sector

As found in all the developed markets in Europe, the leisure industry, hotels, catering, restaurants in the Netherlands are a growing sector due to the increasing affluence and an “eating out culture”.

Key wholesalers in this sector are:

- Zegro
- Hanos
- VHC-Horesca
- Bidfood
- Makro
- Sligo

- De Kweker

Sustainable and health trends

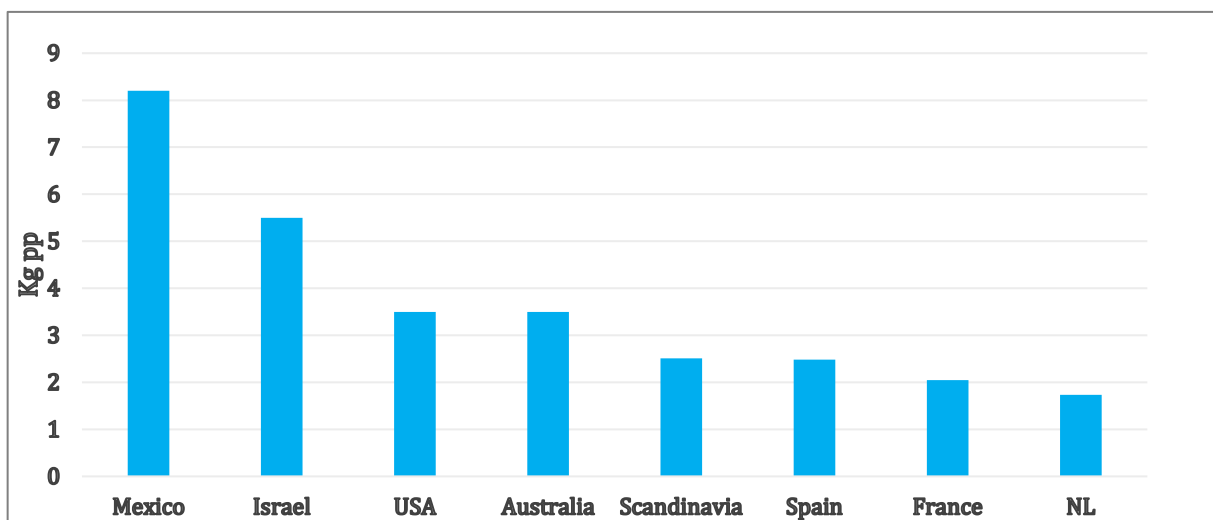
The Netherlands' fruit and vegetable industry is rapidly adapting business and commercial practices to address issues of sustainability where the focus is on ethical sourcing and environmental responsibilities as well as health and wellbeing. Organic and Fairtrade fruit is encouraged and developing whilst there is anecdotal evidence that the country is short of supplies.

The large and international logistics industry is also becoming increasingly aware of its social and environmental responsibilities, especially regarding the methods of transportation and their respective carbon footprints. This is having an impact on the fresh fruit trades as airfreight is becoming increasingly out of favour.

Consumption

Domestic consumption in the Netherlands appears to be very low compared with other high consuming nations. This creates a potential opportunity if demand increases.

Chart 53: Consumption Kg per head compared with other countries



Source: Consultants calculations

6.5 Opportunities

Avocados are in increasing demand throughout Europe and their beneficial health characteristics are still not well promoted. Organic certification and Fairtrade appear to be a significant opportunity. Importers and distributors in the Netherlands are demanding and require strict adherence with accepted quality standards. To gain entry, both Kenyan and Tanzanian exporters have to come to terms with the changing market conditions throughout Europe, improve quality standards and offer reliability with shipments and long-term agreements. It is not a market for opportunistic exporters chasing markets on the assumption because of their higher prices.

Competition is increasing especially from South American and South African suppliers who have recognised the importance of the Netherlands as a gateway to all of Europe. Some of whom have established marketing operations in the country. This may be a model for Tanzanian and Kenyan exporters to follow.

The domestic market is relatively small and as such is of little interest for the Kenyan and Tanzanian avocado exporter. If consumption could be encouraged through promotional activity or by a move towards healthier living, the Netherlands may become an expanding market in the future. As can be seen, by the volume of avocado shipped by Dutch exporters to the rest of Europe and beyond, the Netherlands must be considered by Kenyan and Tanzanian exporters as the gateway to the rest of Europe.

CHAPTER 7: THE FRENCH MARKET



7.1 Overview of the French fresh fruit market

France is the world's six largest importer of fresh fruits. Homegrown fruit accounts for about 60% of the French fruit market. France export market is mainly throughout the EU, the largest markets being Spain and the United Kingdom. Apples are the main export, but France is a major hub for Banana sourced from its overseas territories and former West African dependencies. France enjoys a reputation for its melons that are popular throughout Europe.

Table 36: Fruit supply in France

x 1000 tons	2015	2016	2017	2018
Local production	3,513	3,354	3,229	3,220
Imports	3,894	36,884	4,038	4,402
Exports	1,366	1,241	1,239	1,038
Total Supply	5,353	5,415	5,477	5,668
% Local supply	66%	62%	59%	57%

Source ITC Trade Map

Table 37: The value of French fresh fruit imports

Value (000) US\$	2014	2015	2016	2017	2018
Citrus	1,125,646	1,083,326	1,198,011	1,233,646	1,239,957
Dates, figs, pineapples, avocados, guavas, mangos and mangosteens	618,903	617,549	751,620	842,857	842,738
Banana and plantain	510,580	457,762	455,565	542,421	622,908
Grapes	293,921	263,291	270,686	291,594	276,540
Melons and papayas	291,003	260,026	279,106	317,653	340,253
Apples, pears, quinces	257,100	240,451	243,538	274,187	277,559
Stone fruit	280,338	285,931	301,681	277,477	299,889
Berries and currants	516,775	476,540	538,772	621,850	701,048
Total	3,894,266	3,684,876	4,038,979	4,401,685	4,600,892

Source ITC Trade Map

Table 38: The volume of French fresh fruit imports

M.Tons	2014	2015	2016	2017	2018
Citrus	1,022,235	1,067,328	1,101,546	1,121,028	1,057,133
Dates, figs, pineapples, avocados, guavas, mangos and mangosteens	326,842	320,962	367,382	387,398	429,179
Banana and plantain	613,736	599,767	577,351	687,313	752,683
Grapes	165,158	168,649	170,687	175,060	156,043
Melons and papayas	294,598	326,147	341,784	370,948	364,866
Apples, pears, quinces	279,957	297,868	295,014	291,604	289,858
Stone fruit	189,158	212,453	215,949	216,631	204,208
Berries and currants	202,605	212,889	233,043	237,598	232,970
Total	3,094,289	3,206,063	3,302,756	3,487,580	3,486,940

Source ITC Trade Map

Table 39: French imports of exotic fruits

M.Tons	2014	2015	2016	2017	2018	increase
Banana	596,864	580,702	560,464	670,110	726,907	22%
Watermelon	118,409	149,328	167,182	187,889	201,552	70%
Melons	174,240	174,650	172,168	180,193	160,638	-8%
Avocado	119,098	116,304	134,360	145,967	157,486	32%
Pineapple	115,644	113,578	122,142	125,060	144,456	25%
Grape	140,839	143,232	144,373	146,159	128,356	-9%
Mangos & Guava	45,252	41,496	58,109	62,101	66,889	48%
Dates	29,552	32,662	33,925	37,380	42,133	43%
Figs	17,295	16,923	18,845	16,890	18,215	5%
Papaya	1,949	2,170	2,434	2,866	2,677	37%

Source ITC Trade Map

As with most of the EU countries, exotic fruits show an increase in demand with avocado imports up by 32%.

7.2 The avocado market in France

Avocado is one of the major fruits imported into the country representing about 4% of all fresh fruit imports. Imports increased by 32% over the past five years partly reflecting the trend throughout Europe.

Table 40: Avocado imports into France value

(000) US\$	2014	2015	2016	2017	2018
Spain	81,905	79,426	99,606	125,972	131,595
Peru	50,841	57,515	79,208	97,872	86,451
Mexico	14,675	22,693	43,911	47,526	38,135
Israel	37,747	34,508	37,705	56,756	34,942
South Africa	27,145	20,677	22,652	19,131	25,829
Chile	22,422	20,203	40,552	40,847	24,749
Kenya	17,074	22,217	21,337	24,981	24,603
Morocco	2,484	3,246	442	5,263	10,706
Colombia	1,025	2,058	5,047	6,876	8,645
Tanzania	1,143	2,410	4,545	3,940	5,935
Dominican Rep.	2,345	2,076	3,491	6,010	4,776
Other	11,483	13,914	18,284	11,616	13,490
Total	270,289	280,943	376,780	446,790	409,856

Source: ITC Trade Map

Table 41: Avocado imports into France quantity

M.Tons	2014	2015	2016	2017	2018
Peru	25,444	23,591	29,172	31,484	39,851
Spain	26,685	26,179	28,813	35,424	33,676
Israel	19,567	18,026	15,697	21,276	16,258
Mexico	6,148	10,700	17,353	15,324	14,508
South Africa	13,932	8,782	8,728	6,593	13,291
Kenya	8,656	9,717	8,322	9,594	12,839
Chile	11,676	10,554	14,754	13,744	9,490
Colombia	530	1,046	2,399	2,855	3,590
Tanzania	593	992	1,739	1,326	3,372
Morocco	1,185	1,625	164	1,636	2,975
Dominican Rep.	1,109	1,011	1,538	2,439	2,148

Other	3,573	4,081	5,682	4,118	5,488
Total	119,098	116,304	134,360	145,813	157,486

Source: ITC Trade Map

Peru has targeted the French market with exports rising significantly reflecting the countries overall dominance of the European market. France increased its imports from Mexico to respond to the growing demand for avocados in Europe. France is a re-exporter of fruit and a gateway to Europe for Mediterranean suppliers.

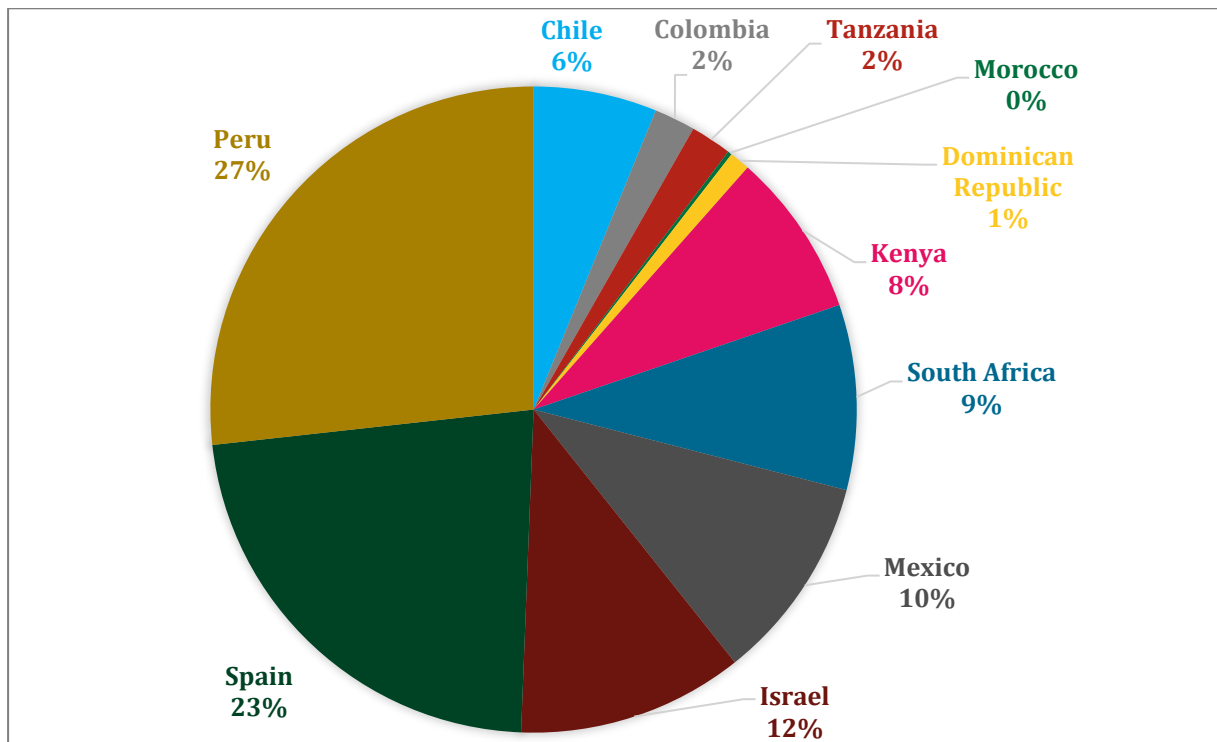
French exports of avocado increased from US\$ 44 million in 2014 to US\$ 62 million in 2018.

Table 42: Exports of avocado from France

M.Tons	2014	2015	2016	2017	2018
Netherlands	5,954	5,792	5,879	5,665	5,846
Italy	1,568	1,915	2,753	4,104	4,991
Switzerland	2,790	2,369	2,461	3,633	3,282
United Kingdom	1,879	1,875	1,954	1,720	2,242
Spain	2,029	2,264	2,132	2,016	2,211
Belgium	2,778	3,374	3,676	3,973	1,184
Morocco	88	203	216	227	562
Germany	857	789	538	650	505
Luxembourg	103	81	135	164	281
Sweden	262	208	197	173	135
Others	343	603	351	556	527
Total	18,651	19,473	20,292	22,881	21,766

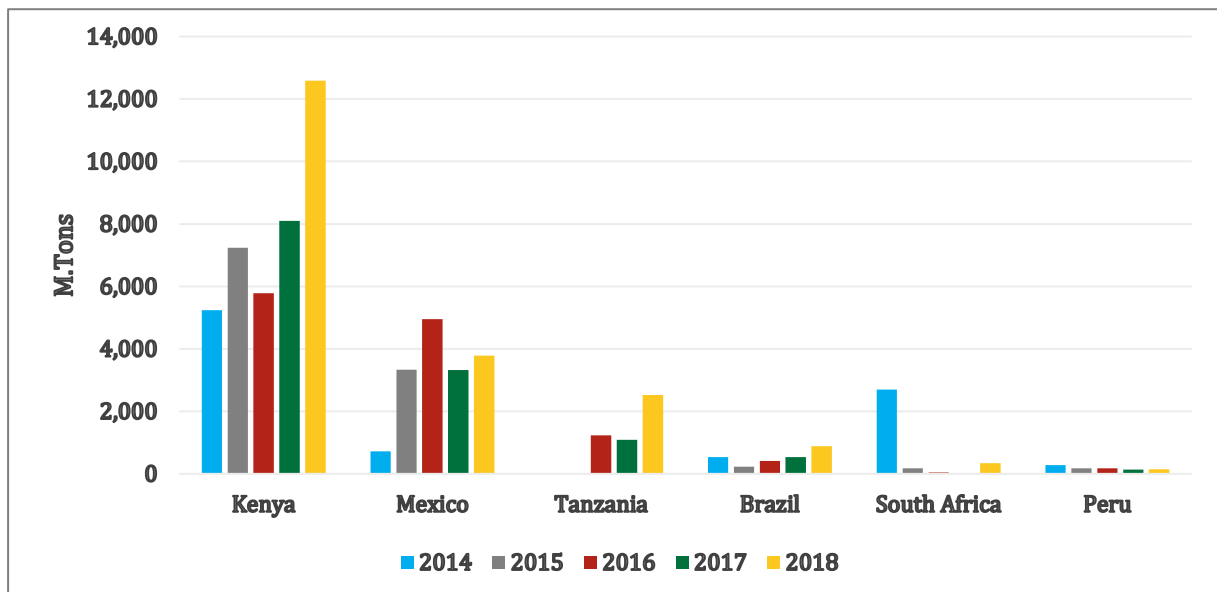
Source: ITC Trade Map

Chart 54: Main suppliers of avocado to France



Source: ITC Trade Map

Chart 55: Summer avocado imports



Source: ITC Trade Map

Peru is a major exporter to the Netherlands and several of France's avocado imports are from the Netherlands thus many of these may have originated in Peru.

South and Central American countries are beginning to have an impact especially Chile and Colombia.

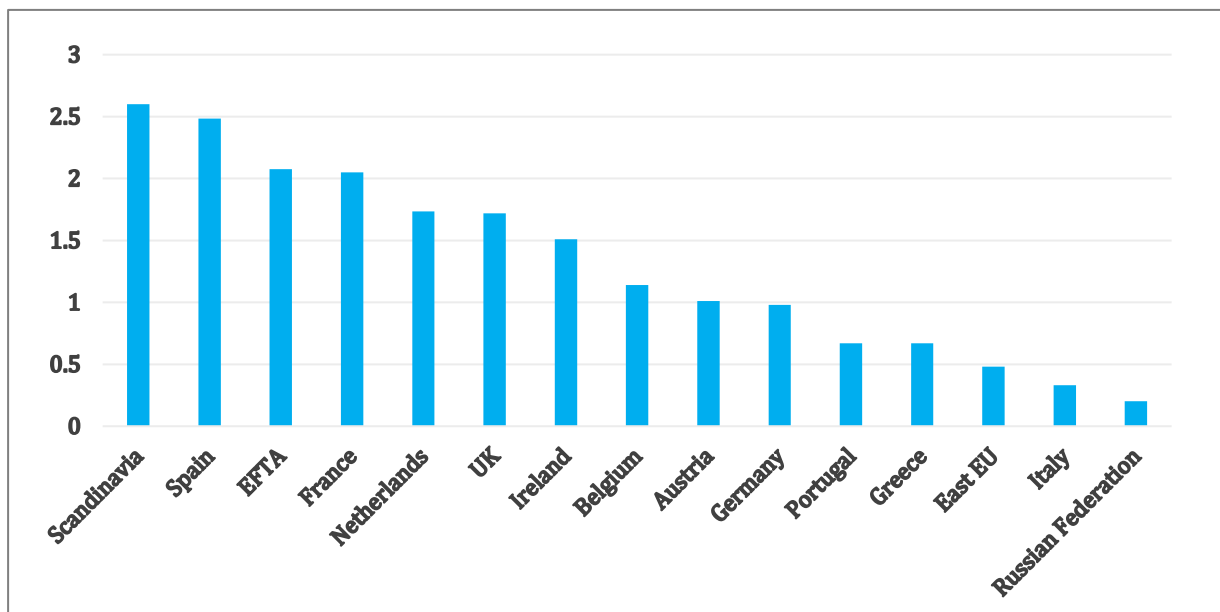
French exports reflect the re-exporting of avocado of produce shipped by Mediterranean nations using the ports of Marseilles and Dunkerque as entry ports to Europe and re-exporting of Spanish produce.

Peruvian, South African and Chilean avocado exporters use Dunkirque as one of the ports for produce destined for the Netherlands.

Consumption

Consumption of avocado in France is at 2 kg per head. It is the third highest in Europe after Scandinavia and Spain.

Chart 56: Consumption of avocado in France compared with other European countries



Source: Consultants calculation

Demand has been fuelled by:

- An increase in convenience and ready to eat meals;
- An aging population and increasing health awareness increasing demand for healthy foods;
- Renewed focus on organic and Fairtrade products. France is Europe's second largest organic market;
- A move towards vegetarian and vegan diets and gluten free products;
- Increasing awareness of ethical sourcing, traceability and sustainable production.

However, France has suffered badly from the recent recession, a stagnating growth with high levels of unemployment especially within the younger generation. As a result, French purchasing power is likely to decrease, and it is unlikely that consumption of avocado will continue to increase.

Market segmentation

Segmentation is similar to that described for the rest of Europe and its development closely follows UK's. The main terminal markets such as Rungis in Paris are in decline due to the all-powerful foodservice sectors. France is a major fruit hub and the central markets will continue to be part of the distribution chain. French homemakers traditionally favour-purchasing fresh from the local street markets. Fast food outlets are increasing but "eating out" has always been a French tradition and the multitude of restaurants and small hotels are generally family-owned establishments.

The retail sector

The retail sector is well developed, diverse and sophisticated. As with the UK, the segments within this sector are comprised of:

- Hypermarkets and smaller supermarkets
- Discounters
- Convenience stores
- Independent stores
- Specialised gourmet food stores
- E-commerce (about 2% of food sales and likely to increase)

Hypermarkets and supermarkets

- Carrefour – (Carrefour Group, World number 2 retailer and largest in Europe) – stores 2,952
- Intermarche – outlets 1,836
- Group Casino – outlets 2,723
- System U – outlets 1,143
- E. Leclerc – outlets 607
- Group Auchan – outlets 144
- Cora – outlets 60
- Grand Frais – outlets 220

Discounters

- Lidl – outlets 1,485
- Aldi – outlets 903
- Norma – outlets 135
- Casino shop outlets 2,000+
- Petit Casino – outlets 1,231
- Costco – American brand of membership free discount opened in 2017

Convenience stores

This type of small supermarkets or “superettes” have increased by over 40% within the last 10 years and now total 8,600 outlets many affiliated with the supermarket groups such as Carrefour, Intermarche, and Casino. Franchised groups such as Netto and Spar, Garage forecourts

Independent stores

Small family-owned stores proliferate throughout France and now, according to the French National Economic Statistics (INSEE), totalling over 78,000 stores.

Specialised gourmet food stores

These are found all over France but mainly in large and medium sized towns. Brands include:

- Fauchon
- Heiard
- La Grande Epicerie

Galerie Gourmande

E-commerce (about 2% of food sales and likely to increase)

France is now the third largest e-commerce market in the EU and sales are likely to grow. Carrefour now offers home deliveries and other supermarkets are likely to follow as this sector is accelerating in demand.

7.3 Opportunities

Although France is a major consumer of avocados, third only to Scandinavia and Spain, demand could increase if consumption could be encouraged to reach the 2.5 Kg p.p of these countries. The potential could be higher if the USA consumption of 3.5 Kg p.p is used as the benchmark. The warmer climate of France should encourage consumption of avocados and promote more like health food. However, the market appears satisfied with current supply and competition from other fruits is fierce. The French fruit market is very price conscious and economic progress is slowly creating more pressure on prices. France is a fruit hub for Europe with excellent distribution and logistics systems and could be a market to target other European markets.

CHAPTER 8: THE GERMAN MARKET



8.1 Overview of the German fresh avocado market

Germany is the largest importer of fruit in the EU with over 5 million tons in 2018 valued at over US\$ billion 7.5.

Table 43: Fruit supply in Germany

x 1000 tons	2015	2016	2017	2018
Local production	1,327	1,334	847	1,447
Imports	5,439	5,399	5,697	5,385
Exports	800	715	714	602
Total Supply	5,966	6,018	5,830	6,230
% Local supply	22%	22%	15%	23%

Source: ITC Trade Map

Table 44: Total German fruit imports – Value

(000) US\$	2014	2015	2016	2017	2018
Banana and plantain	1,127,009	981,412	992,331	1,017,327	944,781
Citrus fruit,	1,144,190	1,117,035	1,194,130	1,216,054	1,291,318
Apples, pears, quinces	838,882	726,362	727,054	921,301	958,025
Stone fruit	681,496	647,771	711,302	763,986	745,799
Melons, papayas	373,897	366,281	368,100	400,262	528,646
Grapes	908,084	843,116	840,926	864,591	906,856
Dates, figs, pineapple, avocado, mango	551,296	568,193	638,140	751,228	827,909
Strawberry, berries, currants	904,174	884,704	962,545	1,130,809	1,317,362
Total	6,529,028	6,134,874	6,434,528	7,065,558	7,520,696

Source: ITC Trade Map

Table 45: Total German fruit imports – Quantity

M.Tons	2014	2015	2016	2017	2018
Banana and plantain	1,397,745	1,400,594	1,380,502	1,420,006	1,258,513
Citrus fruit	1,027,310	1,123,805	1,123,067	1,090,218	1,064,772
Apples, pears, quinces	814,399	857,002	774,219	968,191	807,947
Stone fruit	455,255	472,913	473,760	521,897	446,153
Melons, papayas	443,920	507,730	527,499	553,477	645,297
Grapes	389,798	417,831	402,113	415,513	389,182
Dates, figs, pineapple, avocado, mango	302,050	298,269	332,966	346,761	392,526
Strawberry, berries, currants	343,057	361,346	385,044	381,469	380,619
Total	5,173,534	5,439,490	5,399,170	5,697,532	5,385,009

Source: ITC Trade Map

Table 46: Germany imports of exotic fruits

M.Tons	2014	2015	2016	2017	2018
Banana	1,396,696	1,398,878	1,378,888	1,418,261	1,253,183
Grapes	313,996	337,695	324,237	338,141	311,993
Watermelon	317,789	367,764	395,462	412,459	501,777
Pineapple	168,223	143,965	168,317	148,203	160,587
Melon	115,128	127,048	121,029	129,059	132,803
Mango and Guava	65,725	72,836	73,649	87,206	101,630
Avocado	37,715	48,436	58,453	72,710	92,765
Fresh kiwifruit	98,721	112,265	123,757	102,428	92,415
Dates	13,444	17,053	17,671	21,665	21,597
Figs	16,944	15,980	14,877	16,977	15,947
Papayas	11,003	12,918	11,008	11,959	10,717

Source: ITC Trade Map

The country is a major importer of tropical and exotic fruits. Avocado imports have increased three-fold over the last five years and are by far, the exotic fruit showing the greatest increase in demand. This follows similar increases in demand shown in most European countries.

8.2 The avocado market in Germany

Table 47: Avocado imports into Germany value x\$1000

(000) US \$	2014	2015	2016	2017	2018
Peru	23,838	34,452	55,730	66,198	87,711
Chile	19,855	22,709	42,253	58,846	59,660
Netherlands	23,282	29,235	29,776	30,103	42,803
Spain	17,061	20,490	25,307	42,983	40,273
South Africa	9,826	11,559	11,611	14,136	21,452
Mexico	3,332	4,653	10,843	12,186	17,674
Israel	7,982	10,701	7,368	21,974	16,849
Morocco	1,432	4,876	3,791	9,818	16,029
Kenya	2,262	5,120	8,634	6,500	6,973
Colombia	611	1,457	2,834	3,027	4,692
Dominican Republic	348	342	2,200	2,225	1,317
Tanzania	12	156	200	364	300
Others	1,716	2,282	2,863	1,434	2,077
Total	111,557	148,032	203,410	269,794	317,810

Source: ITC Trade Map

Germany does not produce avocados and must import all its required supply. South American shipments have increased significantly particularly from Chile and both Kenyan and Tanzanian shipments have increased. Morocco, a relative newcomer to the market is now in the top ten-supplier list.

Although Germany enjoys the benefit of a major seaport in Hamburg, a key city in fresh fruit and vegetable distribution in the country, this port is a little too distant for perishable imports such as avocado and it is quicker for German importers to source via the Netherlands, Belgium or France. Israel is a player and their fruit is shipped through the French port of Marseilles.

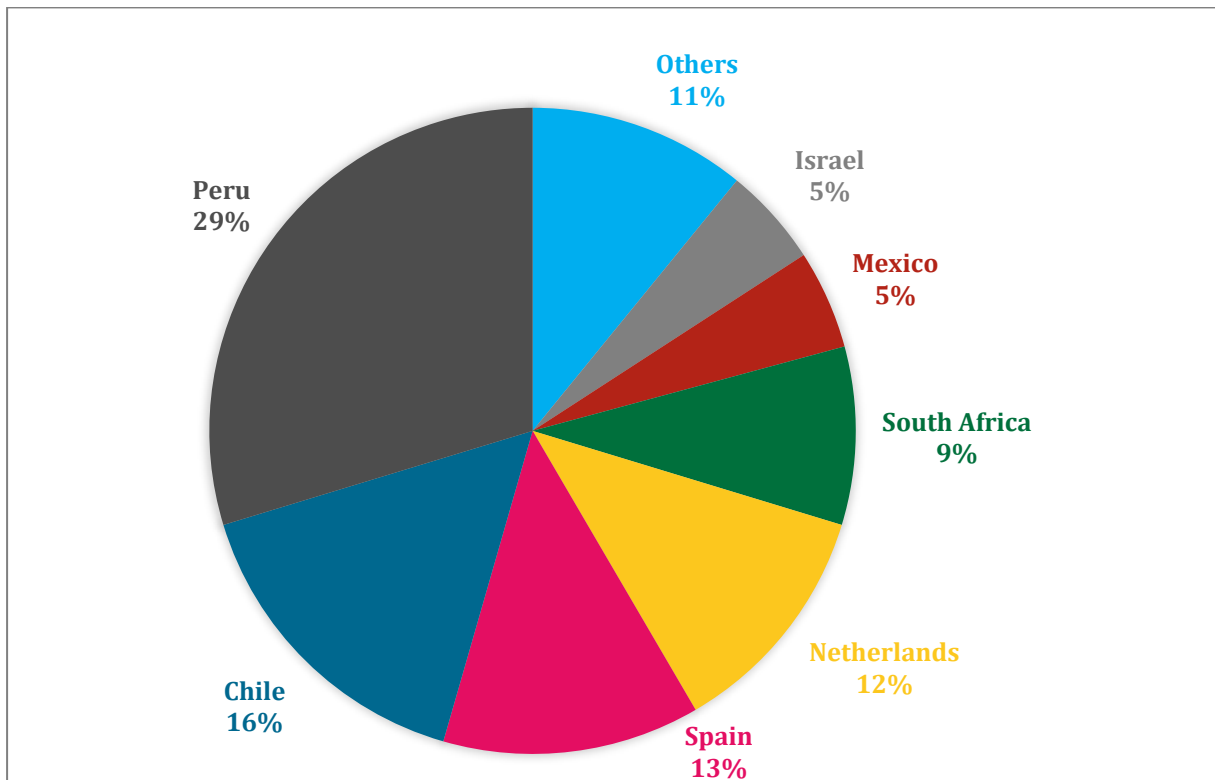
Table 48: Avocado imports into Germany quantity M/tons

M.Tons	2014	2015	2016	2017	2018
Peru	8,138	10,491	15,759	16,580	28,204
Chile	5,174	6,459	10,962	14,313	15,659
Spain	6,108	6,963	7,217	11,159	12,108
Netherlands	7,608	9,483	8,908	8,739	11,219
South Africa	3,743	3,947	3,881	4,018	8,320
Mexico	909	1,443	2,743	2,951	4,690

Israel	3,496	4,485	2,765	6,441	4,356
Morocco	467	1,532	1,087	2,697	3,825
Kenya	1,145	2,196	2,635	2,017	2,189
Colombia	181	499	861	868	1,211
Dominican Republic	137	114	607	562	301
Tanzania	3	67	56	121	87
Others	606	757	971	446	596
Total	37,715	48,436	58,453	70,911	92,765

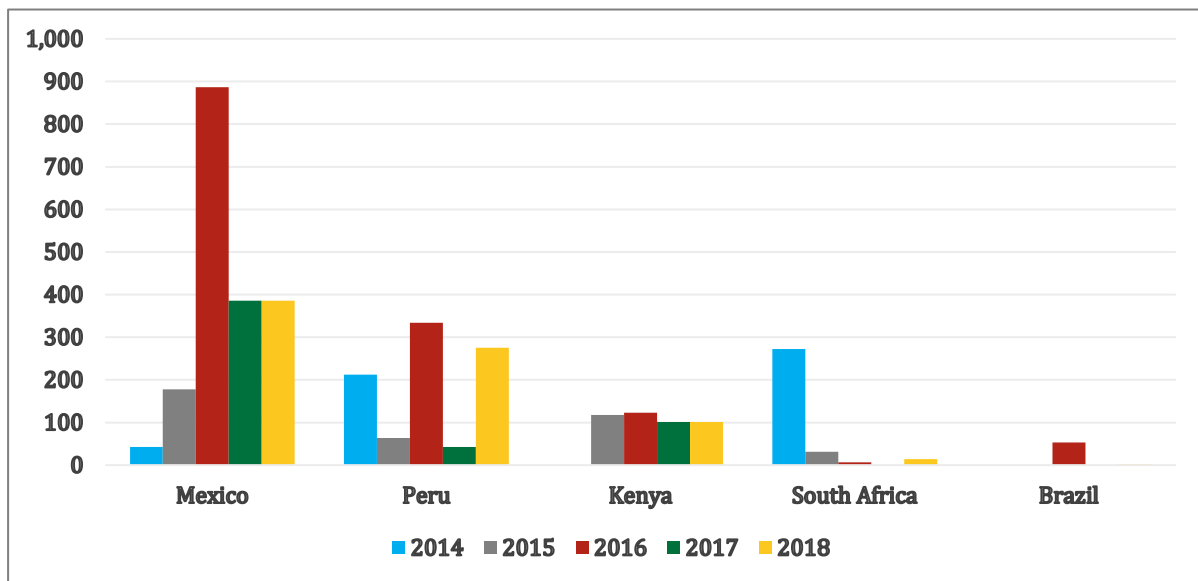
Source: ITC Trade Map

Chart 57: Principal exporting countries to Germany and their market share



Source: ITC Trade Map

Chart 58: Summer season country suppliers of avocado in Germany – MT

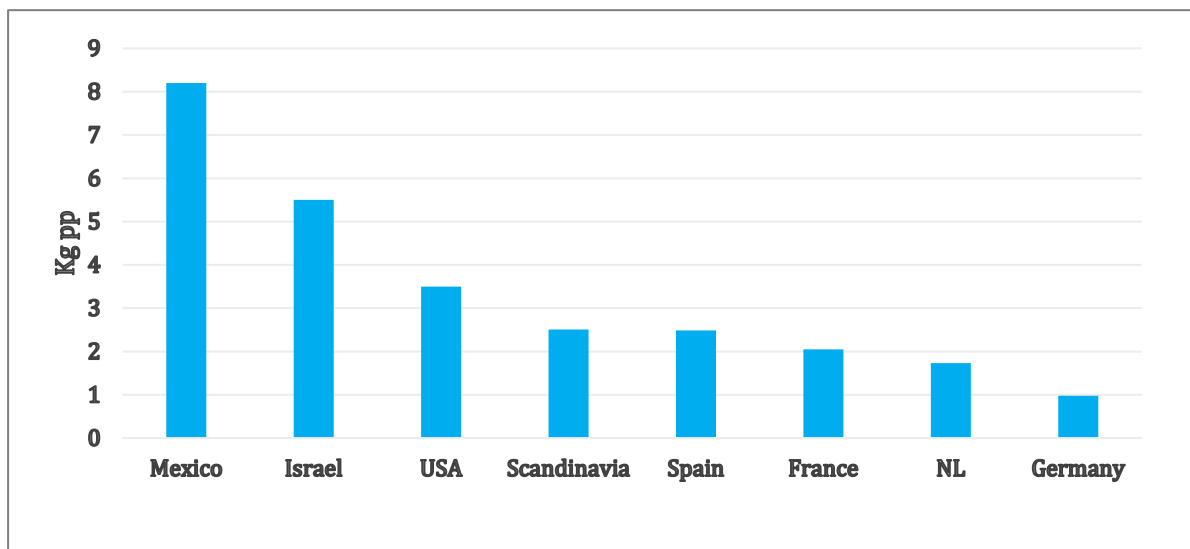


Source: ITC Trade Map

Mexico has made inroads into the German market during Kenya and Tanzania’s season whereas South Africa’s exports have declined.

8.3 Consumption

Chart 59: German consumption Kg/per person per year compared with other nations



Source: Consultants calculation

Germany’s consumption of avocado is relatively low when compared to the rest of Europe and considerably lower than the USA and Mexico. This low consumption appears to be a trend in Northern European countries apart from Scandinavia and, those being some of the most affluent European countries, defies the USA experience linking per capita consumption to affluence.

However, consumption has shown an increase in recent years, thanks to the avocado's positive image as a healthy fruit and to the increase of incomes. It is thus safe to assume that the consumption of exotic fruits will continue to increase.

Hass is the preferred variety in Germany but there is demand for the green skin Fuerte.

Consumption in Germany is driven by:

- An increasing importance attached to organic and Fairtrade products. Germany is the second largest organic market in the world after the USA.
- Increased health awareness particularly from the older population.
- A trend toward ethnic foods and food free from gluten and lactose.
- Germany is a wealthy society prepared to spend on quality high value products.
- A move towards ethical sourcing.

Importer requirements

The German market is more demanding than the current EU standards for food and environmental concerns on several matters such as the disposal of waste and recycling. The German Packaging and Waste Avoidance Law requires producers, importers and distributors to enter into a contract with a licenced national recycling company. A "green dot" printed on the packaging of nearly all products retailed in Germany assuring that the packaging will be recycled in a controlled system. However, since January 2009 the law no longer requires the "green dot" to prove compliance. However, an importer can choose to continue using the "Green Dot" symbol by entering into a signed agreement with the Duales System Deutschland DmbH (DSD).

Ultimately, the German importer has the final responsibility for the marketability of avocado imports. The German Law holds the importer solely responsible for any violations that, if proven, are punishable. Imported fruits are randomly checked by government laboratories at the point of sale.

As a marketing tool, many of the larger retailers in Germany demand higher than the standard for MRLs, regulations and require their suppliers to limit maximum residues of on up to only 70% of the legal limit. Germany has also established additional requirements for contaminants.

Consumers are increasingly demanding ethical sourcing, and traceability, information about production methods, sustainable production methods as well as being active over environmental issues

Despite their wealth, German consumers are extremely price-conscious but not at the expense of quality.

Market segments

These are similar to the rest of Europe and can be summarised as:

- Retail
- Wholesale
- Food Catering

Retail

Purchasing by German food retailers is fragmented and highly competitive. Few German retailers purchase directly from exporters purchasing through central buying departments from specialised importers/distributors.

Supermarkets

The top five retailers account for over 70% of the market. Supermarkets include the co-operatives and discounters:

Hypermarket and supermarkets:

- Edeka Majpr – 6,610 outlets;
- Rewe – 4,601 outlets;
- Kauflandz – 664 outlets;
- Real – 279 outlets;
- DM – 1,956 outlets.

