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NAMIBIAN AGRONOMIC BOARD

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AGRONOMY AND HORTICULTURE DEVELOPMENT DIVISION

RESEARCH AND DEVELOPMENT SUBDIVISION

RESEARCH REPORT

ASSESSING THE POTENTIAL AND CHALLENGES OF FRUIT PRODUCTION AND VALUE ADDITION INVESTMENT IN NAMIBIA

JULY 2025

NAMIBIAN AGRONOMIC BOARD

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EXECUTIVE SUMMARY

Namibia's fruit consumption is heavily dependent on imports, with 96% of its fruit imported, spending over N$224 million annually on apples, bananas, citrus, mangoes, and other fruits. Despite this overreliance on fruit and fruit product imports, Namibia has untapped potential for local fruit production and value addition. Several efforts, such as the NAB's Fruit Development Scheme, are underway to boost local production and reduce import dependency through various initiatives and investments. However, more work, especially in research and development, is still needed to support the initiatives and address challenges such as low fruit production/cultivation, limited processing facilities, high post-harvest losses, and a lack of targeted policy support. This study, therefore, engaged the stakeholders (71 fruit producers and eight processors) in the fruit industry (from all seven production zones in the country, namely, Zambezi, Kavango, North Central, Karst, Central, Orange River, and South) and evaluated Namibia's fruit production and value addition sector, identifying the challenges and opportunities to inform strategic interventions.

The study found that fruit cultivation or farming in Namibia is dominated by small-scale farmers (<1 ha) and large-scale farmers (>15ha), with medium-sized farmers being limited. Fruit types such as mangoes, oranges, lemons, and table grapes are among the most cultivated, with other high-value fruits like blueberries and dates also showing niche potential. More than half (52%) of the interviewed producers reported increased yields over the last five years due to improved farming practices and investment in irrigation systems. There is, however, a significant gap in value addition, as only 49% of producers engage in primary processing (e.g. drying, juicing) with mangoes leading in processed products, although with very low volumes (2.67 tons/year of dried mango). Fruit processors cite a lack of storage facilities (63%), inconsistent supply of raw fruits (50%), and regulatory challenges (75%) as the main challenges in their bid to process fruits.

Other challenges are related to market barriers: 75% of producers do not export their fruits due to high shipping costs (65%) and logistical challenges (41%). One hundred percent of the processors also indicated that local demand for processed products is very weak, highlighting a lack of awareness and competition from imported products as the leading causes. At least 97% of producers and 87% of processors see growth potential in the industry, provided issues such as improved irrigation infrastructure, processing equipment, and market linkages are addressed. The study therefore recommends actions such as improving access to finance and investment support; enhancing infrastructure and logistics; capacity building and market development; supporting research and innovation; and policy and institutional reforms to improve the sector.

1. INTRODUCTION AND BACKGROUND

Fruit production and value addition in Namibia present both challenges and potential for development. Currently, Namibia produces only about 4% of its fruit requirements and relies heavily on imports, particularly from South Africa. The top six imported fruits by Namibia include apples, bananas, citrus fruits, mangoes, avocados, and paw-paws, totalling over 33,400 tons valued at over N$224 million during the year 2022/23 (NAB, 2023). Given these alarming import statistics, it is evident that Namibia has excellent potential for fruit production, for domestic and perhaps export markets. However, while efforts are underway to boost local production and reduce import dependency through various initiatives and investments, more work, especially in research and development, still needs to be done to support these initiatives. The Namibian Agronomic Board (NAB) launched the Namibian Fruit Development Scheme in 2022 to enhance fruit production, processing, storage, and marketing. As part of this scheme, a pilot project for banana cultivation was initiated in 2024, and registration of fruit farmers is ongoing to understand the fruit industry better and support the sector. Additionally, several stakeholder engagement sessions were held across the country, during which the NAB presented the current status of local fruit production and encouraged farmers to increase their fruit production.

Additionally, significant investments are being made in the blueberry sector, with Namibia Berries investing US$80 million over seven years to expand its blueberry production, which is expected to create employment opportunities and position Namibia as a key player in the blueberry market. Value addition is receiving growing attention, with efforts to train local communities to process fruits into various products, such as juices, jams, and dried fruits. This will help reduce post-harvest losses, enhance food security, and create income opportunities. The overall aim of this study is, therefore, to assess production levels, identify any fruit exports and fruit value-addition activities in Namibia, identify potential challenges and export potential, and propose suggestions to address challenges and recommend policies to promote growth and investment in the sector.

