



# Business Plan for Commercial Production and Marketing of Passion Fruit Seedlings



Republic of Kenya  
Ministry of Industrialization, Trade  
and Enterprise Development



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**Authors:** John Ndung'u and Harun Odhiambo

**Edited by:** Dr. Lusike Wasilwa, PhD

**For more Information, contact**

The Director General

KALRO Headquarters

P.O. Box 57811, 00200, City Square, Nairobi, Kenya

**Tel:** +254 722 206986, +254 722 206988, +254 730 707000

**Email:** [director@kalro.org](mailto:director@kalro.org)

**Website:** [www.kalro.org](http://www.kalro.org)

## **Passion fruit Seedling Business Plan for Commercial Production and Marketing**

### ***Business Plan for Production and Marketing of Clean passion fruit Seedlings***

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# ACRONYMS

<b>AFA:</b>	Agriculture and Food Authority
<b>ASK:</b>	Agriculture Society of Kenya
<b>CBO:</b>	Community Based Organization
<b>GAP:</b>	Good Agricultural Practice
<b>KALRO:</b>	Kenya Agricultural and Livestock Research Organization
<b>KEPHIS:</b>	Kenya Plant Health Inspectorate Service
<b>MoA:</b>	Ministry of Agriculture
<b>FPEAK:</b>	Fresh Produce Exporters Association of Kenya
<b>K:</b>	Potassium
<b>P:</b>	Phosphorus
<b>Ca:</b>	Calcium
<b>Fe:</b>	Iron
<b>Na:</b>	Sodium
<b>Mg:</b>	Magnesium
<b>S:</b>	Sulphur
<b>Cl:</b>	Chloride

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# FOREWORD

## Passion Fruit Business Plan - Kenya

The European Union (EU) in partnership with the East African Community (EAC) has launched the Market Access Upgrade Programme (MARKUP) to support member countries improve market access of agro-food products to the EU and regional markets. The main purpose of this project is to contribute to the economic development of Kenya by increasing the value of both extra and intra-regional agricultural exports in selected horticulture sub sectors; (snow peas and peas, mango, passion fruit, chilies, herbs and spices, and nuts [macadamia nuts and groundnuts]). According to MARKUP, agriculture (crop and livestock production) contributes to an average of 27.3% of the national GDP and provides a source of livelihood to most Kenyans. It also contributes about 26% indirectly to GDP through linkages with other sectors such as agro-based manufacturing, transport, wholesale and retail trade. This programme (MARKUP) is structured around two intervention levels: the EAC Regional Window and the Partner States National Window with country specific projects. United Nations Industrial Development Organization (UNIDO) is the implementation partner for the Kenya-Partner States window.

Passionfruit production and productivity is constrained by lack of production knowledge and technical entrepreneurial skills, low access to reliable markets, and unavailability of good, quality planting material. Therefore, provision technical information (business plan manual), and clean, virus indexed, high yielding passionfruit varieties with good market acceptability could enhance overall competitiveness. To maximize benefits, the adoption of improved varieties coupled with training of extension staff and lead farmers on improved crop management practices, use of business plan in commercial passionfruit seedling production along with enhanced opportunities to sell marketable surpluses.

The passionfruit value chain complies with market requirements and standards that foster trade. Therefore, this project addresses challenges through an intervention aimed to improve the institutional and regulatory framework for better conformity assessment services in Kenya's passionfruit sector; increase revenue for Kenya's smallholder passionfruit producers and enterprises in export-oriented sectors.

Recent studies have analysed the reasons for low productivity and competitiveness of passionfruit value chain in Kenya such as the need for specialized extension services and a diffuse lack of business plan knowledge on appropriate good agricultural practices. The business plan contains a description of profitable passionfruit farming in Kenya especially in western regions of Uasin Gishu, Bungoma and Trans Nzoia Counties. This is part of an action research process in which a series of passionfruit clean seed production business at nursery level were analysed and results documented to inform change. Therefore, this business plan forms one of the clean seed/seedling production of passionfruit that has been analysed and researched in Kenya. The main purpose of this business plan is production of clean passionfruit seed/seedling to contribute to the economic development of Kenya by increasing the value of both extra and intra-regional exports.

This document is a business plan for the commercialization of clean passionfruit seed/seedlings in Kenya, is an initiative by the Kenya Agricultural & Livestock Research Organization (KALRO). It gives a summary of the estimated market demand strategies to meet demand of quality planting material. The plan gives a description of passionfruit seed/seedling production, marketing, and distribution. It also includes the financial plan, legal and governance structure of the seed system.

The plan is meant to be used together with the procedural manual to ensure that both technical and business considerations are met during the production process. I am greatly indebted to the KALRO commodity experts who participated in the preparation of the Business Plan, which is expected to epitomize a new way of operating propagation units where in addition to the technical considerations, the business aspects are also incorporated to ensure sustainability.

**Lusike Wasilwa, PhD**

Director Crop Systems  
For Director General KALRO

# EXECUTIVE SUMMARY

This document is a business plan for the commercialization of clean passion fruit seed in Kenya, as an initiative by the Kenya Agricultural & Livestock Research Organization (KALRO). It provides a summary of the estimated market demand and overall strategy to meet this demand, as well as a description of how production, marketing, and distribution activities will be conducted. The financial plan and legal and governance structure to conduct operations are also described. This business plan should be regularly updated to reflect the changing market conditions and insights gained from operations.