Disount stores

- Aldi;
- Netto – 4,320 outlets;
- Penny – 2,200 outlets;
- Lidl – 3,200 outlets;
- Aldi South – 1,900 outlets;
- Aldi North – 2,202 outlets.

Cash & Carry

- Metro – 103 outlets.

Convenience stores

All major supermarkets are benefitting from the increasing popularity of smaller city centers and neighborhood stores.

Although competition from the majors is fierce, independent small retailers, especially specialist retailers that focus on quality are benefitting from support from local discerning customers.

Wholesale

The German wholesale sector is centred on Hamburg and Cologne and Frankfurt is the centre for all air shipments into Germany. Wholesaling is more traditional and regional wholesale markets are strong.

Distribution is very advanced Supermarket are becoming dominant and as with the rest of Europe, wholesalers have to consolidate and form alliances with the Dutch and Spanish shippers.

Catering

It is reported that in 2018, the consumer foodservice market in Germany continued with its strong performance, recording higher growth in terms of value and transactions compared to the previous year. Per capita spending on eating and drinking out in Germany is among the lowest in Western Europe, so there is still substantial untapped potential for the industry. Wholesalers face fierce competition from the large Dutch, French and Spanish distributors. Local restaurants and hotels buy from the city wholesale markets but larger groups sourced from specialised suppliers or direct from Netherlands exporters who can deliver what the client wants when he wants it.

8.3 Opportunities

The German avocado market is expanding. There have been significant increases in supply during the Kenyan and Tanzanian export seasons, from the traditional suppliers South Africa and Peru and a decline in imports from Brazil. The entry of Mexico has been dramatic with supplies quadrupling. Although both Kenya and Tanzania have increased their shipments, these remain small as compared with the competition.

German consumption is still very low compared with Scandinavia and the USA. If German consumption could increase to the levels of these countries, there would appear to be room for German demand. Demand is all year round but there seems to be an opportunity for further expansion during the summer season, however, competition from South American countries remain very fierce. There is a threat from the current political relations between the USA and Mexico. If the threat persists, Mexico could potentially divert further supplies to the German market.

CHAPTER 9: THE SCANDINAVIAN MARKET



Norway



Sweden



Denmark



Finland

9.1 Overview of the Scandinavian fresh fruit market

Table 49: Fruit supply in Scandinavia

(000) M. Tons	2014	2015	2016	2017	2018
Local					
Norway	23.1	29.3	29.7	29.5	28.9
Sweden	42.3	45.6	45.2	41.6	45.5
Denmark	55.7	62.8	51.6	40.2	53.3
Finland	22.5	23.1	21.5	24.1	24
Total	143.6	160.8	148	135.4	151.7
Imports					
Norway	353	351	353	355	347
Sweden	692	708	678	723	668
Denmark	387	400	410	424	438
Finland	293	331	332	330	331
Total	1,725	1,790	1,773	1,832	1,784
Exports					
Norway	61	69	119	121	95
Sweden	46	50	46	49	58
Denmark	31	34	59	61	48
Finland	31	34	59	61	48
Total	169	188	283	291	249
Total Supply	1,700	1,763	1,638	1,676	1,687
% Local supply	9%	10%	10%	9%	10%

Source: ITC Trade Map

The Scandinavian or Nordic countries covered in this report are Norway, Sweden, Finland, and Denmark. Norway is one of the richest countries in the world standing: the sixth position on the International Monetary Fund (IMF) and World Bank lists of countries in terms of Gross Domestic Product (GDP) per capita. Norway is also a member of the European Free Trade Area (EFTA). Scandinavian countries are in general performing well above the EU average when it comes to economic

development. However, Scandinavia is still heavily dependent upon imports with locally grown fruits representing just 10% of its consumption.

Table 50: Total fruit imports - Value (000) US \$

Norway (000) US\$	2014	2015	2016	2017	2018
Banana & Plantain	90,615	83,211	70,183	71,106	66,391
Citrus fruit	108,271	99,798	111,921	117,739	113,814
Apples, pears, quinces	97,673	82,795	78,979	88,454	88,392
Stone fruit	39,280	38,536	37,122	37,431	36,375
Melons	38,317	28,886	30,490	31,506	37,645
Grapes	93,462	77,312	75,877	78,823	82,449
Dates, figs, pineapple, avocado, mango	73,841	71,497	81,464	94,349	91,950
Strawberry, berries, currants	155,150	130,311	140,783	149,080	147,026
Total	696,609	612,346	626,819	668,488	664,042
Sweden (000) US\$	2014	2015	2016	2017	2018
Banana & Plantain	193,780	193,640	180,381	184,292	165,042
Citrus fruit	177,994	166,200	179,686	179,943	163,991
Apples, pears, quinces	177,994	166,200	179,686	179,943	163,991
Stone fruit	155,637	133,742	126,043	135,557	143,218
Melons	52,565	45,862	49,402	51,627	63,623
Grapes	94,207	89,026	84,728	86,035	92,782
Dates, figs, pineapple, avocado, mango	91,073	83,681	99,111	109,275	109,985
Strawberry, berries, currants	106,298	96,218	93,043	103,180	108,511
Total	1,049,548	974,569	992,080	1,029,852	1,011,143
Denmark (000) US\$	2014	2015	2016	2017	2018
Banana & Plantain	92,154	79,761	75,985	77,498	89,033
Citrus fruit	83,342	80,467	88,072	86,306	108,767
Apples, pears, quinces	88,772	81,285	73,430	82,229	98,840
Stone fruit	37,519	32,755	33,138	31,444	37,459
Melons	38,554	32,904	34,183	38,534	49,437
Grapes	84,695	76,267	69,621	73,233	106,492
Dates, figs, pineapple, avocado, mango	76,231	76,554	79,141	90,917	101,523
Strawberry, berries, currants	68,429	70,769	73,207	78,587	89,924
Total	569,696	530,762	526,777	558,748	681,475
Finland (000) US\$	2014	2015	2016	2017	2018
Banana & Plantain	89,717	98,951	93,571	100,353	99,114
Citrus fruit	84,176	73,442	85,773	84,079	94,542
Apples, pears, quinces	66,062	59,158	54,242	61,373	64,087
Stone fruit	21,186	19,064	20,789	21,536	27,081
Melons	23,304	20,461	21,897	23,138	28,212
Grapes	57,127	51,016	51,488	53,285	60,090
Dates, figs, pineapple, avocado, mango	35,455	36,279	41,316	47,370	45,966
Strawberry, berries, currants	33,550	30,767	34,601	39,676	51,417
Total	410,577	389,138	403,677	430,810	470,509
Total Scandinavia	2,726,430	2,506,815	2,549,353	2,687,898	2,827,169

Source: ITC Trade Map

Table 51: Total fruit imports – Quantity M. tons

Norway M Tons	2014	2015	2016	2017	2018
Banana & Plantain	84,645	84,709	83,846	86,404	84,510

Citrus fruit	72,064	75,891	80,989	78,189	74,007
Apples, pears, quinces	68,892	68,186	64,765	64,198	60,981
Stone fruit	16,556	16,767	15,318	16,220	14,591
Melons	32,751	28,811	30,536	30,610	32,081
Grapes	29,962	29,662	28,845	29,588	30,289
Dates, figs, pineapple, avocado, mango	23,879	24,074	25,196	26,550	27,086
Strawberry, berries, currants	23,990	23,349	23,909	23,544	23,314
Total	352,739	351,449	353,404	355,303	346,859
Sweden M Tons	2014	2015	2016	2017	2018
Banana & Plantain	199,359	208,960	201,928	213,704	193,998
Citrus fruit	172,833	181,877	186,882	183,095	160,417
Apples, pears, quinces	127,804	124,127	120,694	116,295	108,484
Stone fruit	32,490	34,218	0	35,586	29,856
Melons	59,905	60,004	65,952	68,511	69,246
Grapes	30,481	31,329	30,265	32,051	30,812
Dates, figs, pineapple, avocado, mango	37,164	33,910	36,740	39,534	42,378
Strawberry, berries, currants	31,552	33,384	35,652	34,221	33,237
Total	691,588	707,809	678,113	722,997	668,428
Denmark M Tons	2014	2015	2016	2017	2018
Banana & Plantain	89,921	90,365	99,936	102,793	96,016
Citrus fruit	78,821	88,468	86,346	82,878	103,520
Apples, pears, quinces	72,681	75,850	74,801	77,260	71,661
Stone fruit	26,192	24,178	19,348	19,688	22,843
Melons	39,557	40,066	43,335	48,877	50,561
Grapes	29,456	29,067	32,810	34,986	29,660
Dates, figs, pineapple, avocado, mango	33,234	33,863	35,036	38,883	42,243
Strawberry, berries, currants	17,217	18,516	18,283	19,224	21,714
Total	387,079	400,373	409,895	424,589	438,218
Finland M Tons	2014	2015	2016	2017	2018
Banana & Plantain	85,736	115,067	110,543	114,043	111,768
Citrus fruit	72,107	73,987	78,719	70,999	75,799
Apples, pears, quinces	58,852	60,942	56,470	54,393	51,483
Stone fruit	13,090	13,146	12,399	14,075	14,223
Melons	22,674	24,188	27,280	27,749	29,316
Grapes	16,788	17,651	17,808	18,648	19,051
Dates, figs, pineapple, avocado, mango	15,103	16,319	16,718	17,849	17,166
Strawberry, berries, currants	8,934	9,927	12,287	12,260	11,719
Total	293,284	331,227	332,224	330,016	330,525
Total Scandinavia	1,724,690	1,790,858	1,773,636	1,832,905	1,784,030

9.2 The avocado market in Scandinavia

Table 52: Scandinavian imports of avocado- Quantity M.tons

Norway	2014	2015	2016	2017	2018
Chile	23,356	23,428	23,802	24,077	10,335
Peru	11,528	11,422	15,774	19,024	20,911

Mexico	310	775	4,641	6,432	8,604
Spain	1,568	2,079	3,109	4,721	5,278
Colombia	224	355	293	1,762	4,844
Morocco	335	64	30	128	2,351
South Africa	1,824	2,121	2,222	1,881	2,964
Israel	1,455	1,286	890	1,004	1,812
Kenya	348	540	1,123	659	1,255
Other	1,116	744	855	1,249	1,316
Total	42,064	42,814	52,739	60,937	59,670
Sweden	2014	2015	2016	2017	2018
Netherlands	40,121	37,341	45,957	50,319	52,203
United Kingdom	3,808	1,818	2,149	2,790	3,162
Spain	3,180	3,766	2,999	4,181	4,038
Denmark	256	498	1,255	1,510	2,251
Germany	2,156	3,130	3,470	3,788	4,415
France	1,781	1,723	1,691	2,472	1,637
Israel	1,681	2,412	1,422	2,552	980
Others	381	19	2,429	1,944	20
Total	55,114	52,256	63,307	71,665	70,906
Denmark	2014	2015	2016	2017	2018
Netherlands	26,452	31,366	35,827	34,792	35,957
Spain	4,783	6,104	5,489	11,322	19,410
Germany	1,654	2,235	2,719	3,000	2,853
United Kingdom	2,603	2,638	1,712	2,123	2,539
Belgium	82	28	4	6	242
France	179	630	79	64	233
Others	352	57	201	476	728
Total	36,105	43,058	46,031	51,783	61,962
Finland	2014	2015	2016	2017	2018
Spain	4,107	5,510	9,644	10,982	9,074
Netherlands	4,174	4,436	4,872	3,032	4,585
Kenya	55	1,256	2,297	568	639
Brazil	1,597	1,622	1	2,181	2,929
South Africa	1,544	1,220	1,129	3,257	697
Chile	1,573	1,176	3,615	5,158	4,792
Peru	1,330	1,044	2,542	3,423	4,943
Others	5,467	5,456	2,171	1,592	1,197
Total	19,847	21,720	26,271	30,193	28,856
Scandinavia Total	153,130	159,848	188,348	214,578	221,394

Source: ITC Trade Map

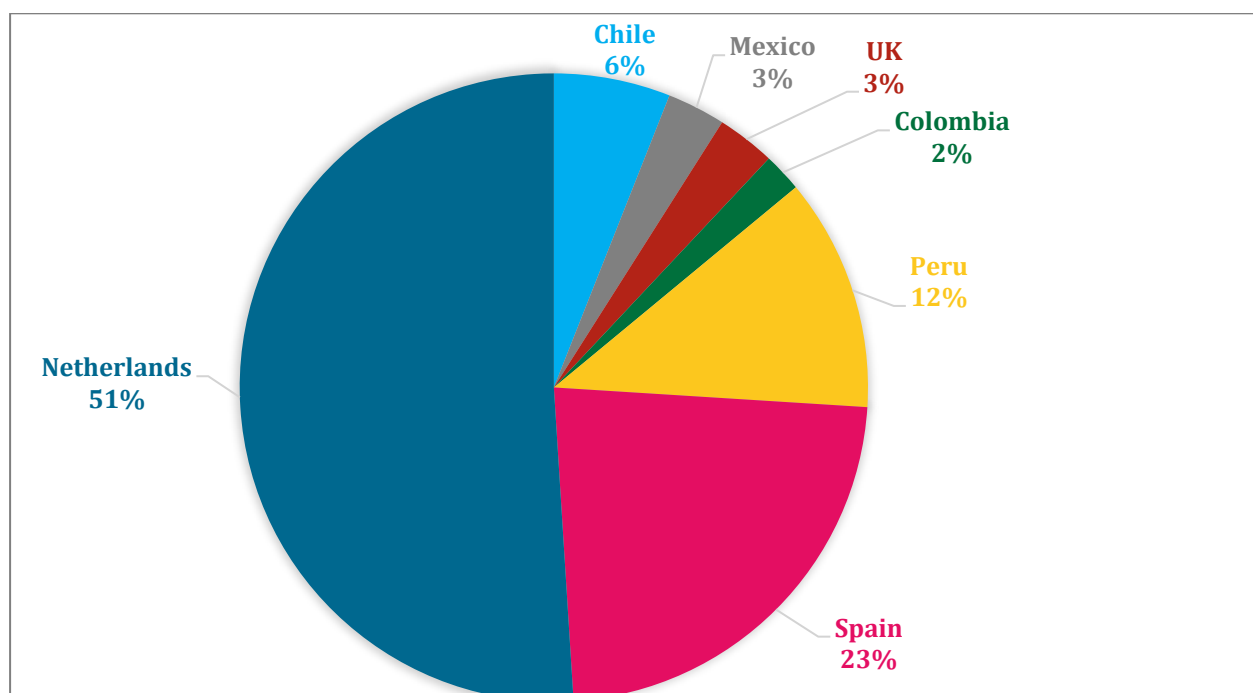
Table 53: Scandinavian imports of avocado- Value (000) US \$

Norway	2014	2015	2016	2017	2018
Chile	23,356	23,428	23,802	24,077	10,335
Peru	11,528	11,422	15,774	19,024	20,911
Mexico	310	775	4,641	6,432	8,604
Spain	1,568	2,079	3,109	4,721	5,278
Colombia	224	355	293	1,762	4,844
Morocco	335	64	30	128	2,351
South Africa	1,824	2,121	2,222	1,881	2,964
Israel	1,455	1,286	890	1,004	1,812

Kenya	348	540	1,123	659	1,255
Other	1,116	744	855	1,249	1,316
Total	42,064	42,814	52,739	60,937	59,670
Sweden	2014	2015	2016	2017	2018
Netherlands	40,121	37,341	45,957	50,319	52,203
United Kingdom	3,808	1,818	2,149	2,790	3,162
Spain	3,180	3,766	2,999	4,181	4,038
Denmark	256	498	1,255	1,510	2,251
Germany	2,156	3,130	3,470	3,788	4,415
France	1,781	1,723	1,691	2,472	1,637
Israel	1,681	2,412	1,422	2,552	980
Others	381	19	2,429	1,944	20
Total	55,114	52,256	63,307	71,665	70,906
Denmark	2014	2015	2016	2017	2018
Netherlands	26,452	31,366	35,827	34,792	35,957
Spain	4,783	6,104	5,489	11,322	19,410
Germany	1,654	2,235	2,719	3,000	2,853
United Kingdom	2,603	2,638	1,712	2,123	2,539
Belgium	82	28	4	6	242
France	179	630	79	64	233
Others	352	57	201	476	728
Total	36,105	43,058	46,031	51,783	61,962
Finland	2014	2015	2016	2017	2018
Spain	4,107	5,510	9,644	10,982	9,074
Netherlands	4,174	4,436	4,872	3,032	4,585
Kenya	55	1,256	2,297	568	639
Brazil	1,597	1,622	1	2,181	2,929
South Africa	1,544	1,220	1,129	3,257	697
Chile	1,573	1,176	3,615	5,158	4,792
Peru	1,330	1,044	2,542	3,423	4,943
Others	5,467	5,456	2,171	1,592	1,197
Total	19,847	21,720	26,271	30,193	28,856
Scandinavia Total	153,130	159,848	188,348	214,578	221,394

Source: ITC Trade Map

Chart 60: Principal avocado exporting countries to Scandinavia



Source: ITC Trade Map

Table 54: Imports of avocado into Scandinavia from the Netherlands

Countries	2014		2015		2016		2017		2018	
	Qty Tons	Value 000 US\$	Qty Tons	Value 000 US\$	Qty Tons	Value 000 US\$	Qty Tons	Value 000 US\$	Qty Tons	Value 000 US\$
Norway	0	0	0	0	0	0	0	0	0	0
Sweden	13,828	40,121	12,457	37,341	13,755	45,957	14,515	50,319	15,265	52,203
Denmark	8,015	26,452	10,476	31,366	12,489	35,827	11,835	34,792	11,212	35,957
Finland	1,058	4,174	1,158	4,436	1,217	4,872	686	3,032	1,143	4,585
Total	22,901	70,747	24,091	73,143	27,461	86,656	27,036	88,143	27,620	92,745

Source: ITC Trade Map

Direct imports of avocado from the summer season suppliers, Peru, Mexico, South Africa, Kenya and Tanzania is as negligible as the bulk of avocado imports into Scandinavia are from the Netherlands and Spain.

The high consumption of avocado in Scandinavia reflects the theory that avocado purchases are linked to the affluence of the importing country, a finding of the HASS Avocado Board in the USA on a state-wide basis.

Imports from the Netherlands represent over 44% of all avocado shipments to Scandinavia. Most of these imports are sourced from major suppliers using the Netherlands as their gateway.

Spain whose homegrown avocado season competes with Kenyan's is a major supplier with 20% of the market share. Spanish exporters will ship the majority of these directly overland. Competition in terms

of imports from Scandinavian countries has increased due to the relatively newcomers Mexico, Colombia and Morocco. This poses a major threat to Kenyan and Tanzanian exporters.

Table 55: Imports of avocado from Spain into Scandinavia

Countries	2014		2015		2016		2017		2018	
	Qty Tons	Value 000 US\$	Qty Tons	Value 000 US\$	Qty Tons	Value 000 US\$	Qty Tons	Value 000 US\$	Qty Tons	Value 000 US\$
Norway	404	1,568	627	2,079	829	3,109	1,131	4,721	1,037	5,278
Sweden	1,300	3,180	1,376	3,766	966	2,999	1,460	4,181	1,239	4,038
Denmark	1,446	4,783	1,993	6,104	1,913	5,489	3,851	11,322	8,032	19,410
Finland	1,425	4,107	2,168	5,510	2,997	9,644	3,284	10,982	2,238	9,074
Total	4,575	13,638	6,164	17,459	6,705	21,241	9,726	31,206	12,546	37,800

Source: ITC Trade Map

The market segments

The Scandinavian market is similar to the rest of Europe with a trend towards fewer but larger operators. Smaller retailers are being forced out of business and the overall number of retailers is in decline. The wholesale sector is integrated, rationalised and consolidated. The largest groups controlling over 80% of the market.

Their purchasing power is one of the strongest in Europe. Discount stores currently account for 10% to 13% of retail trade and are increasing. The German discounter Lidl has entered the market and is pressurising the established retailers.

Scandinavia as a whole has embraced the move towards environmentally sourced food, sustainability and healthy eating and demand is for products of very high quality. Fair Trade, Nordic Swan Eco and organic products are in demand with Denmark and Sweden having the largest share of the EU market for organics.

Supermarkets

Over 60% of retail sales are now through the major supermarkets and pressure on the smaller stores is increasing.

Table 56: Scandinavian supermarkets

Sweden

Supermarkets		Convenience		Discount	
Group	Stores	Group	Stores	Group	Stores
Bergendahis		Bergendahis		Bergendahis	
City Gross	40			Matoppet	50
Eko	5			Matrebellerna	70

Axfood			Norge Groupen			Axfood	
Handlar'n	217					Tempo	136
						Willys	200
Hemkop	187		Rietan Group			Salling	
			7-Eleven	189		Netto	159
Kooperative			Pressbyran				
Coop	665					Lidl	170
ICA AB			ICA AB				
ICA Maxi	82		ICANara	649			
ICA Kvantum	126						
ICA Supermarket	429						

Norway:

Supermarkets		Convenience		Discount	
Group	Stores	Group	Stores	Group	Stores
Coop Norge		Coop Norge		Coop Norge	
Coop Mega		Coop Marked	384	Extra	342
Coop obs!	33	Coop Prix	315		
Norge Groupen		Norge Groupen		Norge Groupen	
Eurostar	28	Joker	465	Kiwi	652
Jacobs	2	Rietan Group		Rietan Group	
Meny	195	7-Eleven	152	REMA 1000	626
Spar	262	Narvesen			

Finland

Supermarkets		Convenience		Discount	
Group	Stores	Group	Stores	Group	Stores
Kesko Ovi		Kesko Ovi		Kesko Ovi	
K-citymarket	80	K-Market	900		
K-supermarket	200				
S Group		S Group		Tokmanni	150
Prisma	65	Alepa	111		
S-Market	400	Sale	240		
		Rietan Group		Salling	
		R-kioski	548		

M-Itsenäiset kauppiat Oy						
M-Market	67				Lidl	160

Denmark:

Supermarkets		Convenience		Discount	
Group	Stores	Group	Stores	Group	Stores
Coop Danmark		Coop Danmark		Coop Danmark	
Kwickly	81	LokalBrugsen	375	Fakta	420
DagiBrugsen	375				
SuoerBrugsen	230			Salling	
Irma	71			Netto	500
Dagrofa		Dagrofa		Aldi	244
Meny	190	Spar	120		
Klet-Kab	100	Min kabmand	200		
Dansk Supermarket		Dansk Supermarket		Lidl	98
Fotex	88	DognNetto	45		
Bilka	18				
Lovbjerg Supermarket		Reitan Group		Reitan Group	
Lovbjerg	16	7-Eleven	177	REMA 1000	317

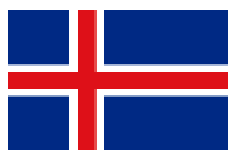
Source: Consultant Research

9.3 Opportunities

In Scandinavia, Organic and Fair Trade certifications are increasing in importance. According to the Norwegian government's policy, organic fruit and vegetables in Norway should reach a market share of 15% within the next few years.

Scandinavia is the highest consuming group of countries in Europe as well as being an affluent society. Fruit imports are relatively high, and the consumption of avocado is also high compared to most other European countries. The high consumption combined with the relatively low population limits a significant increase in demand for exotic fruits such as avocado. However, Scandinavia's well-documented awareness of health issues, growing demand for organic produce and concerns over ethical and responsible sourcing could be exploited.

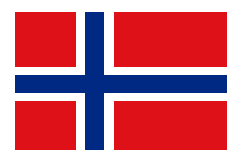
CHAPTER 10: THE EFTA MARKET



Iceland



Switzerland



Norway

10.1 Overview of the fresh fruit market

The EFTA nations comprise Norway, Switzerland and Iceland. Norway is a Scandinavian country and details of this market are covered in Chapter 9 – and will only be summarised in this section.

Table 57: Fruit supply in EFTA countries

(000) M Tons	2014	2015	2016	2017	2018
Local production					
Norway	23	29	30	30	29
Switzerland	396	402	447	401	403
Iceland	22	22	23	23	23
Total	442	453	500	454	455
Imports					
Norway	353	351	353	355	346
Switzerland	456	492	506	520	517
Iceland	110	113	115	118	118
Total	919	956	974	993	981
Exports					
Norway	61	69	119	121	95
Switzerland	6.90	6.00	5.20	4.10	4.90
Iceland	0.03	0.03	0.04	0.02	0.05
Total	68	75	124	125	100
Total Supply	1,293	1,334	1,349	1,321	1,336
% Local supply	34%	34%	37%	34%	34%

Source: ITC Trade map: FAOSTAT

As with Norway, Iceland heavily depends on imports due to limited agriculture production so there is limited competition in this market. Iceland is recovering from a recent economic collapse and is heavily dependent upon imports. However, the association is an extremely wealthy region and prices are high compared with the rest of Europe. Demand is for quality, but the consumer is very price-conscious. The eating-out culture and gourmet food along with importance attached to healthy eating have stimulated demand for avocado. The market is a growing market for organic food as well as a consumer-driven demand for sustainable and ethical sourcing.

Table 58: Total EFTA fruit imports – Value

Norway (000) US\$	2014	2015	2016	2017	2018
Banana & Plantain	90,615	83,211	70,183	71,106	66,391
Citrus fruit	108,271	99,798	111,921	117,739	113,814
Apples, pears, quinces	97,673	82,795	78,979	88,454	88,392
Stone fruit	39,280	38,536	37,122	37,431	36,375
Melons	38,317	28,886	30,490	31,506	37,645
Grapes	93,462	77,312	75,877	78,823	82,449
Dates, figs, pineapple, avocado, mango	73,841	71,497	81,464	94,349	91,950
Strawberry, berries, currants	155,150	130,311	140,783	149,080	147,026
Total	696,609	612,346	626,819	668,488	664,042
Switzerland (000) US\$	2014	2015	2016	2017	2018
Banana & Plantain	111,011	107,751	106,208	109,273	109,303
Citrus fruit	187,618	187,881	200,270	204,585	211,118
Apples, pears, quinces	22,492	18,416	26,556	31,156	58,144
Stone fruit	97,395	101,417	105,739	107,617	92,788
Melons	70,768	72,077	67,028	69,018	74,122
Grapes	92,724	87,359	87,693	91,230	83,768
Dates, figs, pineapple, avocado, mango	128,151	130,277	151,240	168,841	163,266
Strawberry, berries, currants	166,563	177,764	201,074	207,199	211,551
Total	876,722	882,942	945,808	988,919	1,004,060
Iceland (000) US\$	2014	2015	2016	2017	2018
Banana & Plantain	6,436	5,941	6,367	6,269	6,174
Citrus fruit	5,851	5,694	5,979	6,621	7,038
Apples, pears, quinces	7,845	6,755	6,937	7,838	8,327
Stone fruit	929	1,023	984	2,299	1,405
Melons	2,907	2,373	2,349	2,792	2,942
Grapes	7,098	6,576	6,870	7,102	7,537
Dates, figs, pineapple, avocado, mango	4,867	4,955	6,161	8,649	8,864

Strawberry, berries, currants	6,345	7,936	9,206	15,012	14,982
Total	42,278	41,253	44,853	56,582	57,269

Source: ITC Trade Map

Table 59: Total EFTA fruit imports – Quantity

Norway M Tons	2014	2015	2016	2017	2018
Banana & Plantain	84,645	84,709	83,846	86,404	84,510
Citrus fruit	72,064	75,891	80,989	78,189	74,007
Apples, pears, quinces	68,892	68,186	64,765	64,198	60,981
Stone fruit	16,556	16,767	15,318	16,220	14,591
Melons	32,751	28,811	30,536	30,610	32,081
Grapes	29,962	29,662	28,845	29,588	30,289
Dates, figs, pineapple, avocado, mango	23,879	24,074	25,196	26,550	27,086
Strawberry, berries, currants	23,990	23,349	23,909	23,544	23,314
Total	352,739	351,449	353,404	355,303	346,859
Switzerland M.Tons	2014	2015	2016	2017	2018
Banana & Plantain	85,412	88,510	91,299	93,822	96,490
Citrus fruit	133,525	143,961	145,932	144,599	143,929
Apples, pears, quinces	15,968	13,631	21,451	21,995	39,525
Stone fruit	47,920	52,657	51,337	57,178	43,675
Melons	48,287	59,472	55,592	59,348	58,113
Grapes	36,463	38,604	38,350	39,123	35,218
Dates, figs, pineapple, avocado, mango	49,299	51,011	55,202	56,892	56,830
Strawberry, berries, currants	39,048	44,456	46,907	47,675	44,124
Total	455,922	492,302	506,070	520,632	517,904
Iceland M.Tons	2014	2015	2016	2017	2018
Banana & Plantain	6,443	6,745	7,142	7,185	7,044
Citrus fruit	3,944	4,380	4,273	4,303	4,108
Apples, pears, quinces	5,029	5,020	5,058	5,105	4,773
Stone fruit	364	378	374	623	369
Melons	2,174	2,257	2,315	2,587	2,323
Grapes	1,774	1,937	1,860	1,857	1,906
Dates, figs, pineapple, avocado, mango	1,792	1,900	2,233	2,496	2,349
Strawberry, berries, currants	822	1,083	1,165	2,026	1,890
Total	22,342	23,700	24,420	26,182	24,762

Source: ITC Trade Map

Overall fruit imports have remained steady over the last five years.

10.2 The avocado market in the EFTA countries

Table 60: EFTA imports of avocado quantity M. tons

Norway	2014	2015	2016	2017	2018
Chile	5,260	6,113	5,371	4,795	2,122
Peru	3,166	3,047	3,695	3,771	4,867
Mexico	59	180	921	1,216	1,551
Spain	404	627	829	1,131	1,037
Colombia	66	114	101	380	1,027
Morocco	74	17	7	28	406
South Africa	579	635	580	395	726
Israel	449	439	297	219	336
Kenya	108	163	411	174	357
Other	331	338	199	313	350
Total	10,496	11,673	12,411	12,422	12,779
Switzerland	2014	2015	2016	2017	2018
Peru	2,999	3,785	4,233	4,377	5,374
Chile	2,672	3,431	4,401	4,091	3,486
Spain	1,762	1,705	1,560	3,109	2,551
South Africa	717	672	717	570	1,656
Israel	608	563	268	621	577
Mexico	134	448	1,200	679	450
Dominican Rep.	105	62	322	377	392
Other	519	710	1,122	870	1,042
Total	9,516	11,376	13,823	14,694	15,528
Iceland	2014	2015	2016	2017	2018
Chile	105	124	198	257	296
Peru	48	80	129	213	206
South Africa	203	203	245	208	155
Mexico	7	14	44	61	86
Kenya	7	47	41	62	73
Spain	114	115	89	108	62
Colombia	0	19	29	45	50
USA	12	13	16	33	49
Israel	86	69	71	73	44
Netherlands	1	1	12	15	18
Others	6	11	11	26	14
Total	588	697	886	1,099	1,053

Source: ITC Trade Map

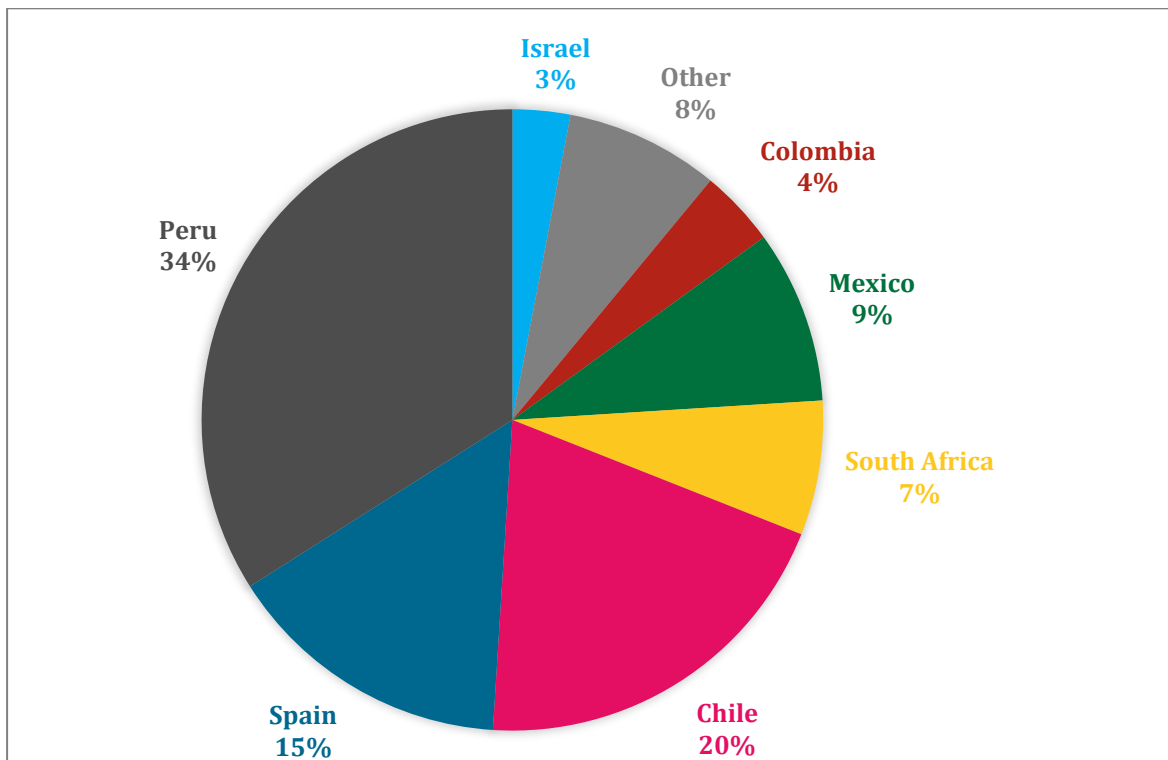
Table 61: EFTA imports of avocado value (000) US \$

Norway	2014	2015	2016	2017	2018
Chile	23,356	23,428	23,802	24,077	10,335
Peru	11,528	11,422	15,774	19,024	20,911
Mexico	310	775	4,641	6,432	8,604
Spain	1,568	2,079	3,109	4,721	5,278
Colombia	224	355	293	1,762	4,844
Morocco	335	64	30	128	2,351
South Africa	1,824	2,121	2,222	1,881	2,964
Israel	1,455	1,286	890	1,004	1,812
Kenya	348	540	1,123	659	1,255
Other	1,116	744	855	1,249	1,316
Total	42,064	42,814	52,739	60,937	59,670
Switzerland	2014	2015	2016	2017	2018
Peru	7,808	10,527	14,291	16,748	18,760
Spain	6,752	6,048	6,508	13,587	12,737
Chile	7,300	8,246	12,878	16,597	12,680
South Africa	1,982	2,073	2,513	2,216	4,895
Mexico	415	1,422	4,239	3,075	1,962
Dominican Rep.	306	363	1,817	1,571	1,689
Israel	1,482	1,558	725	1,559	1,364
Other	1,422	2,028	3,805	3,015	3,322
Total	27,467	32,265	46,776	58,368	57,409
Iceland	2014	2015	2016	2017	2018
Chile	384	430	782	1,092	1,406
Peru	184	272	484	1,027	769
South Africa	644	641	804	794	660
Mexico	30	54	198	403	483
USA	25	18	23	165	383
Spain	383	353	316	444	333
Kenya	16	163	128	232	298
Colombia	0	59	99	173	214
Israel	249	183	217	238	195
Netherlands	5	3	42	38	57
Others	22	48	53	123	65
Total	1,942	2,224	3,146	4,729	4,863

Source: ITC Trade Map

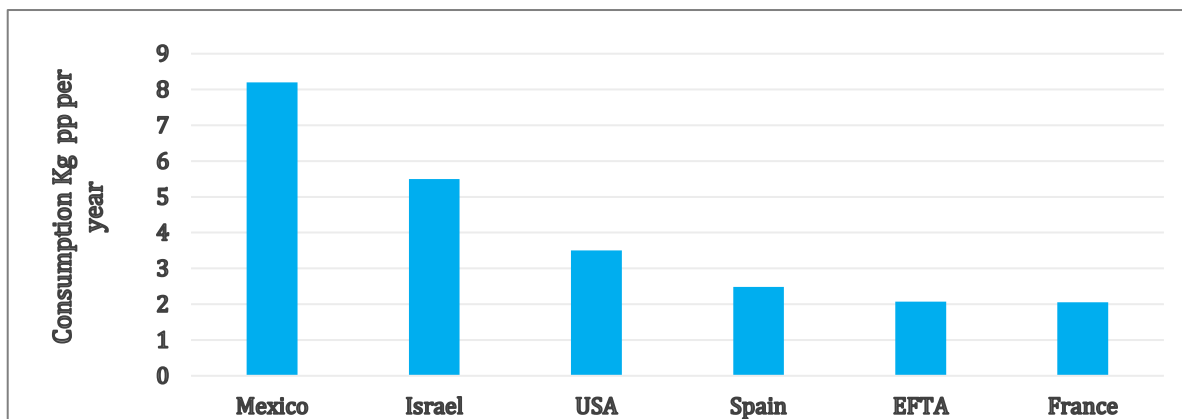
Avocado imports have steadily increased over the past five years with Switzerland showing the fastest increase. This may be attributed to an increase in demand in Switzerland for similar reasons to those in the rest of Europe – a move towards healthy living – and as Norway has always been a high consumer of avocados, their increases are steady. South American imports from Peru and Chile, dominate the market.