With the country’s record of high fruit imports and an almost non-existent fruit processing industry, this study aimed to unlock the potential to change or improve the status quo by engaging current industry stakeholders, including fruit farmers and a few fruit processors. This was achieved by investigating and documenting the industry's challenges and opportunities, and by formulating appropriate interventions to improve the fruit industry in Namibia. This information is crucial not only to the government but also to farmers, private investors, and crop researchers who may be interested in contributing to the country's economic development through fruit production.

The study specifically targeted fruit producers, some of whom also export their fruit, and a few fruit processors operating in Namibia. Unfortunately, the targeted categories of respondents were limited to stakeholders registered with the NAB. However, other active industry stakeholders (producers or

processors) who may not be registered with the NAB were identified through the snowballing sampling method and also interviewed. Secondary sources and databases were also used to amplify further the findings from the key stakeholders engaged in this study.

2. PROBLEM STATEMENT

An in-house study conducted by the NAB in 2022 revealed that only 15% of the total land available for fruit production in Namibia is currently under actual production, occupied with over 230,000 trees. The study further indicated the potential to plant more than 1,1 million trees on the remaining 85% of the unused land. In terms of value addition to fruits, very little is being done, with only a few farmers processing lemons and mangoes into juice or jam, grapes into raisins, and olives into olive oil on a tiny scale. An overall approach to investing in the fruit value chain will boost local fruit production by increasing farmers' interest in primary fruit production.

Unfortunately, the local fruit processing industry in Namibia is close to non-existent, which explains the large gap. The high imports of processed fruit products demonstrate the potential for investment and growth in Namibia's fruit value chain, provided more investment is directed toward increasing local fruit production. Therefore, having identified the potential, there is an urgent need to assess the challenges hindering its realisation in boosting production and value addition to develop the fruit sector fully.

3. RESEARCH OBJECTIVES

The specific objectives of this research are:

- ✓ To evaluate the progress and current state of local fruit production in Namibia, including its growth and export potential.
- ✓ Identify challenges and barriers to fruit production and fruit value addition.
- ✓ To propose strategies and policy recommendations to enhance investment in fruit production and value addition.

4. METHODOLOGY

4.1. Study design

Based on the specific objectives of this study, a mixed-methods, descriptive-exploratory design was used, in which quantitative (i.e., fruit types, land size, value addition, etc.) and qualitative (i.e., investment potentials, challenges, and policy recommendations) data were collected through a survey approach. According to Manjunatha (2019), descriptive research is “aimed at casting light on current issues or problems through a process of data collection that enables them to describe the situation more completely than was possible without employing this method. Primary data were collected through face-to-face interviews using a structured questionnaire with both closed- and open-ended questions.

Telephone interviews were also conducted to collect primary data or to ask follow-up questions with respondents when it was considered incomplete. A review of secondary sources of information on literature was also used to complement the primary data obtained from the field survey.

4.2. Study area

The study was conducted in Namibia, with respondents from fruit farmers and processors sampled across all seven production zones in the country, namely Zambezi, Kavango, North Central, Karst, Central, Orange River, and South. Figure 1 below shows the study area with selected production zones.

