



# The Business Case for Investing in the Packaging and Export of Avocados in Rwanda

*Investor Presentation*  
April 2012

*Prepared By*

MONITOR GROUP

Monitor Group Proprietary



### Objective of this Document

This investment case has been prepared by the Monitor Group for the Rwanda Ministry of Agriculture and Livestock under the auspices of the USAID's Feed the Future (FtF) program. It provides an overview of an investment opportunity for Regional and International investors who are looking for strategic or financial investments in Sub-Saharan Africa

### Opportunity Definition

The investment opportunity identified is the establishment of a greenfield avocado packaging facility that will serve the growing and significant demand for avocados in the EU. Avocado consumption has grown strongly amongst health conscious consumers in developed markets; however unlike the U.S., the EU has thus far struggled to find sources of increased supply. Rwanda's good agro-climatic conditions, favorable cost basis and the attractive investment environment, enable Rwanda to meet some of the EU's unfulfilled demand

# Packaging and Export of Avocados

## Summary



### 1 Market Opportunity



- Global avocado consumption has grown strongly over the last decade, with imports growing by 17% per annum to total over \$1.6B in 2010
- While demand in the U.S. market has nearly tripled in this time, demand in the EU market has remained relatively stable
- The EU's difficulty in finding sources for increased supply and seasonal price fluctuations offers a high potential export opportunity

### 2 Competitive Advantages



- Rwanda has the ideal agro-climatic conditions for avocado cultivation
- Rwanda provides a cheaper cost basis for avocado packaging / export than other countries in the EAC
- Rwanda is well positioned to serve as an extension of the existing regional avocado export network
- Export-oriented industries enjoy substantial Government support

### 3 Investment Highlights



- Avocado exports from Rwanda and Revenues are projected to be 4,000MT and \$7.8M respectively by year five
- The initial investment will require \$2.9M for sourcing and packaging
- Project IRR is forecast to be 38%, with Net Income of \$1M by 2017
- Risks to investment are procurement and transport costs and the adoption of Hass variety seedlings by small holder farmers (SHFs)

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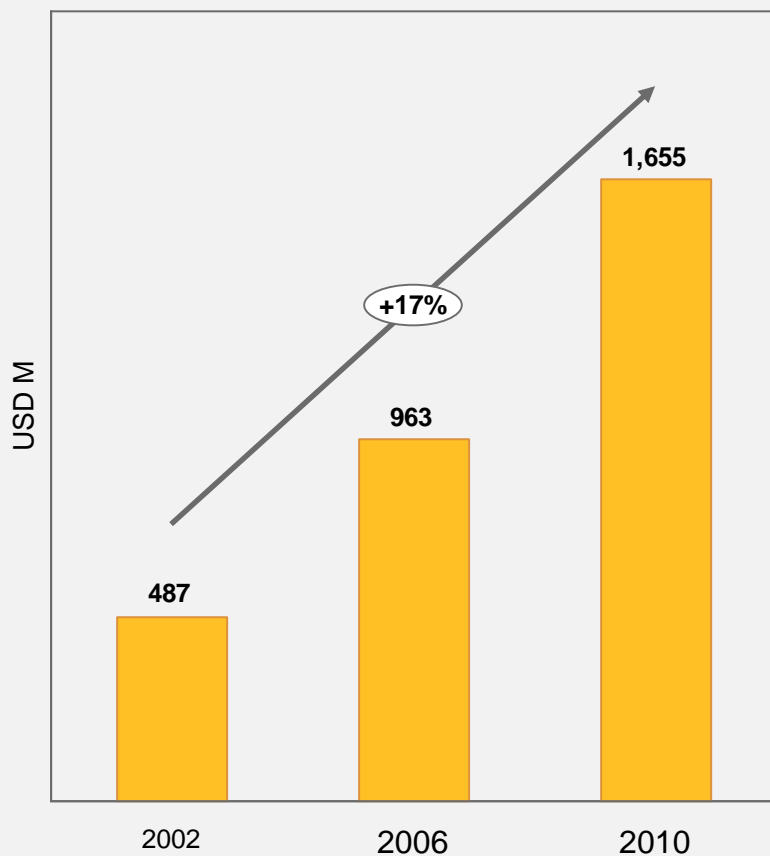
### 3 Investment Highlights



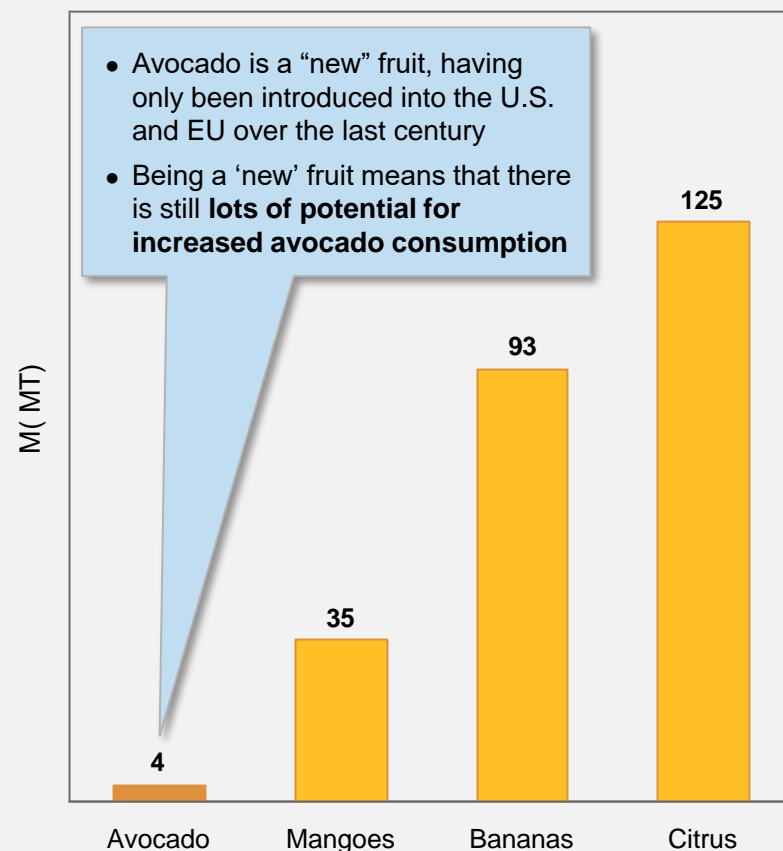
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*Global demand growth for avocados is strong, driven by the taste preferences of health conscious, developed market consumers, and the fact that avocado is still a “new” fruit*