Chart 61: Principal non – European avocado exporting countries to EFTA



Source: ITC Trade Map

Chart 62: Avocado consumption in EFTA compared with high consuming countries



Source: Consultants calculation

Swiss consumers enjoy a very high standard of living. Avocado consumption in Switzerland and Iceland has grown of over 50% during the last 5 years but per capita consumption is still well below the levels of Mexico, Israel and the USA. This indicates that there is room for further expansion. The Swiss have changed their buying habits over the last few years with the major supermarkets now offering a wide range of fruits at the expense of the more traditional small retailer. Healthy eating and ethical sourcing of imported products are becoming increasingly important, driving the demand in the country. The EFTA countries are high consumers of organic produce.

10.3 Trade structure

As with the rest of Europe, the wholesale trade is changing with the major supermarket chains in Switzerland, Migros and Coop playing a key role in pricing and supply demands. Downward price pressure intensified with the entry of the large German discounters Aldi and Lidl. Purchasing is becoming centralised.

Swiss regulations are similar to EU food standards, hygiene and phytosanitary regulations. The SwissGAP association implements Global Gap standards. Key to Swiss consumer demands are:

- Food safety;
- Health issues;
- Protection of the environment;
- Sustainable production.

10.4 Quality standards

The Swiss market demands fruit of the highest quality and the following criteria have to be followed:

- Traceability;
- Labelling including
 - Quality standard;
 - Grower name and address;
 - Size;
 - Number;
 - Variety;
 - Pesticide labelling
- Packaging must protect produce from damage, is clean and hygienic and complies with food regulations;
- Migros and COOP demand compliance with GlobalGAP; and
- Switzerland imposes weight duty on the entire gross weight.

10.5 Importer requirements:

Importers in the EFTA follow similar demands as those in the rest of Europe and most are endeavouring to apply requirements similar to the EU regulations

The key requirements are:

- Consistency within a consignment;
- Adherence to deadlines;
- Freedom from residues and contamination;
- Heavy fines and destruction of produce are incurred if consignments do not meet with import regulations.

As a result of their increased responsibilities regarding product liability, importers now tend to rely on a small number of efficient and reliable partners.

10.6 Market segmentation

Norwegian stores are listed in Chapter 9. It is reported that there are some 300 importers supplying the markets. Avocados are generally imported by the big supermarket chains Migros and the Coop

As with most European countries, the segments are similar with the German discounters, which are increasingly gaining market share.

Swiss supermarkets

- Spar – 190 stores
- Volg

Discounters:

- Aldi Suisse – 200 stores
- Lidl – 120 stores
- Denner
- Landi
- Manor
- Convenience stores
- K kiosk
- Avex

Icelandic supermarkets

Supermarket Stores

Costo 1

Discount

Bonus 32

Kronan 16

Netto 15

Convenience

10-11 33

Euro-Market 2

Kjarval 5

Samkaup 26

CHAPTER 11: THE EAST EUROPEAN MARKET



Russia Poland Ukraine Romania Czech Republic Hungary Belarus Slovakia Bulgaria Moldova

11.1 Overview of the fresh fruit market

The term "Eastern Europe" is often used to refer to all European countries that were previously ruled by the Communist Eastern Bloc. There are several ways to define the countries within the region which includes some Baltic and western Asian countries. This report covers the ten countries defined by the UN statistics division as Eastern Europe and focuses on two countries, The Russian Federation and Poland.

Table 62: Population of selected East European countries

Eastern Europe	2015	2016	2017	2018	2019
Russia	143,888,004	143,964,513	143,989,754	143,964,709	143,895,551
Ukraine	44,657,704	44,438,625	44,222,947	44,009,214	43,795,220
Poland	38,265,226	38,224,410	38,170,712	38,104,832	38,028,278
Romania	20,440,347	19,876,621	19,778,083	19,679,306	19,483,360
Czech Republic	10,603,762	10,610,947	10,618,303	10,625,250	10,630,589
Hungary	9,783,925	9,753,281	9,721,559	9,688,847	9,655,361
Belarus	9,485,772	9,480,042	9,468,338	9,452,113	9,433,874
Bulgaria	7,177,396	7,131,494	7,084,571	7,036,848	6,988,739
Slovakia	5,439,318	5,444,218	5,447,662	5,449,816	5,450,987
Moldova	4,065,980	4,059,608	4,051,212	4,041,065	4,029,750
Total	293,807,434	292,983,759	292,553,141	292,052,000	291,391,709

Source: National Statistics

Table 63: Eastern European fruit imports- Quantity- M.Tons

M.Tons	2014	2015	2016	2017	2018
Russian Federation	11,837	12,248	19,120	29,242	29,242
Poland	9,270	11,607	14,885	19,845	19,845
Romania	3,013	4,302	5,779	7,737	7,737
Czech Republic	2,465	3,572	3,994	5,734	5,734
Ukraine	1,231	1,685	2,218	4,793	4,793
Hungary	1,966	1,763	1,416	2,365	3,527

Slovakia	942	942	1,135	1,710	2,886
Bulgaria	713	851	1,257	1,694	2,296
Belarus	744	1,441	388	731	1,501
Total	32,181	38,411	50,192	73,851	77,561

Source: ITC Trade Map

Table 64: Eastern European fruit imports value- In \$

(000) US\$	2014	2015	2016	2017	2018
Russian Federation	5,479,577	3,944,184	3,830,586	4,677,746	5,076,953
Poland	1,670,960	1,558,811	1,622,880	2,009,611	2,107,937
Czech Republic	697,350	689,931	734,562	801,809	836,712
Romania	454,921	529,261	623,757	721,013	755,260
Belarus	869,626	1,375,084	1,074,710	989,469	660,893
Ukraine	800,594	467,061	476,179	476,885	526,388
Slovakia	348,078	312,987	354,876	352,325	385,129
Hungary	273,994	274,949	286,912	302,964	325,523
Bulgaria	156,222	147,349	173,300	195,416	234,054
Total	10,947,417	9,488,313	9,370,169	10,733,816	11,133,027

Source: ITC Trade Map

Overall fruit imports into Eastern Europe have increased in volume but values have remained steady. This may reflect the growing demand for fruit but a price conscious keenness from consumers.

11.2 The avocado market in East Europe

Avocado imports have more than doubled, reflecting the overall trend throughout Europe. The majority of fruit are re-exports from the Netherlands. This highlights the importance of the Dutch hub for distribution throughout Europe.

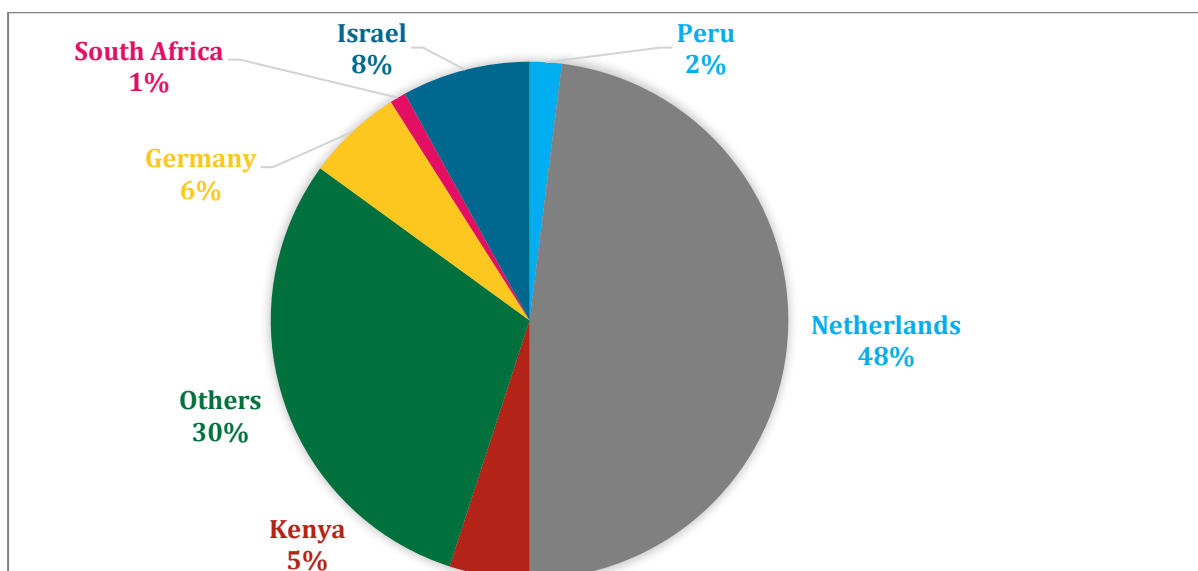
Table 65: Eastern European avocado imports

M.Tons	2014	2015	2016	2017	2018
Russian Federation	11,837	12,248	19,120	29,242	29,242
Poland	9,270	11,607	14,885	19,845	19,845
Romania	3,013	4,302	5,779	7,737	7,737
Czech Republic	2,465	3,572	3,994	5,734	5,734
Ukraine	1,231	1,685	2,218	4,793	4,793

Hungary	1,966	1,763	1,416	2,365	3,527
Slovakia	942	942	1,135	1,710	2,886
Bulgaria	713	851	1,257	1,694	2,296
Belarus	744	1,441	388	731	1,501
Total	32,181	38,411	50,192	73,851	77,561
Value (000) US \$	2014	2015	2016	2017	2018
Russian Federation	24,029	19,072	20,907	36,253	59,010
Poland	17,189	23,247	30,619	43,831	52,164
Romania	5,927	7,336	9,952	16,002	20,599
Czech Republic	5,140	6,676	10,798	13,131	18,283
Ukraine	4,048	2,726	3,791	5,185	10,859
Slovakia	2,931	3,062	3,574	4,080	5,845
Hungary	2,691	2,805	2,858	3,851	5,513
Bulgaria	1,461	1,816	2,878	4,543	5,405
Belarus	1,501	2,589	978	1,811	2,928
Moldova	272	319	504	887	1,395
Total	65,189	69,648	86,859	129,574	182,001

Source: ITC Trade Map

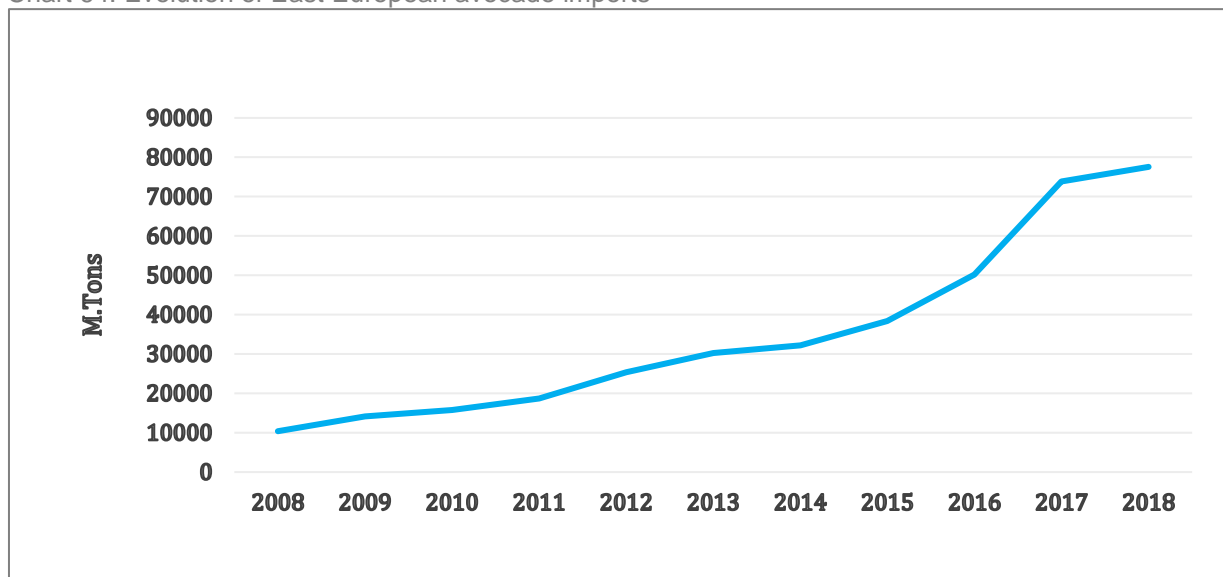
Chart 63: Principal supplying countries to East Europe



Source: ITC Trade Map

The Netherlands is the largest single supplier of avocado to Eastern European countries. The Netherlands is not a producer and sources all its supply requirements from around the world. Avocado demand is rising very fast and Kenyan and Tanzanian exporters may find seeking trading partners with Dutch exporters the best way to enter or expand their interests in this area.

Chart 64: Evolution of East European avocado imports



Source: ITC Trade Map

CHAPTER 12: THE POLISH MARKET



Poland is now a modern country within the EU. Increasing demand has fueled GDP growth to 4.2% in 2017. Household incomes have increased by over 10% over the last 10 years. The Polish consumer is becoming increasingly sophisticated. It is looking for a wide range of foods, namely the exotics where imports have doubled over the last five years. As with other EU countries, mergers and buyouts have created larger supermarkets at the expense of the traditional family retail outlet. High quality is essential, but the consumer is very price-conscious.

Fruit supply in Poland

Table 66: Fruit supply in Poland

(000) M.Tons	2014	2015	2016	2017	2018
Local production	4,049	4,644	3,151	4,545	4,200
Imports	1,403	1,462	1,508	1,745	1,607
Exports	1,366	1,172	1,361	1,286	1,063
Supply	4,086	4,934	3,298	5,004	4,744
% Local supply	99%	94%	96%	91%	89%

Source: ITC Trade Map

Table 67: Total fruit imports into Poland – Quantity

Poland M. Tons	2014	2015	2016	2017	2018
Banana & plantain	329,658	379,904	402,822	481,842	487,703
Citrus fruits	475,944	491,461	498,942	502,217	482,945
Apples, pears and quinces	71,935	71,287	57,946	76,616	47,379
Stone fruit	144,488	131,008	127,289	212,814	121,728
Melons	131,852	138,127	149,327	171,366	169,492
Grapes	135,997	127,824	127,842	141,903	129,126
Dates, figs, pineapple, avocado, mango	34,971	38,676	46,022	61,739	70,037
Strawberry, berries, currants	65,282	72,338	85,239	79,672	72,307
Total	1,390,127	1,450,625	1,495,429	1,728,169	1,580,717

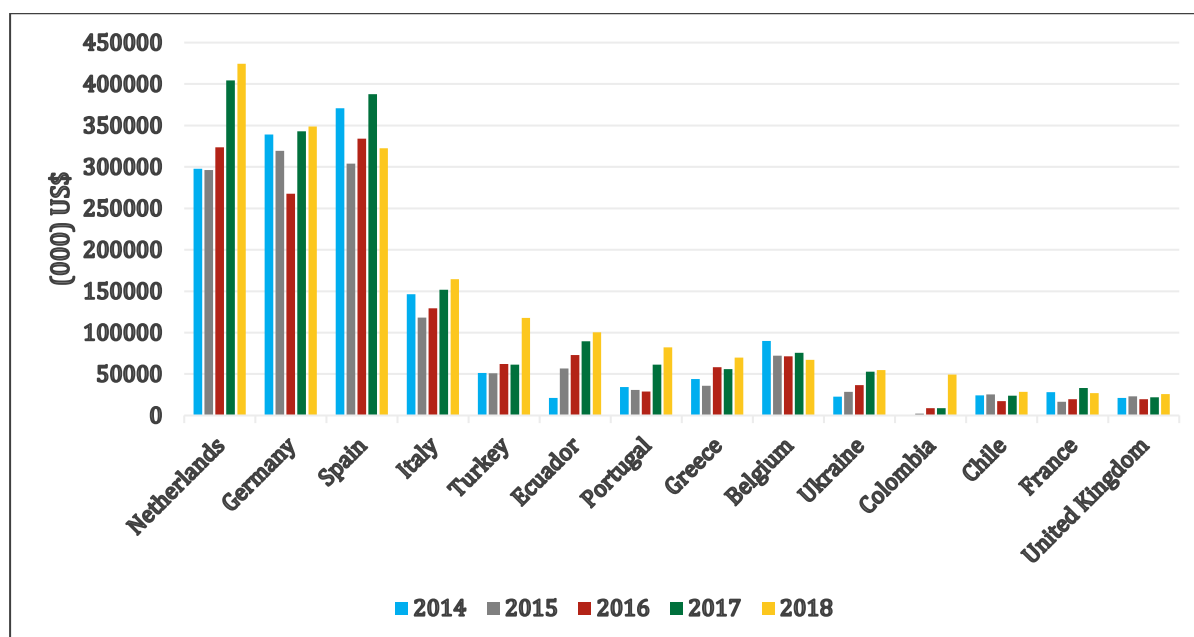
Source: ITC Trade Map

Table 68: Total fruit imports into Poland- Value

Poland (000) US\$	2014	2015	2016	2017	2018
Banana & plantain	291,194	274,258	279,396	318,740	319,629
Citrus fruits	415,597	384,328	415,751	449,782	462,556
Apples, pears and quinces	61,622	52,954	45,569	63,780	50,580
Stone fruit	137,109	110,589	115,941	190,378	142,011
Melons	54,792	52,961	57,923	77,007	95,962
Grapes	218,344	180,909	176,281	211,107	212,403
Dates, figs, pineapple, avocado, mango	55,498	63,112	77,307	110,800	122,426
Strawberry, berries, currants	108,145	100,435	113,981	145,929	161,566
Total	1,342,301	1,219,546	1,282,149	1,567,523	1,567,133

Source: ITC Trade map

Chart 65: Principal exporting nations to Poland



Source: ITC Trade Map

The avocado market in Poland has increased by a staggering 8-fold over the last ten years rising from just over 2000 tons valued at US\$ 4 million in 2009 to nearly 20,000 tons valued at US\$ 52 million in 2018. This increase reflects the growing affluence of the Polish consumer partly due to the country joining the EU and benefiting from trade within the Union.

Table 69: Imports of avocado into Poland - Value

(000) US\$	2014	2015	2016	2017	2018	Increase
Netherlands	7,494	11,158	16,265	26,953	30,495	25%
Germany	2,259	3,081	4,209	7,793	9,364	25%
Slovenia	288	1,320	2,093	3,514	4,017	24%
Spain	5,067	5,997	7,027	4,564	3,736	7%
Austria	7	0	0	0	2,885	136%
France	890	807	658	250	798	0%
UK	731	746	342	537	262	112%
Israel	179	0	0	0	228	279%
Other	274	138	25	220	379	79%
Total	17,189	23,247	30,619	43,831	52,164	72%

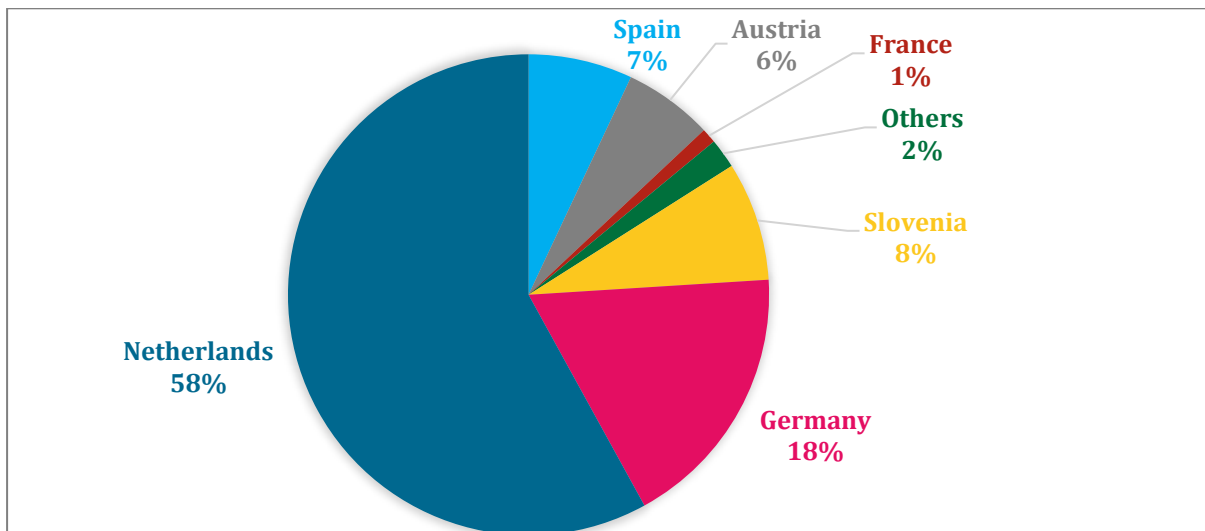
Source: ITC Trade Map

Table 70: Imports of avocado into Poland - Quantity

M.Tons	2014	2015	2016	2017	2018	Increase
Netherlands	3,572	4,643	6,265	9,325	12,117	29%
Germany	898	1,234	1,649	2,281	3,013	30%
Slovenia	166	693	960	1,466	1,601	10%
Spain	1,611	1,938	2,335	1,479	1,305	123%
Austria	3	0	0	0	1,056	0%
France	368	354	250	78	378	97%
UK	343	310	137	167	103	333%
Israel	87	0	0	0	122	71%
Other	174	98	11	89	150	116%
Total	7,222	9,270	11,607	14,885	19,845	36%

Source: ITC Trade Map

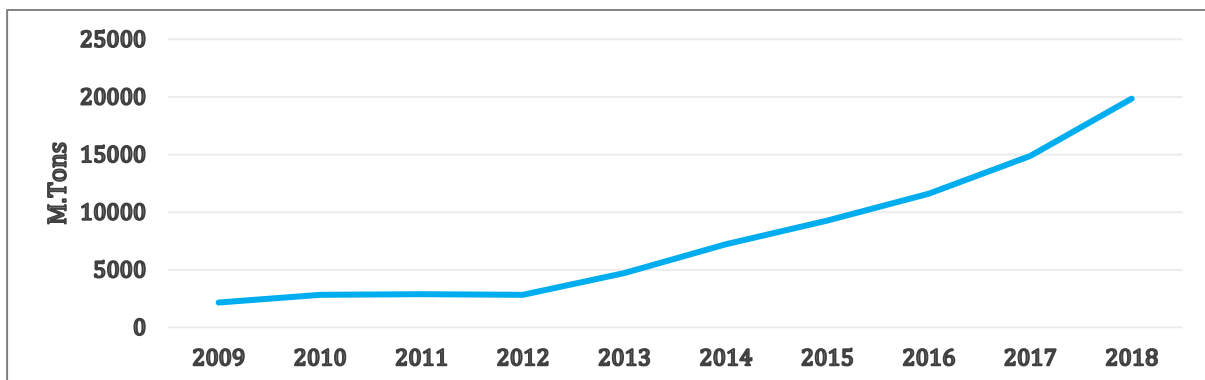
Chart 66: Avocado-supplying nations to Poland



Source: ITC Trade Map

The Netherlands supplies over 58% of avocado imports. As the Netherlands is not a producer but sources worldwide, imports from the Netherlands will include avocado from Kenya, Peru, Mexico, Chile and South Africa.

Chart 67: Avocado import trends in Poland 2009 to 2018



Source: ITC Trade Map

Consumption of avocado has increased significantly over the last six years and as the country becomes more prosperous, the trend is likely to continue.

Trade structure

As with the rest of Europe, the market is divided into two main segments, the retail sector that is now increasingly dominated by the powerful supermarkets and convenience stores, this at the expense of the traditional family retailers. The retail market is very dynamic and discount stores play an important role. Foreign multinationals such as UK's Tesco and the French Carrefour Group are making significant inroads by increasing the supermarket purchasing power and influence. Market traders still play a part in the fruit retail sector.

The wholesale sector comprising market traders and the foodservice segment supplies instructional organisations, Hotels and catering establishments.

The Dutch and German importers/exporters play an important part in the Polish supply chain as both can satisfy the demands of Polish buyers by offering a wide range of products within a delivery duration of one day.

Access to this market may be best served by forming links or alliances with the Dutch or German exporters.

Quality standards

Poland is now part of the EU and is required to embrace the entire EU legal quality standard. These are similar to the EU with key issues:

- Traceability;
- Labelling including:
 - Quality standard
 - Grower name and address
 - Size
 - Number
 - Variety
- Packaging that protects produce from damage, is clean and hygienic and complies with food regulations;
- Compliance with GlobalGAP.

Segmentation

As with all EU Countries the market segments are, the supermarkets, convenience stores and discounters, as listed in table 70.

Table 71: Retail outlets in Poland

Hypermarket	Stores	Convenience	Stores	Discounter	Stores
Kaufland	177	Żabka	2800	Lidl	730
Carrefour	97	Lewiatan	2700	Aldi	72
Tesco	85	Społem	2400		
E.Leclerc	43	Groszek	1250		
Auchan	86	Rabat Detal	950		
Supermarket	Stores	Top Market	600		
Biedronka	2823	Małpka Express	200		
Stokrotka	577	SPAR	71		
Netto	361	ABC	8500		
Polomarket	290	Rosa	100		
Intermarché	180	Freshmarket	500		
Piotr i Paweł	85	Sano	36		

CHAPTER 13: COMPETITOR ANALYSIS

13.1 Summary

Part 13 of the report describes the competing countries and analyses their success in exploiting market opportunities. A key finding is the importance attached to Post-harvest management in the successful shipment of avocados by all of the competing countries using sea freight. A fundamental is harvesting at the correct stage of maturity – dry matter of 23% for Hass. One example of this is Peru's mandatory harvesting standards for all exporters. Annex 2 offers a brief section on post-harvest management. The report contains information gleaned from desktop research and the personal experience of the consultant. Below are the key findings:

Avocado is one of the most difficult fruit crops to be successfully shipped. Following the early shipments which were done through air freight to the UK, Israel was one of the pioneers to bring avocado to Europe through the relatively short sea freight route to Marseilles in France, although it was difficult to successfully transport fruit. The technology of modern sea freight was pioneered by South Africa and the techniques developed and still being researched have been adopted by South American countries especially Peru in successfully shipping to Europe. The methods used are:

- Harvesting at the correct maturity – a key and essential requirement;
- Removal of field heat immediately after harvesting;
- Harvesting using mobile picking platforms;
- Using bulk plastic field crates;
- Cooled transport to pack-house;
- Rapid pre-cooling immediately upon arrival at the Packhouse;
- Careful handling throughout the supply chain;
- Storing at shipping temperature 4-5°C;
- Adopting Controlled Atmosphere storage CO₂ 4% to 10% and reducing O₂ to 2%-5%;
- Only high-quality fruit placed into CA storage;
- Shipping containers with computer-controlled C/A equipment with temperature drawn down to shipping temperature before loading;
- Using ethylene inhibitors such as “SmartFresh”® ;
- No breaks in the cool chain;
- Adopting these techniques established South Africa as one of the main suppliers of avocado in Europe and enabled Peru, Chile, Colombia and Mexico to successfully ship to Europe;
- The competition is now very fierce in Europe;
- Common to all the successful exporting countries are their strong grower associations who provide technical services, finance research and development and most importantly, finance promotional campaigns;
- Many of the most successful exporting nations have vertically integrated producing companies that also source from small farmers and have marketing offices or formed alliances with major distributors in Europe.

13.2 Introduction

The trade data in this report was compiled from data from ITC's Trade Map, FAOSTAT, United Nations International Trade Statistics Database (COMTRADE), CIRAD, Fruitropic, Freshinfo, exporter trade associations and various internet resources. The exporting seasons for both Kenya and Tanzania are what the trade defines as the "Summer Season" for Hass exports (April to September). Although both countries may produce avocados outside this season, especially for Fuerte that harvests earlier, the European winter season is dominated by the Mediterranean countries, Spain, Israel and Morocco along with the ever-increasing supplies from South American producers especially Mexico, Chile, Colombia and the Dominican Republic. Importers tend to switch sourcing distinctly between the two seasons. The European market has expanded phenomenally over the last ten years and it has been satisfied by imports from Peru. Adverse weather, droughts and biennial bearing issues hampered South Africa's expansion during 2016/17 but exports strongly recovered the following year. Tanzania has recently entered the market while although Kenya has doubled its exports to Europe, the country has yet to fully, capitalize on the expanding market. The main competitors of both Kenya and Tanzania are the summer season suppliers Mexico, Peru, South Africa and small shipments from California and Brazil. The other main suppliers to Europe are also covered in this report as:

- a) They are potential direct competitors in other and future markets such as the Gulf region and China; and
- b) They have strong and very effective grower organisations, which have successfully supported market penetration. The lessons learned from their activities are models for the industry's development in Kenya and Tanzania.

13.3 Production and export trends

Table 72: Leading producers of avocado – Area-Ha

Ha	2014	2015	2016	2017
Mexico	153,771	166,945	180,536	188,723
Peru	30,320	33,590	37,871	39,489
Colombia	34,513	36,461	40,057	39,172
Chile	31,727	29,908	29,933	30,078
USA	23,876	23,990	23,200	22,900
Dominican Republic	12,927	13,112	13,375	14,571
Brazil	9,450	10,356	10,907	12,940
Australia	9,000	10,226	14,107	11,840
South Africa	20,000	16,471	17,025	11,814
Spain	10,893	11,329	11,441	11,812
Venezuela	10,998	11,318	11,880	11,800
Kenya	11,583	8,486	10,305	11,605
Israel	7,654	7,579	8,180	8,410
Ecuador	4,940	4,376	3,615	4,653
New Zealand	3,893	4,179	4,219	3,979

Morocco	2,599	3,423	3,806	3,505
China	2,014	2,015	2,016	2,017
Zimbabwe	244	293	310	299

Source: FAO

Table 73: Leading producers of avocado –Production/Yield quantities

M.Tons	2014	2015	2016	2017
Mexico	1,520,695	1,644,226	1,889,354	2,029,886
Dominican Republic	513,961	526,438	601,349	637,688
Peru	349,317	367,110	455,394	466,758
Colombia	288,739	309,852	294,389	314,275
Brazil	156,699	180,652	196,422	213,041
Kenya	218,692	136,420	176,045	194,279
Venezuela	121,576	128,601	130,290	133,922
Chile	160,000	148,459	140,558	133,636
USA	179,124	207,750	124,860	132,730
China	116,000	118,203	122,875	124,110
Israel	91,035	93,000	101,500	110,000
Spain	77,401	86,636	91,509	92,936
South Africa	107,176	86,189	89,440	62,840
Australia	43,969	49,397	67,600	56,501
Morocco	31,896	42,732	42,256	41,695
New Zealand	23,269	24,326	24,853	23,716
Ecuador	30,000	24,247	16,118	20,995
Zimbabwe	1,400	1,700	1,800	1,748

Source: FAO

Table 74: Export trends from competing nations to Europe

M.Tons	2010/ 2011%	2011/ 2012%	2012/ 2013%	2013/ 2014%	2014/ 2015%	2015/ 2016%	2016/ 2017%	2017/ 2018%	2018 Tons
Summer season									
Mexico 1	6	42	14	15	33	7	-3	22	1,091,936
Peru	37	2	37	56	N/A	N/A	27	45	359,428
South Africa	-39	74	-8	30	-12	0	-25	105	89,343

USA	-37	64	47	-14	2	41	-5	34	68,455
Brazil	21	31	1	35	-20	7	58	-3	7,564
Dominican Republic	8	-15	21	-7	-21	73	-42		
Kenya (2)	6	9	19	-4	16	34	20	10	51,507
Tanzania	72	630	122	35	75	15	16	73	7,551
Winter season									
Australia	20	-2	-21	-33	14	63	-24	45	2,542
Chile	-5	-11	-3	26	-19	63	20	-25	132,525
Israel	-21	2	47	-44	-31	5	-15	-15	18,343
Spain	28	-12	6	19	14	9	15	0	108,033
Colombia	120	-96	10,740	225	215	228	57	5	30,009

Source: ITC Trade Map. Note 1 exports during both seasons. Note 2 - 2017

13.4 Australia

Production

Hass season: April to January

Sheppard season: February to May

Fuerte season: April to September

Producer organisations: Avocados Australia

Government agencies for agriculture development:

State Governments Horticulture Australia Ltd (HAL)



Table 75: Australian production estimates

Production	2015	2016	2017
Area harvested Ha	10,226	14,107	11,840
Yield Ton/Ha	4.83	4.79	4.77
Commercial Ton/Ha	18 - 25		
Production Tons	49,397	65,992	77,032

Source: FAO/Avocados Australia

Yield relates to all orchards, local, young and fully bearing.

Australia produced just over 77,000 tonnes of avocados in 2017/18, which was 17% more than the previous year. The value was estimated at US\$ 400 million. In recent years, production in Australia has

increased substantially with new orchards bearing fruit. The 56,000 tonnes produced was worth around US\$ 124 million. Australia has about 700 commercial avocado growers. Further plantings are continuing cultivating about 6,000 hectares of avocados. Australian avocados are predominately grown for the domestic fresh fruit market with only about 2,500 tons exported.

Due to the range in climates avocado is grown all year round.

Table 76: Evolution of avocado production in Australia – M.Tons

2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
46,446	39,841	49,612	51,113	54,877	48,715	57,595	66,716	65,992	77,032

Source: Avocados Australia

Queensland is the largest producing state representing 65% of the industry with the rest produced in New South Wales and Western Australia. Many different varieties are grown, but nearly 78% of the industry is made up of Hass, other varieties being Sharwil, Wurtz, Reed and Shepard. Recent droughts have affected production in some areas but overall production is showing a steady increase.

Avocados Australia has assisted the industry in a number of projects aimed at producing yields that are more consistent and improving quality made possible by funding from the country's Horticulture Innovation Avocado Fund. The success of the avocado industry has attracted investment with over 300 new growers over the last three years, which has resulted in substantial new plantings.

However, production costs at over US\$ 2,500/ha are very high compared with Peru at 750 US\$/ha and Mexico at US\$ 800/ha

Marketing



Australia boasts a strong domestic market for avocados and is a relatively small exporter, but the country is investing heavily through a system of levies and governmental and industrial support through the not for profit organisation "Avocados Australia" to promote the demand for the fruit and encourage export opportunities. The domestic market provides a strong financial base for the industry and with emphasis on quality standards, good agriculture practices together with a programme of targeting the EU markets and Gulf Cooperation Council (GCC) states the country could become a strong market competitor for Kenya and Tanzania especially in the Gulf and Asian markets. Avocados Australia has recognised weaknesses in the traditional marketing system namely:

- Immature and poor-quality fruit;
- Inadequate production forecasting;
- Large volumes of small fruit;
- Poor training of supply chain staff;
- Poor Post Harvest Management;
- Recommending 23% + dry matter for Has and 21% + dry matter for Shepard;
- Ripeness at 0.65 and 0.45 KG force.



However, the expanding local market combined with high production costs in Australia is attracting exports from Peru and Mexico.

It is estimated that about 60% of avocados produced are sold through supermarkets.

Food service and export are becoming increasingly important segments in the supply chain and the government through consumer pressure is placing emphasis on CSR, ethical trading, and ecological factors and has introduced a "Freshcare" programme and certification to encourage growers to address these issues.

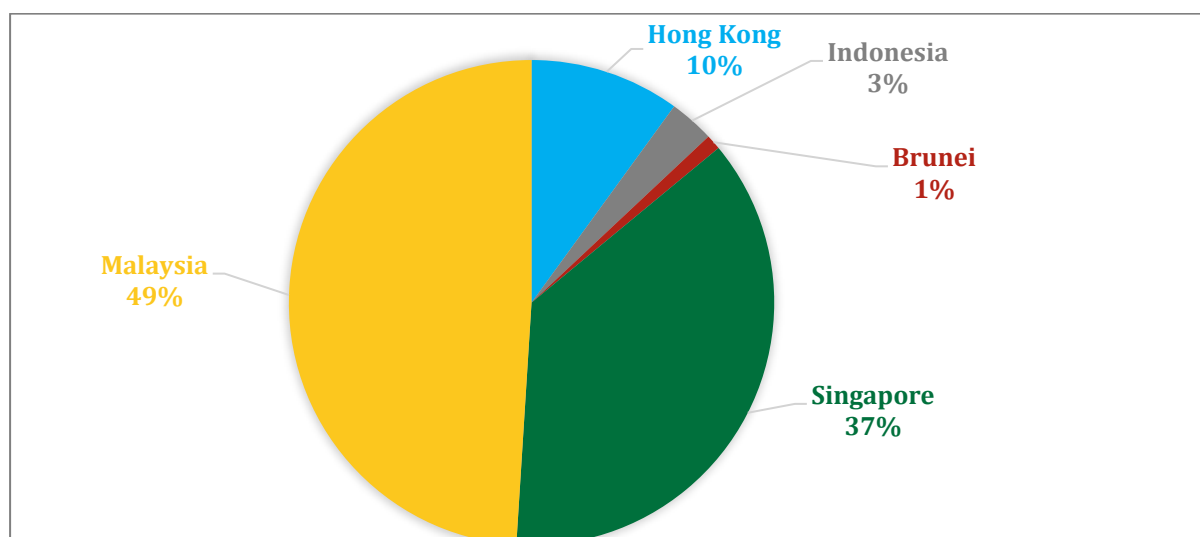
Horticulture research, development and marketing programmes are now the responsibility of HAL and the Australian avocado industry funds its activities through levies. Research and Development is funded by a levy of AUD 0.16/tray & marketing is funded by a levy of AUD 0.25/tray administered by HAL.