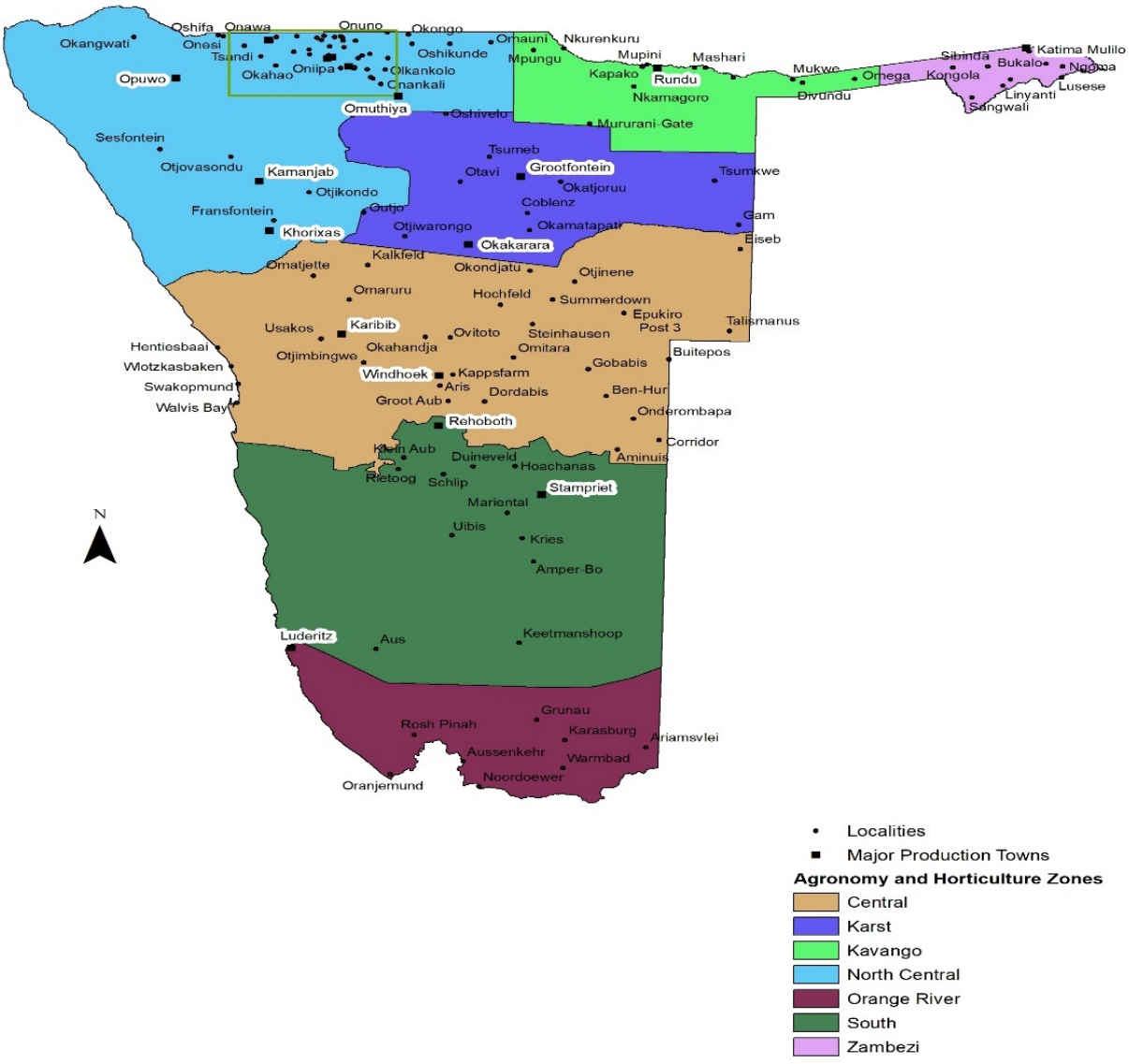


Figure 1: Study area map

4.3. Population and sampling strategy

This study used a combination of probability and non-probability sampling methods. Probability (random) sampling means that every member of the target population has a known chance of being included in the sample, whilst non-probability (non-random) sampling refers to selecting samples based on the subjective judgement of the researcher rather than random selection (Gore, 2022). Ultimately, for the target respondents of fruit producers and processors, a stratified random sampling (probability sampling method) was used as the primary technique to identify the sample size of fruit producers and processors (if known) from each of the seven different strata, which are the NAB's production zones. For the identified processors, respondents were further stratified into three strata based on their scale of operation.

However, as mentioned in the introduction above, the population focus of this study was fruit farmers and processors who are registered with the NAB; however, the study discovered a few more that are not registered, identified through the snowballing sampling technique (non-probability sampling method) during the data collection process in the field and were thus also interviewed and included in the study. For the specific sample size based on the fruit producers registered with the NAB, the Krejcie and Morgan (KM) sampling table (**Table 1**) was used to determine the sample size from each production zone (Krejcie & Morgan, 1970).

Table 1: *Table for determining sample size from a given population (Krejcie & Morgan (KM), 1970)*

N	S	N	S	N	S
10	10	220	140	1,200	291
15	14	230	144	1,300	297
20	19	240	148	1,400	302
25	24	250	152	1,500	306
30	28	260	155	1,600	310
35	32	270	159	1,700	313
40	36	280	162	1,800	317
45	40	290	165	1,900	320
50	44	300	169	2,000	322
55	48	320	175	2,200	327
60	52	340	181	2,400	331
65	56	360	186	2,600	335
70	59	380	191	2,800	338
75	63	400	196	3,000	341
80	66	420	201	3,500	346
85	70	440	205	4,000	351