Although passion fruit is a major food and cash crop for smallholder farmers in Kenya. Its productivity is limited by unavailability of good quality planting materials. Therefore, provision of clean, improved disease and pest tolerant, high yielding passion fruit varieties with good market acceptability could enhance overall productivity. To maximize benefits, the adoption of improved seeds should be coupled with the use of improved crop husbandry techniques, along with enhanced opportunities to sell any marketable surpluses.

This business plan describes the principles and practices in the production of good quality passion fruit seed planting material. The plan equips the seed growers, farmers and seed company managers with the knowledge and techniques of establishment and running of small scale-seed commercial business. This plan aims to provide information on passion fruit seed production and marketing practices. It targets technicians, seed producers and traders to ensure sustainable availability of high quality seed production. It is also designed to facilitate the learning process by incorporating practical activities that provide better and clearer understanding of the principles of seed production, establishment, management and marketing to enable participants to transform such knowledge and skills into commercial projects.

The current plan on production and sales is based on increment derived from the averages of the previous years and sales during the same period. The operating cost plan is based on unit costs of field activities and overheads. The sale value is based on minimum price of the passion fruit seed sold to the passion fruit growers. The cash flow plan is also included marketing and distribution activities to reach the last mile will be required to ensure availability and affordability of the product by farmers. In addition to awareness raising campaigns, agro-input bundling and subsidy schemes will be designed and tested, in collaboration with the Government of Kenya and input suppliers and agro-dealers that KALRO has existing relationships with.

# 1

## INTRODUCTION

The Passiflora plant, also known as passion fruit is a high value cash crop in Kenya. The crop is grown for its fruits mostly for juice extract, and added to other fruit juices to enhance the aroma. Passiflora is grown extensively in warm tropical and sub-tropical regions of the world. In Kenya, passion fruit serves as a source of food and income to farmers in Elgeyo Marakwet, Uasin Gishu, Bungoma, Narok, Bomet, Kwale and Lamu Counties and is produced along with other major crops, such as maize, beans, wheat and sorghum. The fruit has high nutritive and medicinal value (Joy, 2010). Passion fruit is a high acid food (pH~ 3.2) due to the predominance of two acids, citric and malic acid. It exhibits a high potential for nutrients such as Vitamin A, B<sub>2</sub> and C and non-nutritive phytochemicals, carotenoids and polyphenols. It is also rich in minerals like K, P, Ca, Fe, Na, Mg, S, Cl and protein (Table 1.). The high amount of vitamin A, C and B<sub>2</sub> in passion fruit is the primary driver of such nutritional scores. Nutritional composition of passion fruit per 100g is enumerate in Table 1. The yellow variety is used for juice processing, while the purple variety is sold in fresh fruit markets. The fruit is eaten alone or in fruit salads, sherbets, ice cream, jams, cool drinks and as concentrates.

**Table 1: Nutritional composition of passion fruit per 100g**

Nutrients	Nutritional value per 100g	Nutrients	Nutritional value per 100g
Energy	97 kcal	Thiamine	0.0 mg
Carbohydrate	23.38 g	Vitamin A	1274 IU
Protein	2.20 g	Vitamin C	30 mg
Total fat	0.7 g	Potassium	348 mg
Cholesterol	0.0 g	Calcium	12 mg
Dietary fibre	10.4 g	Iron	1.60 mg
Folates	14 µg	Magnesium	29 mg
Niacin	1.5 mg	Phosphorus	68 mg
Pyridoxine	0.1 mg	Carotene	743 µg
Riboflavin g	0.130 mg	Crypto- xanthene	41 µ

(Source: USDA National Nutrient Data Base)

Economically, the two major varieties of passion fruit are significant to the Kenyan agriculture-based economy. Purple passion is one of the most profitable fruit in Kenya among smallholder farmers. Its' market include export, local fresh and processing. It is popular in the cottage industry for fresh juice processing in Uganda which is one of the leading market destinations. During the period between 2019 and 2020, the area under production dropped by 147Ha, a 7% decrease. The volume and value increased by 260 tons and KES103 million which represented a 1% and 7% increase from the previous year, respectively (Table 2). The increase in value was attributed to high farm gate prices due to high demand for the fruits especially due to the Ministry of Health advice on consumption of fruits to increase immunity. The leading counties in production of purple passion are Elgeyo Marakwet, Bungoma, Uasin Gishu, Kirinyaga and Embu Counties.



**Table 2: Production of purple passion in selected Counties 2019-2020**

County	2019			2020			% of Total Value
	Area (Ha)	Volume (MT)	Value (KES)	Area (Ha)	Volume (MT)	Value (KES)	
Elgeyo Marakwet	462	9,486	554,436,000	471	9,560	556,780,000	36.0
Bungoma	126	2,755	143,760,010	132	2,845	150,860,000	9.7
Uasin Gishu	187	1,936	105,695,000	189	1,970	136,430,000	8.8
Kirinyaga	58	752	41,140,000	60	860	73,456,000	4.7
Embu	41	746	62,577,778	50	870	72,621,000	4.7
Narok	157	1,180	47,540,000	117	920	52,130,000	3.4
Kisii	53	622	53,844,800	51	670	51,120,000	3.3
Bomet	110	705	37,948,000	105	730	48,234,000	3.1
Murang'a	93	534	37,686,356	89	760	46,123,000	3.0
Nyeri	83	709	28,712,829	84	515	44,247,000	2.9
Trans Nzoia	47	592	35,300,000	50	610	43,243,000	2.8
Nandi	41	534	37,926,500	44	520	41,456,000	2.7
Nyamira	96	774	31,420,000	92	780	39,453,000	2.5
Migori	130	385	16,900,000	60	410	36,130,000	2.3
Baringo	55	466	16,615,000	48	430	29,658,000	1.9
Makueni	91	387	16,602,004	64	360	22,381,000	1.4
Nakuru	26	201	15,707,000	29	290	19,345,000	1.3
Kitui	42	1,050	83,500,000	34	450	16,345,000	1.1
Others	259	1,328	76,306,750	240	1,850	67,543,900	4.4
<b>Total</b>	<b>2,156</b>	<b>25,140</b>	<b>1,443,618,026</b>	<b>2,009</b>	<b>25,400</b>	<b>1,547,555,900</b>	<b>100.0</b>