Table 77: Australia avocado exports value

Value (000) US \$	2014	2015	2016	2017	2018
Malaysia	1,670	2,061	3,309	3,974	5,544
Singapore	3,224	3,661	3,382	3,332	4,203
Hong Kong	131	182	631	1,248	1,131
Indonesia	130	93	119	39	330
Brunei	47	78	116	140	88
Fiji	48	59	42	66	57
Myanmar	0	0	1	81	33
Gulf States	28	80	763	313	79
Other	48	18	57	4	31
Total	5,326	6,232	8,420	9,197	11,496

Source: ITC Trade Map

Chart 68: Share of importing countries of avocado from Australia by value US\$



Source: ITC Trade Map

Table 78: Australia avocado exports Qty – M.tons

Quantity M.Tons	2014	2015	2016	2017	2018
Malaysia	363	509	865	721	1,167
Singapore	798	797	953	684	982

Hong Kong	27	39	170	221	259
Indonesia	23	20	27	9	62
Brunei	8	16	22	24	23
Fiji	11	15	12	14	14
Gulf States	5	15	240	64	19
Myanmar	0	0	1	13	6
Other	10	6	18	0	10
Total	1,245	1,417	2,308	1,750	2,542

Source: ITC Trade Map

Table 79: Evolution of avocado exports from Australia

M.Tons %	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
World	8	20	-2	-21	-33	14	63	-24	45	2542
Malaysia	47	48	3	14	18	40	70	-17	62	1167
Singapore	18	30	3	4	-17	0	20	-28	44	982
Hong Kong	9	-10	-16	-91	59	44	336	30	17	259
Indonesia	178	40	-66	450	-65	-13	35	-67	589	62
Brunei	-14	50	-22	57	-27	100	38	9	-4	23
Fiji	50	67	40	57	0	36	-20	17	0	14
UAE	14	25	6	-94	-88	200	1633	-99	900	10

Source: ITC Trade Map

Threats to Kenyan Tanzanian producers

The Gulf region was a large market for Australian avocado but there has been a decline in exports attributed to the high Cost Insurance and Freight (C.I.F.) cost of Australian fruits in general and that most are air freighted. Despite the excellent airfreight services from the local GCC airlines such as Emirates all offering competitive prices, Australian produce is perceived in these countries as being too costly especially when compared to Kenya and Tanzania. Quality problems have also been an issue as well as inconsistency of supply.

Australia is planning to target the European market, but the freight costs will remain a major constraint. Although the European market is buoyant, price will remain a major issue and Australia will continue to be considered a high price supplier and is unlikely to become a major threat to the low cost Kenyan and Tanzanian producers.

13.5 Brazil

Production

Export supply season: April to September

Grower organisations: Brazilian Avocado Growers Association (ABPA)



Table 80: Brazilian production estimates

Production	2015	2016	2017
Area harvested - Ha	10,356	10,907	12,940
Yield - Tons/ha	17.44	18.01	16.46
Production - Tons	180,652	196,422	213,041

Source: FAO

Brazil is a very large country with several climatic zones, elevation and soils suitable for avocado production. It is the world 6th largest producer of avocados. The country is renowned for its mango production and exporters have longstanding connections with major buyers in Europe as well as having extensive experience in sea-freight shipping. Mango exporters apply good post-harvest management and comply to EU entry requirements, with quality standards, Global Gap, Fairtrade and organic accreditations. The country has a very good infrastructure in terms of roads, transport and port facilities and is an ideal position to export high quality avocado to Europe.

The majority of Brazil's production are the green skin varieties with only 10% planted with Hass but most new plantings destined for export will be Hass. The avocado export season is similar to Kenya and Tanzania's season.

The country's leading producer, Jaguacy, has recently planted 600 ha of commercial orchards and sources fruit from a similar acreage of out growers. Jaguacy gained organic accreditation and started marketing organic avocado during the 2018 season.

Marketing

As the European market, USA avocado market continues to expand, and prices are high. Avocado exporting is a natural development. Halls International, one of South Africa leading producer and exporter that has a large marketing network in Europe, managed to do a partnership with ACMH International to market its Hass avocados.

Jaguacy has marketing offices in the Netherlands and last year shipments to Europe amounted to 7,000 tons.

The forecasted Brazilian Hass exports are to exceed 15,000 tons by 2020.

Table 81: Brazil avocado exports Quantity

M.Tons	2014	2015	2016	2017	2018
Spain	1,114	1,095	1,778	4,055	3,494
Netherlands	3,631	2,956	2,448	2,598	2,494
France	669	307	518	730	939
Canada	172	49	62	278	274
United Kingdom	25	3	25	75	179
Other	196	218	120	99	184
Total Exports	5,807	4,628	4,951	7,835	7,564

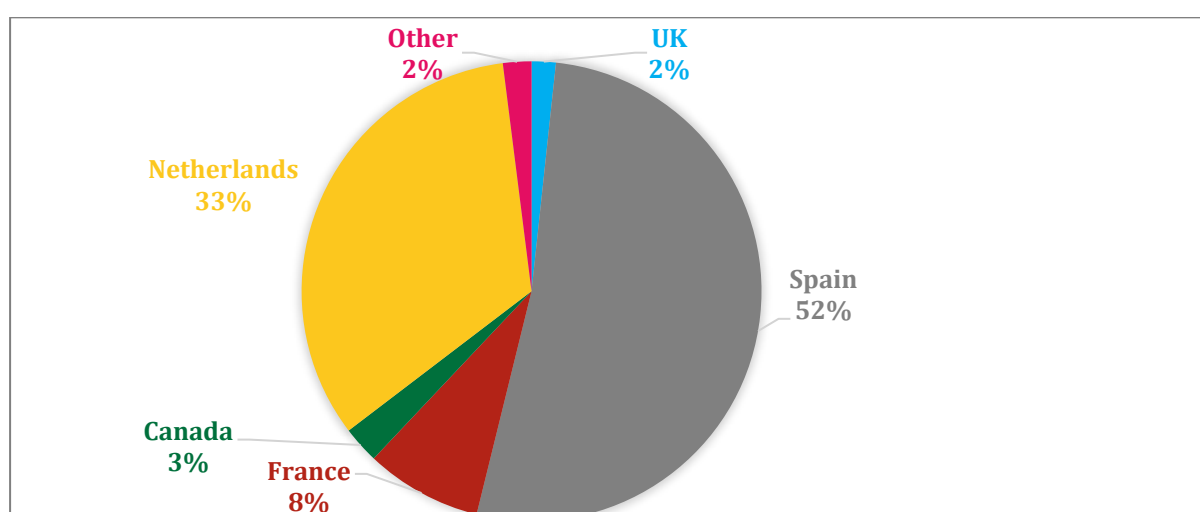
Source: ITC Trade Map

Table 82: Brazil avocado exports value

(000) US \$	2014	2015	2016	2017	2018
Spain	1,781	1,558	2,469	6,206	8,552
Netherlands	6,099	3,952	3,282	2,973	5,474
France	1,204	628	735	1,157	1,377
Canada	252	85	75	347	432
United Kingdom	10	7	45	78	286
Other	191	331	201	129	259
Total Exports	9,537	6,561	6,807	10,890	16,380

Source: ITC Trade Map

Chart 69: Share of importing nations of Brazil's avocado exports



Source: ITC Trade Map

Threats to Kenyan and Tanzanian exporters

Brazil could become a major threat to exporters in Kenya and Tanzania because:

- The seasons are the same;
- Brazil has a long and successful experience as a major exporter of mango to Europe;
- Brazil has good connections with European buyers who could remain loyal to Brazilian exporters, if they widen their portfolio to include avocado;
- Brazil has a strong and effective grower organisation ABPA;
- Brazil has major avocado producers which are forming alliances with international marketing companies;
- Brazil, through ABPA, is investing in research and development, focused on improving productivity and quality of Hass production.

13.6 Chile

Production

Hass season: September to March

Fuerte season: June to September Bacon season: May to July

Exporter's organisation: Chilean Avocado Importers Association

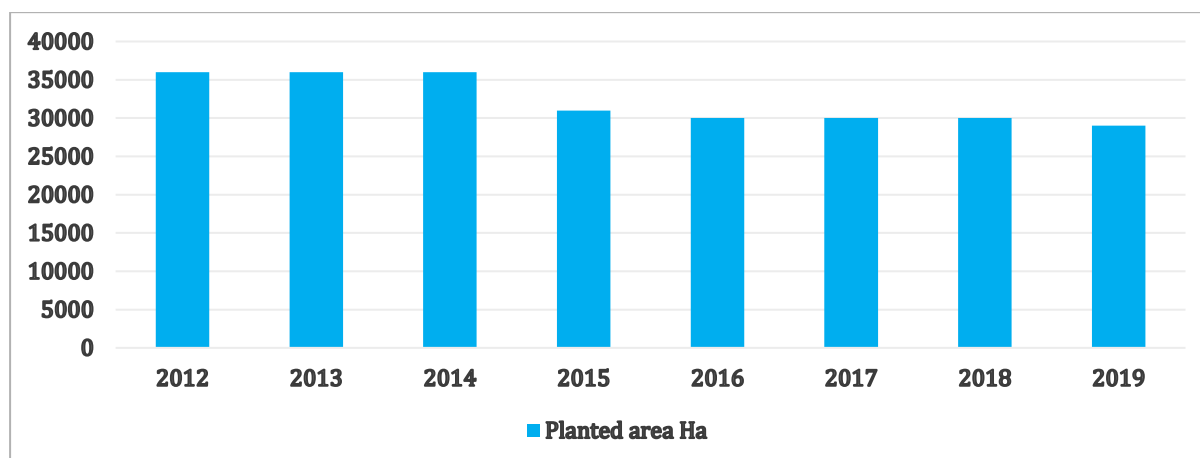


Table 83: Chilean production estimates

Production	2015	2016	2017
Area harvested - Ha	29,908	29,933	30,078
Yield - Tons/ha	4.9	4.7	4.4
Production - Tons	148,459	140,558	133,636

Source: FAO

Chart 70: Avocado planted area



Source: OPEDA

The avocado has always been a popular fruit in Chile and people consume over 7 kg per person each year. Expansion of the industry has declined in recent years from a peak of over 40,000 ha in 2008 to 29,166 ha in 2019 due to increased costs now one of the highest cost nations at US\$ 2,500/ha and financial uncertainties from a continuous revaluation of the peso that have impacted on the profitability of the crop. Poor cold and freezing weather coupled with frequent droughts.

As part from the current poor weather patterns of cold, frost and drought, production problems in Chile are reported as:

- High incidence of Root diseases such as Avocado root rot (*Phytophthora cinnamomi*), Verticillium wilt (*Verticillium dahlia*);
- Alternate bearing in Fuerte;
- Relative high production costs particularly the high cost of fertiliser and chemicals;
- Wide presence of “Anthracnose” fruit rot (*Colletotrichum gloeosporioides*).

It has recently been reported that due to the extreme recent droughts, Chilean producers have resorted to illegal; sourcing of water. This has given rise to concerns by European importers under pressure, from supermarket buyers to ensure all products meet their ethical and environmental standards.

Marketing



Chile started exporting avocados in 1980 and today the country exports over 111,000 tons with 41,000 tons destined to the Dutch market and 42,000 tons destined for the USA. It is reported that domestic returns are becoming higher for the farmer than export



returns because of devaluation. As a result, farmers are favouring the domestic market. However, the industry is making investments in diversifying its markets and the USA Chilean Avocado Importers Association (CAIA) has embarked on a promotional campaign in the USA. The USA was once the largest importer accounting for nearly 85% of all Chile’s exports of avocado but in these recent years, the USA has now been overtaken by the Netherlands as Chile has focused on Europe. The phytosanitary procedures required by the USA to prevent Mediterranean fruit fly from entering the country may also be a factor. The industry has made great efforts in diversifying its export markets and is using the Netherlands as a platform for entry to other EU countries. Although Chile produces the whole year, its production occurs mainly during the winter season (August to March) and the country is now importing from the USA because of the increasing domestic demand throughout the year which in 2018 was over 66,000 tons.

Table 84: Chile avocado exports to major importing nations - Quantity

M.Tons	2014	2015	2016	2017	2018
Netherlands	42,101	42,005	57,733	65,548	55,341
USA	41,370	10,174	26,278	36,254	25,780
UK	6,811	14,520	17,887	18,164	12,386
China	21	2,716	11,597	16,644	12,199
Argentina	13,404	10,687	12,498	17,784	11,786
Spain	3,539	4,935	8,121	8,353	5,574
Costa Rica	0	1,547	3,445	3,209	2,510
Belgium	683	416	1,147	2,458	1,452
Switzerland	110	331	1,571	1,672	1,140
France	1,387	1,485	3,377	2,738	777
Others	2,249	1,194	1,212	2,157	2,115
Total	109,426	88,816	145,912	175,079	130,410

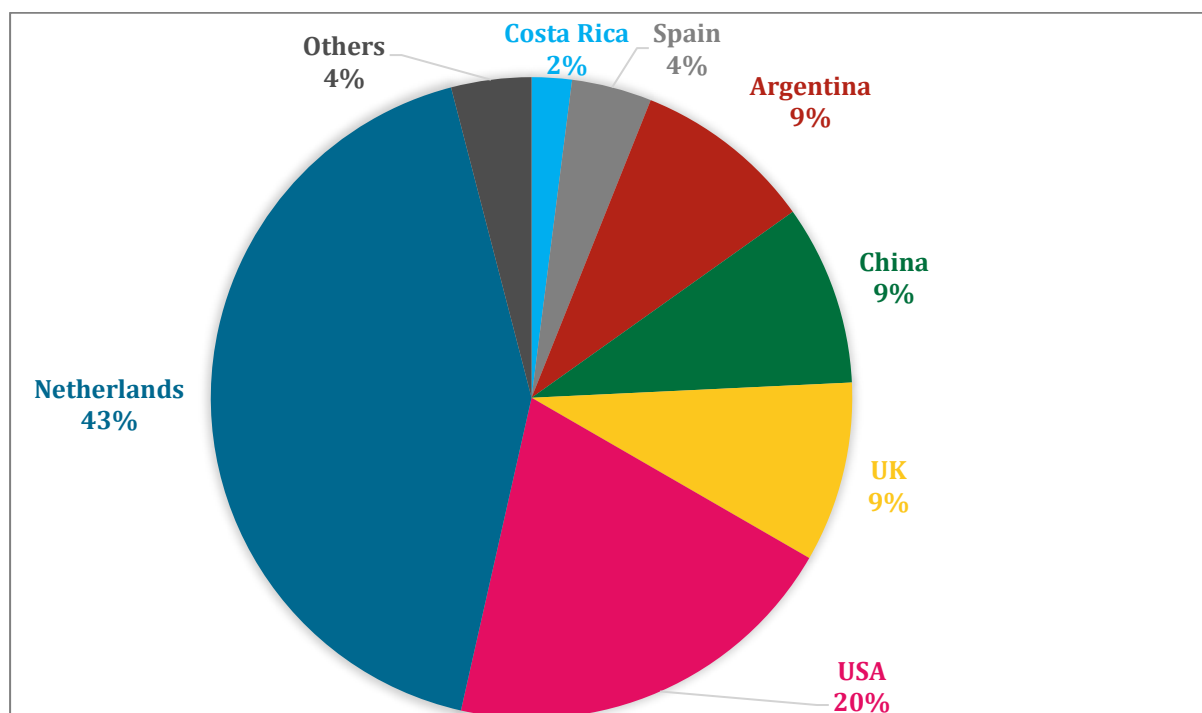
Source: ITC Trade Map

Table 85: Avocado exports from Chile to major importing nations markets - Value

(000) US \$	2014	2015	2016	2017	2018
Netherlands	89,723	90,548	142,372	152,703	124,783
USA	79,803	22,384	77,967	115,528	66,250
UK	15,134	30,856	44,844	56,355	33,847
China	108	7,164	32,695	51,739	30,555
Argentina	22,321	21,877	23,454	40,750	28,037
Spain	7,368	11,283	18,674	24,891	12,846
Costa Rica	0	3,544	8,749	10,110	8,571
Germany	0	0	5,508	5,545	3,819
Belgium	1,550	996	2,809	5,128	3,712
Switzerland	313	825	4,067	3,902	3,098
France	2,987	3,124	7,787	6,714	1,940
Other	4,586	2,674	3,009	5,925	5,737
Total	223,893	195,275	371,935	479,290	323,195

Source: ITC Trade Map

Chart 71: Share of Peru exports in importing markets (% of volume)



Source: ITC Trade Map

Table 86: Evolution of avocado exports to major importing nations from Chile - M. tons

M.Tons	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Netherlands	17,483	19,354	18,689	27,517	37,694	42,101	42,005	57,733	65,548	55,341
USA	97,408	65,066	68,407	40,638	24,330	41,370	10,174	26,278	36,254	25,780
UK	7	5,273	4,613	6,004	7,623	6,811	14,520	17,887	18,164	12,386
China						21	2,716	11,597	16,644	12,199
Argentina	1,855	8,447	5,489	9,023	9,253	13,404	10,687	12,498	17,784	11,786
Spain	7,556	4,611	2,587	4,268	4,719	3,539	4,935	8,121	8,353	5,574
Total Exports	124,319	108,116	102,820	91,420	88,349	111,675	90,010	147,124	177,236	132,525

Source: ITC Trade Map

Threats to Kenyan and Tanzanian producers

Chile is a large producer of avocados with considerable export experience in the USA and Europe. This is coupled with a strong and profitable domestic market that provides some security to exporters wishing to diversify. However, its supply base is a little erratic due, mainly, to changes in weather. The country is mainly a winter producing nation with exports commencing in late August, peaking in October and declining from December to March. The country must import avocados to satisfy local summer demand. Chile is receiving support from European importers such as Westfalia Fruits who have a joint venture with a major fruit exporter, Agrico, providing technical support and marketing in Europe. South American countries, which have attracted Western marketing groups, are bringing the orchards up to meet European standards and certification with their partners providing the marketing expertise. Chile is not a major threat for now considering that it is a winter producer.

13.7 Colombia

Production

Hass season: Sept to May

Grower organisations: Corpoaguacate Corpohass

Research Institution: CORPOICA



Table 87: Colombian production estimates

Production	2015	2016	2017
Area harvested Ha	36,461	40,057	39,172
Yield Ton/ha	8.5	7.3	8.2
Production Tons	309,852	294,389	314,275

Source: FAO

According to the Food and Agriculture Organisation (FAO), the country was the world's fifth largest producer of the fruit producing over 300,000 tons.



Colombia has between 25,000 and 30,000 hectares devoted to avocado production. Most of which is of the local "Criollo" variety with 9,696 ha of Hass and 6,560 ha of local green-skin cultivars. The department of Antioquia accounts for half the country's production.

Colombia started commercial avocado production in 2004, with plans to increase external demand for the product - especially of the Hass variety. Just over a decade later, the country has 14,600 hectares planted with avocados destined for export, with total sales of 18,200 tonnes in 2016 (equivalent to USD 35 million).

According to the Colombian Agricultural Institute, there are 744 registered Hass avocado production sites.



The South African Westfalia Group has joined forces with Agricom of Chile to invest in avocado exports by inaugurating a modern Hass avocado plant in the municipality of Sonson (Antioquia). This is one of the most modern plants and it has the largest production capacity in the country. The Ministry of Agriculture forecasts that this year the country will have 15,350 hectares planted with Hass avocado, an increase of 15% as compared to the previous year. Together with improved production increases productivity to 9 ton/ha, the country is expected to produce 95,250 tons of Hass for exports. The leading departments in the production of Hass avocado are Tolima, Caldas and Antioquia (with 28,197 tons, 21,209 tons; and 18,917 tons, respectively). The most productive departments are Antioquia, Tolima, and Risaralda (with 10.6, 10, and 9.2 tons per hectare, respectively).

Marketing

Consumption of avocado in Colombia is high, estimated at 4.5 kg per capita per year. Despite the country's wide experience in exporting, local production does not satisfy the demand. Colombia has slowly entered the international markets for avocado partly due to the strong local demand, to problems

accessing the vast USA market because of phytosanitary problems especially fruit fly and partly due to a reluctance of producers to become accredited with Global GAP, HACCP, BRC, and Fairtrade. The main export market is Europe with the UK as a target.

Table 88: Colombian avocado exports to principal importing countries – Value

(000) US \$	2014	2015	2016	2017	2018
Netherlands	2,852	6,162	14,582	18,872	29,655
Spain	147	930	7,116	11,629	11,627
UK	458	2,430	9,479	14,149	12,493
Belgium	0	0	177	3,782	3,238
France	69	698	2,730	2,551	2,510
USA	0	0	2	71	660
Germany	0	0	422	903	423
Sweden	0	0	0	0	405
Other	47	59	532	991	1,721
World	3,573	10,279	35,040	52,948	62,732

Source: ITC Trade Map

Table 89: Colombian avocado exports to principal importing countries – Quantity

M.Tons	2014	2015	2016	2017	2018
Netherlands	1,369	3,339	7,385	10,184	13,992
Spain	80	583	4,206	6,905	6,181
UK	224	1,170	4,539	6,760	5,506
Belgium			104	2,047	1,572
France	44	428	1,481	1,593	1,310
USA			0	29	346
Germany			209	438	135
Sweden					179
Other	43	23	277	531	788
World	1,760	5,543	18,201	28,487	30,009

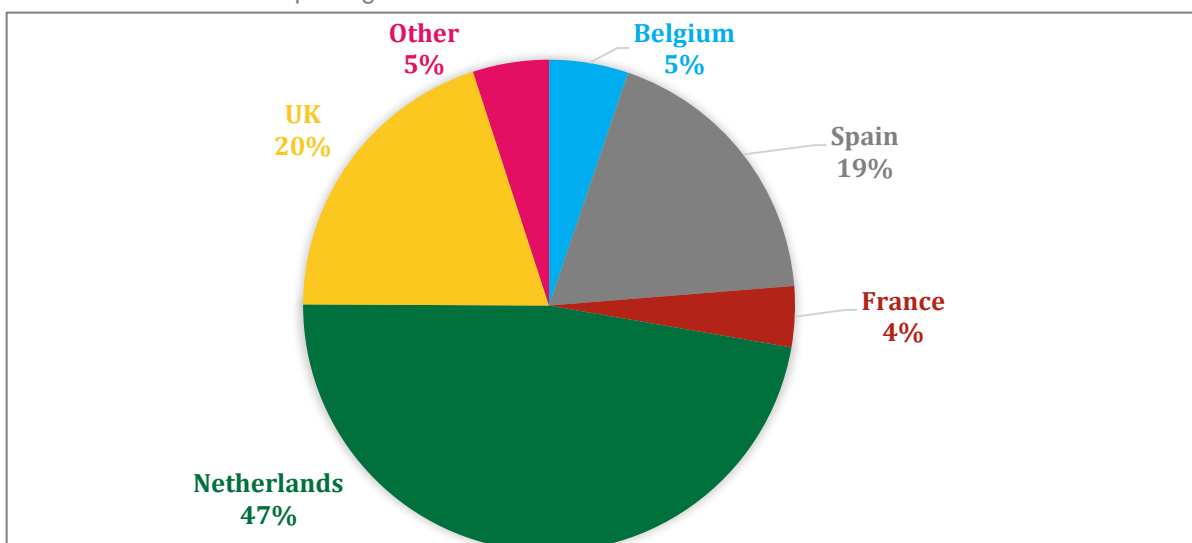
Source: ITC Trade Map

Colombia's progress as a major avocado supplier has shown exceptional growth over the last few years with exports growing from 1,760 tons in 2014 to over 30,000 tons in 2018. The production season has been extended with plans to target a 10-month supply. Exporters have joined forces with major European importers to improve marketing and develop the markets.

Colombia has just been granted entry to the USA satisfying the USDA with compliance to their strict phytosanitary standards over the importation of fruit from countries with fruit fly. The formation of a new grower and marketing organisation Avocado Antioqueña Corporation (CORPOHASS) funded by levies on producers is aimed at addressing the phytosanitary restrictions imposed by the USA. Its activities are also aimed at promoting avocado exports and in close co-operation with the research organisation; CORPOICA (Colombian Government body in charge of agricultural research) plans are being prepared to enable Colombia to reach markets such as Europe.

Colombia enjoys a relatively low production cost of US\$ 855/Ha and is therefore competitive.

Chart 72: % Share of importing markets for Colombian avocado



Source: ITC Trade Map

Table 90: Evolution of Colombia's avocado exports

M.Tons	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Exports	32	56	123	5	542	1,760	5,543	18,201	28,487	30,009
Netherlands	25	51	114		508	1,369	3,339	7,385	10,184	13,992
Spain						80	583	4,206	6,905	6,181
UK						224	1,170	4,539	6,760	5,506
Belgium								104	2,047	1,572
France						44	428	1,481	1,593	1,310
USA	1							0	29	346

Source: ITC Trade Map

Threats to Kenyan & Tanzanian exporters

Colombia is a very large producer of avocado with a very strong domestic market but until recently has been a small player in the world avocado market. Colombia is very experienced in exporting horticulture crops especially cut flowers. The country enjoys high domestic production that could form a base for diversifying into other markets. Whilst the USA phytosanitary restriction prevented the Colombian fruit

industry from exporting to the USA, Europe was their prime market. Now that the USA has lifted phytosanitary restrictions on Colombian avocado imports, it is likely that that the country will focus on the USA market.

The country appears attractive to the large overseas companies such as the Fresca Group of the UK who have entered into a joint venture with Cartama, a leading Colombian producer to market avocados in the UK and Europe. Such arrangements will encourage high standards of production, post-harvest management and compliance with European nation’s ethical and environmental standards.

The main Hass season happens during the winter season but investment in Research and Development have enabled the extension of the season with Cartama claiming an eleven-month season. At present Colombia is not a major threat to either Kenya or Tanzania but the rapid rise in exports together with an extended season combined with a very low cost production base could make Colombia a serious threat in the future.

13.8 Dominican Republic (DR)



Production

Hass season: August to May;

Semil 34 type: October to January (Green Skin Local variety) ;

Organisations: Avocado Production Chain (CPA).

Table 91: Dominican Republic production estimates

Production	2015	2016	2017
Area harvested - Ha	13,112	13,375	14,571
Yield - Tons/ha	40.1	44.9	43.7
Production - Tons	526,438	601,349	637,688

Note: The FAO Yield estimates appear to be very high. Commercial yields on the most productive farms rarely exceed 25 ton/Ha
Source: FAO.

The Dominican Republic is the world’s second largest producer of avocado after Mexico. The country has increased its avocado planting in order to meet the international demand for avocado. The country produces a wide range of varieties including Bacon, Lula, Pinkerton and Reed. The production of all these varieties falls during the season of June to May. Both green skin and Hass are grown, but the latter is the major export variety. There are currently 21,875 hectares planted with avocados in the Dominican Republic, of which 32% are in the North region, 28% in the Southwest, 26% in the Central region and 14% in the South region. However, most of the avocado varieties are local. The Dominican Republic, thanks to its different production areas, altitudes and varieties, has avocado available throughout the year. The most productive variety cultivated in the Dominican Republic is the purple avocado. For this variety, as one harvest is ready the plant is producing other fruits that are 50% ready, and yet another fruit at 25% of its process. It is a continuous production, which gives higher yields than other varieties. Hass avocado is harvested mostly between the months of September and February. Production has doubled over the last ten years in response to governmental support. The support is in the form of training, certification on good agricultural practices, market management and improvements to infrastructure particularly the roads. In addition, a special fund for Agriculture support (FEDA) funded

through the Agriculture Bank aims at supporting and developing avocado sector in Cambita, Garabito and in San Cristobal.

The Dominican Republic has gained a reputation for organic produce and following the success of supplying organic bananas to UK supermarkets challenging the hold of the multi-nationals EU importers are keen to market the country's avocado. Apart from fruit fly (*Ceratitis capitata*); the Dominican Republic experiences problems with anthracnose (*Colletotrichum gloeosporioides*).

Marketing

The domestic market absorbs more than 90% of the production: the avocado is widespread in the Dominican diet, with consumers favouring the West Indian varieties for their sweetness. The internal market represents a population of nearly 10 million inhabitants to which can be added approximately 4,5 million tourists per year. Consumption is high, estimated at 7 Kg p.p/year. There are about ten exporters in the Dominican Republic, some of which are also producers.

US Animal Plant Health Inspection Service (APHIS) had removed the restrictions on exports of fruit and vegetables from the province of Santo Domingo and from the National District.

Recent problems related to the problems with fruit fly control have affected the country's reputation.

The USA was the country's largest receiver of avocado, some 17,000 tons out of a total of 20,600 tons that were exported in 2014. The fruit shipped through the large American fruit shippers such as W.P. Produce Corporation followed the USA issuance of a federal order restricting imports of fruit from the Dominican Republic to prevent the introduction of fruit fly. This was in response to multiple detections of Fruit Fly in the Punta Cana region. The fruit subject to heat treatment can be imported but the process that can be used on mango remains unsuitable for avocado. However, APHIS removed the restrictions in 2016 on exports of fruit and vegetables from the province of Santo Domingo and from the National District.

Table 92: Dominican Republic avocado exports - Quantity.

M.Tons	2013	2014	2015	2016	2017
USA	17,377	15,143	9,058	16,768	10,608
Netherlands	1,568	1,170		3,298	1,544
France	751	1,394	1,213	1,886	946
UK	422	640	1,262	1,510	562
Other	510	925	2,313	2,895	1,502
World	20,628	19,272	15,272	26,357	15,162

Source: ITC Trade Map

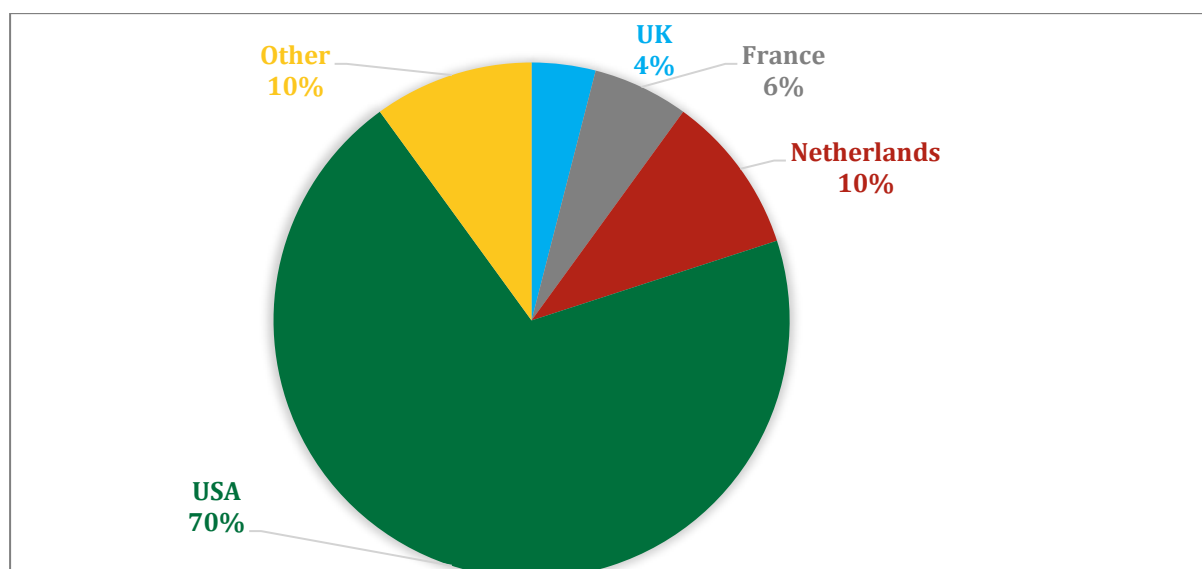
Table 93: Dominican Republic avocado exports- Value

(000) US \$	2013	2014	2015	2016	2017
USA	18,758	17,590	9,042	21,038	34,184
Netherlands	1,935	1,450	2,100	5,109	4,974
France	816	1,714	1,411	2,432	3,051
UK	540	764	1,599	2,012	1,811
Other	761	1,012	2,434	2,858	4,840

World	22,810	22,530	16,586	33,449	48,860
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Source: ITC Trade Map

Chart 73: % Share of Dominican Republic avocado importing nations by value US\$



Source: ITC Trade Map

Table 94: Evolution of DR's avocado exports to major importers (000) US \$

000) US \$	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Total Exports	21,385	16,281	17,991	21,326	19,237	22,809	22,530	16,586	33,449	48,860
Netherlands	1,282	1,474	1,912	1,104	984	1,935	1,450	2,100	5,109	4,974
France	2,185	267	779	925	477	816	1,714	1,411	2,432	3,051
UK	1,304	703	869	300	291	540	764	1,599	2,012	1,811
USA	14,585	12,933	13,863	18,282	16,960	18,758	17,590	9,042	21,038	34,083

Source: ITC Trade Map

Threats to Kenyan and Tanzanian producers



The Dominican Republic is the dark horse in avocado marketing. The country has developed a reputation for aggressive marketing of organic produce and has enjoyed considerable success with its bananas in Europe. Currently over 82% of its avocado exports go to the USA. The country ships avocado to Europe principally to the Netherlands, France, the UK and Germany. Quality problems may be an issue, but the country has demonstrated a commitment to satisfying the EU's stringent quality standards. The Dominican Republic's main season is the winter season, from October to April rendering the threat to Kenyan and Tanzanian producers small. However, the near year-round production could see an extension of the export season but this expansion is likely to be of the green skin and local varieties.

13.9 The EAC



The East African Community (EAC) is a regional intergovernmental organisation of six Partner States: the Republics of Burundi, Kenya, Rwanda, South Sudan, the United Republic of Tanzania, and the Republic of Uganda, with its headquarters in Arusha, Tanzania.

Production

Export Season

Kenya: April to September

Tanzania: February to October

Rwanda: April to September

Uganda: June to September

South Sudan: N/A

Burundi: N/A

Table 95: EAC production estimates

Kenya	2015	2016	2017
Area harvested ha	8,486	10,305	11,605
Yield Tons/ha	160,759	170,835	167,409
Production Tonnes	136,420	176,045	194,279
Rwanda	2015	2016	2017
Area harvested ha	680	634	950
Yield Tons/ha	135,294	146,675	72,762
Production Tonnes	9,200	9,296	6,912
Tanzania	No FAO Data		
Area harvested ha			3,596
Yield Tons/ha			
Production Tonnes	31,000	38,000	57,000
South Sudan	No FAO Data		
Burundi	No FAO Data		
Uganda	No FAO Data		

Source: FAO/MAFC

Kenya

Kenya has a long history of producing and exporting avocado and their producers and exporters have benefited from help from several overseas agencies.

Most of the Kenya avocado crop is exported through six companies: East African Growers Ltd, Indu Farms Ltd, Kakuzi Ltd, Kenya Horticultural Exporters Ltd (KHE), Sunripe Ltd and Vegpro Ltd. Some have their own production farms, but the majority rely on large numbers of small-scale out-growers, each of whom have only a few trees. Smallholders grow around 85% of Kenyan avocado. It represents an important crop to rural communities and economies. However, this supply base poses certain challenges. Many produce local varieties that are not suitable for export and quality, traceability and conformity and cool chain management are difficult to achieve. This may account for the frequent criticism of some importers in Europe that Kenyan quality suffers sometime from varietal differences in shipments. Most avocado from Kenya is exported by sea, mainly to Marseilles, France via the Red Sea. The journey takes 18 to 24 days in transit, and the produce is kept in temperature-controlled conditions that allow slow ripening en route.

Tanzania

Tanzania has a range of climatic zones suitable for avocado production. The main production areas are in Kilimanjaro, Iringa, Mbeya and Njombe.

In September 2018, the Tanzania Trade Development Authority (TanTrade) conducted a survey in Rungwe, Mbozi, Lileje, Njombe, Siha and Rombo districts in Mbeya, Songwe, Njombe and Kilimanjaro regions in order to establish avocado production status. The findings revealed the following: Busokelo (121,093 tons), Rombo (1,200 tons), Mbozi (4,546 tons), Rungwe (58,661 tons) and Njombe (4,500 tons). FAO established the production of avocados in Tanzania to be 190,000 tons/year of which 5,000 to 10,000 tons are exported annually. Some considerable quantities are destined to supplying neighbouring countries such as Kenya, Kigoma, Mwanza, Mozambique, Malawi etc. In 2019/2020, production was expected to be 106,000 tons.

Commercial production is in the hands of just three producers/exporters who source from smallholders. Small growers produce mainly local cultivars that are unsuitable for export. New initiatives are ongoing to produce high quality planting material and extend plantings in suitable areas. Reputable sources (UNDP Value Chain Mapping Report e.g.) suggest the Njombe region in Southern Tanzania that produced over 5000 tons in 2013 is the most promising region for development. However, post-harvest management is still relatively of low quality especially in the Northern Regions. Africado Ltd is the country's foremost packing and export company operating up to date cold chain and packaging facilities for fruit exported through Mombassa Port.

Uganda

Uganda has the climate for avocado production and has a history of exporting small volumes of the crop. Most exports are from small exporters supplying European and the Gulf markets on a commission basis. Until the country attracts investment in avocado export, production is unlikely to become a major industry player.

Rwanda, South Sudan, Burundi

According to FAO data, Rwanda is among the leading avocado producers in Africa and the lack of exports from Rwanda signifies high consumption of the fruit within the country. Burundi produces avocado mainly of local cultivars by small growers destined mainly for local consumption, however, there are exports to Tanzania over some months. The climate is suitable for commercial production, but the country needs investment in the industry to engage in avocado exporting.