90	73	460	210	4,500	354
95	76	480	214	5,000	357
100	80	500	217	6,000	361
110	86	550	226	7,000	364
120	92	600	234	8,000	367
130	97	650	242	9,000	368
140	103	700	248	10,000	370
150	108	750	254	15,000	375
160	113	800	260	20,000	377
170	118	850	265	30,000	379
180	123	900	269	40,000	380
190	127	950	274	50,000	381
200	132	1,000	278	75,000	382
210	136	1,100	285	1,000,000	384

NB: ***N*** = Population Size, ***S*** = Sample size

As per **Table 1**, the study took into consideration that the population size of the registered fruit producers in Namibia is 98 farmers; hence, a sample size of 97 fruit producers was used. The NAB is yet to start registering fruit processors; however, a 2021 NAB study, "An analysis of Namibia's potential for horticulture agro-processing," identified approximately 7 stakeholders involved in fruit processing. Thus, with no officially registered fruit processors, this study randomly sampled and targeted to interview a total of seven identified fruit processors as a sample size, although a few different from those in the study were identified through the complementary snowballing sampling technique during data collection (**Table 2**).

Table 2: Stratified sampling plan for each strata/ targeted production zone

Production Zone	Population – Fruits Producers	Sample size (Fruits producers)	Population – Fruits Processors	Sample size – Fruits Processors
Zambezi	21	21	-	2
Kavango	6	6	-	1
North Central	14	14	-	2
Karst	20	19	-	2
Central	10	10	7	7
South	4	4	-	2
Orange River	23	23	-	2
TOTAL	**98**	**97**	**7**	**18**

4.4. Data collection and analysis

Data for this study were collected using structured questionnaires with both closed- and open-ended questions, and face-to-face and telephone interviews were conducted with the sampled farmers or processors. The researcher(s) conducted field trips to different areas where the sampled farmers and/or processors are located for face-to-face interviews. The collected data were primarily analysed using descriptive statistics and thematic analysis, with SPSS, Microsoft Excel, and Microsoft Word.

5. GLOBAL OVERVIEW OF FRUIT PRODUCTION AND VALUE ADDITION

5.1. Global fruit production and trends

Fruit production globally has been on an annual increase, with a total increase of over 64 million tons, representing an overall growth of 7.3% over the five years under review. The lowest production was recorded in 2019 at 887.34 million tons, and the highest in 2023 at 951.90 million tons, respectively (**Figure 2**).