(Source: AFA-Horticulture Crops Directorate)

Sweet yellow passion fruit has high demand from the juice makers as it yields more juice than the purple passion fruit. During the period between 2019 and 2020, the area under production and volume decreased by 7% and 2% from 1,406Ha in 2019 to 1,313Ha and from 16,886 tons to 16,479 tons respectively in 2020. The value however increased by 3% from 562.7 million to 578,4 million in 2020 compared to 2019 (Table 3) The leading counties in value in 2019 were Kwale, Lamu, Migori, Kitui, and Tana River.

**Table 3: Production of yellow passion in selected Counties 2019-2020**

County	2019			2020			% of Total Value
	Area (Ha)	Volume (MT)	Value (KES)	Area (Ha)	Volume (MT)	Value (KES)	
Kwale	499	6,444	203,140,000	512	7,224	214,130,000	37.0
Lamu	237	3,270	98,100,000	228	3,160	106,434,000	18.4
Migori	122	2,805	73,758,300	65	1,865	58,342,000	10.1
Kitui	102	1,550	67,500,000	45	758	38,543,000	6.7
Tana River	90	600	30,000,000	95	658	38,453,000	6.6
Meru	33	314	16,155,000	38	429	22,657,000	3.9
Murang'a	20	89	4,950,000	21	408	18,321,800	3.2
Nandi	9	273	13,406,000	12	324	16,434,000	2.8
West Pokot	15	270	7,700,000	16	386	14,324,000	2.5
Trans Nzoia	9	145	7,500,000	10	163	8,654,000	1.5
Homabay	28	262	5,659,200	16	232	5,834,200	1.0
Vihiga	18	117	5,590,000	17	121	5,642,800	1.0
Turkana	15	186	5,070,000	14	143	4,853,400	0.8
Kirinyaga	3	91	4,859,999	4	102	4,453,200	0.8
Machakos	26	65	3,250,000	27	70	3,425,000	0.6
Embu	8	64	3,200,000	9	68	3,045,000	0.5
Others	172	343	12,922,079	184	368	14,854,000	2.6
<b>Total</b>	<b>1,406</b>	<b>16,886</b>	<b>562,760,578</b>	<b>1,313</b>	<b>16,479</b>	<b>578,400,400</b>	<b>100.0</b>

(Source: AFA-Horticulture Crops Directorate)

Access to quality passion fruit seeds plays a major role in sustainable passionfruit production. Production of passion fruits starting with clean seed aims at improving food/nutrition security, in addition to enhancing household income. Access to information on technology in quality and clean seed production, improved agronomic practices, pests and disease management and post-harvest handling offers a solution. However, many private seed growers such as CBOs do not meet the requirements or cannot pay the fees, thus operate without certification. The existing registered passion fruit companies have limited production capacity for bulking and maintenance of breeder seed of released passion fruit varieties hence the lack of access to quality seeds in Kenya.

Therefore, most farmers plant own farm saved seeds or purchase seeds from the local markets that do not meet the required sanitary and phytosanitary requirements. Note that these markets are not registered and certified by the requisite authorities and poses health risks to producers. Hence the most important things to consider in producing clean passion fruit seed for business is the suitability of the climate, the soil and the irrigation in the proposed site. In addition, appropriate varieties that are best suited to the region and climate as well as the targeted market. Good Agricultural Practice (GAP) should be practiced during seed production.

# 2

## DESCRIPTION OF THE BUSINESS

### Passion fruit Seed Producer Business Plan



**Fig. 1: Business plan concept**

### 2.1. PASSION FRUIT SEED BUSINESS PLAN

#### Business Planning

The first decision which needs to be made by the seed merchant, grower or a farmers group, is whether investment in land, labour and capital investment in passion fruit seed business will make a 'good business' and return a profit to the owner. There are considerable planning and recording implications for running the business. This requires knowledge of what needs to be recorded, either for compliance with national laws (KC1758) or global laws e.g. Global GAP. A seed business plan helps to determine the type, market, location, site, design and size of operations. It also helps one to establish specific details on equipment, employee requirements, operational costs, estimated pricing schemes, projected return on investment and asset availability.

When starting a new seed business, it is important to look ahead and envisage what the returns on the initial investment are likely to be, before deciding to borrow money or invest personal savings in the business venture. Initial business planning will require the grower to:

- Identify all the types of inputs which will be required and the quantity of each input that will be needed for the size of the passion fruit project planned

- Predict the potential number of seeds to be sold, the time it will take to peak sales and the value of the predicted sale of seeds
- Calculate the difference between the cost of inputs and the value of outputs (sales of passion fruit seeds) to determine the profitability of the passion fruit seed business

## 2.2. BUSINESS MODEL

Through training of seed growers, we look at the cost of production of every kg of seeds and a margin will be added on the cost hence the price for the seed is discovered taking into account the forces of demand and supply in force within the market. Quality control of all the seeds being sold out will be highly checked to ensure that the products meet the required standards and fetch good prices.