Table 96: Avocado exports from Kenya - Value

(000) US \$	2013	2014	2015	2016	2017
France	6,369	8,183	9,568	11,586	17,077
United Arab Emirates	9,405	10,209	16,020	17,025	16,650
Netherlands	4,118	4,204	6,762	12,499	14,067
United Kingdom	4,444	9,163	11,955	9,583	7,059
Saudi Arabia	1,712	2,074	2,730	4,888	6,874
Russian Federation	43	33	226	2,359	4,989
Spain	1,311	1,212	1,325	1,560	2,765
Egypt	353	609	976	1,249	1,212
Other	1,593	1,395	2,524	3,242	7,304
Total Exports	29,348	37,082	52,086	63,991	77,997

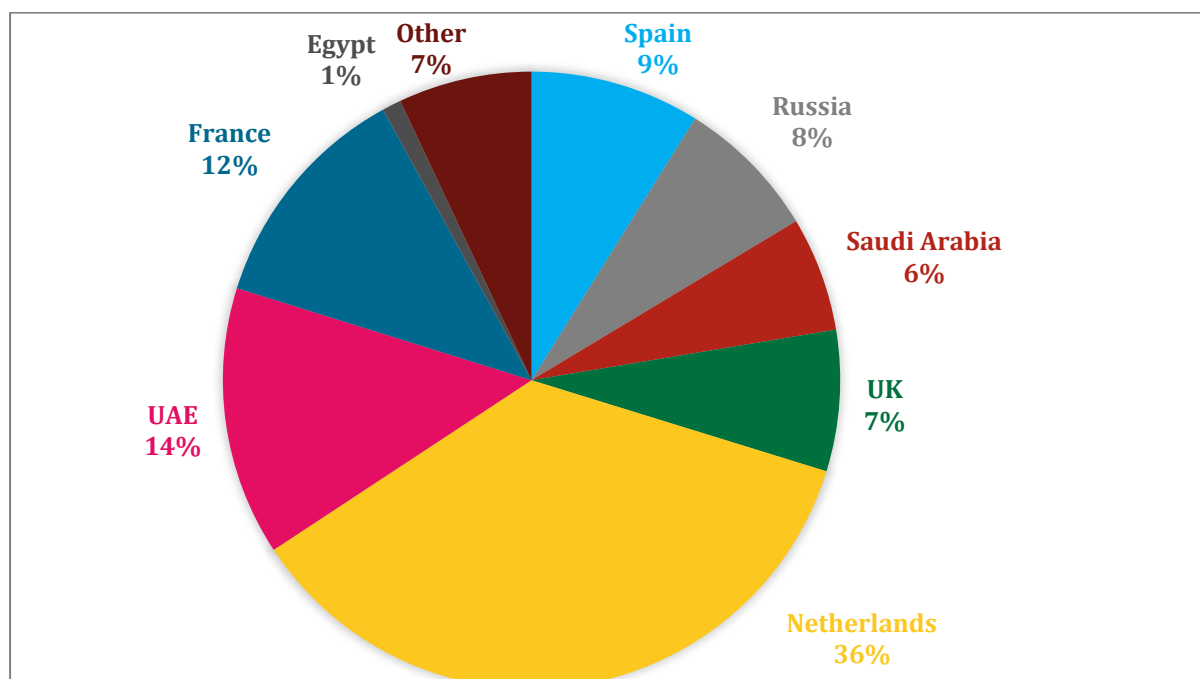
Source ITC Trade Map

Table 97: Avocado exports from Kenya – Quantity

M. Tons	2013	2014	2015	2016	2017
France	5,531	7,482	8,704	8,560	10,423
United Arab Emirates	8,210	10,009	13,209	13,529	12,041
Netherlands	3,959	3,256	5,119	10,282	10,557
United Kingdom	3,196	4,639	6,490	4,645	2,944
Saudi Arabia	1,088	1,262	1,813	3,560	4,874
Russian Federation	132	23	400	1,993	4,172
Spain	1,349	1,038	1,100	1,157	1,735
Egypt	206	440	734	1,037	1,225
Other	1,331	746	1,289	1,919	3,536
Total Exports	25,002	28,895	38,858	46,682	51,507

Source ITC Trade Map

Chart 74: % Share of nations importing avocado from Kenya



Source ITC Trade Map

Table 98: Avocado exports from Tanzania – Value

(000) US \$	2014	2015	2016	2017	2018
France	391	204	1,205	1,519	3,858
Netherlands	234	492	278	1,587	2,830
United Kingdom	176	457	543	644	1,515
Belgium	88	135	0	0	66
Other	10	5	59	892	308
Export Total	899	1,293	2,085	4,642	8,577

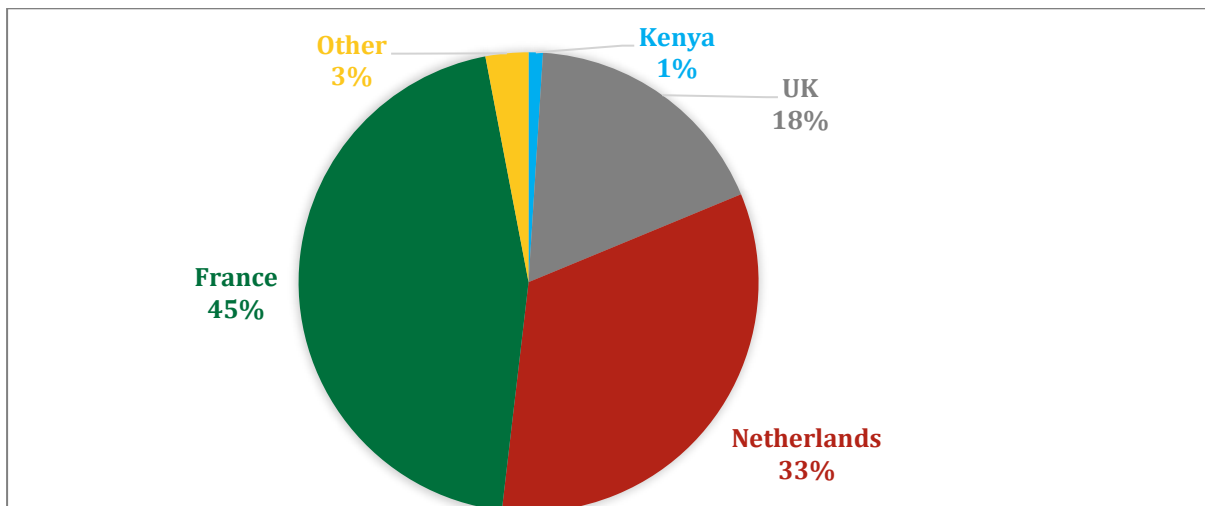
Source ITC Trade Map

Table 99: Avocado exports from Tanzania – Quantity

M.Tons	2014	2015	2016	2017	2018
France	615	704	1,555	1,339	3,133
Netherlands	739	1,900	1,077	1,418	2,304
United Kingdom	319	442	530	512	1,193
Kenya	120	100	500	846	663
Other	84	133	102	259	258
Export Total	1,877	3,279	3,764	4,374	7,551

Source ITC Trade Map

Chart 75: % Share of nations importing avocado from Tanzania



Source ITC Trade Map

There were no significant exports from Burundi, Rwanda or South Sudan. Uganda exported a total of 337 tons valued at 103,000 US\$ in 2018

Threats to Kenyan and Tanzania producers

Kenya and Tanzania will always be rivals in the export markets but there is close co-operation between the two nations. Kenya is long established in the market whilst Tanzania is a relative newcomer with a nascent industry. Some of the Kenyan orchards are ageing and a lack of investment in new nursery stock is now having an impact on yield, quality and cost of production. Investments are taking place in Tanzania by both commercial farmers and smallholder growers with the support of the United States Agency for International Development (USAID), enterprise development grants and some venture capital funds. Tanzania has invested in nursery stock and its commercial orchards are young, productive producing crops of high quality. Smallholder farmers will continue to account for significant percent of export volume hence concerns over quality and traceability both issues each country has to address to make significant expansion into Europe. To mitigate the impact of likely market failure due to poor quality of fresh avocado delivered by smallholder farmers, oil-pressing capacity has been created at Rungwe, Njombe and Mbozi districts.

13.10 Israel

Production

Hass season: November to May

Fuerte season: October to March

Grower organisations: Israeli Fruit Growers Association



Table 100: Israeli production estimates

Production	2015	2016	2017
Area harvested - Ha	7,579	8,180	8,410
Yield - Tons/ha	12.3	12.4	13.1
Production - Tons	93,000	101,500	110,000

Source: FAO



Avocado production started in the mid-1950's and peaked in the 1980's to some 11,000 ha before water shortages and salinity combined with fierce low-price competition from Mexico forced a scaling back to around 8,500 ha today. The main Avocado growing area with almost 70% of production is along the coast while the remaining 30% grows in the Eastern Valleys. Most of the orchards are managed by the collective settlements or Kibbutzim. About 50% of these produce is Hass, which is now the variety of choice for new plantings. Total production now exceeds 90 thousand tons. With Hass accounting for 35% of the area under production.

Israel boasts an advanced Government/Private funded research programme focused on breeding new varieties. The country has made significant advances into production techniques such as the use of growth regulators to control tree height and high-density planting. Cost of labour and labour availability are major problems.

The Israeli industry is expanding at 250 Ha of new orchard a year.

Jewish law imposes a seven-year agriculture cycle when in the seventh year no planting can be carried out. Production problems reported in Israel are:

- Alternate bearing in Fuerte;
- Small fruit especially in Hass;
- Salinity and low productivity;
- Alkaline soils;
- Shortage and very high cost of labour.



Marketing

The Israeli exports rank as one of the top 10 avocado exporting nations achieving a 6.2% share of the market. Its domestic market is large as Israel is a huge consumer of avocado with per capita consumption of 7.6 Kg. pp/year. The Israeli domestic market prefers the varieties Galilee and Ettinger, which starts production in August. Israeli horticulture marketing was once the monopoly of the Co-operative AGREXCO, an extremely effective marketing organisation that established the Carmel brand throughout Europe.

This is now owned by private equity but continues to trade and is a major Israeli exporter of avocados. Leading private exporters are Mehadrin Truport Exports Ltd, which claims to be Israel's largest avocado exporter and Galilee Export. This company sources fruit from Kenya, Chile, Mexico, South Africa and Peru to provide its customers with fruit all the year round. Mehadrin is focusing on expanding further in the European market and forging stronger international export ties. Currently, it deals with major British supermarkets like Asda, Tesco and Sainsbury's, while also exporting to France, the Netherlands and Germany.

Table 101: Israeli avocado exports value

(000) US \$	2014	2015	2016	2017	2018
Russian Federation	9,621	9,235	8,007	15,494	17,788
France	30,116	19,337	12,689	19,198	13,280
Netherlands	18,916	8,576	7,302	14,925	11,435
United Kingdom	13,800	8,747	7,993	9,753	8,892
Slovenia	2,347	1,936	1,979	2,723	3,027
Italy	1,614	1,570	1,436	2,479	2,069
Other	8,508	3,234	2,277	4,801	3,287
Total Exports	84,922	52,635	41,683	69,373	59,778

Source: ITC Trade Map

Table 102: Israeli avocado exports quantity

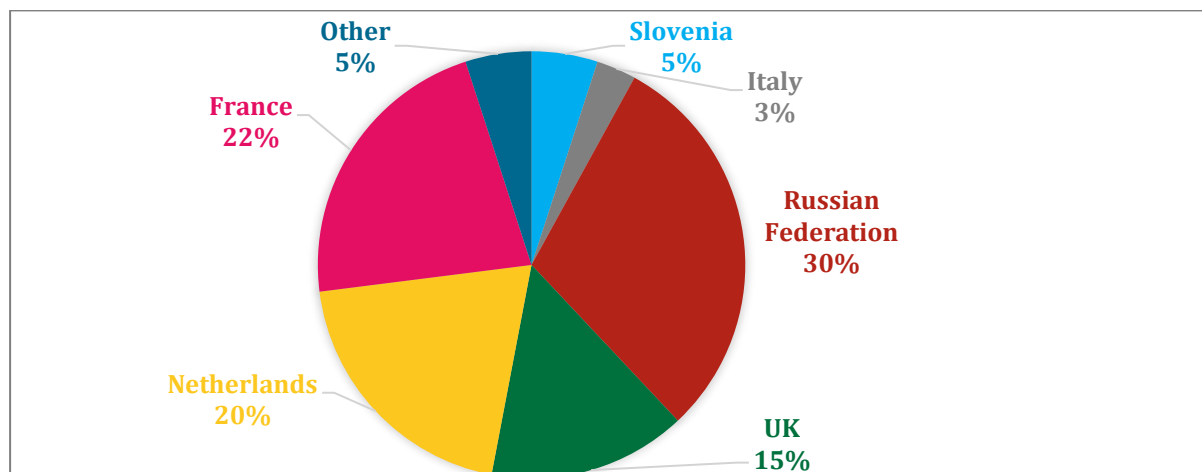
M.Tons	2014	2015	2016	2017	2018
Russian Federation	5,886	4,235	4,375	4,808	5,458
France	11,429	8,867	7,882	5,957	4,075
Netherlands	8,355	3,933	5,615	4,632	3,509
United Kingdom	4,133	4,011	3,958	3,027	2,728
Slovenia	1,035	888	1,723	845	929
Italy	863	720	607	769	635
Other	3,127	1,483	1,164	1,489	1,009
Total Exports	34,828	24,137	25,324	21,527	18,343

Source: ITC Trade Map

The company has also begun to sell outside of Europe, exporting around 200MT of Hass fruit to South Africa.

Israel enjoys the benefit of sea freight, the time to ship to Europe being only 4-5 days. The country has a long history of exporting horticulture produce and many claim that it is through their efforts that the avocado fruit became popular in Europe. Israel's main markets are France and the Netherlands.

Chart 76: Share of importing nations of Israeli avocado by value US\$



Source: ITC Trade Map

Table 103: Evolution of Israel's avocado exports to major importers M.tons

(000) US \$	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Russian Federation	4,301	7,317	6,223	5,727	9,804	9,621	9,235	8,007	15,494	17,788
France	14,750	18,080	20,246	31,469	46,856	30,116	19,337	12,689	19,198	13,280
Netherlands	9,442	14,602	16,787	23,961	27,418	18,916	8,576	7,302	14,925	11,435
UK	6,843	9,906	8,279	9,660	20,213	13,800	8,747	7,993	9,753	8,892
Slovenia	3,013	5,669	3,313	3,361	4,232	2,347	1,936	1,979	2,723	3,027
Italy	2,656	2,427	1,586	484	931	1,614	1,570	1,436	2,479	2,069
Ukraine	61	391	217	352	1,226	689	525	60	502	804
Total Exports	54,412	75,040	71,487	83,266	122,121	84,922	52,635	41,683	69,373	59,778

Source: Trade Map

Threats to Kenyan & Tanzanian producers

As there is a ban on all Israeli imports into the GCC states, the majority of Israeli exports are destined to Europe. As Israel enjoys close transport links with Europe and has a reputation for high quality and first-class export management despite high production, costs Israeli avocados enjoy a good reputation throughout Europe. Production problems with water shortages and salinity will always be of concern to growers in Israel and many in the European market complain about small fruit. Although the Israeli season is long due to the wide variety choice, it is mainly a winter exporting nation only affecting the Kenyan and Tanzanian producers at the beginning and end of their avocado season.

13.11 Mexico

Production

Hass season: All year round **Fuerte season:** August to April

Producer organisations: Mexican Avocado Association – APEAM

Government agencies for agriculture development:

The Secretariat of Agriculture, Livestock, Rural Development, Fisheries and Food.



Table 104: Mexican production estimates

Production	2016/17	2017/18	Forecast
Area planted (Ha)	218,492	231,028	25,000
Area harvested (Ha)	180,536	188,723	20,000
Production M.Tons	1,889,354	2,029,886	2,150,000

Source: SAPARPA

Mexico is the world's largest producer of avocado with over 1.4 million tons of avocados a year. The area under production has grown by nearly 30% over the last ten years due partly to good weather and improved phytosanitary procedures. Production is concentrated in five states, Michoacán, Chiapas, Guerrero, Jalisco and Mexican State. Michoacán is the world's leader in avocado production and accounts for over 85% of the total production in the country. The state is also the only Mexican state authorised to export Hass avocados to the USA. Other states such as Jalisco have focused on exporting to Japan, Canada and Europe. Most states grow Hass for its long shelf life and export potential, but smaller quantities of Fuerte, Bacon, Pinkerton and Reed are also grown.



The cost of production is relatively high, varying from \$ 3,600 for basic and to over \$ 5,000 per ha adopting a higher level of technology including mechanisation and irrigation.

Reported production problems in Mexico are:

- High incidence of avocado root rot (*Phytophthora cinnamomi*);
- Climate favouring fungal disease and pests requiring excessive and costly spray programmes.

Marketing



The USA is the largest overseas market for Mexican avocados and exports have been increasing due to a good international demand and year-round market access to all 50 U.S. states. Due to phytosanitary restrictions in the USA, access to the USA market is limited to the production from Michoacán state.

The USA levies \$0.25 per pound (0.45 kg) on fresh Hass imported into the USA under the US Hass Avocado Promotion, Research and Information Order. This levy finances promotion, research and industry programmes.

The Mexican Avocado Association APEAM is encouraging investment to improve the quality of fruit and ensuring freedom from injurious pests and diseases. It is hopeful that this programme will also improve yield and quality. The domestic market is huge and provides a strong financial base for export. The country exports of avocado in 2018 totalled over 1 million Metric tons.

Table 105: Mexican avocado exports quantity

M.Tons	2014	2015	2016	2017	2018
USA	516,085	683,386	696,395	678,711	814,816
Canada	36,411	54,459	66,480	76,919	89,134
Japan	50,975	54,739	67,860	54,963	66,210
Netherlands	1,427	5,393	15,897	19,559	16,765
Spain	2,510	9,167	17,555	13,120	15,852
France	6,762	10,811	16,658	14,932	14,766
Singapore	44	85	1,053	1,606	14,499
China	3,721	12,947	10,280	8,496	12,202
El Salvador	10,266	10,246	10,908	9,261	11,769
Honduras	6,228	8,879	8,390	6,434	11,663
Other	14,299	13,392	15,119	12,557	24,261
Total	648,729	863,503	926,597	896,557	1,091,936

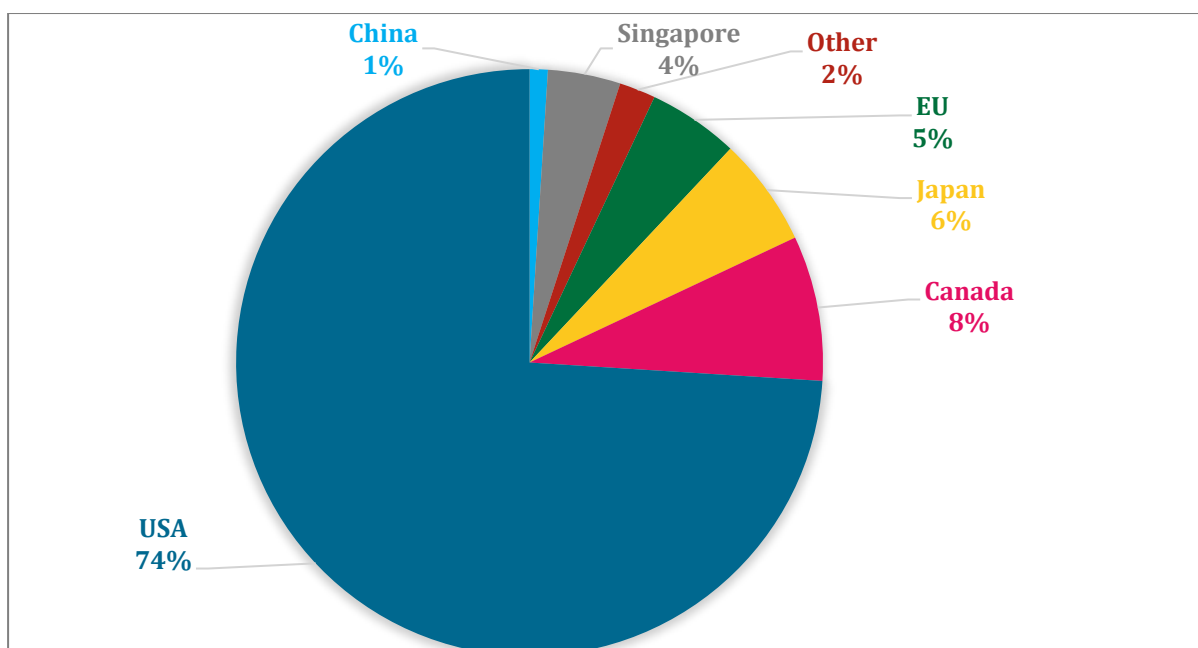
Source: ITC Trade Map

Table 106: Mexican avocado exports value

(000) US\$	2014	2015	2016	2017	2018
USA	1,111,531	1,292,412	1,530,351	2,137,444	1,896,891
Canada	78,855	103,536	151,436	253,582	210,043
Japan	112,262	104,796	154,841	176,480	157,088
Netherlands	2,952	9,424	36,605	59,281	45,964
Spain	4,980	15,901	38,903	45,070	37,456
Singapore	94	135	2,544	5,309	37,179
France	13,557	19,213	38,433	45,653	34,359
China	8,278	24,361	23,188	23,944	30,514
El Salvador	19,803	19,045	24,735	26,005	27,722
Honduras	12,309	17,021	17,898	17,560	27,043
Other	30,633	26,619	31,829	37,585	58,128
Total	1,395,254	1,632,463	2,050,763	2,827,913	2,562,387

Source: ITC Trade Map

Chart 77: Principal export markets for Mexico's avocado exports



Source: ITC Trade Map

75% of Mexico's exports are shipped to the USA and have increased steadily over the past 10 years reflecting the rising demand in the USA. There has been a significant increase in shipments to Europe despite their relatively small share in Mexican exports (3%) as their main focus is/and remains the US market.

Table 107: Mexico avocado export growth

M.Tons	2009/ 2010	2010/ 2011	2011/ 2012	2012/ 2013	2013/ 2014	2014/ 2015	2015/ 2016	2016/ 2017	2017/ 2018	2018 Tons
World	-4	6	42	14	15	33	7	-3	22	1,091,936
USA	-8	17	38	17	19	32	2	-3	20	814,816
Canada	12	-9	45	3	7	50	22	16	16	89,134
Japan	46	-17	58	3	-1	7	24	-19	20	66,210
Netherlands	-39	-65	77	-24	78	278	195	23	-14	16,765
Spain	23	-71	500	12	15	265	92	-25	21	15,852
France	-36	-70	28	243	31	60	54	-10	-1	14,766
Singapore	224				-22	93	1136	53	803	14,499
China	-87	1579	54	1429	322	248	-21	-17	44	12,202
El Salvador	-24	-10	53	-1	-2	0	6	-15	27	11,769
Honduras	1	-27	87	1	-20	43	-6	-23	81	11,663

Source: ITC Trade Map

Threats to Kenyan & Tanzanian producers

The dominance and demand of the USA market accounts for nearly 75% of all Mexico's avocado exports combined with the very large domestic consumption (estimated at over 8.5 kg per person) – or 640,000 tonnes, with good local prices. It provides a solid commercial and financial basis for Mexican producers to explore more distant markets. Currently, exports to Europe are low with France, Spain and the Netherlands. They are currently the main markets but represent only 5 % of the total exported by Mexico. The present expansion policy will mean additional export volumes and Europe will play a major part in Mexico's ambitions.

The USA is very demanding on phytosanitary requirements and major USA shippers are very active to ensure compliance with USA standards. These well-managed corporations have introduced strict post-harvest management, as they demand an unbroken cool chain from tree to market. Due to this, Mexican producers have experienced in shipping and satisfying the quality demands of European importers. However, recent political problems over the Mexican border with the USA, combined with concerns over the volume of imports into the USA could pose problems. Mexico may be forced to divert exports from the USA to the European market. However, Europe has recently imposed phytosanitary restrictions on mangoes coming from fruit fly areas and restrictions may be applied to all fruits as a protection for the European fruit industry.

Yields are increasing with reported yields on farms adopting modern technology to be in the range of 16 to 20 M. Tons/ha. These partly offsets the high production costs making Mexican exporters competitive in price in the markets.

APEAM is currently investing in promotional campaigns especially in Japan and Canada that could soon be extended to Europe with the ambition of diversifying into more export markets.

"Avocados from Mexico Inc" is a recently created marketing agency. A joint venture created by the Mexican Hass Avocado Importers Association (MHAAIA) and APEAM to boost promotion and exports. This organisation has received \$36 million to promote the "Avocado's from Mexico" brand in the USA and if successful, the organisation could target funding for similar promotions in Europe.

13.12 Peru

Production

Hass season: May to September

Fuerte season: April to September

Producer organisations: PRO Hass

Association of Producers of Hass Avocados of Peru

Government agencies for agriculture development: Sierra Exportadora



Table 108: Peruvian production estimates

Production	2015	2016	2017
Area harvested (Ha)	33,590	37,871	39,489
Yield Kg/Ha (1)	10,929	12,024	11,819
Commercial orchards	15 - 25 Ton/Ha		
Production M. Tons	367,110	455,394	466,758

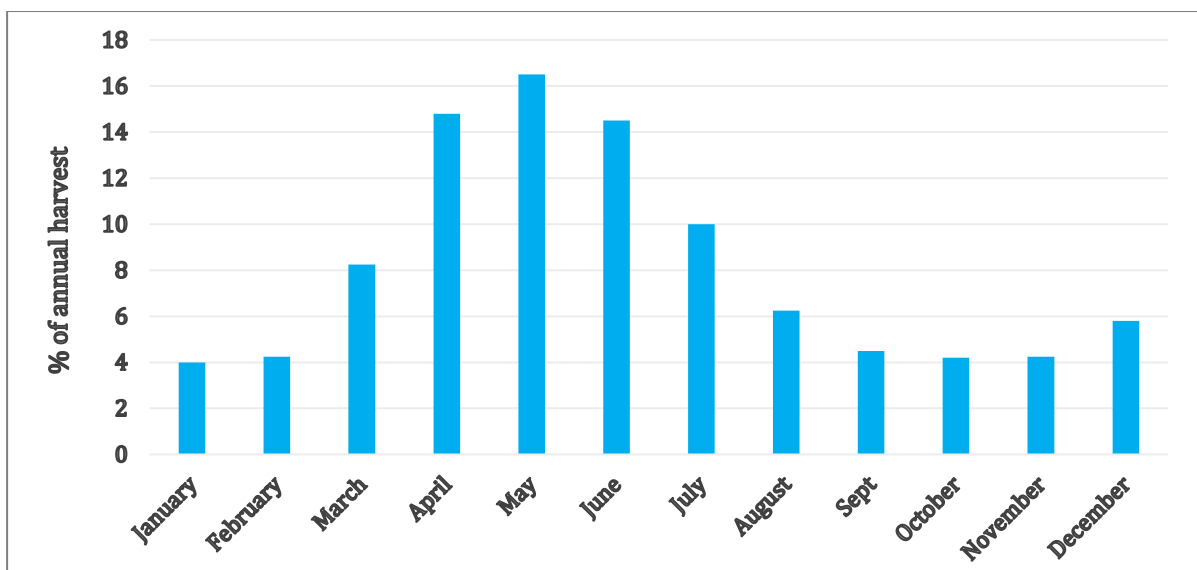
(1)Yield relates to all orchards, local, young and fully bearing
Source: FAO

Peru is located near the equator and along the Pacific. The Ocean creates consistently mild temperatures all year-round. The soil is rich and sandy, and the Andes Mountains provide a constant flow of pure water for irrigation. Naturally sheltered as it is from heavy rain or freezing temperatures, Peru is an almost perfect climate for the cultivation of avocados. The area under production in Peru is estimated by FAO at 39,489 ha producing over 466,000 tons of avocado. Production in Peru has traditionally been done by small-scale farmers but there has been considerable investment by international farming groups such as the Danish Company Ingleby Farms and Camposol together with capital and technical investment by large scale importing and shipping companies in organising grower groups. This has resulted in the planting of relatively new and orchards bearing the fruit of increased size and high quality. These orchards are now highly mechanised with considerable investment in mechanisation, cold storage and cool chain from field to seaport. Peru's production has increased significantly over the last five years and the country is now the second-largest producer after Mexico.

ProHass expects that with the maturity of the most recent plantings and improved orchard management, avocado production will continue to grow. Production has increased over 60% from 268,000 tons in 2012 to the current level of over 466,000 tons.

Peru suffered from the "El Nino season" in March 2017 but the effect on avocado production was less than first feared. 95% of the Hass crop is exported. The remainder along with the Fuerte variety is for local consumption where the estimated per capita annual consumption is around 5 kg, double the Scandinavian consumption, which is the highest in Europe. Peruvians prefer green skin varieties.

Chart 78: Peru's harvest calendar



Source: MINAGRI

Marketing



The country exported 359,426 tons of fruit in 2018 with 230,000 tons going to Europe, Peru's major export market. Peru has recognised the quality problems associated with shipping over long distances and has recently introduced mandatory quality standards with a minimum of 23% dry matter for Hass to ensure a standardised product that will ripen evenly at the point of delivery.

Large commercial companies dominate production and exporting the largest of which is Camposol which exported 44 thousand tons of avocados in 2018 with an estimated 20% market share; followed by Consorcio de Productores de Fruta S.A with 9% and Agricola Cerro Prieto S.A. c with 6%. Camposol is a vertically integrated organisation producing and exporting a wide range of products, including avocado, with an annual turnover in 2017 of US\$ 240 million. The company has commercial offices in the US and Europe and sells about 40% of its products to supermarkets and food services through these offices. Not only does it invest in modern orchards but supports much smaller out-growers. Their success is attributed to the company having complete control over its production and supply chain. It is actively engaging with a joint venture with Dole to enter the Chinese market.

Many of the company's orchards are new and will not be in full production until 2023 when they anticipate marketing a further 40,000 tons. Since 2014, Peru has increased its acreage by 3000 ha per year. This rapid expansion has caused concern by environmentalists in the USA and Europe over fears of deforestation and water security.

Peru's export achievements over the last 10 years have been outstanding, increasing almost tenfold from 48 thousand tons in 2009 to 359 thousand tons in 2018.

Table 109: Peru avocado exports - Quantity

M.Tons	2014	2015	2016	2017	2018
Netherlands	58,284	65,153	79,723	92,516	138,834
USA	65,188	47,177	32,296	66,236	82,825
Spain	34,816	31,775	41,744	41,830	59,445
United Kingdom	10,399	17,234	21,303	24,817	29,579
Chile	2,716	8,324	7,992	6,090	20,237
China	0	59	1,869	4,628	11,845
Hong Kong	1,196	524	1,932	1,805	5,212
Japan	57	25	947	3,270	5,183
Costa Rica	108	1,694	3,296	1,861	2,033
Russian Federation	400	528	717	1,073	1,645
Other	5,929	5,507	2,302	3,066	2,590
Total	179,093	178,000	194,121	247,192	359,428

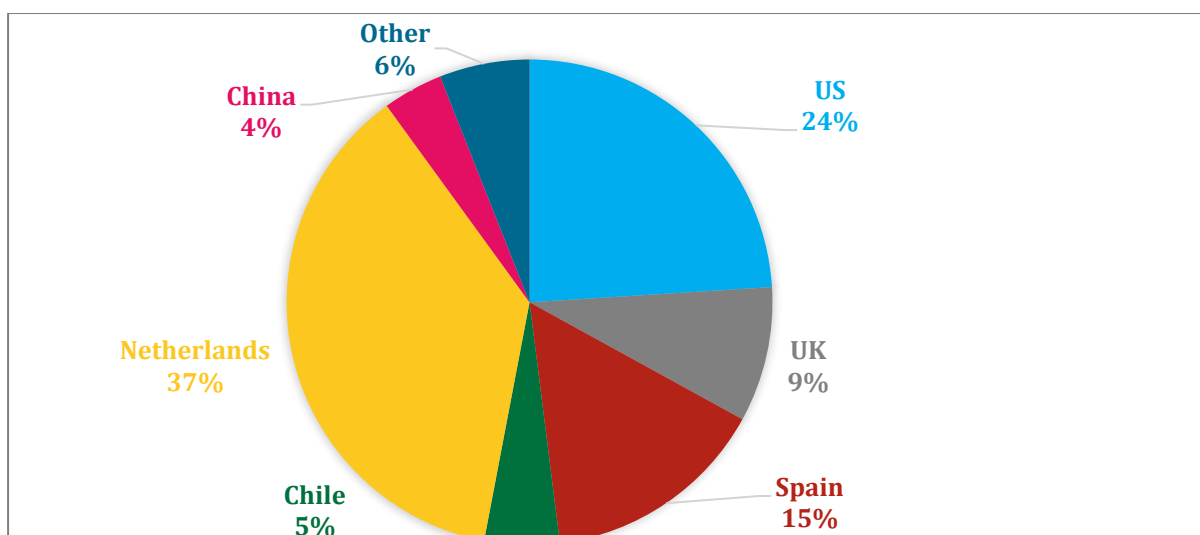
Source: ITC Trade Map

Table 110: Peru avocado exports - Value

(000) US\$	2014	2015	2016	2017	2018
Netherlands	96,581	117,599	163,402	2,017	2,018
USA	120,965	83,134	74,919	175,181	175,641
Spain	47,689	50,471	78,130	88,964	110,396
United Kingdom	18,685	31,914	44,231	58,050	65,372
Chile	3,325	13,380	12,480	10,028	34,195
China	0	104	4,580	13,442	30,111
Japan	195	39	2,050	9,248	13,532
Hong Kong	2,106	975	4,622	5,362	12,465
Costa Rica	172	3,191	7,271	4,962	5,238
Russian Federation	566	781	1,107	1,827	3,141
Other	9,827	4,681	4,096	211,318	270,201
Total	300,111	306,269	396,888	580,399	722,310

Source: ITC Trade Map

Chart 79: Importing countries share of avocado exports from Peru



Source: ITC Trade Map

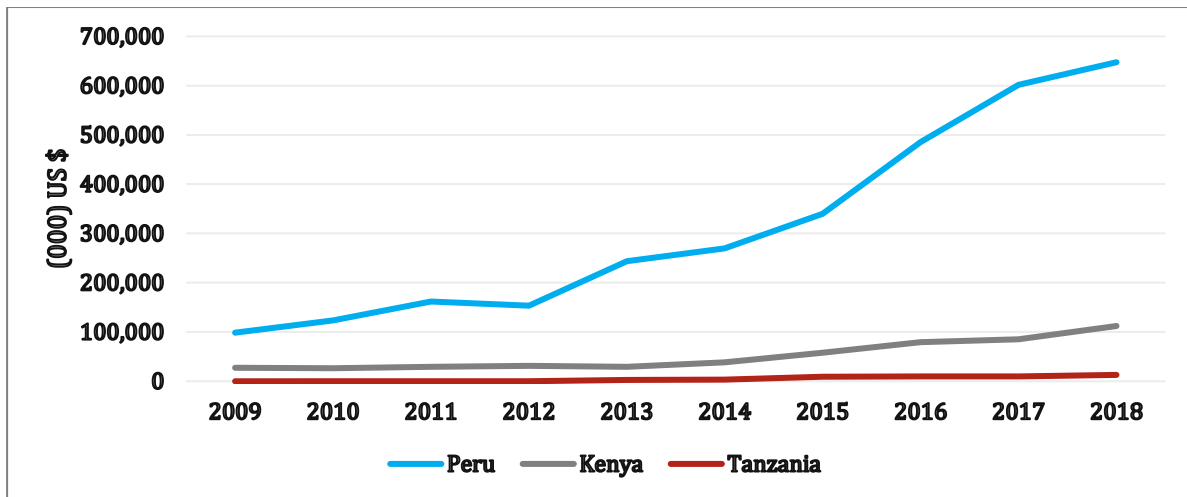
Table 111: Evolution of Peru's avocado exports to major importing nations

Country	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
EU	46,206	57,182	76,340	80,441	110,005	170,003	162,470	176,853	227,017	313,085
Chile	479	281	937	678	785	2,716	8,324	7,992	6,090	20,237
China				21	21		59	1,869	4,628	11,845
Hong Kong			132	272	628	1,196	524	1,932	1,805	5,212
Japan						57	25	947	3,270	5,183
Costa Rica		162	721	113	45	108	1,694	3,296	1,861	2,033
Others	1,661	1,896	3,414	2,051	3,060	5,013	1,500	1,232	2,521	1,833
Total	48,346	59,521	81,544	83,576	114,544	179,093	174,596	194,121	247,192	359,428

Source: ITC Trade Map

Exports of avocado from Peru have focused almost entirely on the European market and the EU nations in particular. The increase and penetration are phenomenal as they evolved from small shipments to over 313 thousand tons in 2018. The exports in the last year rose to 38% and along with new planting and young orchards, exports are expected to reach full production over the next few years.

Chart 80: Evolution of exports from Peru to the EU market



Source : ITC TradeMap

Peru's exporters have capitalised on the rapid expansion of the European market by increasing their exports six-fold.

Threats to Kenyan and Tanzanian producers

As with most South American producers, Peru's exports are enjoying the profitable and growing European market and more recently, the Asian one. These export markets coupled with a strong domestic market gives commercial and financial security to exporters and a sound base to develop to other markets. The country benefits from large commercial export companies that own their orchards and source from smaller farmers. The structure and financial strength of these companies have enabled a high level of capital investment in modern-up facilities. Exporters recognised the importance of reliability of supply and quality and encouraged the government to introduce mandatory quality standards. This approach has gained them an enviable reputation in its main market: Europe. Alliances with major exporting corporations active in Asian countries have allowed Peruvian exporters to enter the lucrative Chinese markets. Europe is still being targeted as their prime market considering the relatively low-cost production base achieved by good management and high yields from the new plantations that are exceeding 20 tons/ha. Peruvian avocado exporters will likely satisfy any increased demand from Europe.

The acceptance by importers in Europe of the high professional standards demonstrated by Peruvian exporters coupled with consistency and reliability of supply – subject to the occasional problems due to weather – and the estimated increase in volumes exported poses a real threat to Kenyan exporters as their seasons are similar. However, Peru's model for successful exporting in being market-led and focusing on what the market wants is an example for all Kenyan and Tanzanian exporters to follow.