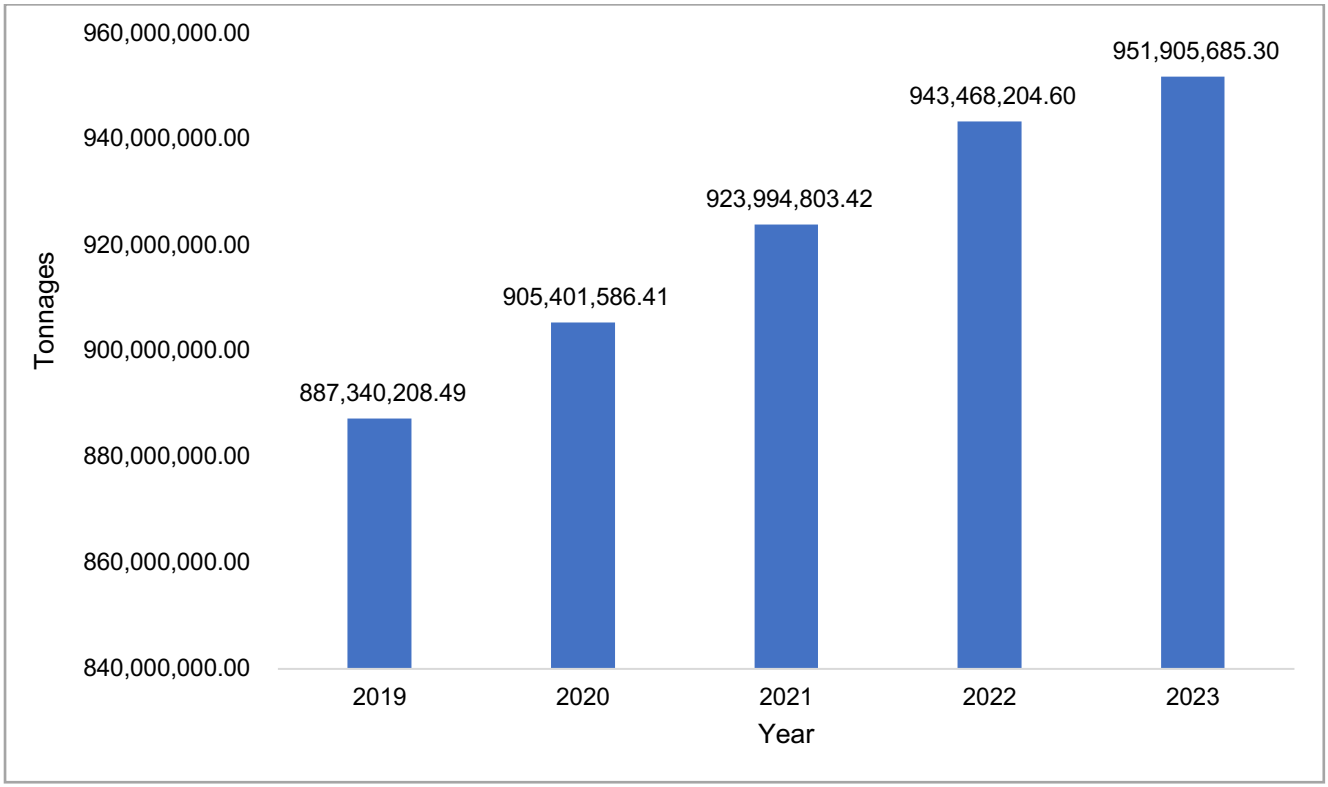


Figure 2: Global fruit production trend. Source: FAOSTAT (2025)

Among the major fruit-producing countries, the Chinese mainland accounted for at least 28% (269.33 million tons) of the world's fruit production in 2023, followed by India with 12% (113.90 million tons) and Brazil with 5% (43.24 million tons). Other countries such as Turkiye, Mexico, Indonesia, USA, Philippines, Spain and Iran are also amongst the top 10 major fruit-producing countries, however, with their production volumes at 3% or less during the same year (**Figure 3** below).

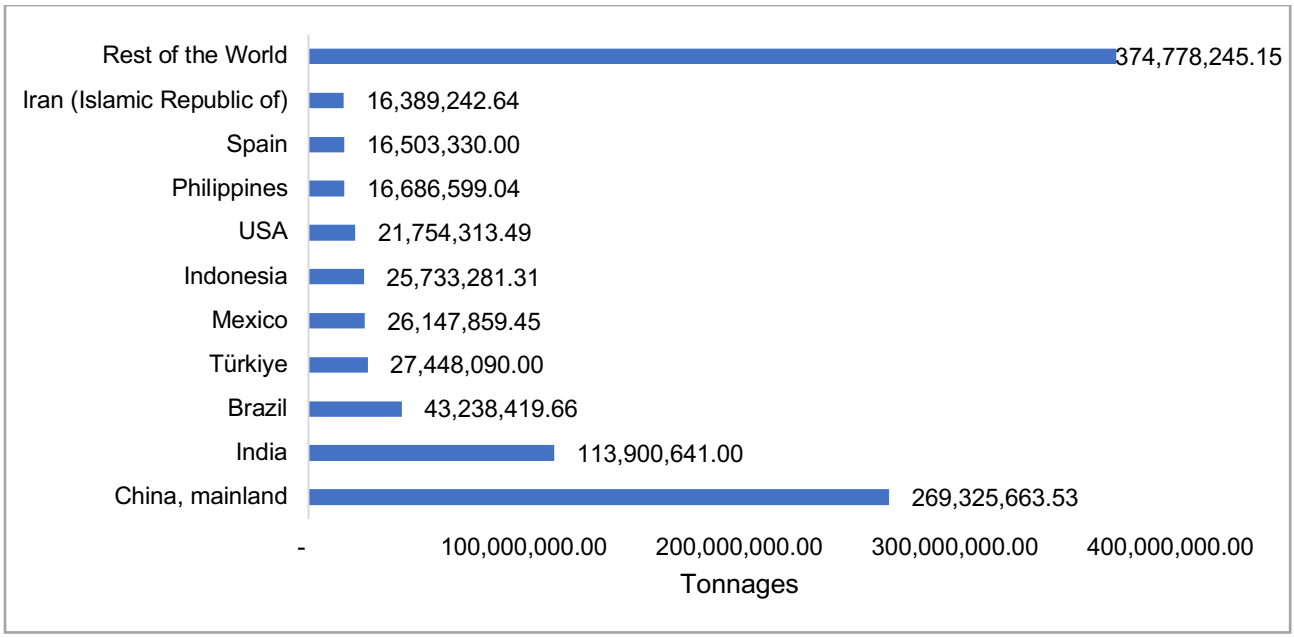


Figure 3: Major fruit-producing countries - 2023. Source: FAOSTAT (2025)