### Value of Global Avocado Imports, 2002–2010



### World Fruit Production, 2011



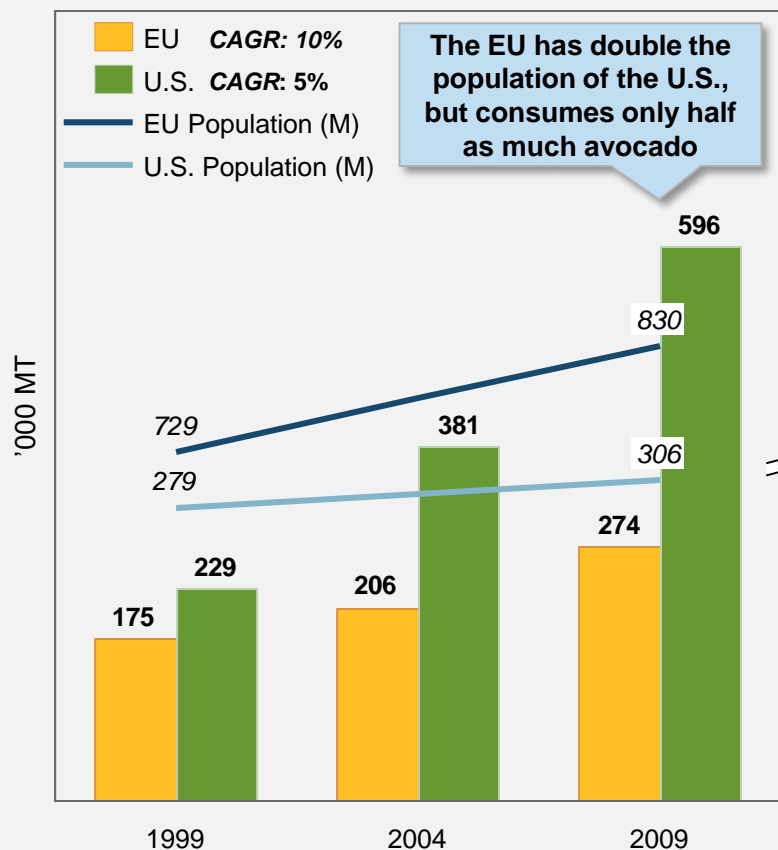
# Global Avocado Market

## U.S. and EU Markets

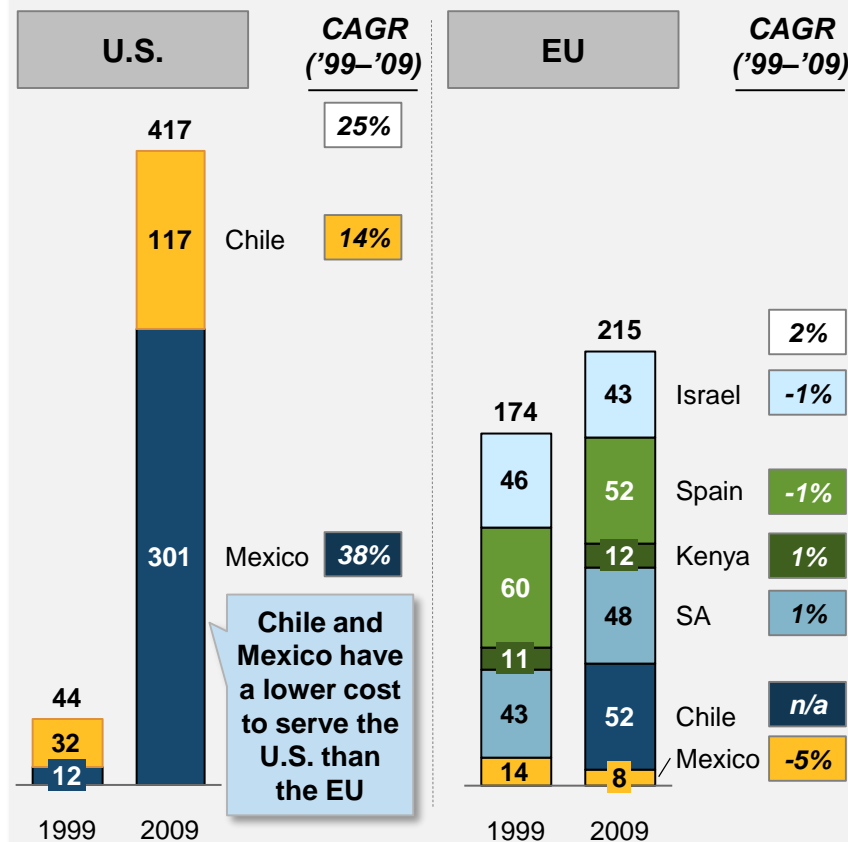


*In recent years the U.S. market for avocado imports has grown faster than the EU, due to expanded production by key U.S. suppliers, namely Mexico and Chile; the EU meanwhile has been hampered by limited ability amongst its current suppliers to increase production*

### U.S. and EU Consumption, 1999–2009



### U.S. and EU Imports, by Source Country, 1999–2009 ('000 MT)



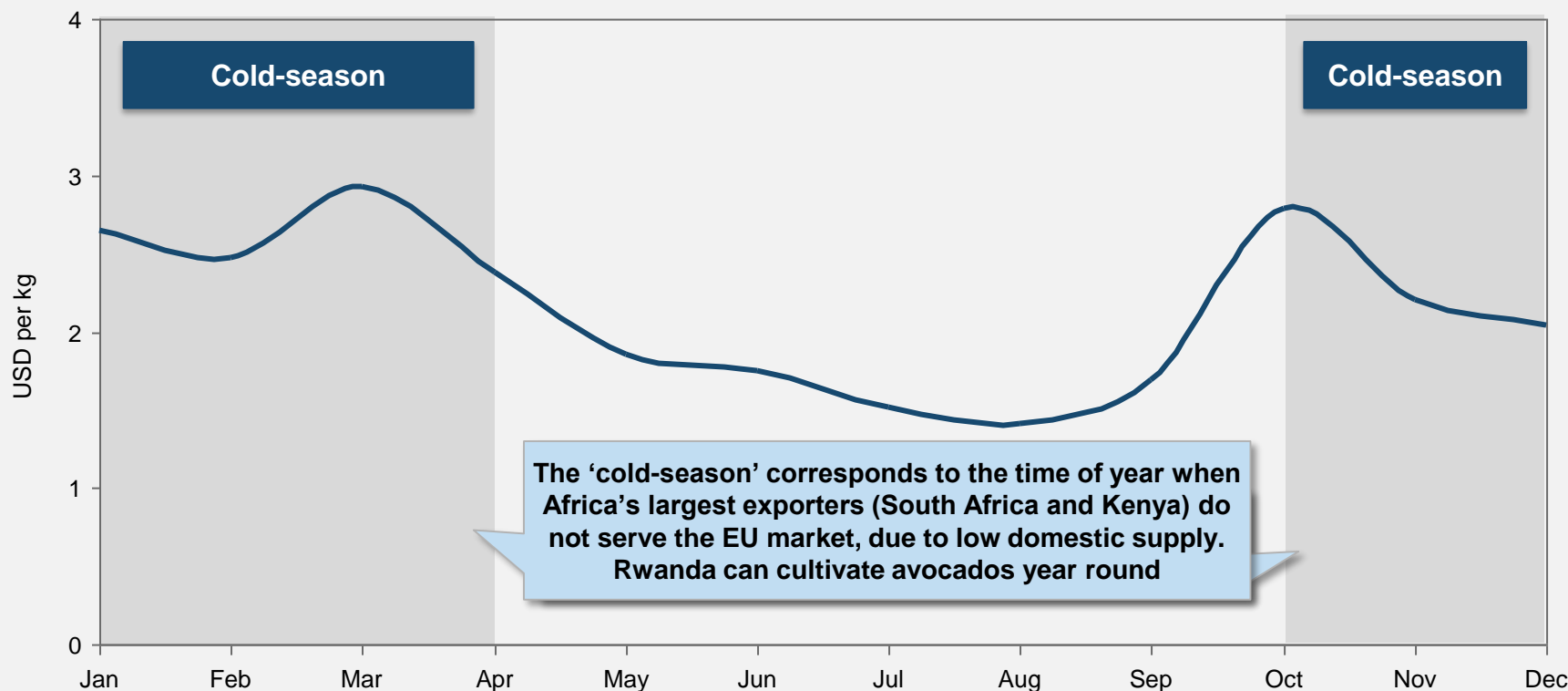
# Global Avocado Market

## Potential for EU Markets



*The EU market has even more potential during the 'cold-season' of October to April, when avocado prices can reach levels of 50%–100% above other times of the year. Rwanda's ability to produce avocado year round will be beneficial in matching 'cold-season' demand.*

**Avocado Price Trends in the UK<sup>1</sup>**



Note: <sup>1</sup>This price trend is from 2004 but remains representative of the seasonality of prices in the EU

Source: Fintrac Horticulture Development Centre, 2004

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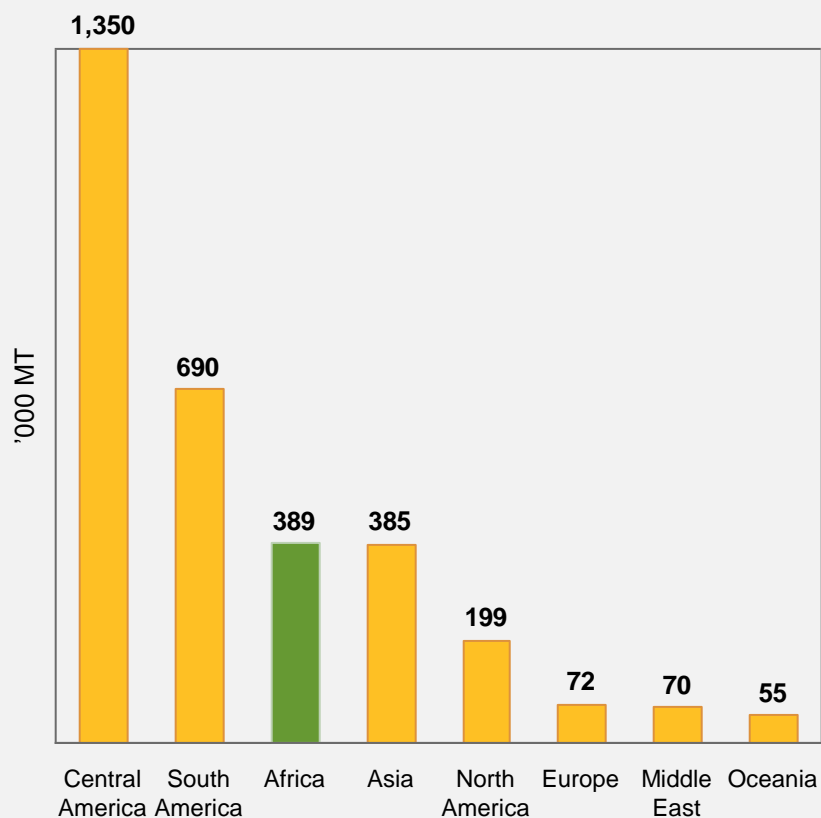
# Global Avocado Market