Peru's exporters have recognised and adapted to the changing markets and accepted that Post-harvest and supply chain management is one of the keys to successful exporting. The introduction of mandatory harvesting and quality standards has been enthusiastically taken up by the reputable exporters. This will deter the opportunistic exporter who may bring the country in disrepute. This approach will cement Peru's reputation and achievement of high market prices

13.13 South Africa



Production

Supply season: March to September

Grower organisations: South African Avocado Growers Association (SAAGA)

Table 112: South African production estimates

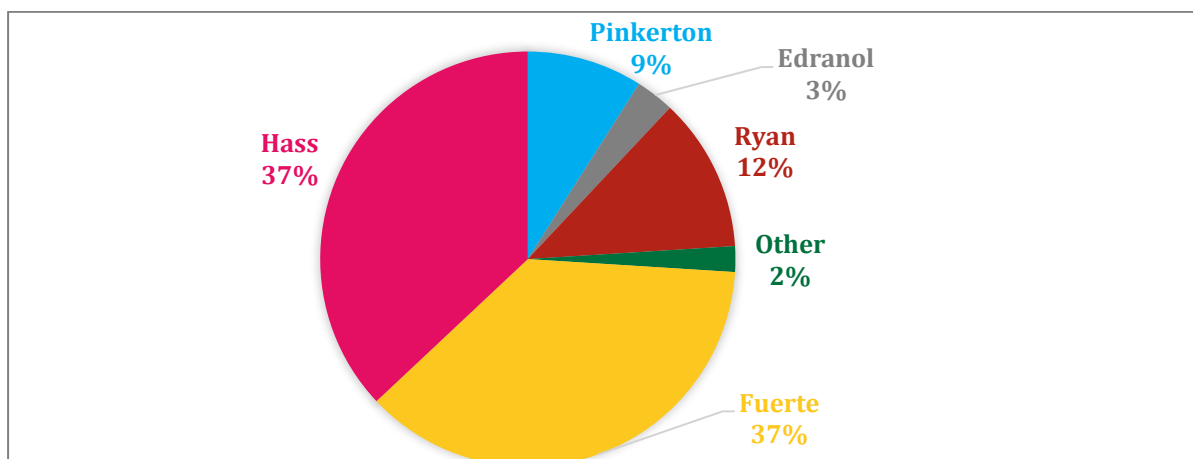
Production	2015	2016	2017
Area harvested – Ha	16,471	17,025	11,814
Yield - Tons/ha	5.2	5.2	5.3
Production - Tons	86,189	89,440	62,840

Note: Yield is for all harvested crops, young and fully bearing. Commercial yields are from 15 to 25 Ton/ha
Source: FAO

According to SAAGA, the total production in 2018 was 170,000 Tons.

Production of avocado in South Africa is concentrated in the North East warm sub-tropical areas of Limpopo and Mpumalanga provinces. The production season is from mid-March to September. South Africa has been a leader in international marketing of the fruit starting from the early 1970's with plantings of around 2000 ha. This has increased to around 17,000 ha of commercial orchards in 2018. The industry is rapidly with about 1,000 ha planted every year. Hass and Fuerte are the predominant varieties but 80% of young plants grown on nurseries for future commercial production are of the Hass variety.

Chart 81: Area planted in South Africa by variety



Source: SAAGA

An equal amount of Hass and Fuerte are grown accounting for 74% of production.



THE SOUTH AFRICAN
AVOCADO GROWERS' ASSOCIATION
ESTABLISHED 1971

SAAGA is a vigorous and very effective voluntary trade organisation that represents 95% of the country's avocado exporters and is funded by its

members. Its main activities are providing support, technical services, market research, development, and importantly in association with the national Department of Agriculture determining and enforcing quality standards for export. Quality inspections are carried out by a parastatal organisation, the perishable Products Export Control Board (PPECB) on each consignment shipped to ensure the quality standards are met.

Most of the orchards are large-scale managed farms and more than 95% of avocado growers are GGAP accredited with many growers also accredited with HACCP, BRC, and Fairtrade. Cape Town is the major export port and is approximately 1,800 km from the growing areas and it takes fruit about 25 days from packing to reach the European retailer, thus the importance placed on strict control and discipline within all links in the cold chain.

A need for continuity of volume in order to meet the requirements of supermarket programmes has resulted in significant consolidation within the South African avocado export industry. SAAGA maintains that contracts with major retailers provide greater price stability than selling fruit on the open market.

Problems found in South African orchards include:

- Alternate bearing in Fuerte that seriously affects exports;
- Root rot caused by *Phytophthora cinnamoni* now controlled with most new plantings using tolerant rootstocks such as “Merensky 11” and Duke 7;
- Avocado sunblotch viroid;
- Anthracnose (*Colletotrichum gloeosporioides*).

Marketing

Exports in 2018 reached 89 thousand tons with Europe absorbing over 90% of exports, and the Middle East taking up the remainder.

Table 113: South African avocado exports value

(000) US \$	2014	2015	2016	2017	2018
Netherlands	62,883	48,420	50,515	42,727	79,352
UK	16,549	14,689	12,513	13,082	19,403
Spain	1,673	2,615	3,711	4,196	6,892
Russian Federation	1,551	1,266	1,089	768	2,129
United Arab Emirates	774	87	14	130	1,781
Portugal	126	228	312	139	1,162
Namibia	436	545	524	767	941
Other	6,174	3,035	3,524	2,308	5,062
Export Total	90,166	70,885	72,202	64,117	116,722

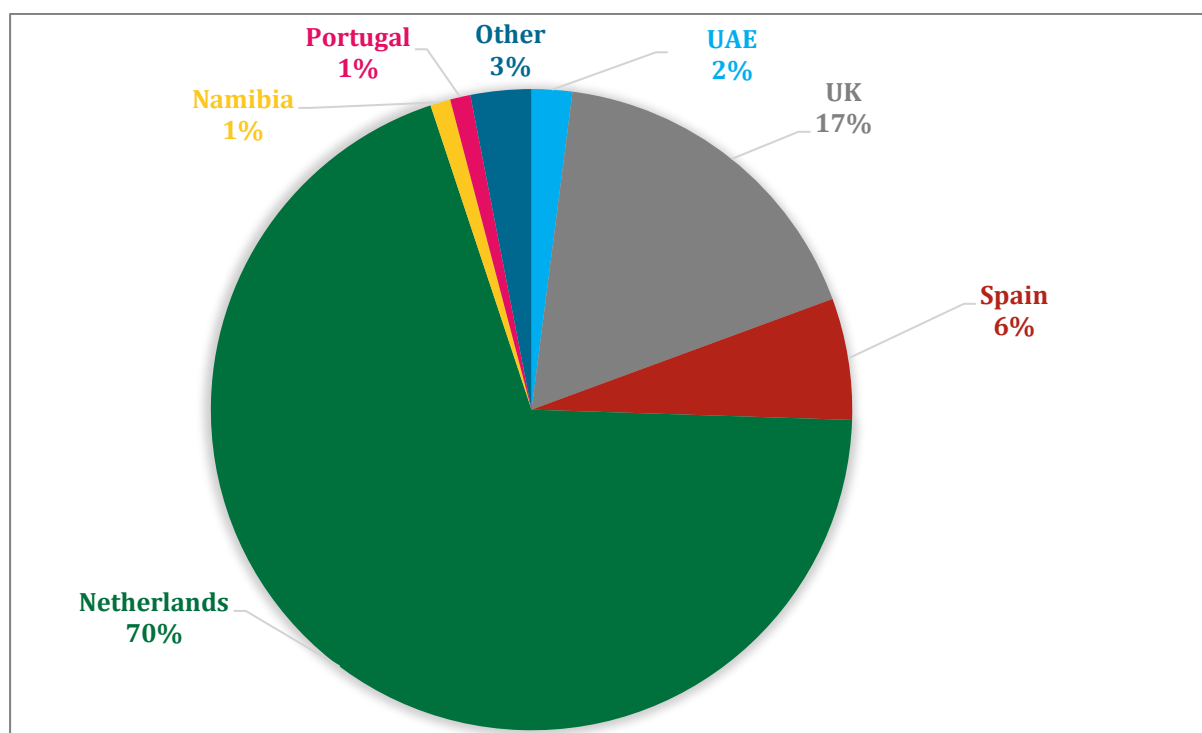
Source: ITC Trade Map

Table 114: South African avocado exports quantity

M.Tons	2014	2015	2016	2017	2018
Netherlands	45,551	40,854	41,279	29,824	60,274
UK	11,919	11,439	10,744	9,503	17,893
Spain	1,296	1,789	2,311	1,881	3,716
Russian Federation	1,344	950	701	350	1,243
United Arab Emirates	599	72	23	53	717
Portugal	119	261	346	148	1,443
Namibia	452	486	523	537	885
Other	4,565	1,814	1,939	1,196	3,172
Export Total	65,845	57,665	57,866	43,492	89,343

Source: ITC Trade Map

Chart 82: % Share of importing countries for South African avocado by value US\$



Source: ITC Trade Map

Table 115: Evolution of South African avocado exports to major importing nations-Tons

Country	2010	2011	2012	2013	2014	2015	2016	2017	2018
Netherlands	32,306	22,741	33,922	29,555	45,551	40,854	41,279	29,824	60,274
UK	9,346	5,901	9,998	11,400	11,919	11,439	10,744	9,503	17,893
Spain	1,761	356	1,289	1,137	1,296	1,789	2,311	1,881	3,716
Portugal	84	0	0	0	119	261	346	148	1,443
Russian Federation	0	0	0	534	1,344	950	701	350	1,243
Namibia	470	765	390	371	452	486	523	537	885
UAE	302	214	311	344	599	72	23	53	717
Other	7,363	1,589	9,163	7,388	4,565	1,814	1,939	1,196	3,172
Total	51,631	31,566	55,073	50,729	65,845	57,665	57,866	43,492	89,343

Source: ITC Trade Map

Threats to Kenyan and Tanzania producers

The South African season coincides with the Kenyan and Tanzanian seasons and is thus a major competitor. The country has enjoyed a long and successful export trade and the producers are supported by a very strong Growers Association. The industry is well structured with vertically integrated exporting companies and a grower association that invests heavily in research and development as well as promotion.

To satisfy the demand for year-round supplies the major exporting groups now source world-wide with some of their supplies coming from Kenya especially late season supplies as one of Kenya's advantages is that the Kenyan season is slightly later than the main South African season. South African producers enjoy a growing domestic market, which gives exporters a sound base to develop export markets. Europe has been targeted for the last 10+years with promotional campaigns and exporters have responded to the challenges of the developing markets. Post-Harvest and supply chain management is in the forefront of research and development and strict compliance to quality standards is encouraged and adapted by all the major exporting companies.

The very high professional standards demonstrated by South African exporters coupled with consistency and reliability of supply – subject to the occasional problems due to weather and biennial bearing – and the estimated increase in volumes exported poses a real threat to Kenyan exporters as their seasons is similar. However, the South African model for successful exporting in being market led and focusing on what the market wants and providing this, vertically integrated exporting companies, having representation in all their targeted markets is an example for all Kenyan and Tanzanian exporters to follow. Furthermore, investment taking place in Tanzania is an extension of South Africa base. Westfalia is the driving force. In fact Tanzania sector growth depends on technology from South Africa

13.14 Spain

Production

Hass season: December – May

Fuerte season: October - February



Table 116: Spanish production estimates

Production	2015	2016	2017
Area harvested - Ha	11,329	11,441	11,812
Yield - Tons/ha	7.6	8.0	7.8
Production - Tons	86,636	91,509	92,936

Note: Yields are the average of all fruit harvested. Commercial fully bearing orchards yield between 15 to 25 Ton/Ha
Source: FAO 2018

Spain is the foremost producer, importer and exporter of avocado in Europe. Spain produces a large volume of fruits over 5 million ha, of which 200,000 ha are devoted to sub-tropical fruits.

Avocado is the principal sub-tropical fruit crop with 11,000 ha under production producing over 92 thousand tons of fruit. Avocado is grown mainly along the Southern coastal areas particularly in the regions of Andalucia and Valencia.

Spanish growers have recognised the move in the EU market from green-skin varieties to Hass. New Spanish plantings have increased the area under production of Hass to nearly 70% of the total area under production with Fuerte occupying 14%. Bacon is also grown. The harvest period starts with Fuerte in October to January followed by Hass, which is harvested from December to May.

Spain is expected to produce around 70,000 metric tons (MT) of avocados during the 2018-19 season, which is a 20% rise from last season, the increase attributed to a rise in planted area, high-density planting and increased productivity. Of the total, 56,000MT are to be exported within the European Union. The Hass season starts in November and runs through to April, while the green-skinned varieties start a little earlier.

Spanish producers face problems with:

- Spring leaf drop;
- Alternate bearing in Fuerte;
- Limestone soils;
- Acute water shortages.

Marketing

Table 117: Avocado exports from Spain – Quantity

M.Tons	2014	2015	2016	2017	2018
France	29,502	32,064	34,836	37,020	39089
Netherlands	6,909	10,375	9,373	11,968	14305
Germany	7,515	9,118	9,612	12,075	11248
Morocco	5,906	5,694	3,099	4,066	9239
UK	7,147	6,799	9,297	14,757	8446
Portugal	2,545	2,767	2,533	2,676	4419
Italy	986	1,295	2,031	2,533	3181
Belgium	1,878	2,801	2,480	2,701	2655
Denmark	1,846	2,070	2,169	2,103	2097
Poland	1,691	1,617	2,570	1,485	1808
Sweden	1,529	1,880	2,015	2,131	1680
Finland	1,430	1,964	2,366	2,485	1481
South Africa	1,172	906	1,779	1,762	1224
Austria	560	660	616	927	1124
Romania	324	557	466	701	977
Latvia	818	1,011	944	1,077	774
Lithuania	405	275	386	361	741
Norway		4	178	510	466
Hungary	119	135	152	243	451
Spain	1,932	2,449	5,534	4,074	403
Switzerland	146	17	21	693	403
Other	1,115	1,280	1,263	1,556	1822
Total Exports	75,475	85,738	93,720	107,904	108,033

Source: ITC Trade Map

Most of the Spanish production is destined to France, which imports nearly 30,000 tons. Spain has a very strong domestic market. A European wide transport and distribution logistical system servicing the whole Europe with a very wide range of products. The country is one of the highest consumers of avocado at nearly 2.5 Kg p.p./year in Europe. In 2018 Spain, exported 108 thousand tons of avocado valued at 351 million US \$.

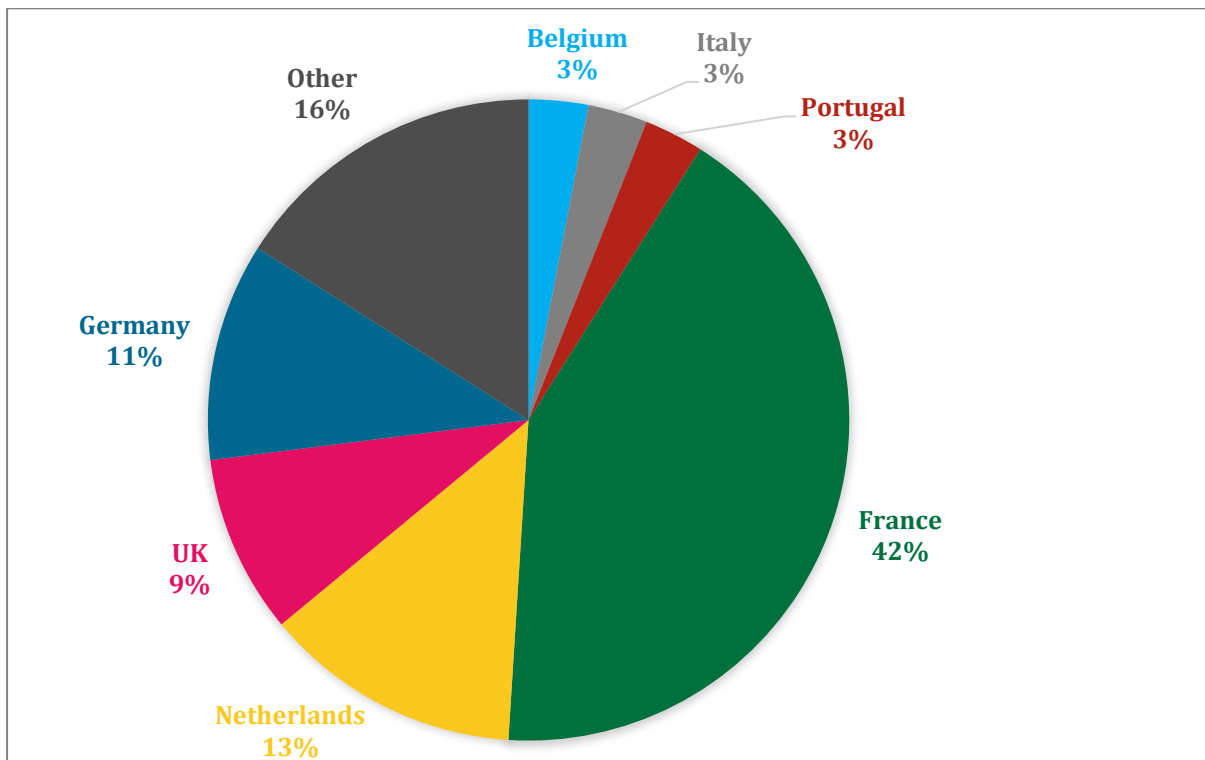
France is the principal importer of Spanish exports and some are re-exported throughout Europe. Spain is actively diversifying its exports and has entered the USA market.

Table 118: Avocado exports from Spain – Value

(000) US \$	2014	2015	2016	2017	2018
France	89,137	94,234	118,809	143,268	150,069
Netherlands	17,754	27,362	28,454	38,355	45,974
Germany	20,432	21,515	26,188	37,719	40,085
UK	19,578	16,876	29,241	37,485	30,352
Belgium	6,365	8,473	9,354	11,368	10,735
Italy	2,564	3,620	6,152	8,791	9,583
Portugal	3,797	4,136	4,616	6,197	8,989
Denmark	6,002	6,231	6,582	7,529	7,655
Morocco	5,887	4,698	6,490	8,659	7,121
Austria	2,405	2,408	2,528	4,270	5,999
Sweden	4,424	5,088	6,409	6,835	4,935
Poland	4,932	4,725	6,817	4,428	4,741
Finland	2,839	3,796	5,316	6,754	4,517
South Africa	3,041	2,251	4,254	5,590	3,680
Romania	924	1,359	1,351	2,309	2,634
Norway	0	14	521	1,699	2,035
Switzerland	486	27	72	2,918	2,000
Latvia	1,702	1,995	1,974	2,237	1,889
Lithuania	574	391	673	1,125	1,555
Hungary	223	225	316	632	1,039
Other	2,617	2,929	2,377	3,882	4,497
Total Exports	195,683	212,749	269,105	343,008	351,111

Source: ITC Trade Map

Chart 83: % Share of nations importing avocado from Spain by value US\$



Source: ITC Trade Map

Threats to Kenyan & Tanzanian Producers

Spain enjoys proximity to all European countries and can undertake all the current fruit market-ripening requirements especially the expanding “ready to eat” market directly from the source. The country’s exporters have invested in state-of-the-art logistical systems that are rivalling the Dutch in being able to offer produce on a daily basis to countries throughout Europe. Spain is predominately a winter season producer with exports starting in October. The main Spanish Hass season starts in December, peaks in March/April, and ends in June/July. Thus, Spanish avocado supply, clashes with the beginning of the Kenyan and Tanzanian Hass export season, which starts in March/April.

13.15 The United States of America

Production

Hass season: January to October

Fuerte season: November to May

Florida season: June to March

Grower/Exporter's organisations:

The California Avocado Commission

California Avocado Society

Hass Avocado Board



Table 119: US production estimates

Production M. Tons	2015	2016	2017
Area harvested (Ha)	23,990	23,200	22,900
Yield Ton/acre	8.65	5.38	5.70
Production M.Tons	207,750	124,860	132,730

Source: USDA, FAO

Avocados are the official fruit of Southern California, which can be explained by the fact that 95% of US production of avocados is supplied by the state. The state produces mainly Hass and production is variable ranging from 150 thousand tons to over 240 thousand tons depending on weather conditions and the biennial bearing characteristics of Hass in the State. Florida is the second largest producer in the USA with a more stable production of around 30 thousand tons with predominant production of the varieties Booth, Lula, and Taylor that are less susceptible to biennial bearing.

The California Avocado Commission exists to develop markets and increase consumption of California Avocados on behalf of the state's 6,000 avocado growers and creating new demand for Hass Avocados through the Hass Avocado Board (HAB). Through advertising, promotion and public relations the commission continually strives to increase overall demand for California Avocados and maximize grower returns. The HAB also works with the major importing nations to promote avocado consumption in/of California. The USA has for many years adopted strict quality standards for avocado, which define the correct harvest procedures.

Production problems have been reported in the USA:

California

- High incidence of Root diseases such as Avocado root rot (*Phytophthora cinnamomi*), Verticillium wilt (*Verticillium dahlia*);
- Salinity and water shortages.



Florida

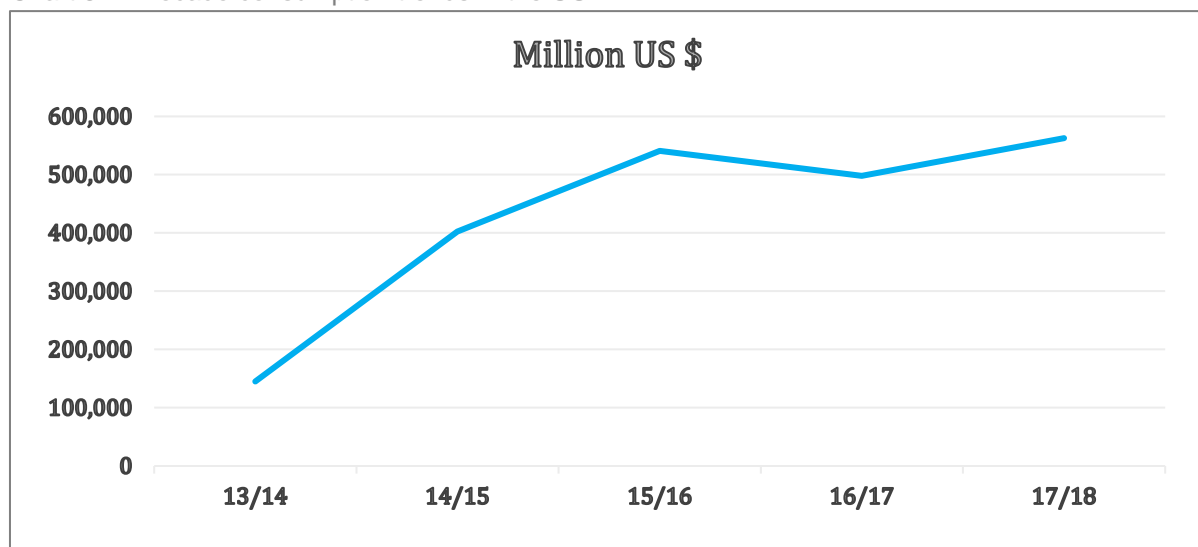
- High risk of fungal diseases such as: “Anthracnose” fruit rot (*Colletotrichum gloeosporioides*), *Cercospora* (*Pseudocercospora purpurea*);
- Difficult to control weed problems.

Marketing

Avocados in the USA are aggressively marketed by the HASS Avocado Board and the Californian Avocado Commission. The US Federal Hass Avocado promotion and Information order established in 2002 was introduced after the lifting on the ban on Mexican and Central American Hass fruits from entering the country. Commercial organisations such as the Californian conglomerate “Mission” are also engaged in the promotion of avocado. Promotions are based on healthy dietary choices and as good source of beneficial monounsaturated oil. Whilst these programmes are generic promotions, their effect on consumers has been dramatic and the USA has become a major importer of avocados to satisfy this growing demand. Complimentary to the industry wide promotional is the science-based food and wellness education program “Love One Today™” that encourages Americans to include fresh Hass avocados in everyday healthy eating plans to help increase fruit and vegetable intake and as a delicious, cholesterol-free, whole food source of naturally good fats.



Chart 84: Avocado consumption trends in the USA



Source: Source Hass Avocado Board. California Avocado Commission ITC Trade Map

To provide for this rapid increase in consumption the USA imports over one million tons valued at US\$ 2.5 billion that now account for over 50% of avocados eaten in the USA. The USA is not one of the major exporters of avocado with the majority of trade being cross border with Canada.

Table 120: USA avocado imports – Quantity

M.Tons	2014	2015	2016	2017	2018
Mexico	604,634	804,050	785,076	774,626	904,205
Peru	64,448	46,284	31,573	64,420	81,893
Dominican Republic	15,171	9,469	16,656	24,103	26,082
Chile	41,477	7,551	26,300	37,019	25,643
Others	3,412	10	1	30	289
Total	729,142	867,364	859,606	900,198	1,038,112

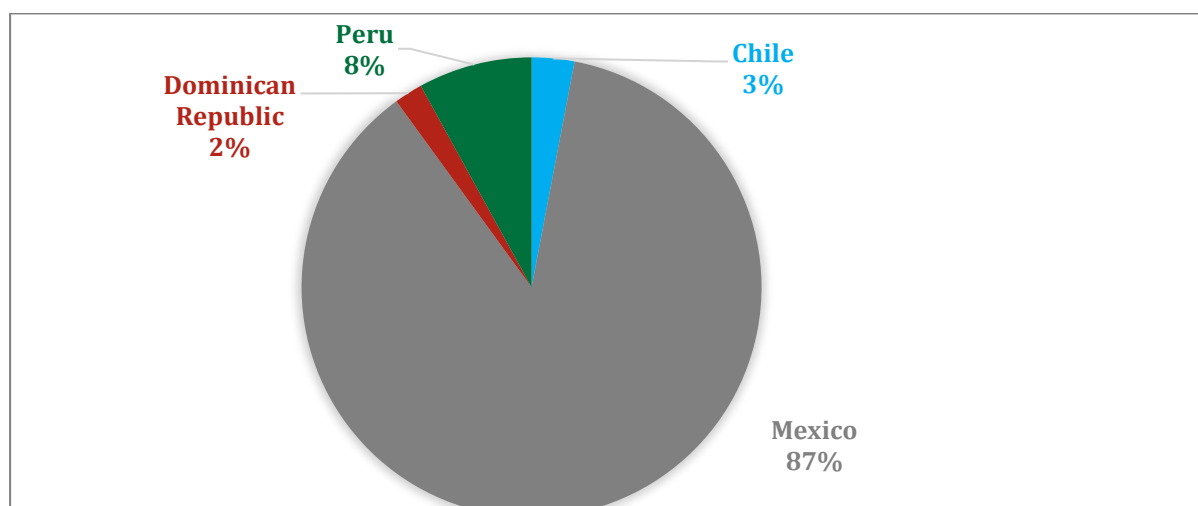
Source: ITC Trade Map

Table 121: USA avocado imports – Value

(000) US\$	2014	2015	2016	2017	2018
Mexico	1,335,246	1,581,028	1,825,250	2,390,598	2,138,157
Peru	166,470	94,998	71,790	180,467	197,852
Dominican Republic	19,446	10,685	22,362	36,040	40,821
Chile	78,328	16,752	73,467	120,724	70,946
Other	3,556	16	17	85	665
Total	1,603,046	1,703,479	1,992,886	2,727,914	2,448,441

Source: ITC Trade Map

Chart 85: Share of the USA avocado market by importing nations



Source: ITC Trade Map

Table 122: USA avocado exports – value

(000) US \$	2014	2015	2016	2017	2018
Canada	89,679	79,835	102,149	127,037	129,962
Republic of Korea	3,227	4,489	5,117	13,418	26,112
Japan	10,230	4,836	5,862	1,554	9,175
Hong Kong	1,509	620	2,487	2,696	2,963
Singapore	2,394	2,926	1,957	1,531	2,257
Kuwait	828	2,416	2,333	1,667	1,173
Other	3,987	4,276	8,760	4,476	7,937
Total	111,854	99,398	128,665	152,379	179,579

Source: ITC Trade Map

Table 123: USA avocado exports – Quantity

M.Tons	2014	2015	2016	2017	2018
Canada	30,072	32,413	42,975	43,992	52,516
Republic of Korea	778	1,084	1,744	3,702	8,720
Japan	3,541	1,663	2,687	570	2,798
Hong Kong	547	262	1,048	650	1,102
Singapore	577	759	683	395	725
Kuwait	384	536	457	324	217
Other	1,106	1,169	3,756	1,291	2,377
Total	37,005	37,886	53,350	50,924	68,455

Source: ITC Trade Map

Threats to Kenyan & Tanzanian producers

At present, the USA does not appear to be a threat to either countries as domestic consumption continues to increase. Californian avocados enjoy a summer season, but production and shipping costs are high. Large USA conglomerates such as Mission have established offices in Europe mainly to channel produce procured in South America and Mexico in particular, but if the European market shows promise, the country could be a competitor during the Kenyan and Tanzanian export season.

CHAPTER 14: S.W.O.T ANALYSIS

14.1 Kenya

Strengths	Weaknesses
<ol style="list-style-type: none"> 1. Established markets in the EU. 2. Long history of exporting horticulture produce. 3. Reasonably good climate that allows constant annual yields and discourages biennial bearing. 4. Exporters experienced in out-grower management. 5. Good seaport facilities. 6. Strong governmental and institutional support. 7. Good air connections with Europe. 	<ol style="list-style-type: none"> 1. Poor sea freight connections. 2. Lack of discipline in cool supply chain. 3. Improvable post-harvest management. 4. Opportunistic exporters undermining Kenya's reputation. 5. Long transport time from orchard to packhouses. 6. Discount prices realised due to poor reputation in some destination markets. 7. No dedicated producer organisation. 8. Lack of transparency and traceability.
Opportunities	Threats
<ol style="list-style-type: none"> 1. Consumption is increasing throughout Europe. 2. Increasing demand by joining the Peruvian and other exporters in generic promotion 3. Embrace "organic" and Fairtrade 4. Capitalise on EU importers' preference for dealing with larger organisations to guarantee supply by consolidating production base. 5. Introduce effective discipline throughout the supply chain to establish a reputation for quality and management excellence 6. Through effective training, improve Post-Harvest management to satisfy importers' requirements 7. Establish a strong and effective producer organisation. 8. Gain a reputation for sustainable production. 9. Target new markets in Asia (China). 	<ol style="list-style-type: none"> 1. Increased competition from well organised South American efficient and low-cost exporters. 2. Increased competition from USA shippers now operating in Europe. 3. Threat from new suppliers denied entry to the USA because of fruit fly diverting exports to Europe. 4. Imports from Dominican Republic to USA have recently been banned and the country may target Europe as an alternative market. 5. The Dominican Republic has established a reputation for "organic" produce and may dominate the "organic" avocado market in the UK. 6. Resurgence of Israeli and Mexican exports to EU. 7. Threat from Brazil entering the market. 8. Asian fruit fly <i>Bactrocera invadens</i> if found prevalent would create major issues for EU entry.

14.2 Tanzania

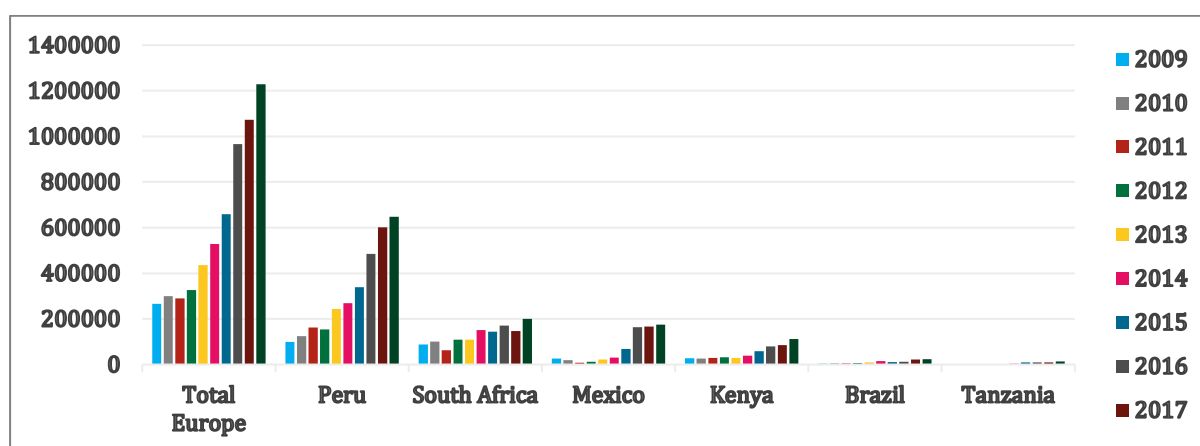
Strengths	Weaknesses
<ol style="list-style-type: none"> 1. Gaining a reputation in EU Markets. 2. Proximity to the GCC states and Asian markets. 3. Reasonably good climate that allows consistent yields. 4. Wide range of production climatic zones can allow extended delivery to market. 5. Good air connections with Europe, the GCC and Asia. 6. Good (but underutilized) sea port facilities. 7. Strong commercial relationships with Kenya and South Africa. 8. Presence of Agriculture Research. 9. Institutions that has background experience in avocado. 	<ol style="list-style-type: none"> 1. Poor sea freight connections. 2. Long shipping time. 3. Poor Post-Harvest management. 4. Limited cool chain volume coupled with lack of discipline in the cool chain. 5. Lack of discipline in the supply chain. 6. Poor Government and Institutional support. 7. Long transport time from established pack-houses to seaports. 8. Poor procurement procedures & lack of transparency. 9. Inexperienced out grower management. 10. No dedicated Producer organisation.
Opportunities	Threats
<ol style="list-style-type: none"> 1. Consumption is increasing throughout Europe. 2. Increasing demand by joining other exporters in generic promotion. 3. Embrace “organic” and Fairtrade. 4. Consolidate the production base to form larger production & marketing organisations to capitalise on EU importers preference for dealing with larger organisations to guarantee supply. 5. Introduce effective discipline throughout the supply and marketing chains to establish a reputation for quality. 6. Effective training to improve Post-harvest management to satisfy importers requirements. 7. Form a strong Producer organisation dedicated to avocado. 8. Improve local infrastructure especially roads and transport. 9. Improving co-ordination between ministries and concerned agencies. Gain a reputation for ethical sourcing and sustainable production 	<ol style="list-style-type: none"> 1. Increased competition from well organised South Americans, efficient and low-cost exporters especially emerging countries such as Brazil. 2. Increased competition from USA shippers now operating in Europe. 3. Threat from new suppliers denied entry to the USA because of fruit fly diverting exports to Europe. 4. Threat from political issues in USA regarding Mexican border. A ban could divert Mexican supplies to Europe. 5. The Dominican Republic has a reputation for “organic” produce and may dominate the “organic” avocado market in UK 6. Australian exporters targeting the Gulf and China 7. Asian fruit, fly <i>Bactrocera invadens</i> if found prevalent would create major issues for EU entry. Over-regulation in levies, permits, registrations taxes and fees that discourage investment

CHAPTER 15: CONCLUSIONS

The European market has quadrupled over the past ten years from a value of 265 million US\$ to over 1.2 billion US\$. South African and Kenyan exports once dominated Europe's summer season avocado supplies, but it has been Peruvian exports that have kept pace with the market expansion. It is difficult to make judgements with an orchard crop that takes 3-4 years to produce a return for growers and small holders are therefore reluctant to make long-term investments. Kenya and Tanzania exporters are thus at a disadvantage relying heavily on exporters having to procure from a multitude of small growers.

Kenyan producers and exporters should improve post-harvest management and procurement. Despite doubling exports over the last ten years, the country has not taken full advantage of the opportunity to expand. Kenya's main traditional competitor, South Africa has experienced serious production problems in inclement weather, drought and resulting biennial bearing but their large well-established commercial grower/exporter organisations have made alliances with other producers notably Tanzanian, Brazilian and Peruvian exporters to ensure continuity of supply.

Chart 86: Imports of avocado into Europe over 10 years – Value (000) US \$



Source: ITC Trade Map

Kenya needs to further invest to improve its supply base in order to dominate the sector. Tanzania has invested in young nursery stock but needs to attract investment in the industry to build on its progress into the European market.

In commercial terms, many believe that to successfully compete in the world's market, there is a need to rely on a large-scale production base augmented by outsourcing from smaller satellite growers. Tanzanian sources define a large grower when the grower has a minimum of 12 Ha. In international terms, this is very small. Exporter home farms in many competing countries exceed 200 ha.

However, there are examples of successful exporting relying solely on small-scale producers. One such example is Haitian mango exporters supplying the difficult USA market with over 10,000 tons before the devastating earthquake. These exporters had a packing base supplied solely by very small growers through a network of collection points. Many had organic accreditation for the USA market. They achieved this and high-quality standards by employing agronomists at each collection base to advise farmers and oversee collection and quality. The exporting companies provided internal transport.

There is therefore potential in both Kenya and Tanzania to source from small out growers provided they be backed-up by good management to ensure quality compliance and traceability.

The international environment for the marketing of fresh fruits has changed, especially in Europe with consolidation throughout the supply chain and increased purchasing power of a few large supermarket and hypermarket chains.

Competition within the avocado market sector has increased:

- a) From low cost but efficient and well-managed South American exporters who are either:
 - 1- Well served by large USA shippers such as Mission and European based importers who provide growers with technical expertise, cool chain management and marketing operations in Europe
 - 2- Well served by domestically based large companies such as Peru's Camposol, which not only farms avocados but also nurtures small-scale farmers.
- b) South African exporters, who have embraced the market changes and developed affiliations with international suppliers, established marketing facilities in Europe. They provide supermarket suppliers with high quality produce as well as diversifying into the rest of Europe.
- c) European importers who offer a full marketing service including ripening such as the South African production company Westfalia Fruits. It has facilities in the UK, France and the Netherlands. Another example is the UK based Fresca Group. These seem to prefer making alliances with the large South American producers, possibly, as they offer entry to the USA market, and allows them to augment and extend their supply base.

Many of the competing countries enjoy the benefits of a strong domestic market and an export market, which provides security for diversifying into Europe.

Most competing countries have dedicated and well-run Exporter/Grower organisations such as ProHass in Peru and SAAGA in South Africa who provide a full service to members in providing technical support, research and development and engaging in effective promotion of avocados in the country's targeted markets.