## 2.3. LAUNCHING A SEED SYSTEM

A seed business is a process that can be personally and financially rewarding, if done in the right way.

Key issues; to enhance the seed business

- Superior/Competitive Seed varieties
- Understanding the market
- Seed promotion fairs/exhibition

The above issues will enable the nursery operator to have profit from the business.

Key skills required for seed business

- Knowledge in seed production skills
- Understand seed plant growth, its needs and care
- Key pests and diseases; their management
- Post-harvest handling
- Administrative skills
- Business skills
- Marketing skills
- Communication skills

## 2.4. CRITICAL RISKS OR SITUATION ANALYSIS

- Natural water disaster caused by prolonged drought; can be managed by expanding water sources
- Competition from other nurseries in the vicinity
- Outbreak of pests and diseases

## 2.5. TYPES OF SEED BUSINESSES

### a. Wholesale -Distributor

- Produces certified seeds in large quantities
- Sell in large batches at significantly reduced prices
- Target customers; exporters/ retailers

### b. Retail - Stockists

- Mainly buys from wholesalers/distributors
- Sell in smaller batches at retail prices



## 2.6. MARKETING AND COMMERCIALIZATION

- Assesses market preference
- Advice the farmers on quality and quantity
- Price review and negotiations
- Market research
- Explore new markets

## 2.7. FINANCE AND AUDIT

This is done through;

- Financial reporting
- Management and monitoring expenses
- Crafting financial policies
- Interpreting policies
- Managing petty cash
- Evaluating proposed financial investments

## 2.8. PRODUCTION AND GRADING

Quality control

- Ensures supply of quality produce
- Produce seeds according to market demand
- Price differentiation according to profitability
- Compliance with government health standard
- Explore and educate new farming technologies
- Receive information from agricultural centers

## 2.9. THE TARGET MARKET

This depends on the target customer. It is partially influenced by the type of business one chooses and the location of operation, whether urban or rural.

### Possible Approaches of Defining the Market

#### 1. Customer Types

- Define the types of customers within your target market based on market available data and advice for example data from MoA, AFA among others.

#### 2. Preferences

- Determine customer preferences for products and services by investigating in the local competition

#### 3. Market Trends

- Determine market trends anticipated in future on the types and number of plant varieties to grow
- May use local and national association and government data

#### 4. Promotions

- Invest and use different channels (friends, media, exhibitions, ASK shows, Trade fairs) to promote the seed.
- Attract as many customers as possible

## 2.10. COMPETITION IN THE BUSINESS

Knowing the competition in the business is essential in developing a marketing strategy. There is competition from roadside nurseries which can be minimized by increased farmer awareness regarding the importance of establishing high quality passion fruit production units.

Key issues to understand regarding the business competition are:

- What other growers are producing for the market? This will help a seed entrepreneurs develop better competing positions for products and services.
- Developing a competitive attitude to help in identifying products that will sell, along with pricing strategies and promotions that are necessary for keeping the customer interested.
- Having a product or service that others perceive as different and superior from everything else offered.
- Immediate demand by the market. This will guide a seed entrepreneur in producing the right type of seed needed by the market.
- Product selection, good quality, lowest price and fastest service which define a good seed business.

**Table 4: Business Plan**

Passion fruit Business Plan	
<b>Name of Business</b>	K9 Passion fruit Agro-entrepreneurs' Group
<b>Name of Entrepreneur(s) group and Number of members</b>	
<b>Contact details/ other Co-ordinates</b>	XYZ
<b>Physical Location of the Business/ Group</b>	Bungoma, Trans Nzoia and Uasin Gishu
<b>Brief Description of the Business</b>	<p><b>Vision:</b> To be a leading supplier of clean passion fruit seedlings in Bungoma, Trans Nzoia and Uasin Gishu Counties.</p> <p><b>Mission:</b> To enhance sustainable production of clean passion fruit seedlings in Bungoma, Trans Nzoia and Uasin Gishu Counties while promoting an innovative, competitive socially inclusive and commercially oriented enterprise for improvement of livelihoods among smallholder farmers.</p> <p><b>Objectives:</b></p> <ol style="list-style-type: none"> <li>To produce and supply high quantity passion fruit seedling to farmers.</li> <li>To create sustainable income generating opportunities for the youth and women</li> </ol> <p><b>Activities:</b> Seed selection and processing, seedling propagation, grafting, nursery management and marketing.</p>
<b>Target customers</b>	Passion fruit seedling entrepreneurs and farmers.