## Africa's Potential

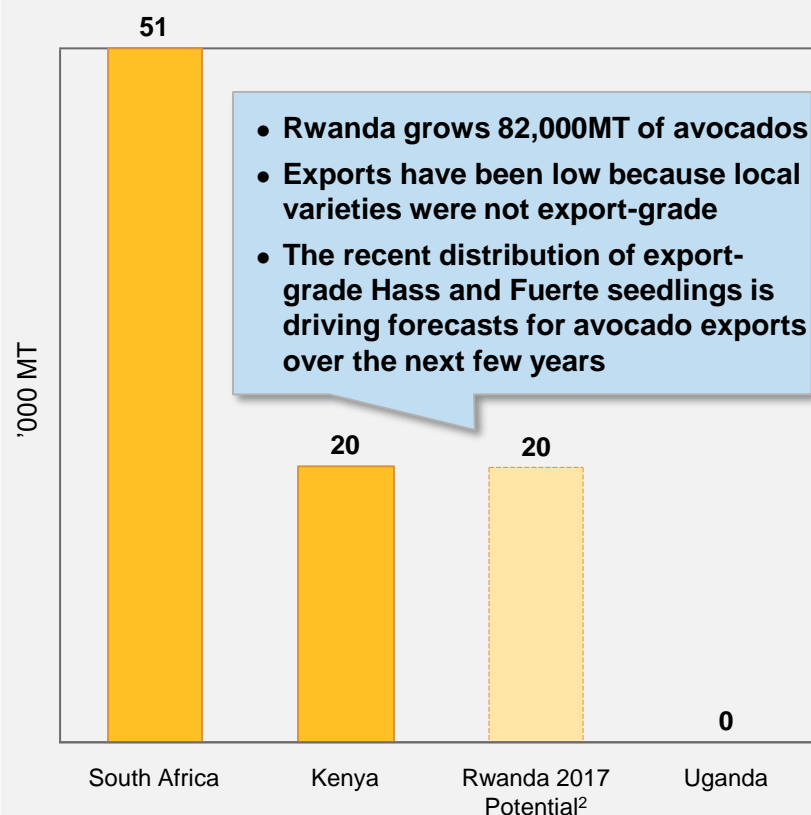


*Although avocado is widely cultivated across Africa, South Africa and Kenya are the only notable exporters; Rwanda has the potential to export similar volumes to Kenya*

### Avocado Production, by Region



### Avocado Exports (African Countries)<sup>1</sup>



Note: <sup>1</sup>Data is most recent available: 2010 for South Africa and Kenya, 2008 for Uganda; <sup>2</sup>Figure based on NAEF forecast

Source: Comtrade; Monitor Analysis

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# Packaging and Export of Avocados

## Competitive Advantages



### 1 Market Opportunity



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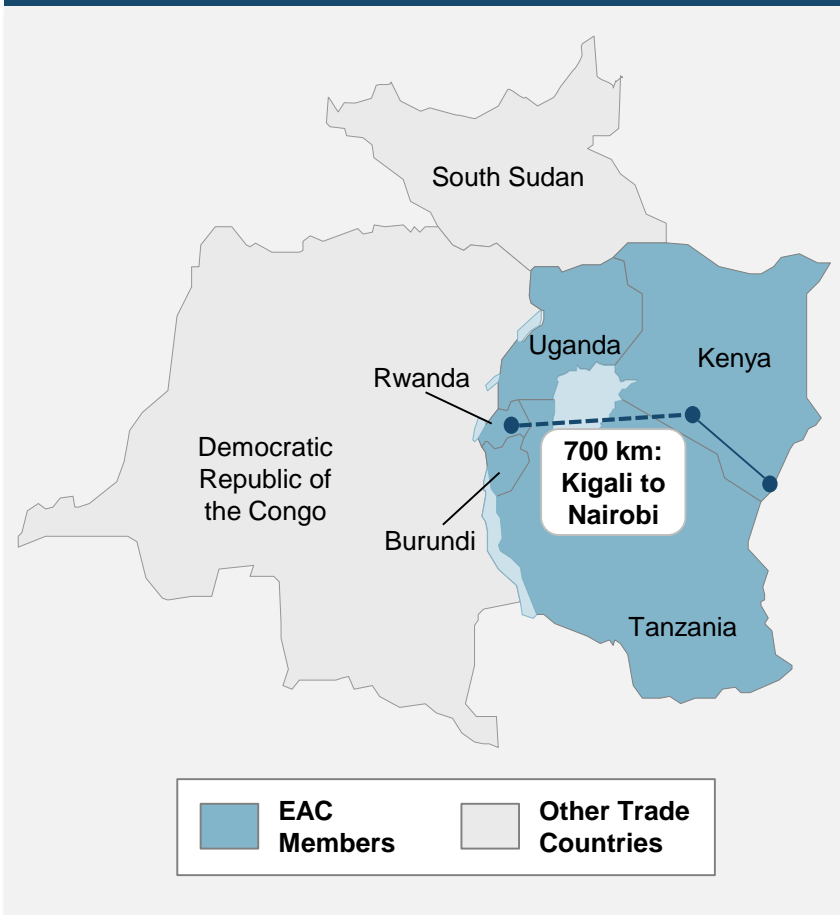
# Rwanda's Competitive Advantage

## Rwanda's Cost Advantage

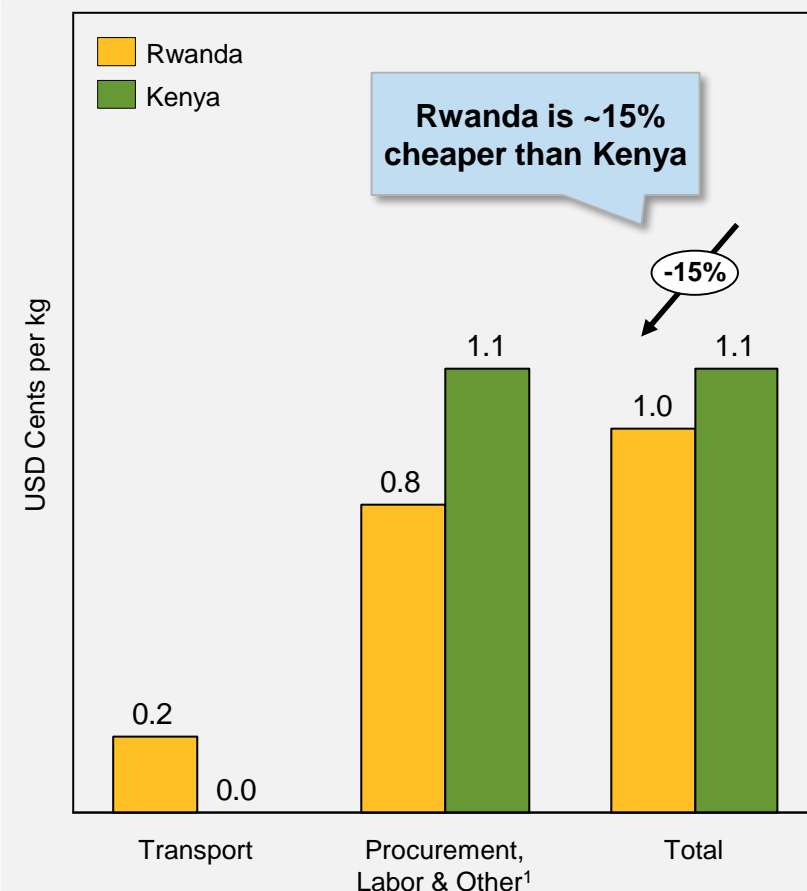


*Rwanda has close proximity to the regional avocado supply chain via Nairobi; while transportation costs are high, the savings on procurement and labor offset these costs*

### EAC Trading Block and Regional Map



### Cost Differentials, Rwanda vs. Kenya (FOB Nairobi)



Note: <sup>1</sup>Procurement refers to the cost of procuring avocado, whether from SHFs, cooperatives or the nucleus farm

Source: Processor and Farmer Interviews; Monitor Analysis

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# Rwanda's Competitive Advantage

## Agro-climatic Conditions



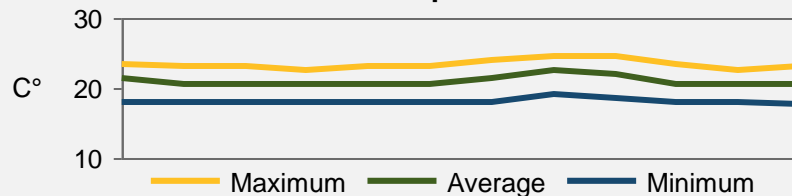
*Rwanda has ideal conditions for avocado cultivation, and especially for Hass cultivation; conditions include tropical temperatures, high humidity and high annual rainfall*