The Dominican Republic banana producers have shown how to compete with the multinational banana groups head on by successfully entering the organic market in the UK. The organic market has recovered strongly with the advent of a move towards veganism and vegetarianism combined with customers concerns over environmental issues and sustainability. This niche market along with FairTrade are markets that well-managed exporters should target for value added returns.

Avocado do not have the natural appeal of other tropical fresh fruits but has significant health benefits. In an age in Europe of health concerns over obesity, diabetes and heart conditions, the time is ripe to promote avocado's health benefits. Generic promotion of Kenyan and Tanzanian avocados under a brand that signifies high quality and uniform fruit should have an impact on demand and increased exports. In very simplistic terms, if the UK population were to eat one extra fruit per person per year, consumption demand would increase by over 16,000 tons or the equivalent to 800 containers of additional avocados.

The issues of sustainability and CSR, ethical sourcing and trading and certification of quality standards such as G.R.A.S.P. (Global GAP, Risk Assessment on Social Practise) and especially BRC are now of paramount importance.

Imports of avocado into Europe have increased significantly and despite the huge increase in quantity, prices remain high. Kenyan and Tanzanian avocado producers must respond to the new market challenges and adapt if they are to maintain their market share. Strong leadership and discipline are essential if Kenya is to regain a reputation for high quality and increase market share and Tanzania to continue its expansion into international markets.

CHAPTER 16: RECOMMENDATIONS

16.1 Kenya

Recommendations are to be implemented in order to improve Kenya's reputation in the market, to increase demand by promotion, to develop strong relationships with importers, to manage the supply chain, monitor shipments and to ensure that all Kenyan avocado reaching the market is of the highest quality.

- The creation of Kenyan Avocado Growers Association
- Horticultural Crops Directorate (HCD) encourage the formation of an independent Avocado Growers Association to be the apex organisation representing the interests of the avocado industry in Kenya.
- The association should be modelled on the successful growers' associations of competing countries such as SAAGA, South Africa, PRO Hass of Peru and the Hass Avocado Board of the USA.
- The new association to be financed by levy on all boxes exported

Technical audit

In order to formulate a sound marketing plans for both countries it is essential to have in depth knowledge of the production, post-harvest and supply chain management systems. Thus, it is strongly recommended that a full technical audit of each exporting company be carried-out. This audit needs to:

- Profile in detail every Kenyan exporter
- Undertake a technical audit trail from farm to finished product in the pack house, including production and harvesting methods, fertiliser/chemical usage and record keeping, irrigation and harvesting methods.
- Establish the procedures currently undertaken to ensure traceability
- Establish compliance with ethical practices and GlobalGAP certification
- Assessment of past export seasons against EU interceptions

European Marketing Office

This association together with the Export Promotion Council, the Fresh Produce Consortium and the Fresh Produce Exporters Association open a marketing office in London, UK.

The association should recruit the casual services of an independent quality control advisor to monitor all shipments to Europe.

To finance this development and the overseas office, a levy on each container suggested at \$ 0.25/carton, this depending on the consultation and budget.

Quality standards

In order to ensure the highest quality fruit is exported, Kenyan exporters need to have mandatory quality standards introduced and policed effectively. It is therefore recommended that:

- The Ministry of Agriculture with The Horticultural Crops Development Authority (HCD), the Fresh Produce Exporters Association and Fresh Produce Consortium and/or the recommended avocado grower association draw up minimum quality standards for Kenyan avocado that ideally would be ratified by Law.
- HCD to provide staff and services to introduce these standards and police them

Export licencing

To improve its reputation, ensure only exports of the highest quality and to prevent the opportunistic exporter undermining all the efforts of the government and agencies to improve Kenya's export, the following is recommended:

- The introduction of a system of export licencing under the responsibility of HCD;
- A licence will be issue only on exporters compliance with:
 - Adhering to the Minimum Quality Standard especially the harvesting stage (23% dry matter Hass 21% dry matter green- skin);
 - GlobalGAP, BRC and/or ISO Certification;
 - The exporter to be open to inspection by HCD.

Technical training

Poor post-harvest and handling were one of the key issues identified that affects the quality of Kenyan avocados. The issues of sustainability and CSR, ethical sourcing and trading and certification of quality standards such as G.R.A.S.P and especially BRC are now of paramount importance. To address these issues this, it is recommended that a training programme for all operatives in the supply chain be implemented to cover:

- Harvesting;
- Post-harvest management;
- Packhouse layout and management;
- Separation of goods inward and goods outward to prevent contamination;
- Grading and packing;
- Cold and cool store management;
- Traceability procedures and management;
- Organic production.

One of the most important findings of the study is that producers in all the competing countries recognise the prime importance of good post-harvest management particularly uniform standards for harvesting (23% dry matter for Hass and 21% for Fuerte) and an unbroken cool chain from tree to pack-house along with ethical and sustainable production. These are areas that Kenyan & Tanzanian growers and exporters could greatly improve on if they are to maintain or develop market share and successfully compete in Europe with South American exporters.

16.2 Tanzania

The issues faced by Tanzania are similar to those of Kenya and the recommendations suggested for Kenya apply to Tanzania. However, it is recognised that the industry in Tanzania is in its infancy, heavily dependent upon inputs from overseas grower/export companies. Only a couple of exporters would be able to finance several of the operations at this stage of development. Tanzanian producers have formed relationships with South African producers such as Halls International and Westfalia who could provide the technical input and the necessary funds to involve the small growers.

The same quality and compliance issues affect Tanzanian producers, therefore the recommendations should include:

Creation of an “Avocado Promotion Board”

Although many organisations have studied the Horticulture industry in Tanzania and focused on avocado, implementation has been limited. It is recommended that an independent body focused on the promotion and development of avocado be formed. The Board shall be industry led. The makeup

of the board should be an independent chairperson with supportive board members including representatives from the major exporters, the Horticulture department, Ministry of Agriculture and Tanzanian Horticulture Association (TAHA). The board should liaise with the Ministry of Agriculture, Research Establishments and be active in representing and promoting the Tanzanian avocado industry at overseas trade shows.

Creation of a “Tanzanian Avocado Grower Association”

It is strongly recommended that the exporters form an Avocado Growers Association to be the apex organisation representing the interests of the avocado industry in Tanzania. The association should be modelled on the successful growers’ associations of competing countries. Associations such as SAAGA, South Africa, Pro Hass of Peru and the Hass Avocado Board of the USA and this to be partly financed by the export levy.

The long-term objective would be to open offices in Europe but in the short term, the association should engage a part time specialist quality control consultant based in Europe to monitor and report on all shipments of avocado to Europe.

To finance this development and the overseas consultant, a levy would be charged on each carton exported, the suggested levy should be \$ 0.10/carton. Say with 10K MT annual exports, equivalent to 2.5Million cartons that will raise USD 250,000 per season.

The suggested levy for Tanzania is lower than the proposed levy for Kenya’s as Kenya is an established supplier with a very long history in exports and thus its exporters have the resources to fully finance the marketing initiative through volume of trade. Whereas Tanzania is a nascent industry that has to be encouraged and perhaps even subsidized. The surcharge is at this stage a token cost to cover the employment of the Quality Controller (QC). In this regard, there is a need to encourage new investments and to cover the cost of employing an independent QC in Europe. A higher levy should be imposed as exports grow to finance marketing promotion. The rate to be finalized after industry consultation.

Technical audit

In order to formulate a sound marketing plans it is essential to have in depth knowledge of the production, post-harvest and supply chain management systems. Thus, it is strongly recommended that a full technical audit of each exporting company be carried out. This audit needs to:

- Profile in detail every Tanzanian exporter;
- Undertake a technical audit trail from farm to finished product in the pack house, including production and harvesting methods, fertiliser/chemical usage and record keeping, irrigation and harvesting methods;
- Establish the procedures currently undertaken to ensure traceability;
- Establish compliance with ethical practices and GlobalGAP certification.

Quality standards

In order to ensure the highest quality export fruit, Tanzanian exporters need to have mandatory quality standards introduced and policed effectively. It is therefore recommended that:

The Ministry of Agriculture and/or the recommended avocado growers association, draw up minimum quality standards for Tanzanian avocado. Ideally, it would be ratified by Law.

Export licencing

To ensure only the highest quality fruit for export and to prevent the opportunistic exporter undermining all effort made by the government and agencies to improve Tanzanian exports, it is recommended that:

- A system of export licencing based on certain minimum quality/standards be introduced to use the mark “ A product of Tanzania”;
- The introduction of system of export licencing under the responsibility of the Ministry of Agriculture;

- A licence will be issued only on exporters compliance with:
 - Adhering to the Minimum Quality Standard especially the harvesting stage (23% dry matter Hass 21% dry matter green- skin);
 - GlobalGAP, BRC and/or ISO Certification;
 - The exporter to be open to inspection and training by the Ministry of Agriculture;
 - For organic producers, compliance with accreditation standards.

Technical training

Poor post-harvest and handling was one of the key issues identified that affects the quality of avocados. The issues of sustainability and CSR, ethical sourcing and trading and certification of quality standards such as G.R.A.S.P. and especially BRC are now of paramount importance.

To address these issues this, it is recommended that a training and support programme for all operatives in the supply chain be implemented to cover:

- Understanding the consumers;
- Harvesting;
- Post-harvest management;
- Pack house layout and management;
- Separation of goods inward and goods outward to prevent contamination;
- Grading and packing;
- Cold and cool store management;
- Traceability procedures and management;
- Organic production.

Already some companies have taken individual hence fragmented initiatives in that direction, they are inadequate. Avocado industry can also pick lesson from tobacco industry where investors have established the Association of Tanzania Tobacco Traders (ATTT) that organizes the supply chain and provides technical services.

CHAPTER 17: MARKET ACTION PLAN FOR KENYA

17.1 Introduction

Developing this plan is subject to the proposed technical audit of avocado growers in Kenya to determine the current nature of the production base, the supply chain and post-harvest management systems and test the current sourcing methods with a view to ascertaining their robustness to traceability and essential requirement for market penetration in Europe. This proposal is based on the findings of the marketing and competitive analysis presented as Part 2 and Part 3 of the main report and adopting the report recommendations.

17.2 Objectives

The overall objective is to build a sustainable supply of export quality avocado that meet customer requirements in the European markets.

1. To increase the demand for Kenyan avocados in these markets;
2. To ensure appropriate resourcing by governmental and industrial players to support the industry;
3. To achieve an increase in sustainable avocado exports;
4. To effect discipline in throughout the supply and marketing chain.

17.3 Rationale

Production

The dominance of a few retail supermarket chains in the export markets of Europe and their purchasing power have created downward pressure on the price paid to suppliers. Increasing yield and reducing wastage and post-harvest losses are ways of reducing farm gate and FOB price. In addition, competitive Kenyan producers must continually review their production and distribution costs. In an environment where small farmers provide the product, it is difficult to achieve these but new technologies, such as mobile harvesting platforms, high-density planting, growth regulators could be a way forward. Adding value through multipacks and “Ready to Eat” fruit cannot be done by local producers shipping by sea but in offering fruit that can be ripened correctly by an importer will enhance returns and embracing “Organic farming” and adopting “FairTrade” would also add value.

Cost:

The oceanic countries have a very high cost of production and shipping. This is reflected in the unit cost of their avocado exports at between \$3.5 and 4.0 per Kg. Kenya's cost of \$ 1.94 compares favourably with its main competitors, Peru and South Africa and cost should not be a detriment to gaining market penetration and share.

Table 124: Indicative landed cost of production and shipping costs US\$/Kg

Summer suppliers		Winter suppliers	
USA	2.62	Morocco	3.34
Mexico	2.19	Israel	3.26
Brazil	2.17	Spain	3.21
Peru	2.01	Chile	2.44
South Africa	1.31	Colombia	2.09
Kenya	1.94	Mexico	2.19
Tanzania	1.14	Dominican Republic	1.72

Source: Consultants calculations.

Markets:

The market study concludes that the initial markets to target in Europe are the UK, Germany and East Europe with France and the Netherlands each offering opportunity to diversify into the other European markets. The argument for this is based on the increasing affluence, relatively low consumption and potential for increasing consumption by targeted publicity. The domestic market in the Netherlands is small with most imports re-exported to most European countries and the Netherlands exporters offer modern state of the art warehousing, cool storage and ripening facilities, along with a very efficient, reliable and well proven European distribution system. Thus, the Netherlands should be Kenya's gateway to Europe especially to the targeted markets of Germany, Poland and other East European countries at the latter stages of the plan after successful penetration in the UK.

Table 125: Avocado importing European countries - Quantity

M.Tons	2016	2017	2018
Netherlands	246,567	267,197	344,998
France	134,360	145,967	157,486
Spain	87,810	98,763	129,326
United Kingdom	99,882	107,598	117,663
Germany	58,453	72,710	92,765
Russian Federation	12,248	19,120	29,242
Belgium	29,247	28,448	27,957
Italy	14,255	16,734	21,800
Denmark	16,046	17,615	21,208
Sweden	18,922	20,676	21,203
Poland	11,607	14,885	19,845
Switzerland	13,823	14,694	15,528
Norway	12,411	12,422	12,779
Austria	7,680	8,294	10,086

Other	44,236	55,660	72,875
Total Europe	807,547	900,783	1,094,761

Source: ITC Trade Map

Marketing systems

The following factors seriously affect the efficiency, growth and market penetration of Kenyan avocado exports.

- Immature fruit being harvested;
- Inferior quality fruit;
- Poor packaging and container loading;
- Inadequate production forecasting;
- Poor post-harvest practices;
- Poor supply chain management;
- Lack of market discipline.

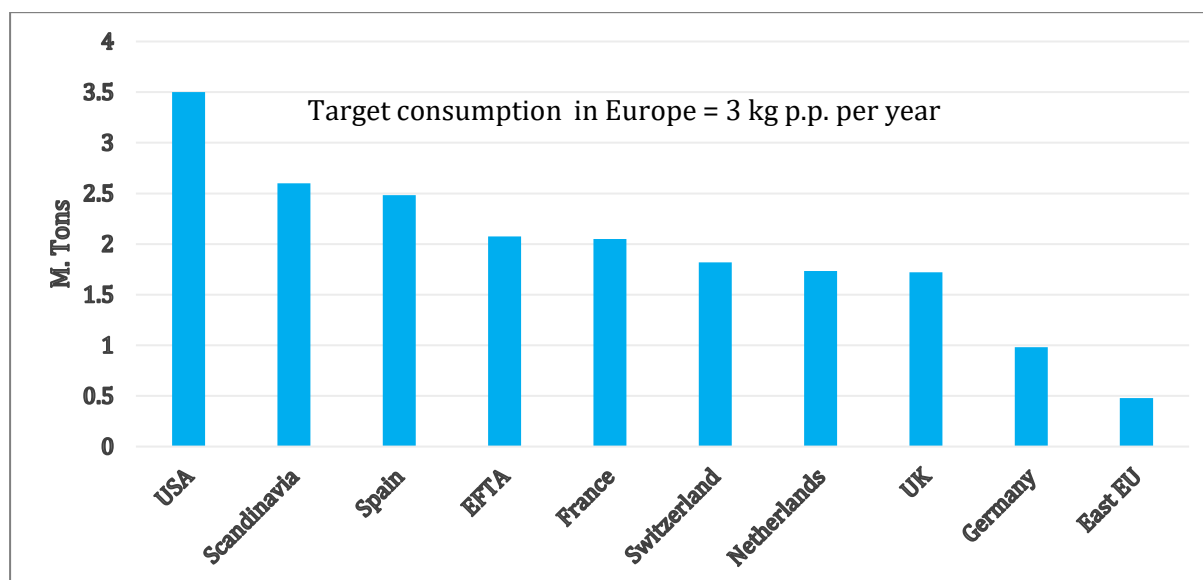
The fresh fruit markets of Europe are increasingly placing emphasis on sustainability, CSR and environmental issues. Germany has been in the forefront to reduce carbon emissions and ethical trading.

European markets are changing in response to the purchasing power and imposed disciplines of control and audit throughout the supply chain, of a few dominant supermarket chains. Swinging penalties are applied for shortfalls in supply or for not honouring commitments. These supermarket chains prefer to deal with large approved suppliers. Therefore, marketing channels are declining particularly for small and medium sized exporters. The old system of sending to market on commission and hoping for a return have long past and Kenyan exporters must change to meet these challenges.

Consumption

Data from the Hass Avocado Board in the USA shows how generic promotion can influence demand with consumption in the USA almost doubling over the last ten years. If consumption in Europe could be increased by just 1 kg p.p. per year – just four avocado fruits - this would amount to an increase in demand of 750,000 tons which, at current values would amount to a value of 2.5 million US\$.

Chart 87: European consumption compared to USA



Source: Consultants calculations based on ITC Trade Map and Country data

This would be shared with competing countries, if Kenyan producers improve production and post-harvest management and adapt to the demand to satisfy importer requirements, with a target of increasing current exports from 66 thousand tons to 75,000 tons is reasonable.

Competitors

Kenyan exporters are operating in a global marketplace and with advances in computer-controlled atmosphere refrigeration, chemical ethylene inhibitors, and preservatives such as “smart ripe” sea freight shipments are possible from distant countries that previously would not attempt to ship avocados to Europe.

The traditional exporting competing nations were South Africa joined by Peru in 2000. Peru has now overtaken all other summer senders and is now the foremost exporter.

However, Mexico, the world’s largest producer, has made new inroads into the market and more recently has been joined by Brazil. Brazilian exporters have long-lasting relationships with European importers in that they are the dominant mango exporter and as avocado is viewed as the future crop with increasing prospects for continued growth and returns, Brazilian exporters are well placed to capitalise on the growing European market.

Table 126: Summer season European market suppliers

Country - M. Tons	2016	2017	2018
Peru	129,764	149,057	278,821
South Africa	50,217	37,801	88,017
Mexico	21,640	18,028	39,668
Kenya	18,380	19,875	38,255
Brazil	3,178	5,405	8,583
Tanzania	2,415	2,957	5,372
USA	1,170	2	1,172
Total Europe	228,779	235,141	461,905

Source: ITC Trade Map

Promotions & Branding:

The Hass Avocado Board in the USA is an alliance of all avocado producers and importers whose remit is to promote avocados in the USA. Their promotional campaigns aimed at educating public with a range of recipes and promoting healthy eating has doubled the consumption of avocados in the USA. With Europe having well publicised health issues with obesity, heart problems and diabetes, promotional campaigns aimed at healthy eating would be welcome in the media and lead to increased demand. This can only be achieved by offering fruit that complies with Europe’s stringent health regulations ensuring compliance with freedom from contamination and MRLs.

Funding levy

Funding promotional activities, marketing offices and R&D state that a levy should be imposed on all cartons of avocado exported from Kenya. Most of the competing countries such as Peru, South Africa and Australia impose similar levies. These levies are around US\$ 0.25 per carton. The rate of the levy would be finalised after industry consultation and costing.

Industry organisation

Key players in the marketing plan are:

- The Fresh Produce Exporters Association of Kenya (FPEAK), the apex producer organisation;
- Horticulture Crops Development Agency (HCD);
- Kenya Export Promotion and Branding Agency (KEPROBA);
- Fresh Produce Consortium (FPC);
- Ministry of Agriculture.

Producers in all the major competing countries are represented by crop specific grower organisations such as ProHass in Peru, SAAGA in South Africa, Avocados Australia etc. who are active in Research and Development (R&D), promotion and marketin

Marketing offices

Under the auspices of a member based sector association such as FPC and FPEAK an association representing avocado growers in Kenya should be formed. This organisation together with assistance from KEPROBA would open a marketing office in London the purpose of which would be:

- Foster relationships with importers;
- Foster relationships with the media;
- Arrange all promotional activities;
- Monitor and provide market information; and
- Monitor and inspect all shipments to avoid conflict with importers and ensure quality standards are met.

17.3.8 Action Plan Schedule - Kenya			
Year 1			
Objective 1	Improving quality to build a sustainable avocado industry		
Activity	Description	Agency	Duration
1. Farm audit	Undertake profiling of all avocado growers Undertake full technical audit Test the traceability robustness Test supply chain for adherence to MRL, and quality standards Monitor Post-harvest Management Monitor cool chain management	Ministry of Agriculture, Kephis, HCD	3 months
2. Quality training	Workshop 1: Post-harvest Management (Avocado root rot (Phytophthora cinnamomi), Verticillium wilt (Verticillium dahlia)). Workshop 2: Procurement, traceability recording and systems Workshop 3: Satisfying importer requirements	Kephis, HCD and KEPROBA	3 x 2 day workshops 14 days including preparation
3. Corporate Social Responsibility (CSR)	Workshop 4: Understanding CSR and ethical trading Workshop 5: Environmental issues in the market place	KEPROBA, FPC and Fpeak	2 x 1 day including preparation
Outcomes	Development of Best Practice. Overall improvement in quality. Improving yield. Reducing wastage. Better understanding of importer requirements.		
Objective 2	Preparing for export penetration		
4. Quality standards	Prepare a legally enforceable minimum quality export standard for Kenya	Ministry of Agriculture, Fpeak, HCD and FPC.	3 months
5. Formation Avocado Association	Industry discussion leading to the formation of a crop specific avocado exporters association under the auspices of HCD	Fpeak, HCD, FPC and KEPROBA	3 months

6. Preparation of marketing levy	Industry discussion and preparing budget for the marketing and R&D levy	Fpeak, HCD, FPC and KEPROBA	3 months
Outcomes	<p>Ensuring uniform quality standards throughout the industry to strengthen confidence in Kenyan avocados.</p> <p>Initial preparation for launching a market led entry into new markets and development of existing markets</p>		
Year 2			
Objective 3	Increasing Market penetration		
7. Opening London office	<p>Renting office space. Forming alliances with importers. Starting relations with the media</p> <p>Monitoring & inspecting imports</p>	<p>New Association,</p> <p>Fpeak, FPC and KEPROBA</p>	On going
8. Production forecasting	<p>Workshop 6: Managing the supply chain</p> <p>Workshop 7: The importance of Market intelligence and forecasting</p>	Fpeak, FPC and KEPROBA	<p>3 x 1 day Workshops</p> <p>5 days preparation</p>
9. Export promotion	Workshop 8: Compiling promotional material. Devising suitable recipes for the material. Promotion of Export	Fpeak, FPC and KEPROBA	<p>Ongoing 1 x 2 day workshop</p> <p>7 days preparation</p>
10. Develop best practice	<p>Workshop 9 : Production Guidelines</p> <p>Workshop 10 : Traceability</p> <p>Workshop 11: Understanding packhouse, cold and cool store management</p>	HCD	2 x 2 day workshops + preparation
Outcomes	<p>Provide industry stakeholders with up to date market data and industry intelligence. Improving supply chain management. Strengthen the confidence of importers Promoting a Kenyan Brand of avocado</p> <p>Improving yields and reducing costs</p>		

CHAPTER 18: MARKET ACTION PLAN FOR TANZANIA

18.1 Introduction

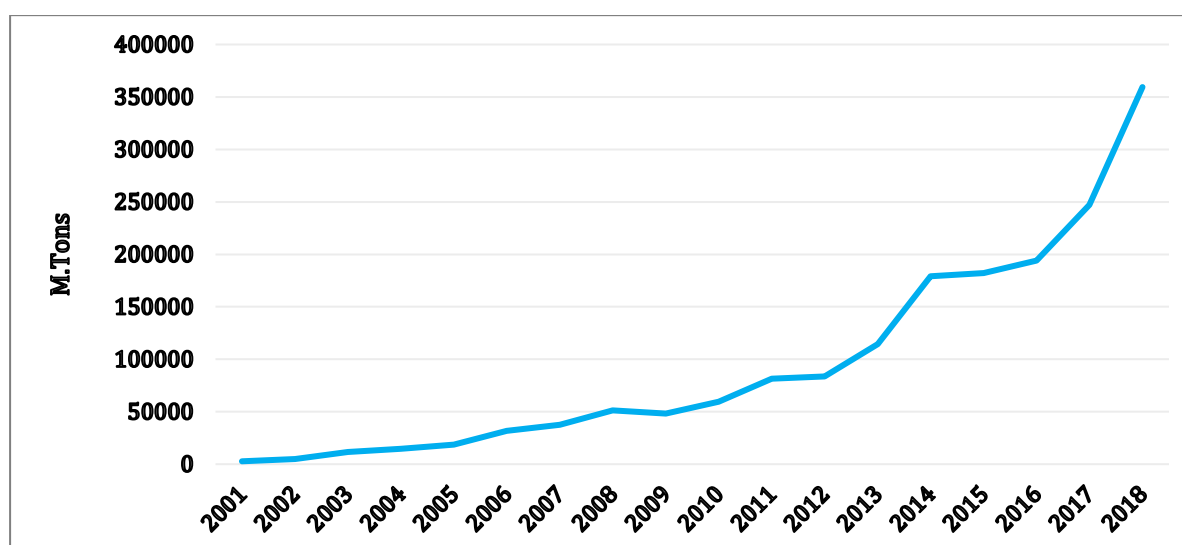
Tanzania is a new entrant into the avocado export industry and this inexperience of newly established exporters and lack of established market connections together with limited institutional support requires an entirely different approach to developing an effective action plan. There have been several studies into the horticulture industry that include the National Horticulture Strategy, and the excellent report entitled “A report on Avocado Value chain mapping in Siha and Njombe” for lack of industry leadership. However, the recommendations and proposed actions have not been implemented yet.

Tanzania produces avocado mainly during the summer season, April to September. This distinction between summer and winter producers is very important as it divides supplying nations into the two categories from the traditional summer suppliers South Africa and Kenya and the traditional winter suppliers Spain, the Mediterranean countries Spain and Morocco, Mexico and Chile.

This report identifies the real possibilities for avocado, perhaps the only horticulture crop, that offers a once in a lifetime opportunity for Tanzanian exporters to exploit. There is of course opportunity to compete in the international markets for most horticulture crops but the growth in the market for these crops and the intense competition makes entry difficult. However, the avocado is probably unique in that all markets are growing very strongly, and the realisable returns remain very attractive. By all accounts, this trend is likely to continue in 15 to 20 years. In the case of Tanzania, a “summer season” producer, the main competition comes from the traditional suppliers South Africa and Kenya and the aggressive recent new entrants, which now dominate the market such as Peru. Other South American producing countries such as Brazil and Mexico pose a threat. Mexico with its huge production base must be considered a major threat particularly with border disputes with the USA along with Brazil with pre-existing established relationships with European importers but these and other supplying countries face similar problems to Tanzania in that the production base must be expanded before impact can be made in the market.

These countries now benefit from having formed alliances with major European importers and ripeners who not only provide marketing opportunities but also the technical support and back up the local producers need to comply with the European import standards.

Chart 88: Evolution of avocado exports from Peru from the first shipments in 2000 to date



Source: ITC Trade Map

Peru is an example of a country that has made exceptional progress since it first started shipping avocado to Europe in 2000. It has overtaken all rivals to become the foremost supplier. With young orchards, yet to reach full production and new plantings, the volumes of exports are likely to continue to rise.

Tanzanian exporters rely on supplies from many small-scale farmers. These farmers rely on a regular annual income and lack the financial resources to invest in perennial crops that may take 8-10 years before providing a return.

This plan, which builds on the experiences of competitors, addresses these issues and offers a strategy for the avocado industry to flourish

18.2 Objectives

The overall objective is to build a sustainable supply of export quality avocado that meet customer requirements in the European markets. This objectives are:

1. To improve and expand the production base;
2. To harness and support small farmer involvement;
3. To increase the demand for Tanzanian avocados in export markets;
4. To ensure appropriate resourcing by governmental and industrial players to support the industry;
5. To achieve an increase in sustainable avocado exports;
6. To effect discipline in throughout the supply and marketing chain.

18.3 Rationale

Production

The definition of large-scale orchards by TAHA includes those farming 12 ha or over. In international terms, this is very small for an export-based industry.

There was a National Avocado R&D programme that started in the 1990's by the Department of Horticulture at the Ministry of Agriculture, Food Security and Cooperatives (MAFC). It was supported by the Dutch government but sadly, investment ended for lack of commercial rationale. As a result, opportunities to establish the nation as a major producer and exporter of avocado were missed or delayed. This short-term view, surprising especially considering the pioneering work and hugely successful export industry developed by near neighbours South Africa, is attributed to the national policy that did not encourage large-scale commercial farming. This also explains why there are no large-scale farms by international standards in almost all commodities. It is recognised that financial constraints influence governmental policies, but long term-focused investment is paramount if Tanzania is to compete with global players in the thriving and expanding avocado industry – an investment that will be repaid in abundance if the commitment is made.

Many, and this is a typical argument by large-scale growers in all producing nations, argue that the science of avocado production has been fully researched in other countries but fail to realise that climatic and social backgrounds in these countries are different. There is of course no sense in reinventing the wheel, but research into adaptation, sustainability, pests and disease management, organic production and water management are fundamental to progress.

However, the challenges facing the Tanzanian avocado export industry is how to utilise and involve the small-scale farmer in international trade. The small farmer depends on an annual income from his farm. An avocado crop takes 3 to 5 years to commence production and full production is not realised until year 12 to 15. There are many examples worldwide of exporters utilising small growers, but this is based on the grower having crops or orchards already in full production. Local avocado growers in Tanzania do have productive orchards but many of these are of local or unsuitable varieties. The market wants

Hass or its variants “Gem” etc. A recent survey in major avocado producing regions – Kilimanjaro, Arusha, Iringa, Njombe, Mbeya and Songwe show that all new orchards are Hass; Gem is limited to Africado and limited commercial outgrowers. Rungwe Avocado Limited plan to introduce new varieties as well. The response by smallholder farmers is overwhelming in areas with suitable land notably in the Southern Highlands part; land on the slopes of Kilimanjaro that is immaculate for avocado is almost saturated growth comes from substitution to other commodities.

If the European market expands by 5%, per annum, it will reach 1.7 million tons over the next ten years.

Table 127: Projected Tanzanian avocado exports by quantity

Year			1	2	3	4	5	6	7	8	9	10
Europe demand (000) Tons + 5%/year			1,094	1,149	1,206	1,267	1,330	1,397	1,467	1,540	1,617	1,698
Year	Assumptions		1	2	3	4	5	6	7	8	9	10
Volume (Tons) exported in 2019.	Assumption: Exported avocado is equal to 85% of total Hass production	8,409										
Hass production from stock of trees harvested in 2019 (Tons).	Assumption: Harvest increasing at 5% per annum.		10,388	10,907	11,452	12,025	12,626	13,257	13,920	14,616	15,347	16,115
Cumulative hectares of new orchards from 2019	New 500 hectares planted per annum	500	500	1,000	1,500	2,000	2,500	3,000	3,500	4,000	4,500	5,000
Yield trendTon/ha	Yield based on average case scenario from practical experience		0	0	0	5	7	9	10	12	15	20
Volume of avocado from new orchards (Tons)				-	-	2,500	6,000	10,500	15,500	21,500	29,000	39,000
Total Hass avocado harvested (Tons)			10,388	10,907	11,452	14,525	18,626	23,757	29,420	36,116	44,347	55,115
Total Hass sold in domestic market (Tons)	Assumption 15% of total production	15%	1,558	1,636	1,718	2,179	2,794	3,564	4,413	5,417	6,652	8,267
Percent of Hass available for exports	85%	85%	8,829	9,271	9,734	12,346	15,832	20,194	25,007	30,699	37,695	46,847

Source: International Consultant and Tanzanian National Consultant

If the target for production in Tanzania shows a modest increase of 500 ha per year, this will amount to an export potential of 108.5 thousand tons valued at 1.5 million US\$. A threefold increase on current revenue.

At present, there are two major exporting companies, Africado Ltd. and Rungwe Avocados. Companies rely on sourcing from a multitude of small producers. An annual 500 ha increase in the production base is ambitious given the current investment climate but considered achievable if there are incentives to invest. However, such investment must come from the major exporting companies assisted by governmental support in facilitating a sound investment climate, providing capital improvement grants, reducing unnecessary bureaucratic constraints and developing capacity building interventions particularly in the field of road infrastructure and logistics. At present, governmental interference by imposing excessive regulatory systems is a disincentive to investment.

The private avocado sector will undoubtedly blossom if freed from restrictions but will have to play its part in providing financial support and most importantly, technical assistance to the small farmer associates who simply cannot afford to replant or expand their orchards given the long delay in achieving returns.

The dominance of a few retail supermarket chains in the export markets of Europe and their purchasing power have created downward pressure on the price paid to suppliers. Increasing yield and reducing wastage and post-harvest losses is a way of reducing farm gate and Free on Board (FOB) prices and to remain competitive. Tanzanian producers must continually review their production and distribution costs. In an environment where small farmers provide the product. This is difficult to achieve but new technologies, such as mobile harvesting platforms, high-density planting, growth regulators could be a way forward. Again, the incentive must come from the exporting companies who have the vision that Tanzania is facing a unique opportunity in avocado expansion.

Adding value through multipacks and “Ready to Eat” fruit cannot be done by local producers shipping by sea but in offering fruit that can be ripened correctly by an importer will enhance returns. Embracing “organic farming” and adopting “FairTrade” would also add value.

Cost

Tanzania benefits as a low-cost country and thus has an immediate competitive advantage. The oceanic countries and the USA have a very high cost of production and shipping. This is reflected in the unit cost of their avocado exports at between \$3.5 per Kg. Tanzanian costs are likely to remain competitively low, now at \$ 1.14 compares very favourably with its main competitors. Cost drivers to keep an eye on are preventing pests and diseases and soil maintenance as nutrition are depleted over time. Cost reduction will be obtained once Dar es Salaam port start to ship avocado again, industry players estimate savings of USD 2,000 – 3,000 per container.

Table 128: Indicative landed cost of production and shipping costs US\$/Kg

Summer suppliers		Winter suppliers	
USA	2.62	Morocco	3.34
Mexico	2.19	Israel	3.26
Brazil	2.17	Spain	3.21
Peru	2.01	Chile	2.44
South Africa	1.31	Colombia	2.09
Kenya	1.94	Mexico	2.19
Tanzania	1.14	Dominican Republic	1.72

Source: Consultant calculations.

Markets

The market study concludes that the initial markets to target in Europe are mainly UK and Germany with France and the Netherlands all offering opportunity to diversify into the other European markets. The argument for this is based on the increasing affluence, relatively low consumption and potential for increasing consumption by targeted publicity. The domestic market in the Netherlands is small with most imports re-exported to most European countries. Thus, the Netherlands should be Tanzania’s gateway to Europe especially to Scandinavia, Germany and Poland at the latter stages of the plan after successful penetration in the UK.

It is beyond the scope of this report to analyse the Asian and Middle Eastern markets, but Tanzania enjoys proximity to the GCC states and is a strong competitor on price compared to established suppliers such as Australia and New Zealand and East Asia suppliers.

There are long-term prospects in China and this country should be seriously considered as an export opportunity. South American countries are now targeting the Chinese market and their distance from China and higher shipping and production costs put them at a disadvantage to Tanzanian exports.

Table 129: Avocado importing European countries - Quantity

M.Tons	2016	2017	2018
Netherlands	246,567	267,197	344,998
France	134,360	145,967	157,486
Spain	87,810	98,763	129,326
United Kingdom	99,882	107,598	117,663
Germany	58,453	72,710	92,765
Russian Federation	12,248	19,120	29,242
Belgium	29,247	28,448	27,957
Italy	14,255	16,734	21,800
Denmark	16,046	17,615	21,208
Sweden	18,922	20,676	21,203
Poland	11,607	14,885	19,845
Switzerland	13,823	14,694	15,528
Norway	12,411	12,422	12,779
Austria	7,680	8,294	10,086
Other	44,236	55,660	72,875
Total Europe	807,547	900,783	1,094,761

Source: ITC Trade Map

Marketing Systems

The fresh fruit markets of Europe are increasingly placing emphasis on sustainability, CSR and environmental issues. Germany has been in the forefront to reduce carbon emissions and ethical trading.

Consumer concerns over climate change are beginning to affect market conditions and especially the carbon footprint of food. There have been many erroneous stories in the national press that avocado production has a very high carbon footprint based on the assumption that all avocados are shipped by air. These issues must be addressed and corrected. Actually, the preferred method of transportation is by sea, a method that has one of the lowest carbon footprints of all food cargos.

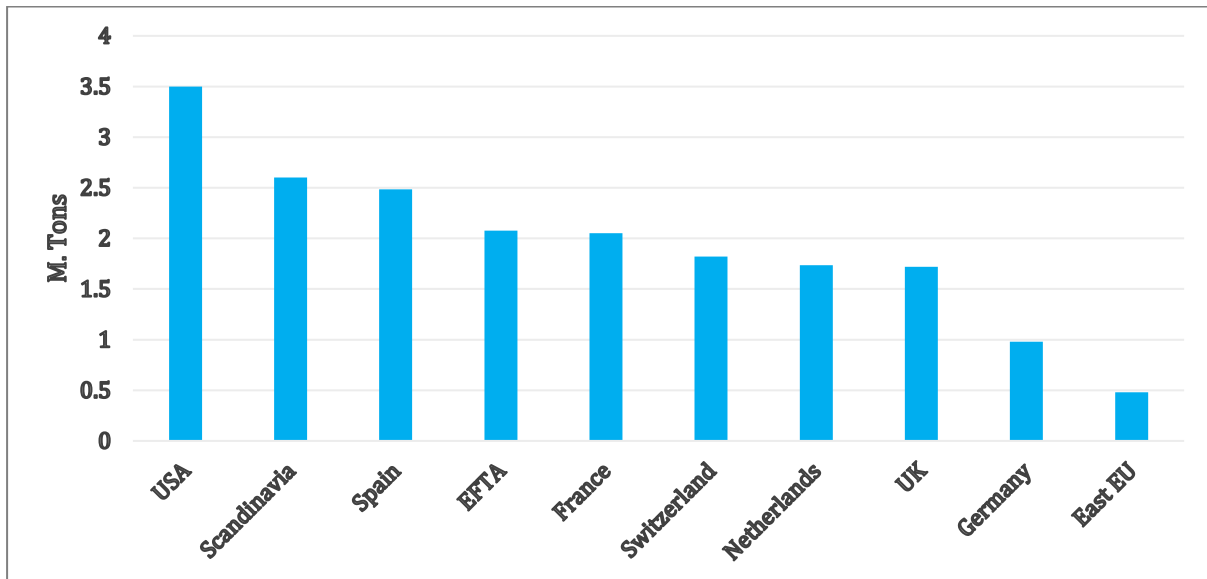
European markets are changing in response to the purchasing power and imposed disciplines of control and audit throughout the supply chain, of a few dominant supermarket chains. Swinging penalties are applied for shortfalls in supply or for not honouring commitments and these supermarket chains prefer to deal with large approved suppliers. Therefore, marketing channels are declining, particularly for small

and medium sized exporters. The old system of sending to market on commission and hoping for a return that has long past and Tanzanian exporters must change to meet these challenges.