Passion fruit Business Plan						
Business Opportunity	High demand for seed and food due to increasing population, internal and external market and value addition					
	Reasons:					
	(a) To improve food and nutrition security.					
	(b) To increase income of the group members					
(c) To create employment in the country						
Competitor Analysis	Competitor	Price	Strengths	Weaknesses		
- Maize producers	1 non-grafted seedling @ KES 30	- It's highly nutritious and medicinal	- Labour intensive			
- Other passion fruit entrepreneurs	1 grafted seedling @ 70	- Its highly profitable	- Requires some level of training/skills			
	1 grafted seedling @ KES 100					
Competitive Strategy	(i) Producing quality passion fruit seedlings					
	(ii) Bulk production of passion fruit seedlings for sustainable supply					
	(iii) Adoption of GAPs in nursery management					
Business Branding	(i) Intense promotion of clean passion fruit seedlings through local mass media and farmer field days.					
	(ii) Customer feedback-response approach/mechanism.					
	(iii) Working in line with the policies and regulations of relevant government ministries.					
	(iv) Enhancing Public-Private Partnerships					
	(v) Review business plan with market trends					
Participatory stakeholder's market research undertaken	Marketing research on price and level of demand for clean passion fruit seedlings.					
Expected sales growth	Year	1	2	3	4	5
	Number clean seedlings sold at KES 100 per seedling	5,000	6,000	7,000	8,000	9,000
	Revenue (KES)	500,000	600,000	700,000	800,000	900,000
Marketing Strategy	Steps	Equipment			Human resource and skills	
	Contracting buyers to guarantee the price.	Potting tubes, grafting equipment, watering cans, knapsack sprayers and hardening off chamber.			One nursery manager and four nursery attendants/operators.	

Passion fruit Business Plan				
	Input needed for products and/or services	Cost per unit (KES)	No of units	Sub-Total
	Potting tubes	2	5,000	10,000
	Grafting equipment	20,000	1	20,000
	Watering cans	650	4	2,600
	Knapsack sprayer	1,500	2	3,000
	Seed processing	400	1	400
	Preparation of potting mix	400	2	800
	Potting	400	4	1,600
	Rootstock propagation	400	3	12,00
	Grafting	400	5	2,000
	Foliar feeds	1500	2	3,000
	Foliar feed application	400	4	1,600
	Weeding	400	3	12,00
	Watering	400	45	18,000
	Pesticide application	400	13	5,200
	Nursery inspection and certification	200	6	1,200
	Nursery Guarding (Nights and Weekends)	500	90	45,000
	Seedling packaging and labelling	1,800	1	1,800
	Total			118,600
Key risk and how to manage them	Key risk	Risk management		
	Delayed healing of graft unions.	Use of grafting powder/hormone.		
Sources of funds for the investment. Explain the various sources	(i) Private capital - funds set aside for the investment (sometimes it is in-kind through assets among seedling entrepreneurs. (ii) Bank credit - some banks provide financial packages to support agro-entrepreneurs and insure them against losses. (iii) Agricultural Finance Corporation – Such institutions provide soft credit facilities to agro-entrepreneurs. (iv) County Government - where appropriate some counties in Kenya have set aside programs and activities that promote passion fruit farming.			





**Fig. 2: Production of clean passion fruit seedlings**

# 3

## POTENTIAL MARKET AND COMPETITIVE ANALYSIS

Currently, large quantities of passion fruits are eaten fresh locally processed and are also exported fresh. Kenya is a large supplier of fresh purple passion fruits to the European markets like UK, Holland, France, Germany, and Belgium. Some are to export to United Arab Emirates. In these markets Kenya competes with Brazil, Columbia, Nigeria, Zambia, Zimbabwe and Uganda. There is a large international market as well for passion fruit concentrate, which Kenya has not exploited. The volumes of passion fruits exported have not had a stable trend. There have been positive and negative growths over the years. The negative growth can be attributed to stringent market requirements related to compliance with FPEAK and Global GAP requirements.

- Passion fruit is a cash crop grown mainly by smallholder farmers, which provides them with income and livelihoods. It also contributes to farm families' well-being due to its nutritious and medicinal properties.
- It exhibits a high potential for nutrients such as Vitamin A, B<sub>2</sub> and C and non-nutritive phytochemicals, carotenoids and polyphenols. It is also rich in minerals like K, P, Ca, Fe, Na, Mg, S, Cl and protein. The high amount of vitamin A, C and B<sub>2</sub> in passion fruit is the primary driver of such nutritional scores.
- The yellow variety is used for juice processing, while the purple variety is sold in fresh fruit markets. The fruit is eaten alone or in fruit salads, sherbets, ice cream, jams, cool drinks and as concentrates.

# 4

## MARKET AND SALES

### 4.1. DEFINING THE MARKET

Defining the market involves answering the question:

Who is the customer? This is partially answered by the type of business you choose and the location of your operation (urban or rural).

Possible approaches to defining your market and customers are:

- ❖ Define the types of customers within your target market based on market available data and advice e.g. from MoA, HCD and KFS among others
- ❖ Determine customer preferences for products and services by investigating the local competition
- ❖ Use local and national association and government data to determine market trends and preferences anticipated in future on the types and number of plants to grow.

### 4.2. MARKETING STRATEGY

Market research should be done to ascertain the potential sales as compared to actual sales. This involves research on performance in the following areas:

- Customer service
- Affordable prices
- Great location
- Quantity and quality of plants, seedlings, trees and saplings

### 4.3. REGISTRATION, INSPECTION AND CERTIFICATION FEES FOR THE NURSERY

A registered nursery business must pay annual nursery licensing fees and be subject to inspections. The costs of licensing and any other authority-mandated certifications must be included in the operational costs when budgeting. They include;

- KRA Pin registration (free)
- HCD inspection
- KEPHIS inspection and certification
- Mileage per kilometer

### 4.4. SALES STRATEGY

Factors that influence primary sales include:

- Excellent customer service
- Exceptional product knowledge
- Large and varied offer of seeds
- Good certified seed bulking location
- Good quality seeds
- Affordable prices.