### Conditions in Rwanda

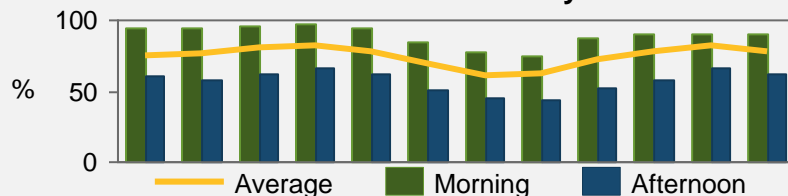
Average Altitude

1,369m

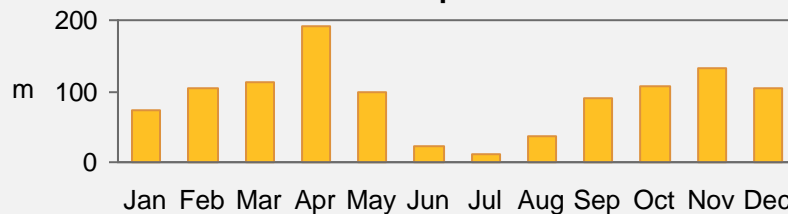
#### Temperature



#### Relative Humidity



#### Precipitation



### Ideal Conditions for Hass Cultivation

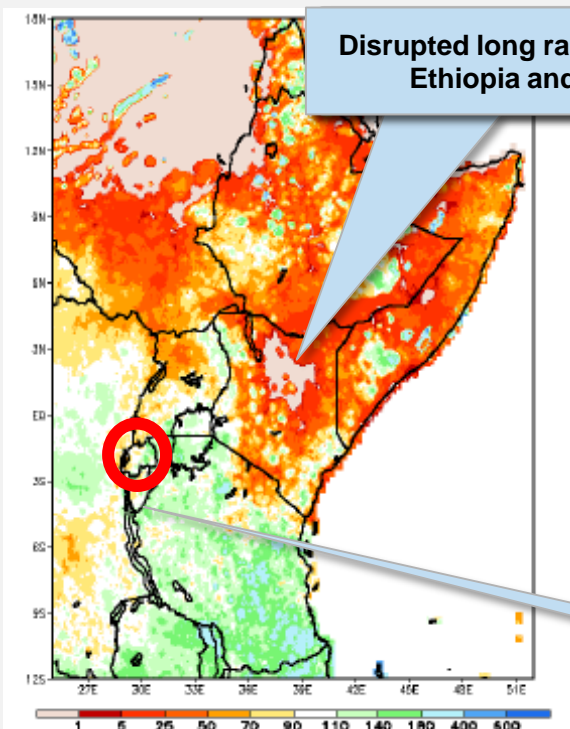
- ✓ High, tropical altitudes ranging from **900m to 2,400m**
- ✓ Mild temperatures, with an average range from **20 to 24 degrees Celsius**
- ✓ Humidity levels **above 65%**
- ✓ Wet conditions, with annual rainfall **exceeding 1,000m**



*Of the ideal conditions for Hass cultivation Rwanda has a clear advantage in rainfall as neighboring countries have been adversely affected by climate changes in recent years*

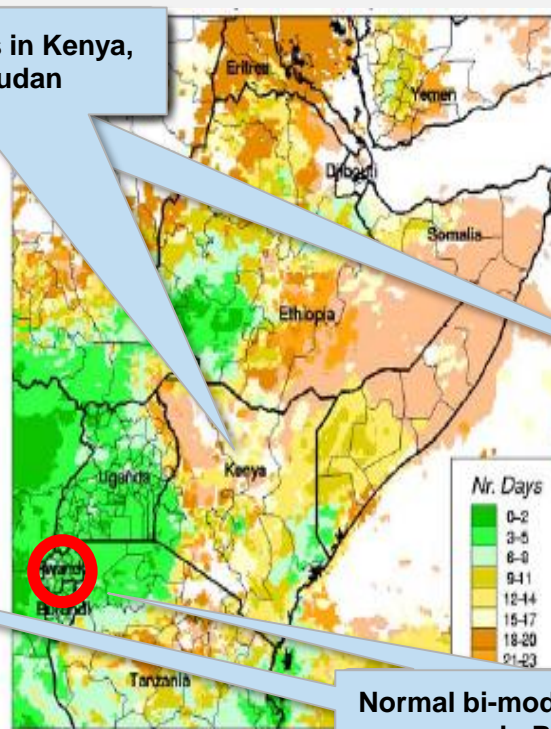
**The long rains, from March to May, have of late drastically declined in most avocado producing countries of the region, mainly due to climate change and deforestation**

**Rainfall Anomaly (% of normal)  
March–April '11**

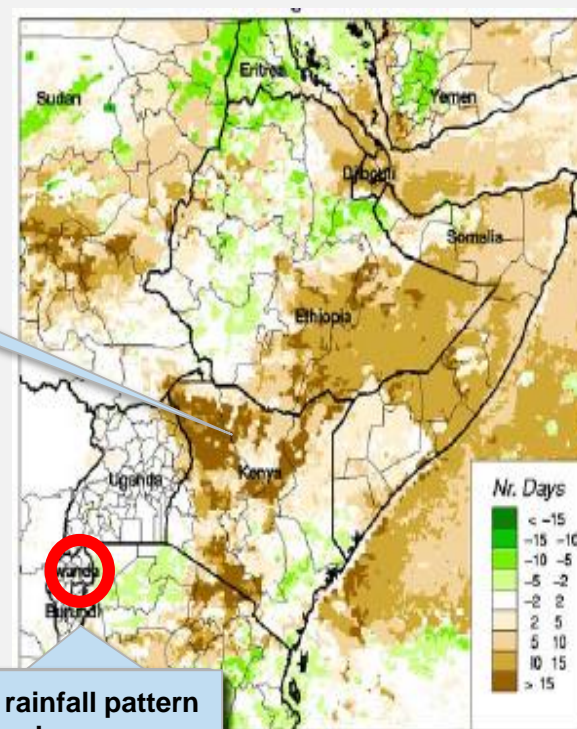


**Disrupted long rains in Kenya,  
Ethiopia and Sudan**

**Max. Consecutive Dry Days  
April '11**



**Max. Consecutive Dry Days  
April '11 — Avg. '01–'09**



**Normal bi-modal rainfall pattern  
in Rwanda**

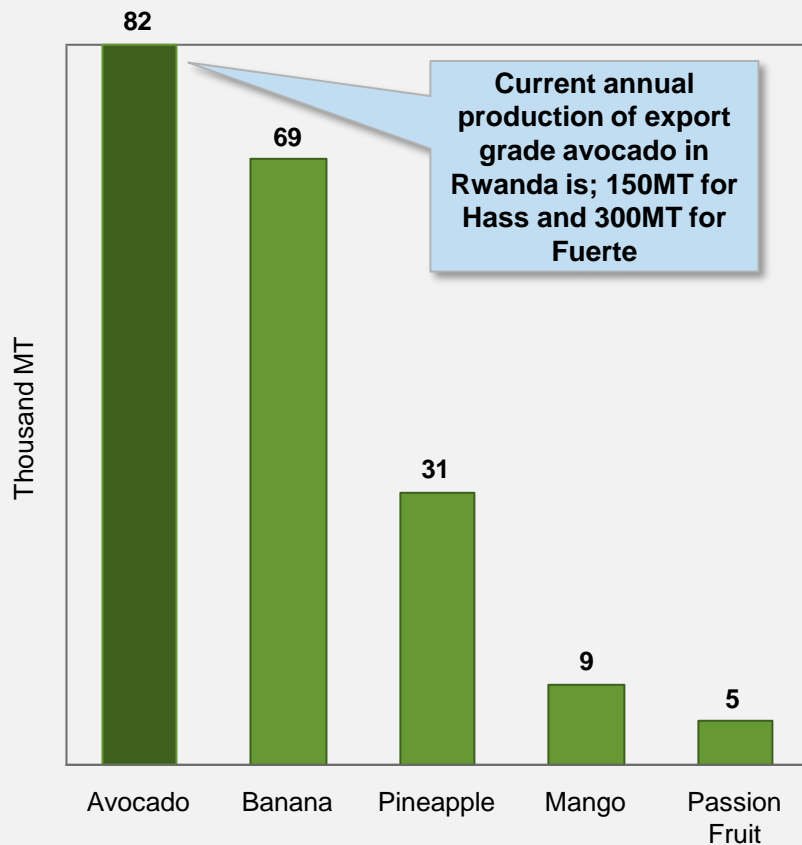
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## Avocado Production in Rwanda

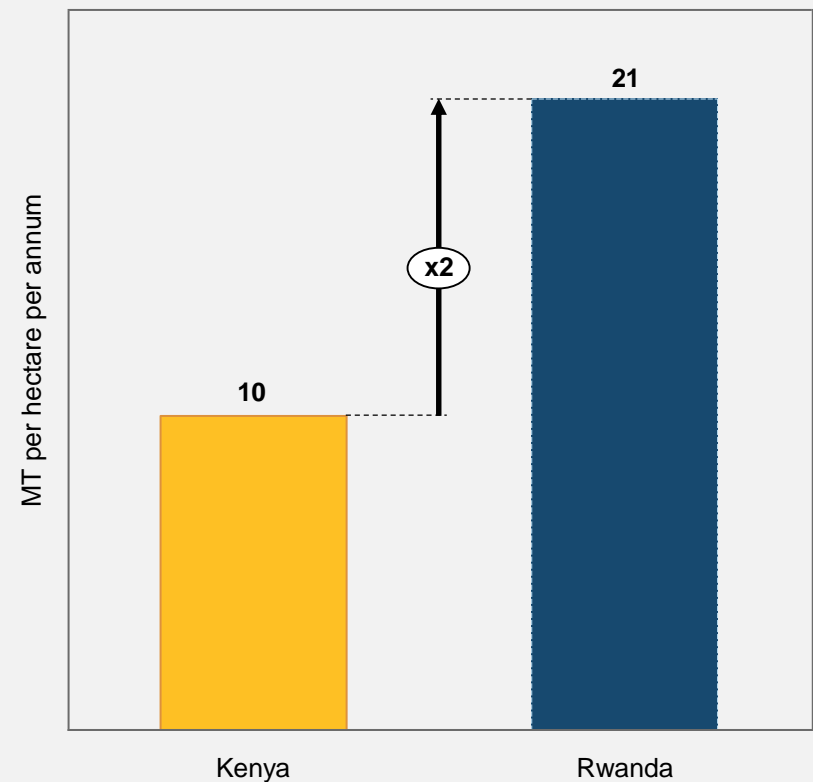


*Favorable conditions in Rwanda and climate changes elsewhere have allowed yields in Rwanda to be double those of Kenya; with avocado being the most produced fruit in Rwanda*