Consumption

Data from the Hass Avocado Board in the USA shows how generic promotion can influence demand with consumption in the USA almost doubling over the last ten years. If consumption in Europe could be increased by just 1 kg p.p. per year – just four avocado fruits - this would amount to an increase in demand of 750,000 tons.

Chart 89: European consumption compared to USA

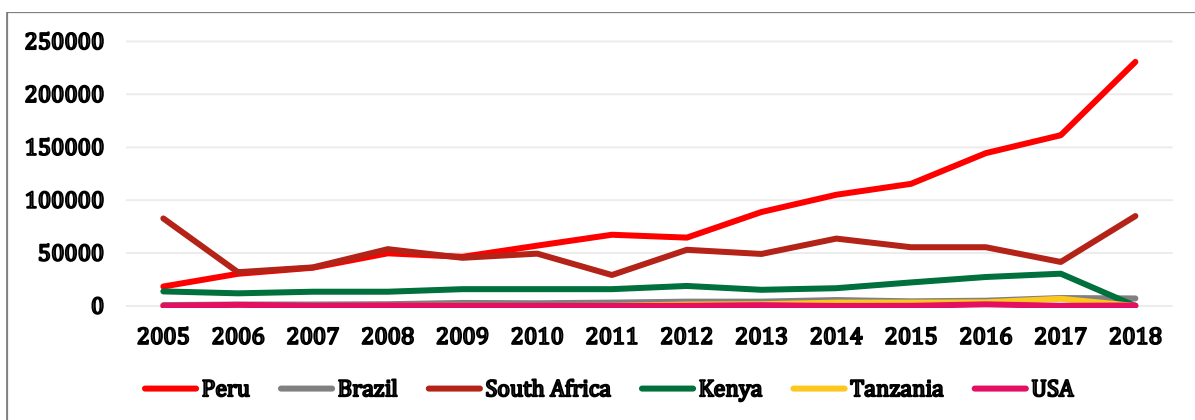


Source: Consultants calculations based on ITC Trade Map and Country data

This increase is considered modest and achievable given the USA and Israel consumption of over 5 kg p.p. per year and Mexican over 8 kg p.p. per year.

Competitors

Chart 90: Summer season European market suppliers



Source: ITC Trade Map

Tanzanian exporters are operating in a global marketplace and with advances in computer-controlled atmosphere refrigeration, chemical ethylene inhibitors, and preservatives such as “smart ripe” sea freight shipments are possible from distant countries that previously would not attempt to ship avocados to Europe.

The traditional suppliers to the European markets were neighbours: Kenya and South Africa. Production problems in South Africa due to droughts and biennial bearing have affected their exports and Kenya has been unable to exert discipline throughout its procurement chain and continues to pay the penalty of a poor reputation for quality and consistency of supply.

Peru has continued to dominate the market and Mexico has made recent inroads and being the world's largest producer of avocado is a serious threat to Tanzania. More recently, supplies to Europe have come from Brazil, Chile and Colombia where producers have formed alliances with major European importers. Brazil is a major supplier of mango to Europe and has developed close ties with major importers throughout Europe. Brazil is a summer producer and therefore poses a major threat if the country embarks on exploiting the lucrative European avocado market.

Quality standards

There are many lessons to be learned from the experiences of Kenyan importers. Regulations imposed throughout the procurement chain and mandatory quality standards to ensure compliance with European buyers' requirements will be key in order to gain a reputation for quality and reliability. This will help penetrate and develop the market for Tanzanian avocados.

Quality will be monitored by appointing qualified post-harvest consultants in Europe to inspect each shipment on arrival and report on the quality.

Promotions & Branding

The Hass Avocado Board in the USA is an alliance of all avocado producers and importers whose remit is to promote avocados in the USA. Their promotional campaigns aimed at educating public with a range of recipes and promoting healthy eating has doubled the consumption of avocados in the USA. With Europe having well publicised health issues with obesity, heart problems and diabetes, promotional campaigns aimed at healthy eating would be welcome in the media and lead to increased demand. This can only be achieved by offering fruit that complies with Europe's stringent health regulations ensuring compliance with freedom from contamination and MRL.

The proposed Avocado Promotion Board will be the vehicle for promoting Tanzania avocado and developing the markets. Its main brief will be to promote the Tanzanian industry in Europe by attending trade fairs.

Funding levy

Funding the Avocado Promotion Board and monitoring quality standards both in Tanzania and at point of arrival, promotional activities will be by a levy on each carton of avocado exported from Tanzania. Most of the competing countries such as Peru, South Africa and Australia impose similar levies. These levies are around US\$ 0.25 per carton. The rate of the levy would be finalised after industry consultation and costing.

Industry organisation

Key players in the marketing plan are:

- Ministry of Agriculture;
- TAHA;
- TanTrade.

Producers in all the major competing countries are represented by crop specific grower organisations such as ProHass in Peru, SAAGA in South Africa, Avocados Australia etc. They are active in R&D,

promotion and marketing. Tanzania will benefit from an organisation dedicated to the promotion of avocado through the proposed Avocado Promotion Board

18.3.11 Action Plan Schedule - Tanzania			
Year 1			
Objective 1	Improving quality to build a sustainable avocado industry		
Activity	Description	Agency	Duration
1. Farm audit	Undertake profiling of all avocado growers Undertake full technical audit Test the traceability robustness Test supply chain for adherence to MRL, and quality standards Monitor post-harvest management Monitor cool chain management	Ministry of Agriculture, TAHA	3 months
2. Quality training	Workshop 1: Post-harvest Management (Avocado root rot (<i>Phytophthora cinnamomi</i>), <i>Verticillium</i> wilt (<i>Verticillium dahlia</i>)). Workshop 2: Procurement, traceability recording and systems Workshop 3: Satisfying importer requirements	TAHA	3 x 2 day workshops 14 days Including preparation
3. Corporate Social Responsibility (CSR)	Workshop 4: Understanding CSR and ethical trading Workshop 5: Environmental issues in the marketplace	TAHA and TanTrade	2 x 1 days. 5 days preparation
Outcomes	Development of Best Practice. Overall improvement in quality. Improving yield. Reducing wastage. Better understanding of importer requirements.		
Objective 2	Preparing for export penetration		
4. Quality standards	Prepare a legally enforceable minimum quality export standard for Tanzania Introduce mandatory minimum quality standards (harvesting standards, minimum maturity level to export...).	Ministry of Agriculture, TAHA	14 Days
5. Formation of Avocado Promotion Board and Avocado Growers Association	Industry discussion leading to the formation of a crop specific: Avocado Promotion Board and an exporters' association	TAHA and TanTrade	3 months

6. Preparation of marketing levy	Industry discussion and preparing budget for the marketing and R&D levy	TAHA and TanTrade	3 months
Outcomes	<p>Ensuring uniform quality standards throughout the industry, the creation of support agencies</p> <p>Initial preparation for launching a market led entry into new markets and development of existing markets</p>		
Year 2			
Objective 3	Increasing Market penetration		
7. Recruiting Inspection consultants	Monitoring & inspecting imports	New Assn.	On going
8. Production forecasting	<p>Workshop 5: Managing the supply chain (logistical services such as warehousing, ripening, distribution facilities).</p> <p>Workshop 6: The importance of Market intelligence and forecasting</p>	TAHA and TanTrade	<p>3 x 1 day Workshops</p> <p>7 days preparation</p>
10. Develop best practice	<p>Workshop 7 : Production Guidelines</p> <p>Workshop 8: Traceability (clear identification of each farmer, recording procedures, administration of protocols).</p> <p>Workshop 9: Understanding Packhouse, cold and cool store management</p>	Ministry of Agriculture, TAHA	3 x 2 day workshops 5 days preparation
Outcomes	<p>Provide industry stakeholders with up to date market data and industry intelligence. Improving supply chain management.</p> <p>Regaining the confidence of importers</p> <p>Promoting a Tanzania Brand of avocado</p> <p>Improving yields and reducing costs</p>		

APPENDICES

Appendix I: Post-harvest handling of the avocado fruit

In order to optimise the quality of the avocado after harvesting, it is imperative that the fruit is harvested at the correct time. Damaged fruit through mechanical, pest and disease does not enter the supply chain. This helps to optimise the transportation and ripening of the fruit later on.

Harvesting in the field

The avocado fruit by nature has a high respiration rate that releases carbon dioxide and ethylene. This therefore means that post-harvest, care needs to be taken to slow down the respiration rate, which causes irreversible internal damage of the fruit. The fruit can dehydrate at relatively high temperatures; together with the mechanical injuries during handling will promote higher and faster decay. It is therefore essential to treat the fruit with care during harvest. Fruit that has fallen from the tree should never be used in the supply chain as this will be bruised and can therefore be a weak entry for disease and contamination. To minimise mechanical damage the fruit pickers should check the length of their fingernails, which can damage the skin of the fruit and introduce infections.

The ideal picking method is by using poles with clippers and bags attached to catch the fruit without bruising it.

Pole, clippers & net



Harvesting platform



Plastic re-useable crates



Harvesting the fruit involves using a pole with clippers and net to catch the fruit without bruising. An example of a harvesting platform is shown above. The poles are required as the average height of the trees is 10m high. The clippers also reduce the risk of damaging the peduncle and introducing infection. Though the Hass variety does tolerate being 'plucked' from the tree by hand, it is strongly advised to follow good harvesting practices to eliminate infection and problems further down the supply chain. The harvesters must be trained to handle the fruit carefully. Ideally self-propelled or tractor mounted harvesting platforms should be used.

The correct harvesting time or harvest point must be assessed accurately, this will ensure that only mature fruit will be harvested, and no wastage occurs due to dehydration and wrinkling of smaller fruit. This can be achieved by using the dry matter index of 23% determined by laboratory analysis. The harvesting should never be carried out in wet weather. Good orchard husbandry should be observed and timing the use of fungicides to control fruit fly and anthracnose is essential. Correct use of fertilizer is also extremely important – too much nitrogen at harvest point will render the fruit unsaleable and susceptible to disease. All farmers/growers should be made aware of GlobalGAP guidelines and HACCP procedures.

It is the farmers' responsibility to train all staff on the importance of correct harvesting methods, record keeping, personal hygiene etc. All these aspects will ensure that the risk of damage or contamination is kept to an absolute minimum. This in turn will result in imposing the maximum possible price. The fruit is harvested into clean plastic crates. The crates once full should be kept in the shade ideally in



refrigerated lorries-making sure that the doors are kept closed to maintain a controlled atmospheric environment. This is the first stage in reducing field heat. This is, of course not practical on many small farms and therefore trucks should be kept in the shade and all fruit covered to prevent contamination. Care should also be taken to ensure that different fruit or varieties are not contaminated and therefore kept separately. The time taken to transfer the

fruit to the pack house should be carried out as quickly as possible. The plastic crates used for harvesting and transportation should be re-useable, cleaned after each use and disinfected. This will reduce the internal transportation damage and contamination.



This picture shows a method that is not recommended for transport but frequently seen in Kenya and Tanzania as the main method of transporting fruit from tree to packhouse. The fruit is tipped in bulk into a pickup truck, exposed to the elements and the fruit is damaged by bruising during the transit process. The truck is not in the shade, lacks a cover to protect against the sun and extraneous contamination.

Respiration

Respiration is a natural process that generates heat and CO₂ rises rapidly during maturity and then steadily declines with age. Avocado undergo a very pronounced increase in respiration at the onset of ripening. This is called the “climacteric” and such fruits are called “climacteric” fruits. The start of the climacteric occurs in the beginning of the fruit ripening process. Respiration generates heat and in the confined space of a store or container, this heat can be considerable and be greater than the capacity of the refrigeration plant to extract. Simply placing fruit in a cold store does not mean that it will cool. The damage done is latent and not apparent until the point of discharge.

Ethylene

All fruits produce minute quantities of ethylene during their development. Avocado is a climacteric fruit i.e one that turns the pulp starch into sugars during the ripening process and these produce much large amounts of ethylene at the onset of the ripening process. Ethylene evolution and contamination during transportation and storage is perhaps one of the least ripening processes understood by exporters, importers and retailers. Ethylene concentrations are as low as 0.5 parts per million (ppm) which are enough to trigger the ripening process in climacteric fruits. One climacteric fruit on the verge of ripening in an enclosed container will generate sufficient ethylene to trigger the ripening of the entire consignment, irrespective of the temperature. 1ppm of ethylene contamination from whatever source such as diesel exhaust fumes, cigarette fumes, malfunctioning refrigeration units, or from mixing with ethylene evolving fruits can be triggered into premature ripening within 24hrs.

Once the ripening response has been triggered, it is irreversible. Hence, it is very important for exporters and retailers not to mix loads of different fruits at varying ripening stages or to mix non-climacteric with climacteric fruits or vegetables in a store or container.

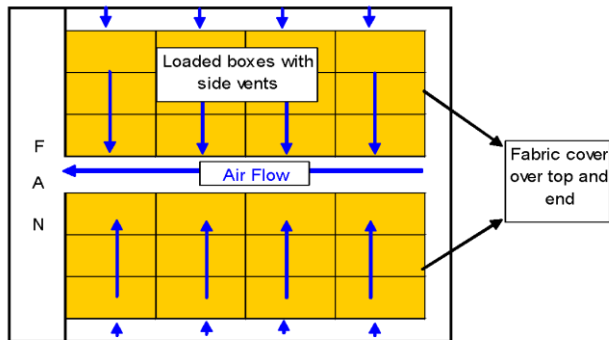
The packhouse

The packhouse should be equipped with a rapid forced draught pre-cooler (Figure 1) to reduce the core temperature to 40C for Hass within a short period before storing in a cool store before grading and packing. As described warm fruit placed directly into a cool store can continue to breathe generating heat causing the fruit to deteriorate even if the cool store is at a low setting. In order for this to work properly, the boxes must be stacked on pallets allowing the air to pass through the fruit boxes.

The effect of cooling is to remove the field heat and so reduce the rate of respiration, but this needs to be carried out without causing chilling injury. The ideal is to chill harvested fruit within 24 hours of harvesting and as follows: -

- 4°C to 5°C for Hass
- 6°C to 8°C for other varieties

Diagram 5: Forced draught rapid air cooler



Great care must also be taken to ensure that cross contamination from other fruit does not occur. Goods inwards must be kept separately from newly packed fruit and not, as is common, placed in the same stores. Field crates must also be kept separate from packed fruit. The fruit is then graded and packed and placed into an outward cool store ready for despatch.

Cold store management

The management of cold stores is, perhaps the most important factor in maintaining good quality produce and poor cold store management is the major cause of crop losses.

Cold storage is costly and poor-quality produce can never be improved by cold storage. Selection and good handling before storing is essential for economic operation.

The key fundamentals of good cold store management are:

- Pre-cooling. All stores should be brought down to the appropriate temperature at least three days before loading
- Temperature control. The probes of the outside temperature gauges and those for the refrigeration controls are normally positioned on the wall of the room. These give an indication of the air temperature inside the store, but it is the core temperature of the produce that is important. Do not rely on the outside temperature gauge but take regular core readings and adjust setting to ensure the produce is at the correct storage and shipment temperature.
- Loading and stacking. Cooling air always takes the least path of resistance. Produce should be loaded to ensure a narrow air path that passes at least two sides of the carton, pallet or bulk bin.

The key fundamentals are:

- The stack should be about 9cms from the walls preferably 12 cms from any wall exposed to the sun
- Leave at least 20cms between the overhead coil drip tray and the top cartons of the pallet.
- The distance from the top of the stack to the ceiling should be at least 25cms
- The stacked crates, boxes, cartons or flatbed bulk bins should never be placed directly on the floor. Pallets or an air plenum placed so that the bases are parallel to the air flow and should always be used.
- Ensure there is a vertical air path of about 1cm within the stack. Reverse layer stacking with a central chimney is recommended to achieve this and provide a stable stack.

Avoiding shrinkage and weight loss

Shrinkage is caused by:

- Immaturity of the loaded produce;
- Excessive delays before storage;
- Harvesting produce under warm conditions and placing “hot” produce in the cool store;
- Packing produce into dry containers;
- Hot spots within the stores causing high produce temperature;
- Low humidity that can be attributed to:
 - Insufficient insulation;
 - Insufficient coil surface;
 - Slow cooling;
 - Excessive air circulation.

Both weight loss and shrinkage can be avoided by:

- Fast cooling;
- Uniformly low temperature;
- Maintaining high humidity in the store by:
 - Wetting floors;
 - Wetting warm produce;
 - Harvesting early in the morning;
 - Reducing the time from harvest to store.

Store hygiene

The importance of store hygiene is often neglected, and dirty stores will exacerbate the risk of high losses due to fungal and bacterial attack often not manifest until produce reaches the market. Routine cleansing is a management must. The walls, floor and ceiling should thoroughly scrubbed down and disinfected with a solution of sodium hypochloride and ideally the store fumigated with formaldehyde. Bulk bins and field boxes should also be routinely cleaned and sterilised after each use. In carrying out these measures, management should ensure that the workers are fully protected with the right clothing and at all times wear rubber gloves and facemasks.

The pack-house layout should be such that at no time does produce inwards i.e. harvested produce in field containers mix with finished produce i.e. produce packed for market and that there are separate cold stores one for storing field produce awaiting grading and packing and another for storing packed produce. These may be adjoining rooms in a single store.

Quality Control - Exporter

Quality control is of the utmost importance at every stage of the supply chain.

Each link in the distribution chain needs to have the lorry temperatures monitored and recorded – the importer can then see instantly if the container has lost refrigeration or if the transport driver has stopped and opened the rear doors and hence broken the cold chain supply. After further inspection by the quality control team feels, there has been a detrimental risk to the fruit- the whole consignment can be rejected at great cost.

Management should have written guidelines on each stage of the development and ripening of the produce and in particular the exact stage for export. At the pack-house, samples should be taken and the actions taken:

- The core temperature taken using a handheld temperature gauge and the development stage recorded.
- The colour stage recorded.

- A small sample should be retained in the pack-house laboratory for shelf life testing at ambient temperature daily recording the changes in colour.
- A small sample should be destructively tested by slicing to check for insect damage and internal physiological disorders. This is particularly important for crops that can be seriously affected by Fruit Fly the grubs of which can only be seen by cutting the fruit. In many countries, consignments will be rejected on arrival if fruit fly is evident. If found in any load from the field, the entire load should be rejected at the pack-house.
- A Quality Controller should be designated to each packing line to ensure produce is handled by his team correctly, minimising rough handling and that produce is packed exactly according to the proscribed guidelines.
- During storage, the core temperature needs to be recorded DAILY and any adjustment to the storage conditions made recording the results and changes.
- The senior QC has to be made responsible for store and pack-house hygiene.

All QC's have to be given the written authority to make binding decisive decisions that are not challenged by management, suppliers or by buyers for commercial reasons. Management frequently is under pressure to fulfil contracts; suppliers will always dispute rejects and at times buyers are under pressure to deliver contractual suppliers to their customers, pressurising QC's to allow sub-standard produce to pass. This has to be resisted and it is the role of the QC to maintain standards.

Food safety

Although not a mandatory requirement food, safety is becoming a major issue particularly when servicing the major EU supermarkets. They now demand processes that document traceability from field through local distribution and through the Packhouse.

Size and packaging

Fresh avocados are classified according to Size Codes 1 to 30, with a minimum weight of 123 grams (or for Hass 80 grams). In Europe, the preferred sizes for Hass avocados range between size 16 and 20 (for the Fuerte variety 14 to 16). Packaging requirements differ between customers and market segments. They must at least be packed in new, clean and quality packaging to prevent damage and properly protect the product. The trade in Europe prefers 4 kg cardboard boxes but many of the specialist ripeners use a 10 kg plastic or cardboard crate. Before the packed fruit leaves the pack house it should be inspected and cleared out by quality control and specifications checks should be recorded.

Examples of quality fibreboard boxes used – note the strong corners



Labelling

The box labels must include the product name, variety name, class, batch code (for traceability), name and address of the exporter, size or count of the fruit, the number of units, net weight, recommended storage conditions and if organic or Fairtrade then the name /code of the inspection body together with the certification number.

Transportation

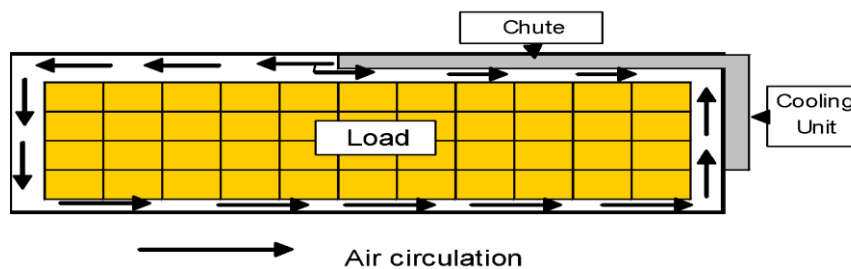
Transportation of the fruit from the pack house to the ports should be carried out in refrigerated vans/lorries or ideally directly loaded into a refrigerated shipping container. It is essential that the cool

chain is not broken and to achieve this the container (or refrigerated lorry) should be pre-cooled before loading and backed up to the pack house door, thereby minimising the risk of warm air entering the container. The ideal transportation by road temperature should be 7°C – 10°C. The relative humidity should be 85-90%.

Refrigerated Transport

Economy of space is a prime requirement, but good air circulation must not be compromised. Respiratory heat is a major load factor and significant amounts of heat enter containers from outside air, solar radiation, leakages through doors and in the case of road transport from heat reflections.

Diagram 6: Schematic layout of a refrigerated sea or road freight container



The road surfaces. To ensure the necessary good air circulation, the sea or road transport container should be fitted with an air delivery chute and the container walls, doors, floors should be designed with ribs with space provided or a bulkhead fitted at the end to for the return air to the cooling unit as shown in Figure 2.

Refer containers are designed for high-density storage and to maintain the load at the correct shipping temperature. There are two fundamental rules that have to be observed and policed at all times:

- 1) The container should be pre-cooled to the shipping temperature before loading and
- 2) The load should also be pre-cooled to the shipping temperature before loading.

Refer containers are designed to maintain the temperature of the loaded produce and not to “cool” produce, remove field heat and the heat of respiration at ambient temperature. If the container is, loaded “warm” the heat of respiration will increase the load temperature irrespective of the refrigerator temperature setting.

Road and sea containers should never be used as an alternative to well-designed cold stores.

Chilling injury

Avocados can be affected by chilling at non-freezing temperatures. Controlling chilling injury requires exporters to know the temperature sensitivity of all the fruits and varieties and not exposing them to low temperature. Airfreight produce is particularly vulnerable to chilling injury where hold temperature is set for the produce requiring the lowest temperature. Importers often mix temperate crops requiring low temperature conditions with tropical fruits that are sensitive to these conditions. Retailers are guilty of subjecting produce to chilling injury in their receiving stores assuming that “all fruits need cold storage” not understanding the particular requirements of individual fruits – some even put fruit overnight into chill rooms used for meat and fish products or display produce in chill cabinets.

This is an example of a loading bay, which eliminates the risk of a break in the cold chain. All lorries are backed up to the loading/unloading platform. The lorries have an inbuilt detector which upon receipt of



consignment by the importer can be read to check that the doors have not been opened during its journey and hence expose the cooled fruit to ambient temperatures

The fruit can achieve more than 4 weeks lease of life by simply combining the optimum overland temperatures with the controlled conditions of the transportation by sea or airfreight.

The shipping container should be equipped with temperature monitoring devices such as a Tyan monitor that will record the temperature throughout the voyage.

Quality control - importer

If all is well and the consignment is accepted, the fruit is stored in a controlled environment until required by the customer. Constant quality control inspections are carried-out. Before sending fruit to their customers, the quality team will ensure that all fruit is free from pest and disease, and that it is not damaged. The technical team will also have to hand the phytosanitary certificate together with full traceability documents as well as field records for spraying chemical pesticides and herbicides. The dates of harvesting have to be handed as well to make sure that the crop has not been harvested too soon after spraying.

Sample fruits will be taken, and shelf life tests will be carried out, as well as pressure measurements etc. Samples will be taken for testing MRL (Max. residue levels) to ensure that no pesticide is still detected on the fruit. The quality of the fruit must adhere to each customer's own specifications. Checks on quality and verifiable recording throughout the procurement chain are essential not only as a function of good management but importantly to avoid trade disputes with buyers and insurers that could have serious financial impact on the business. Employees and sub-contractors i.e. local transport, have to be made accountable from field to pack-house

Avocado quality standards for Europe

Detailed information on quality, size, packaging and labelling requirements for avocados entering into Europe can be found in:

- The Codex Alimentarius Standard for avocados ('Food code' of WHO and FAO);
- The UNECE standards for avocados;
- The General Marketing Standards of Regulation (EC) No. 543/2011;

Quality

The development of the avocados should have reached a physiological stage, which will ensure a continuation of the ripening process. The UNECE standards require a minimum dry matter content of 21% for Hass and of 20% for Fuerte (maturity requirement). Suppliers use different measuring methods and product standards may differ per country and per variety. For the Hass variety, Europe often prefers a dry matter of 23%.

Avocados are generally classified into three classes according to quality:

- Extra Class
- Class I
- Class II

Avocados should, at the very least, be:

- Intact;
- Clean and sound;
- Free from pests and free from damage;
- Free of abnormal external moisture;

- Have a stalk no longer than 10 mm in length;
- Be in a condition to withstand transport and handling.

Appendix II: List of contacts

United Kingdom

Note: Many companies now use web mail and to contact them requires visiting their web sites

Worldwide Fruit Ltd: www.worldwidefruit.co.uk

Contacts:

- Steve Maxwell

Email: steve.maxwell@worldfruit.co.uk,

- Mark Everit
- Neal Colishaw
- Tony Harding

A leading UK avocado importer based in Spalding. Experience with Kenyan avocado. Sources from Peru, S.Africa and New Zealand

Fresca Group: www.frescagroup.co.uk

Contacts:

- Guy Lewis, Chief Information Office
- Jamie Marskell, MD Primafruit
- Charles Rees, Mack Wholesale
- Tim Espley, Director, Fresca
- Paul Froede, GM, Cartama

Email: mail@cartamauk.com

One of the UK's largest Fruit groups that has been formed by the amalgamation of Fresca with the Mack group and Prima Fruit along with sister companies, Thanet Earth, Cartama (Peru), the Avocado Company and a number of UK fruit and vegetable producers. Based at Paddockwood, Kent. The company offers avocado ripening facilities.

Halls International: www.halls.co.za

Email: info@hlhall.co.uk

One of South Africa's leading producers with marketing offices cold store warehousing and ripening facilities in UK, France, the Netherlands and Spain. The company procures fruit worldwide to market in Europe all year round.

C & C Group www.candcgroup.co.uk

Worldwide Exotics Ltd

Contact: Mr Michael Roberts:

Email: admin@candcgroup.co.uk

Gilgrove Ltd

Contact: Mr Kevin Prentice Gilgrove

Gilgrove is one of the oldest Covent Garden wholesalers now merged into C&C Group. Experience in avocado supplying mainly the wholesale/catering trades

Appendix III: Useful addresses

A & M Fruit & Veg	sales@amfruitandveg@hotmail.com
AC Produce Imports Ltd Contact: Jade Dye	sales@acproduceimports.co.uk www.acproduceimports.co.uk
Agrexco Ltd Contact: Contact: Ronen Bitton Agrexco was the Israel's monopoly co-operative marketing organisation and one of the foremost marketing companies in Europe with offices in the UK, Germany, France and the Netherlands. The company markets under the brand name "Carmel" and was the pioneer in avocado promotion and development in Europe. Now a private company.	ronen@agrexco.com , info@agrexco.com www.agrexco.com
Ahamed Exotics Ltd	aziz@ahmedexotic.co.uk www.ahmedexotic.co.uk
Akbar General Importers	akbargeneralimporters@hotmail.co.uk
Bakkover Group	general.enquiries@bakkover.com www.bakkavor.com
Booker Cash & Carry Web	www.booker.co.uk
Bristol Fruit Sales	bananas@bristolfruit.co.uk graham@wholesalefruitcentre.co.uk www.bristolfruit.co.uk
Twentyways	info@twentyways.co.uk www.twentyways.co.uk
Classic Fresh Foods	andrew@c.f.f.co.uk www.classicfreshfoods.co.uk
Wealmore Ltd	www.wealmore.co.uk , wealmoor@wealmoor.co.uk
Worldwide Fruits	www.worldwidefruit.co.uk , steve.maxwell@worldwidefruits.co.uk (CEO)
Wellpack UK Ltd	infor@wellpack.co.uk www.welpack.co.uk
Total Produce UK web mail Contact: Richard Irwin Total Produce claim to be one of the world's largest fruit company's now operates out of 39 countries while serving many more. The company is a major UK importer offering cold storage warehousing and ripening and operates many wholesale markets in the UK.	www.totalworldfresh.com
Vegman Wholesalers Ltd Contact: Musharaf Javed	info@vegmanimport.com www.vegmanimport.com
Tydene Ltd	ercin@tydene.com www.tydene.com
Minor Wier & Willis	enquiries@mww.co.uk

<p>Contact: Sant Mehta MD, Parveen Mehta</p> <p>Based in Birmingham the company which originally specialised in importing exotics is now one of the UK's largest fruit importers and distributors offering cold storage, fruit ripening and cool chain distribution.</p>	<p>www.mwww.co.uk</p>
<p>Vidafresh Ltd.</p> <p>Contact: Chris Rawlins, Scott Davies MD, Dean Garcia - Commercial Manager</p>	<p>chris.rawlins@vidafresh.co.uk</p> <p>scott.davies@vidafresh.co.uk</p> <p>www.vidafresh.co.uk</p>
<p>Ferryfast Produce Ltd</p>	<p>d.byrd@ferryfast.co.uk</p> <p>www.ferryfast.co.uk</p>
<p>Organic Farm Foods</p>	<p>enquiries@ethicalfruitcompany.co.uk</p> <p>www.ethicalfruitcompany.co.uk</p>
<p>Prima Fruit Ltd</p>	<p>jamie.marskell@primafruit.co.uk</p> <p>www.primafruit.co.uk</p>
<p>Poupart Ltd</p> <p>Contact: Jonathon Olins</p>	<p>jonathan.olins@poupartimports.co.uk</p> <p>www.poupartimports.co.uk</p>
<p>Planet Produce Ltd</p> <p>Contact: Alistair Cellard, Pete Watson</p> <p>A company specialising in exotic imports including avocado marketing throughout the UK and wholesale markets.</p>	<p>ali@planetproduce.co.uk</p> <p>www.planetproduce.co.uk</p>
<p>M & W Mack Limited</p>	<p>head.office@mack.co.uk</p> <p>www.mack.co.uk</p>
<p>Mack International</p> <p>Contact: Garry Canning</p>	<p>garycanning@mwmack.co.uk</p>
<p>Univeg</p>	<p>info@univeguk.co.uk</p> <p>www.univeguk.co.uk</p>
<p>DG Fruit UK Ltd</p>	<p>info@dgfruit.co.uk</p> <p>www.dgfruit.co.uk</p>
<p>NFB Import Ltd</p>	<p>fruit@nfb.co.uk</p> <p>www.nfb.co.uk</p>
<p>JEM Fruits</p>	<p>info@jemfruits.com</p> <p>www.jemfruits.com</p>
<p>Westfalia Fruit</p>	<p>www.westfaliafruit.com</p>
<p>UK Marketing Company Greencell</p> <p>Contact: Colin Blake</p> <p>Possibly UK's largest importer of avocado offering cool chain distribution and ripening facilities</p>	<p>colin.blake@greencell.com</p> <p>www.greencell.com</p>
<p>Vitaal UK and Nationwide Produce</p>	

Contact: Richard Dyde GM	
Nationwide Produce	hello@nationwideproduce.com

The Netherlands

- The Greenery
Email m.vandenenden@thegreenery.com **Website:** www.thegreenery.com
- Origin Fruit Direct bv
Email Corn even de Klunsdert corne@originfruitdirect.nl **Website:** www.originfruitdirect.nl
- RovegFruit BV
Email contact@roveg.nl **Website:** www.roveg.nl
- HillFresh International
Email info@hillfresh.eu **Website:** www.hillfresh.eu
- Bakker Barendrecht
Email: info@bakkerbarendrecht.nl **Website:** www.bakkerbarendrecht.nl
- Aartsenfruit Breda Bv
Email: breda@aartsenfruit.nl **Website:** www.aartsenfruit.nl
- Best Fresh Group
Email: info@bestfreshgroup.com **Website:** www.bestfreshfruit.com
- Mission Produce Europe bv
Email: ipotting@missionpro.com **Website:** www.missionpro.com
- Halls
Website: www.halls.co.za **Email:** info@hallsbv.nl

France

- Novagrim:
Email www.novagrim.com **Website:** www.novagrim.com
- Univeg
Email katope@univeg.fr **Website:** www.univeg.fr
- Comexa Europe
Email administracion@comexaeuropa.com **Website:** www.comexaeuropa.com
- Delmonte France
Email: Frederick.basset@gmail.com
- Commercial Fruits
Website: www.commercial-fruits.com **Email:** g.burunat@commercial-fruits.com
- Georges Helfer
Website: www.helferfrance.fr **Email:** contact@helferfrance.fr
- Comexa
Website: www.comexaeuropa.com **Email:** comexa@wanadoo.fr
- Lilot Fruits
Website: www.capexo.fr

Germany

- Univeg Email:
Email: info@univeg.de **Website:** www.univeg.de
- Fairtrasa International AG
Website: www.fairtrasa.com **Email:** Patrick.struebi@fairtrasa.com
- Cobana Fruchtring
Email: Jürgen.Boruszewski@cobana-fruchtring.de **Website:** www.cobana-fruchtring.de
- KÖLLA GmbH & Co. KG
Email: duesseldorf@koella.com **Website:** www.koella.com
- Anton Dürbeck GmbH
Email: anton@duerbeck.com **Website:** www.duerbeck.com
- Agf Atlantic Green Fresh GmbH

<p>Email: hamburg@agf-europe.com Website: www.agf-europe.com</p> <ul style="list-style-type: none"> • Albert Huth Jun. E. Kfm. Email: info@albert-huth.de Website: www.albert-huth.de • DS-Frucht GmbH Email: info@ds-frucht.de Website: www.ds-frucht.de • Fresh Green - Nadel El Abd E. K. • Obst & Gemüse Im- & Export Email: info@fresh-green.eu Website: www.fresh-green.eu • Fresh-Connection Fruchtimport GmbH Email: klein@fresh-connection.com Website: www.fresh-connection.com
<p>Scandinavia</p> <ul style="list-style-type: none"> • ICA Frukt & Gront Website: www.ica.se Contact: Per Unger • Foretagsfrukt AB Website: www.foretagsfrukt.se Email: info@foretagsfrukt.se • Sydgront Website: www.sydgront.se Email: konsument@sydgront.se • Trygve Tønjum Import AS Website: www.tonjum.no Email: office@tonjum.no • SATOTUKKU OY Website: www.satotukku.fi Email: info@satotukku.fi
<p>Iceland</p> <ul style="list-style-type: none"> • Bannar ehf Email: bananar@bananar.is Website: www.banar.is
<p>Norway</p> <ul style="list-style-type: none"> • Interfrukt Sa Email: info@io.no Website: www.interfrukt.no
<p>Switzerland</p> <ul style="list-style-type: none"> • Agro-Import Ag Email: heinz@agroimport.ch Website: www.agroimport.ch • Georges Helfer SA Email: info@helfersuisse.ch Website: www.helfersuisse.ch • Dahler Fruchte Email: mariusdaehler@daehler-fruechte.ch Website: www.daehler-fruechte.ch • AG für Fruchthandel Email: info@safruits.com Website: www.safruits.com
<p>Poland</p> <ul style="list-style-type: none"> • AK Fruit Website: www.akfruit.pl Email: simfruit@wp.pl • Alvena SP Z OO Website: www.alvena.pl Email: fruit@alvena.pl • Consorfrut Polska Sp. Z O.O. Website: www.consorfrut.pl Email: biuro@consorfrut.pl • FK Fruit Website: www.fkfruit.eu Email: freddi@fkfruit.eu
<p>Russia</p> <ul style="list-style-type: none"> • Soyuzprom Website: www.spcontract.com Email: price@spcontract.com • Baltic Fresh Fruit: Website: www.bff.lt Email: irina@bff.lt

- FruitLight
Website: www.fruitlightru **Email:** info@fruitlight.ru
- Agat Fruit Company
Website: www.agatfruit.ru **Email:** anastasiya@agatfruit.ru
- Best Fruit Plus
Website: www.bestfruit.ru **Email:** info@bestfruit.ru
- Friend Fruits
Website: www.friendsfruit.com **Email:** oke@nm.ru