#### 4.5. RECORD KEEPING

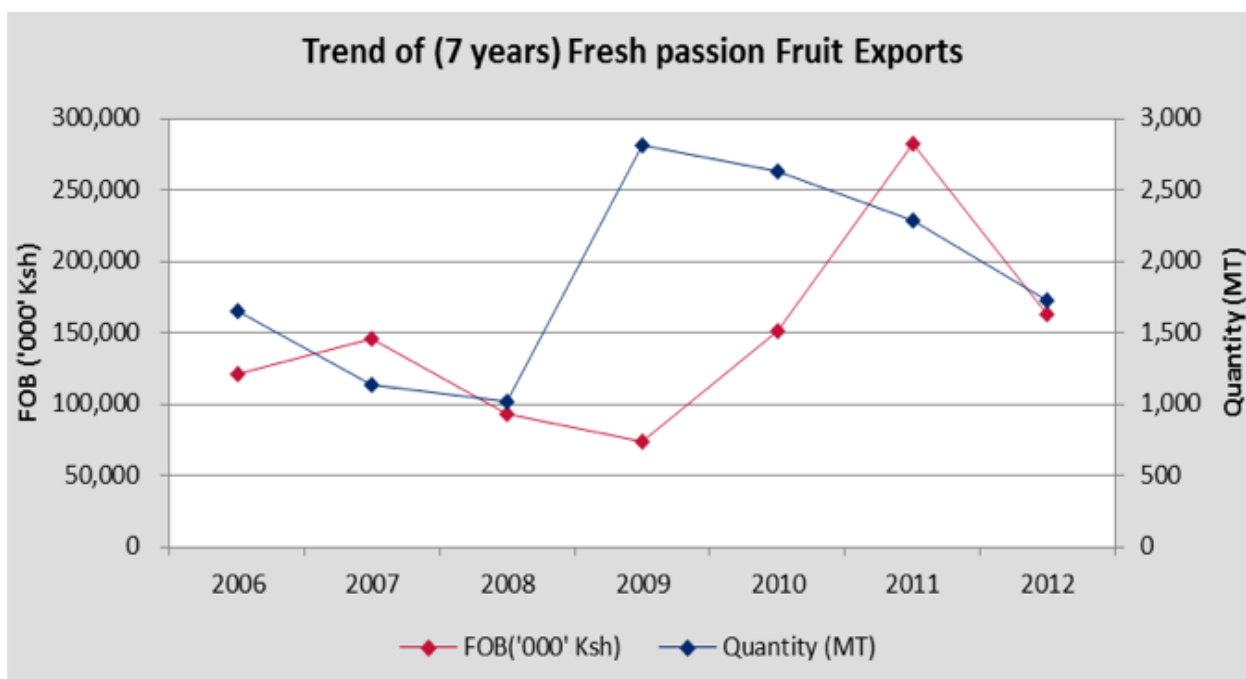
- Seed business plan budget
- Seeds sown in quantity
- Seedlings germinated/ dried up
- Total number of seedlings sold
- Labor wages
- Contacts/age/gender of passion fruit farmers (customers)
- Dates when all the above activities took place

#### Kenya passion fruits export values

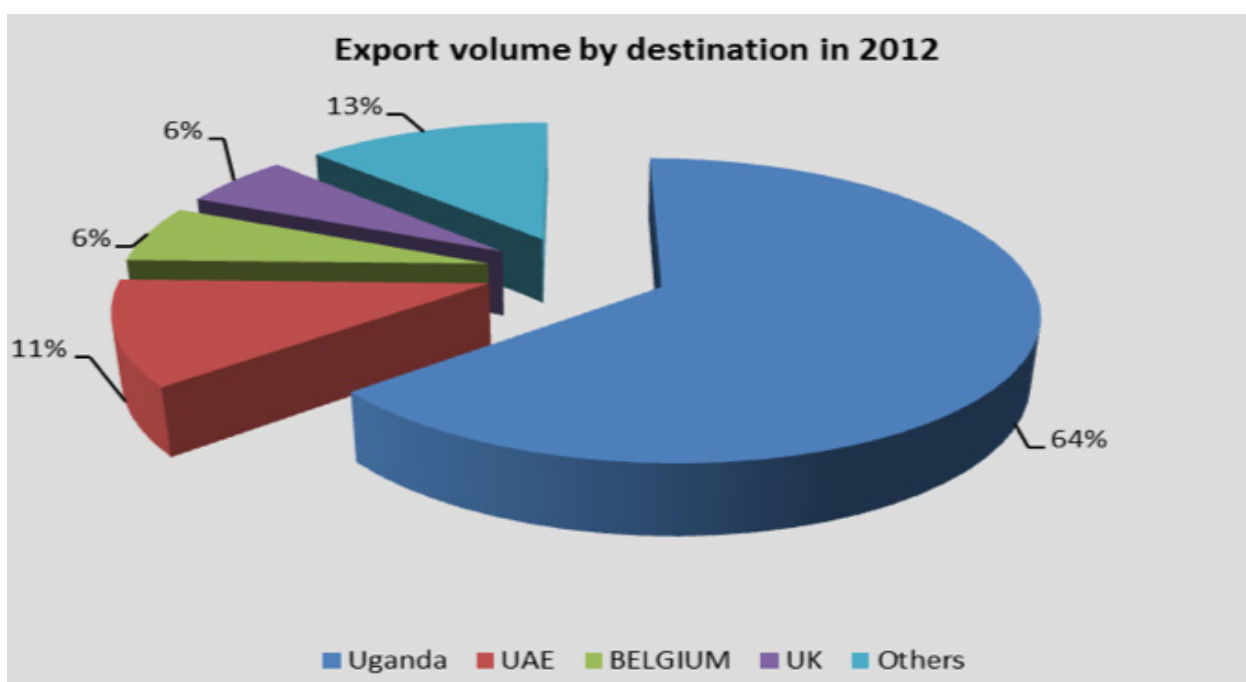
According to the Kenyan Revenue Authority, from 2006 to 2010, passion fruit export volumes increased from 1,651 MTs to 2,634 MTs, while values increased from US\$1.66 million to US\$1.84 million. In 2020, the value of passion fruit increased by 3% from 562.7 million to 578,4 million in 2020 compared to 2019. Currently, large quantities of passion fruits are eaten fresh, locally processed or exported fresh. Kenya is a large supplier of fresh purple passion fruits to the European markets like UK, Holland, France, Germany, and Belgium. Some are to export to United Arab Emirates.