### Fruit Production, Rwanda (Annual)



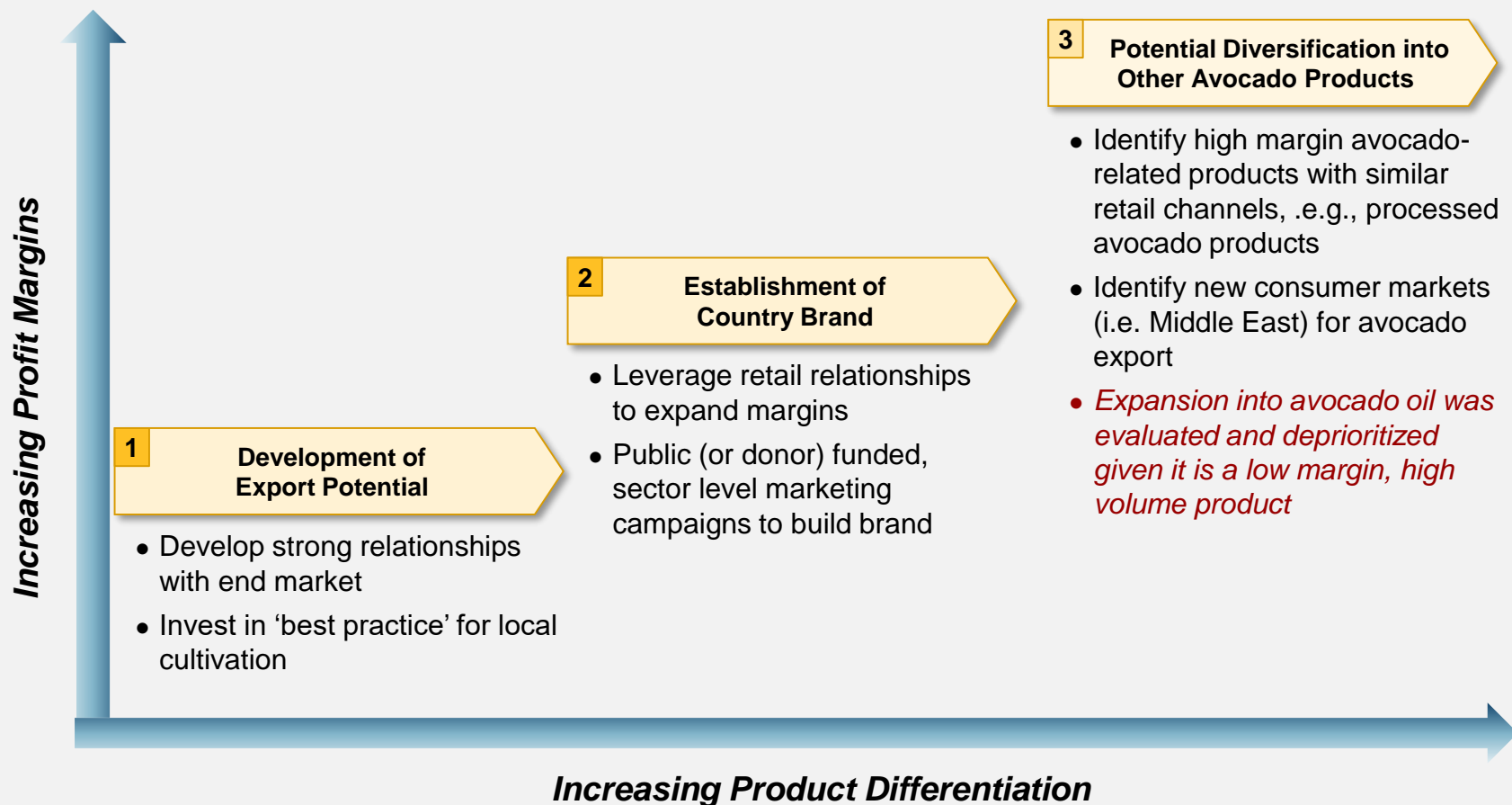
### Projected Hass Avocado Yields Kenya vs. Rwanda





*Development of the avocado cultivation and export sector in Rwanda can be harnessed to ensure firms benefit through higher margins over time*

## Potential Development Stages for Avocado Sector





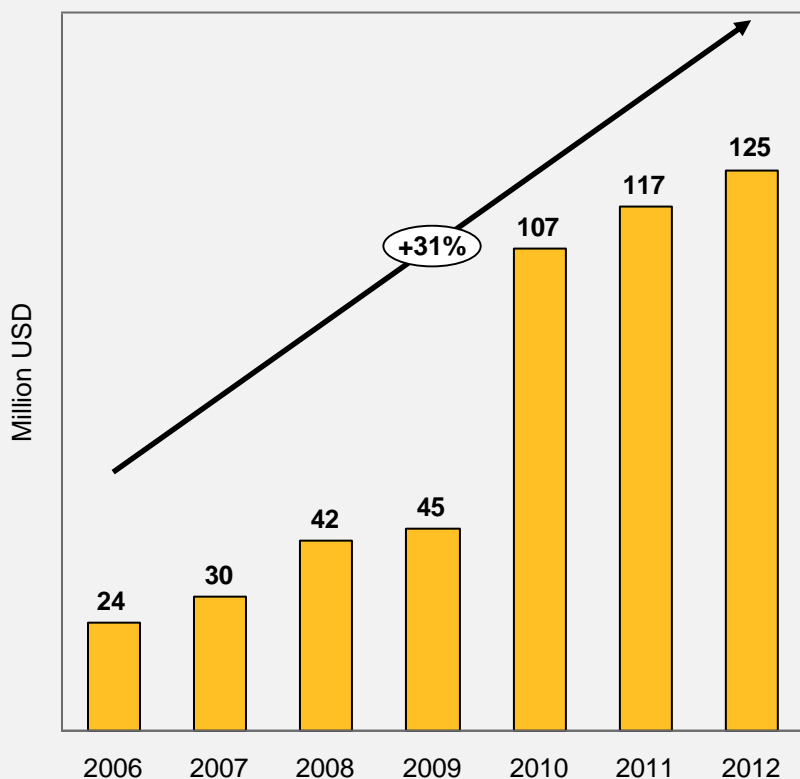
# Rwanda's Competitive Advantage

## Role of the Government of Rwanda



*The Government of Rwanda's commitment to the agricultural sector is well demonstrated by a high and consistently increasing dedication of public funds for agricultural expenditure*

### Government Expenditure on Agriculture (MINAGRI only), 2006-2012



### Agricultural and Investment Environment

- In total **10.2% of Rwanda's national budget** is spent on agriculture / agri-business
- Rwanda was the first country to sign the Comprehensive African Agriculture Development Program (**CAADP**)
- Rwanda was **ranked first** in East Africa in the World Bank's "Doing Business" report 2012
- Under the Everything But Arms initiative, all **agri-exports to the EU are duty and quota free**

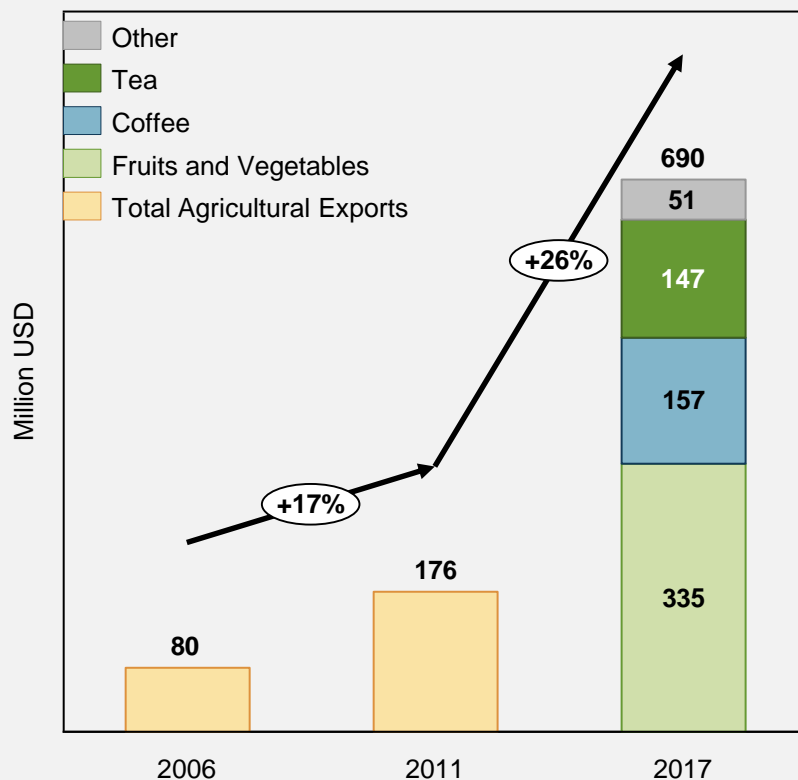
# Rwanda's Competitive Advantage

## Horticulture Support



*Rwanda's export strategy will require significant growth in horticultural exports to meet export targets. As a result, the government proactively facilitates to horticulture investments*

### Agricultural Export Targets



### Initiatives to Promote Rwandan Horticulture

- Since 2010 the National Agriculture and Export Board (NAEB) has **distributed and planted export-grade seedlings** across Rwanda, mainly in the East and South
- All imports of planting materials. Agrochemicals, packaging materials, and equipment for horticulture are **duty free**
- The Rwanda Standards Bureau (RBS) has been formed and tasked with ensuring **certification reaches global standards**
- Cabinet has identified horticulture as a priority growth sector with **highest level support**



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# Avocado Export Investment Highlights

## Operational Highlights



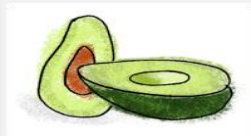
*The opportunity identified requires investing in a avocado packaging facility and nucleus farm, with sourcing support from out-growers*

### Target Markets



- **Export to the EU**, where current consumption is 600,00MT per annum
- Match supply to **'high-season' demand** during October to April

### Product



- **Hass** variety avocado
- Sorted, cleaned, waxed and packaged into cardboard boxes

### Price



- Wholesale price of **\$1.75** per kg (FOB destination) in year one, **growing at 2.7%** per annum (mid-term Eurozone inflation forecast)
- Prices will be higher during the 'high-demand' season

### Channel



- Direct sales to 2–3 key **EU wholesalers**
- Supported by sales to **EU retailers and supermarkets**, such as Tesco, Carrefour and Sainsbury's

### Processing Facility



- Avocado processing and **packaging facility** with an output capacity of 4,000MT<sup>1</sup> per annum
- Proposed location in Eastern Rwanda due to land availability

### Sourcing Model



- **Nucleus farm** (or contractual arrangement or cooperative equity partnership with supply quality assurance) of 100 hectares
- Supply supported by arrangements with 6,000 **out-growers**

Note: 1Output capacity of 4,000MT represents a conservative estimate benchmarked from regional export firms

Source: Monitor Analysis

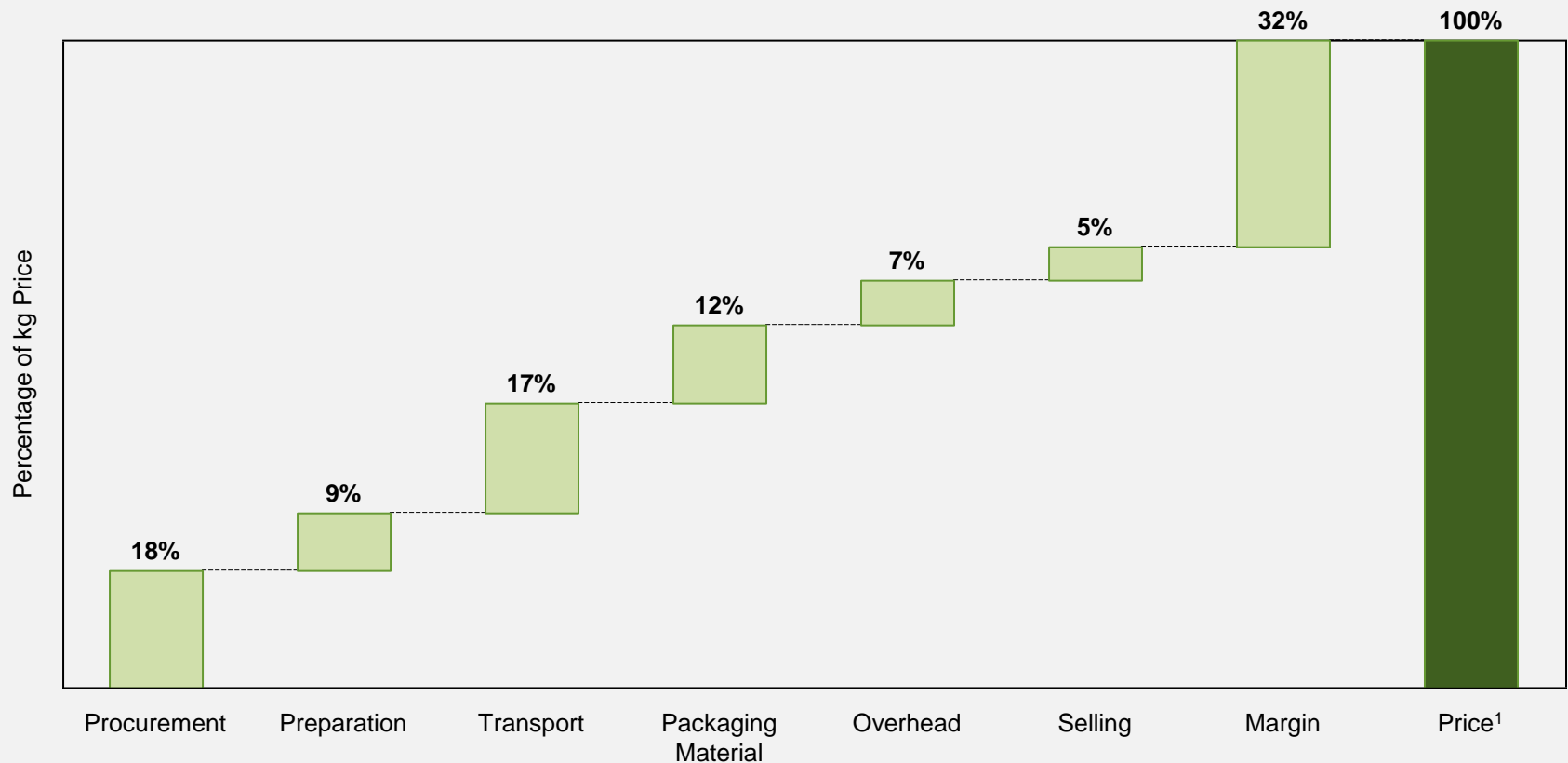
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## Cost Structure



*Cost assumptions suggest that a kilogram of fresh avocado can fetch a margin of 32% in the EU market*

### Cost Structure for 1kg of Avocado in Year Five



Note: <sup>1</sup>Price for 1kg is \$1.75

Source: Monitor Analysis

Monitor Group Proprietary

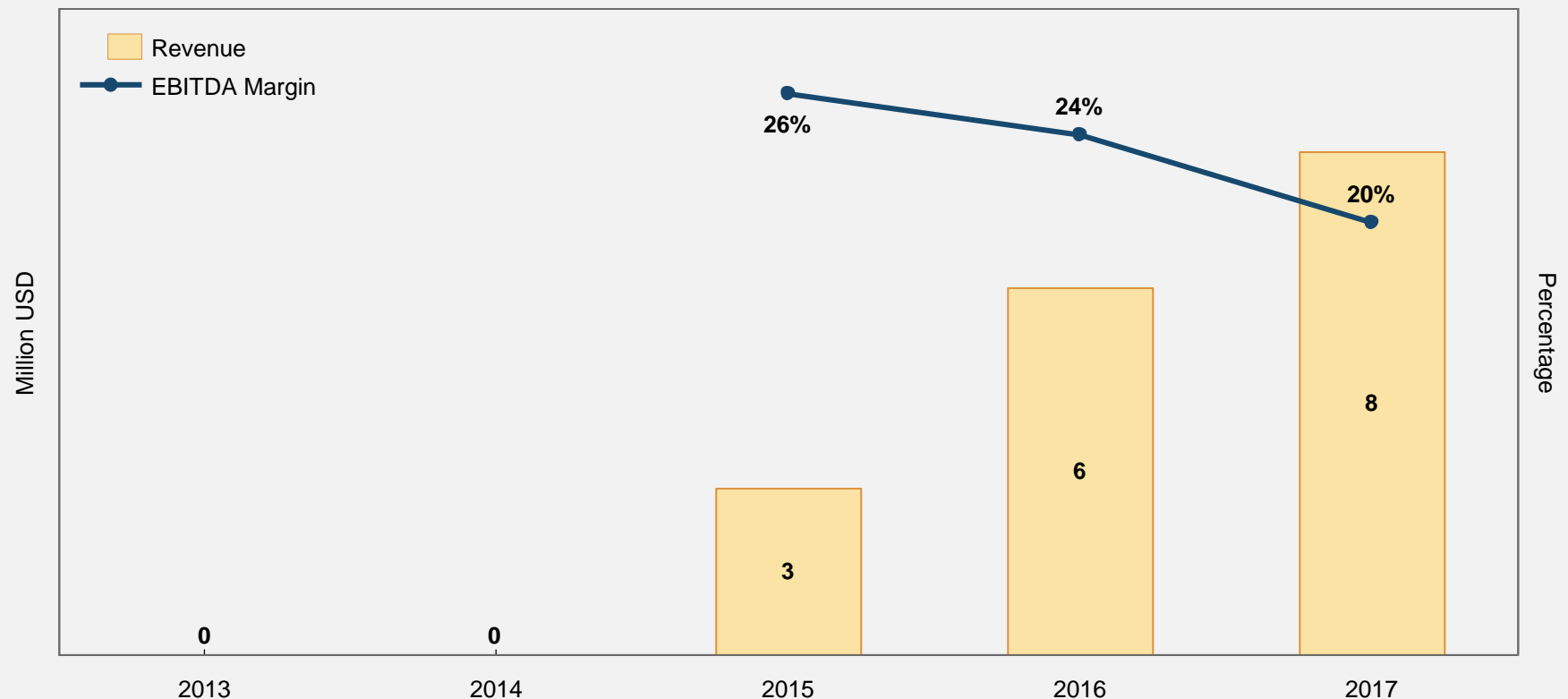
# Avocado Export Investment Highlights

## Financial Performance Summary



*The forecasted 2017 EBITDA margin of 20% compares favorably to listed comparatives; revenues have been conservatively forecasted to ramp up gradually, with no production in the first two years*