#### Import/Export Trends

Kenya is ranked among the leading five exporters of passion fruits to EU. The EU demand for passion fruit has been expanding at 13% per year outstripping the global supply. However, Kenya's passion fruit supply to EU has been declining by 2 percent per year and its market share dropped from 20 percent in 2006 to 11% in 2010. The decline in exports of passion fruit to EU is attributed to lack of clean planting material, inadequate linkages between smallholders and national exporters, low rate of compliance to the market requirements, inefficient collection and onward distribution system which impedes smallholder success in capturing intermediate margins, and expensive and unreliable overland, air and ocean export transportation systems which lead to uncompetitive costs, excessive transit times, and unreliable quality upon arrival (National Passion Fruit Business Plan, 2012 – 2022). Overall, Kenya exported a total of 1,729 MT of passion fruit worth KES 162.7 million or \$1.9 million. Uganda is the single largest regional export destination for Kenya's fresh passion fruit accounting for 64% of the export volume in 2012. From the data there is clear potential for decreased volume of exports since 2009 of which is attributed to decreased production and increased domestic market consumption.



**Fig. 3: Trend of fresh passion fruit exports (Source: KNBS and compiled by USAID-KHCP)**



**Fig. 4: Export volume by destination in 2012 (Source: KNBS and compiled by USAID-KHCP)**

**Users of the product:** Passion fruit farmers, traders and processors

# 5

## FINANCIAL PLAN

The project will be completed within 24 months preferably between January, 2023 to December 2025 to enable us strike the profitability of the business. Some of the activities that will be carried out include:

- Training of extension staff in the three counties (Bungoma, Trans Nzoia and Uasin Gishu) on clean passion fruit seedling production
- The trained extension staff will then train selected seed growers in the target counties.
- The trained farmers/groups will be contacted by seed companies such as KALRO seed, Kenya seed or any other seed company interested in passion fruit seed production.

# 6

## POTENTIAL RISKS AND MITIGATION STRATEGIES

There are three broad types of risks to the execution of this business plan namely: product risk, market risk, and operational risk. Acknowledging their potential impact on the execution and proper running of the plan, KALRO will institute necessary measures to mitigate these risks. Risks will need to be regularly reviewed and managed, as the market context changes.

**Table 5: Summary of potential risks and mitigation strategies**

	Risk	Description	Mitigation strategies
<b>Product risk</b>	Unsustainable input procurement	Competing demand for inputs could threaten sourcing	<ul style="list-style-type: none"> <li>• Contract farming</li> <li>• Building strong relationships with farmers</li> </ul>
	Weak quality control	Influx of unclean seed materials in the seed markets	<ul style="list-style-type: none"> <li>• Training and quality control</li> <li>• Clear branding</li> <li>• Selection of reliable outlets and awareness creation of these outlets</li> </ul>
	Untimely production	Lack of quality/ clean passion fruit seedlings to meet the peak demand of growers during the onset of rains.	<ul style="list-style-type: none"> <li>• Adequate planning and timely execution of operations, leveraging past commercialization experience.</li> <li>• Year-round production of clean seed to meet the demand of rain fed and irrigated production systems</li> </ul>
<b>Market risk</b>	Low uptake of product	Low uptake due to lack of awareness, availability, or affordability	<ul style="list-style-type: none"> <li>• Awareness raising drives</li> <li>• Advocacy for stronger regulation</li> <li>• Building strong distribution network</li> <li>• Subsidy schemes or price premiums</li> <li>• Passing on cost savings to consumers</li> <li>• Regular Strategy Review between KALRO, to refine the strategy as required, in order to maximize uptake</li> </ul>

<b>Operational risk</b>	Coordination breakdown	Risk of conflict due to misaligned objectives and expectations	<ul style="list-style-type: none"> <li>• Clearly defined roles and responsibilities between two parties</li> <li>• Legal agreements in case of any dispute</li> <li>• Clear mediation and arbitration channels</li> </ul>
	Funding shortfall	Inadequate funding may lead to delays in execution of plan	<ul style="list-style-type: none"> <li>• Identification of additional funding required and funding sources as soon as possible</li> </ul>