Revenue (Million USD) and EBITDA Margin (%), 2013–2017



## Capital Investment and Forecast Returns



*To reach revenue forecasts an initial investment of \$2.9M is required; without leverage the investment is projected to deliver an IRR of 38% after five years and be cash positive by 2015*

### Investment

<b>Total Capital Investment (\$M)</b>	<b>2.9<sup>1</sup></b>
Plant and Machinery	1.8
Land	0.7
Working Capital and Other <sup>1</sup>	0.4

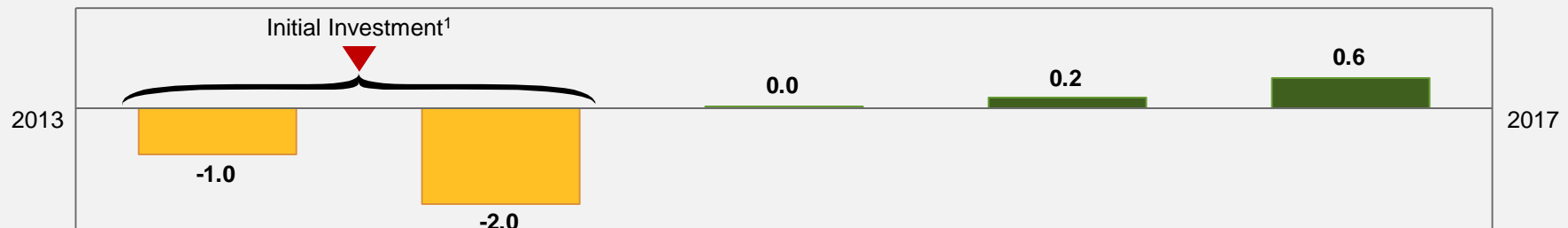
- Capital investment assumed to take place in years one and two
- No debt assumed

### Return

Internal Rate of Return (IRR) <sup>2</sup>	38%
NPV (\$M)	1.0
2017 Revenue (\$M)	7.8
2017 Net Income (\$M)	1.0

- IRR can be improved to 62% with the addition of 50% debt (on fixed assets)
- Steady net profit margin is 13%

### Forecast Free Cash Flows (Million USD)



Note: <sup>1</sup>That assumption that all capital investment will take place in years one and two is conservative, and investment can be staggered over the initial business setup phase; <sup>2</sup>Assuming an exit EBITDA multiple of five times

Source: Monitor Analysis

## Key Risks



*Several key risks have been identified, however there are several paths to mitigate against these risks, some of which have already been tested*

	Risk Parameter	Description	High	Med	Low	Mitigation Requirements
Supply Chain Risks	De-prioritization of Hass distribution	Low penetration of Hass seeds required for processing plants	★			<ul style="list-style-type: none"> <li>• Sourcing seedlings from Kenya, directly supplying them to SHFs</li> <li>• Overseeing the early stage of cultivation</li> </ul>
	Cooperatives are not set up	Cooperatives do not function well and inhibit distribution of inputs	★			<ul style="list-style-type: none"> <li>• Directly empower key SHFs to form cooperatives</li> <li>• Provide monitoring and training</li> </ul>
	Variable Commodity Prices	Breach of supply contracts when more lucrative prices can be found elsewhere		★		<ul style="list-style-type: none"> <li>• Fixed-pricing agreements / contracts with producers</li> <li>• Consistent enforcement of contracts</li> </ul>
Regulatory Risks	Unforeseen / Hidden costs	Costs incurred for port storage and at other setup steps			★	<ul style="list-style-type: none"> <li>• Obtaining guarantees that no such costs will be incurred</li> </ul>
	Shortage of Available Land	Delays or blocks in acquiring and being allocated land		★		<ul style="list-style-type: none"> <li>• Find multiple cultivation sites</li> <li>• Contracting a cooperative to own and operate a 100 ha nucleus farm</li> </ul>
Market Risks	Limited SHF Uptake	SHF reluctance to change farming practices or adopt new inputs		★		<ul style="list-style-type: none"> <li>• Crop insurance to lower the risks</li> <li>• Expanding the size of the nucleus farm</li> </ul>
	Lack of Quality Assurance	Quality assurance standards of the RBS are not accepted by EU buyers		★		<ul style="list-style-type: none"> <li>• Establishing early dialogue with EU buyers</li> </ul>
Collaboration Risks	Inputs Distribution Difficulties	Inability to distribute inputs, especially seedlings	★			<ul style="list-style-type: none"> <li>• Ensuring the availability and distribution of inputs with support of donors</li> <li>• Direct agreements with input providers</li> </ul>
	Input Financing Shortfall	Unwillingness across public stakeholders to finance inputs			★	<ul style="list-style-type: none"> <li>• Providing inputs on credit to out-growers</li> <li>• Cover input costs as an operational expense</li> </ul>

## Enabling Requirements



*To support the avocado packaging facility and lower investment risks certain interventions are being considered, and in some cases implemented, by public and donor stakeholders*

### Public / Donor Initiatives to Satisfy Enabling Requirements

- Distribution and SHF cultivation of Hass variety avocado
- SHF access to quality fertilizer
- Increase access to credit and insurance for SHF
- Training and education of SHFs
- Simplified and time-bound land acquisition process

- Reduce electricity costs, through expanded capacity or subsidies
- Elimination of hidden costs on plant and machinery importation
- Clarity around SEZ regulations, and plans for agri-focused free trade zones

**Supply**

**Market Linkage**

**Processing**

**End Market**

- Creation and empowerment of SHF-led cooperatives

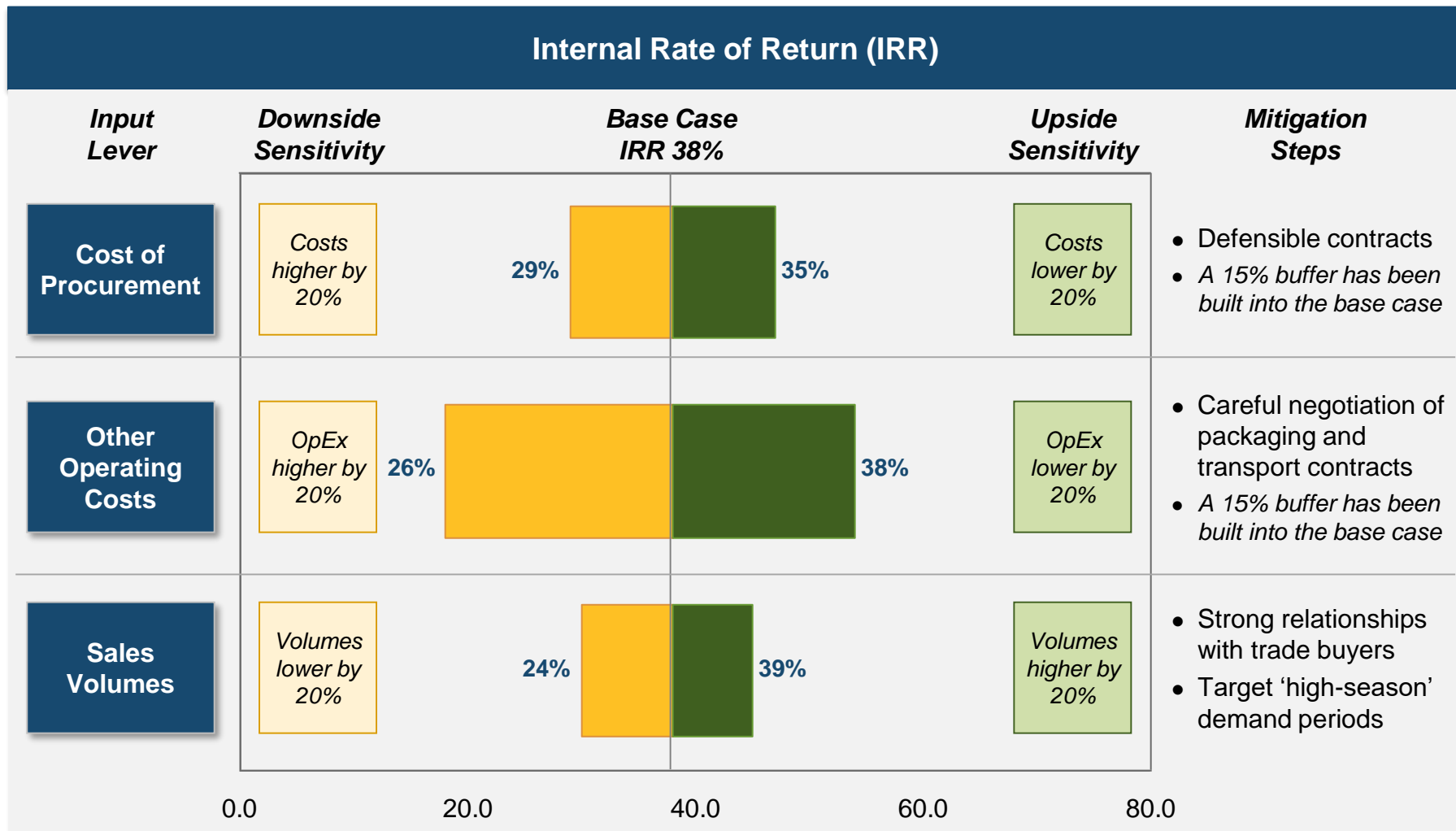
- Improve certification standards board to internationally recognized level
- Reduce non-trade barriers for international exports
- Lower cost of credit for the channel
- Build 'Brand Rwanda'

**Key:**  
Interventions Under Way

## Sensitivity Analysis



*Key risks have been accounted for in the business case, with the costs of procurement, packaging and transport having the highest uncertainty and downside potential*





## Who Should Invest?



*The profile of this avocado packaging investment opportunity is attractive to operational firms looking to expand their sourcing reach, and to financial firms driven by the compelling investment case and opportunity for strong social impact*

### Opportunity Attraction

**Expanded Sourcing Network**

**Attractive Returns**

**Social / SHF Impact**

### Investor Profiles

#### Operational Investors

- **Operational firms seeking to expand sourcing reach** and grow volumes
- Active, regional horticulture exporters already operating in the East Africa region
- Fresh produce suppliers that are not currently active in the East Africa region but are active in fruit and vegetable crops with established global markets

#### Financial Investors

- Financial investors looking for projects with robust demand and low capital requirements
  - An example could be a Kenyan bank partnering with Kenyan operating company
- Financial investors looking to drive social impact to SHFs



*RDB can assist interested investors in undertaking the following initial steps to further explore and capitalize on the opportunity to package and export avocados from Rwanda*

#### Initiate Public / Donor Dialogue

- Initiate relationships with RDB, MINAGRI, NAEB and USAID, amongst others, to support the market entry process as well as strengthen efforts to distribute and cultivate Hass avocados

#### Perform Own Due Diligence

- Perform, or outsource, an independent due diligence process, to identify operational and capital cost structures, and monitor Hass take-up by SHFs

#### Identify Procurement Arrangements

- Enter into contractual relationships with cooperatives and out-growers, to ensure raw material supply
- Identify and contract key procurement sources, including packaging and transport

#### Build Relationships with Key Buyers

- Identify and contract key distributors and trade buyers in the EU
- Ensure close alignment on buyers' expectations for certification

#### Contact Details

**PLEASE ADD RDB & MINAGRI CONTACT INFORMATION**

# *Packaging and Export of Avocados*

## **Backup**

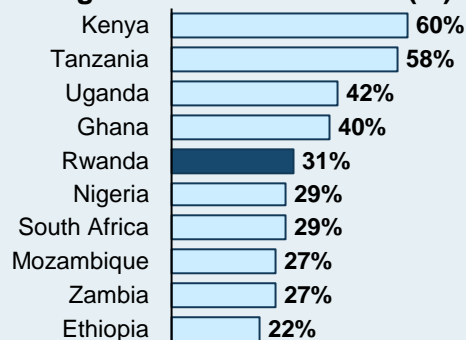




*Potential investors are highly attracted to certain regions in Africa, with Rwanda being high on their preference list, and better information dissemination will improve investment realization*

### Attraction of East Africa and Rwanda<sup>1</sup>

#### Investors' Top 10 Countries for Agricultural Investments (%)

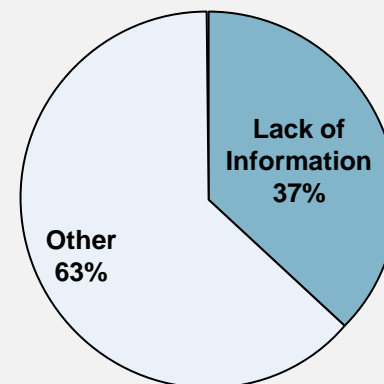


- A Monitor Group Investor Survey identified **high investor attraction** to East Africa
  - Established and higher saturation markets are tough to compete in
- Rwanda viewed as the **5th most attractive destination** for new investments in Africa

### Unfamiliarity and Network Effect

- The **biggest single barrier to investment is unfamiliarity** and insufficient information
- **Network effects are valuable** to investors
  - Firms want to see success stories
  - Firms want local partners and contacts

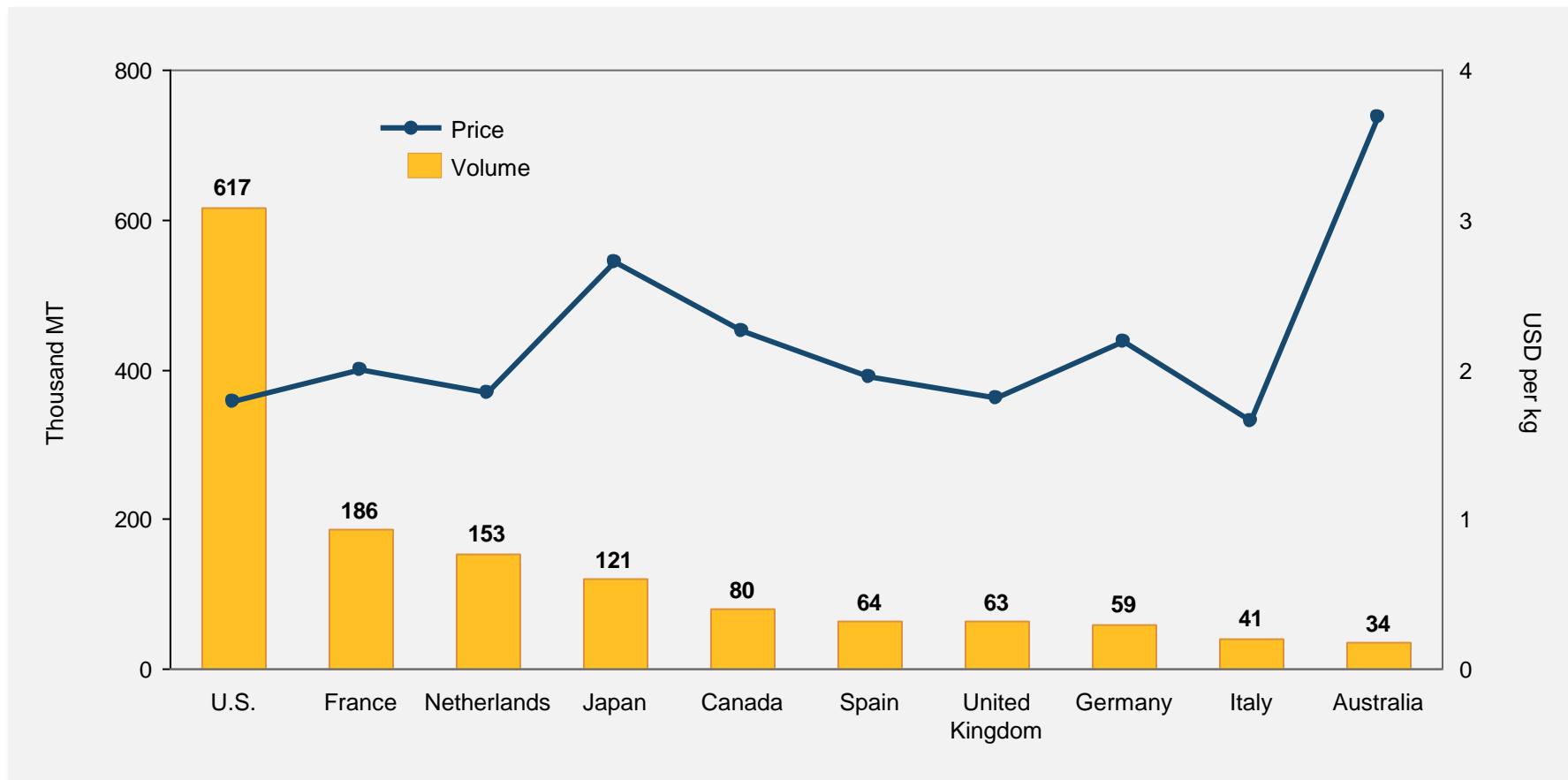
#### Barriers Inhibiting Investment in Africa<sup>2</sup>



Note: <sup>1</sup> Analysis of investor preferences is based on the Monitor Group Investor Survey. <sup>2</sup> Results are a reflection of the sample and not necessarily an indicative of the preferences of the all potential investors; <sup>3</sup> Lack of information was indicated by unawareness of actual, investment-ready opportunities outside of the countries where investors operate

Source: Investor Interviews; Monitor Analysis

## Top 10 Avocado Importing Countries (Volume and Price)





## Consumption (Thousand MT)