# 7

## APPENDICES

### APPENDIX 1: COSTINGS FOR PASSION FRUIT SEEDLING PRODUCTION IN 2 YEARS

Standard Nursery (15metres by 15metres) Gross Margin - Year 1			
Activity	Unit	Price per unit	Total (KES)
Screen Net	24 by 24 (square meters)	1	180,200
Black Net	10 by 10 (square meters)	1	20,000
Post	300	70	21,000
<b>Timber-Materials</b>			
600ft (4 Inches by 2 Inches)	600	50	30,000
600ft (3 Inches by 2 Inches)	600	28	16,800
600ft (2 by 1)	300	50	15,000
Nails (40 kg)	40	450	18,000
Specialized Labour	1	20,000	20,000
Unskilled Labour	20	1,000	20,000
Dam Liner (Meters)	20	300	6,000
Steel Doors	2	14,000	28,000
Ballast	1	2,000	2,000
Sand	1	1,500	1,500
Cement-Bag	1.5	1,700	2,550
HCD-registration	1	5,000	5,000
Inspection-KEPHIS	1	5,000	5,000
Transport	1	5,000	5,000
Planting Materials-Packets	500	60	30,000
Wheel Barrow	1	5,500	5,500
Spade	1	600	600
Rake	1	400	400
Jembe (Hoe)	1	300	300
Panga (Machete)	1	400	400
Seeds-Yellow (Kg)	1	80,000	80,000
Zion (300 Grams)	1	4,000	4,000
Chemical Storage	1	5,000	5,000
Nursery Operator (Skilled)-Monthly	12	8,000	96,000
Casuals-25 Days For 3 Times	75	250	18,750
Sand-2 Tons	2	1,000	2,000

Manure And Transport	4	1,500	6,000
Sterilization Jik (or Topex, Chlorox etc) & Solarization Materials	4	2,000	8,000
Fungicide-2KG	1	4,600	4,600
Foliar Feed-5L	1	3,000	3,000
Insecticide-3L	1	5,000	5,000
Fertilizer DAP-50kg	1	6,000	6,000
Fertilizer CAN-50kg	1	4,000	4,000
Surgical Blades	1	1,000	1,000
Protective Clothing	1	10,000	10,000
<b>Total Cost of production-Year 1</b>			<b>686,600</b>
<b>Sales</b>	<b>Unit (Seedlings)</b>	<b>Average farm gate price</b>	<b>Total</b>
<b>Year 1</b>	<b>75,000</b>	<b>50</b>	<b>3,750,000</b>
<b>Gross margin (Year 1)</b>			<b>3,063,400</b>

<b>Standard Nursery (15Metres by 15Metres) Gross Margin- Year 2</b>			
<b>Activity</b>	<b>Unit</b>	<b>Price per unit</b>	<b>Total (KES)</b>
<b>Year 2</b>			
Root Stock			
Yellow-KG	1	80,000	80,000
Zion-Purple (300 Grams)	1	8,000	8,000
Labour-Operator	12	10,000	120,000
Casuals	75	400	30,000
Manure & Transport	1	8,000	8,000
Chemicals	1	10,400	10,400
Fertilizer DAP, CAN Foliar Fertilizers	1	25,000	25,000
Surgical Blades Packet	1	1,000	1,000
Planting Materials	1	25,000	25,000
Protective Clothing	1	10,000	10,000
<b>Total Cost of production-Year 2</b>			<b>317,400</b>
<b>Sales</b>	<b>Unit (Seedlings)</b>	<b>Average farm gate price</b>	<b>Total</b>
<b>Year 2</b>	<b>75,000</b>	<b>50</b>	<b>3,750,000</b>
<b>Gross margin (Year 2)</b>			<b>3,432,600</b>

## APPENDIX 2: ONE-YEAR BUSINESS PLAN

Capital costs yr 1.	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Total
Capital Items e.g. seed equipment etc.					
Depreciation on capital					
INPUT COSTs Yr. 1	Quarter 1	Quarter 2	Quarter 3	Quarter 4	<b>Total</b>
Annual costs of licenses					
Annual costs of labour					
Annual costs of inputs					
Fertilizers					
Pesticides					
Commission to sales man					
Transport costs					
Tax					
Total costs (KES)					
REVENUE Yr. 1	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Total
Number of seed bags sold (No.)					
Predicted value					
<b>Total income year 1</b>					
Gross profit Yr. 1	(Total income-Total costs)				
Income tax	(Contingency for 30% tax on gross profit)				
Net Profit Yr. 1	(gross profit – income tax)				

### APPENDIX 3: ACTION PLAN

Activity	Month 1	Month 2	Month 3	Month4	Month5	Month6
Preparation to start operations						
Business plan approved						
Secure funding commitment						
Develop monitoring and evaluation plan						
Identify talent to fill each role						
Develop process flows and train talent						
Production of clean passion fruit seedlings						
Identify channel to procure scions						
Procure scions from clean mother blocks						
Procure other inputs						
Produce first batch of seedlings						
Marketing and distribution						
Secure distribution agreements for clean seedlings						
Conduct awareness raising drives						







## CONTACTS

### United Nations Industrial Development Organization (UNIDO)

P.O. Box 41609-00100  
United Nations Avenue  
UN Gigiri Complex, Block N, Ground Floor  
Nairobi, KENYA

**Tel:** +254 20 7624369; +254 20 624388;

**Email:** [office.kenya@unido.org](mailto:office.kenya@unido.org)

**Website:** <https://www.unido.org/>



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