As of 2023, bananas, watermelons, and apples were among the top 10 fruits produced globally, with bananas leading with 139.27 million tons. Watermelons and apples followed closely with 104.93 million tons and 97.33 million tons, respectively. Other significantly produced fruit types include grapes with 72.48 million tons, oranges with 69.85 million tons, and pineapples with 29.64 million tons (**Figure 4**).

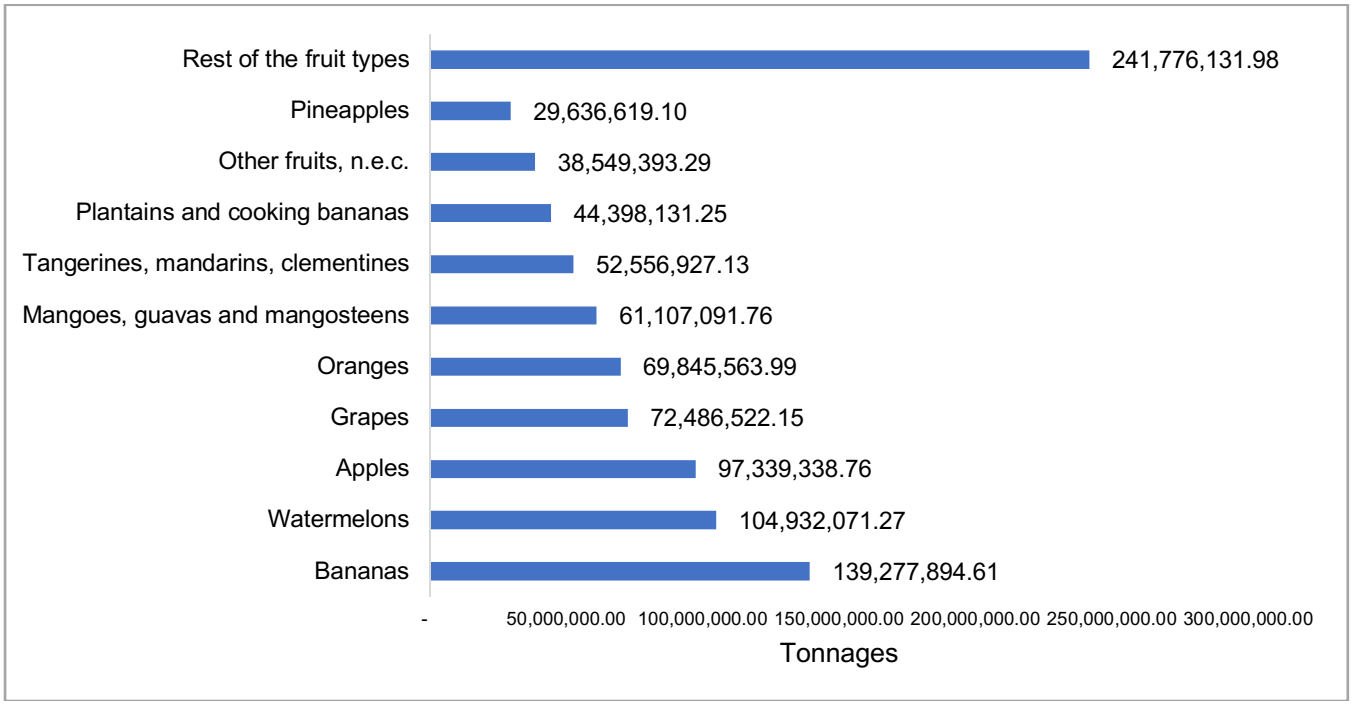


Figure 4: Key fruit types produced globally - 2023. Source: FAOSTAT (2025)

In terms of regional production outlook, Asia accounted for 59% of global fruit production in 2023, totaling 558.40 million tons. Asia is followed by the Americas, which produced 18% (169.84 million tons), and thereafter Africa, accounting for 14% (137.15 million tons) of the world's fruit production (**Figure 5**). For the top four (4) leading fruit types (bananas, watermelons, apples, and grapes) produced globally, Asia remains the largest producer of all four.

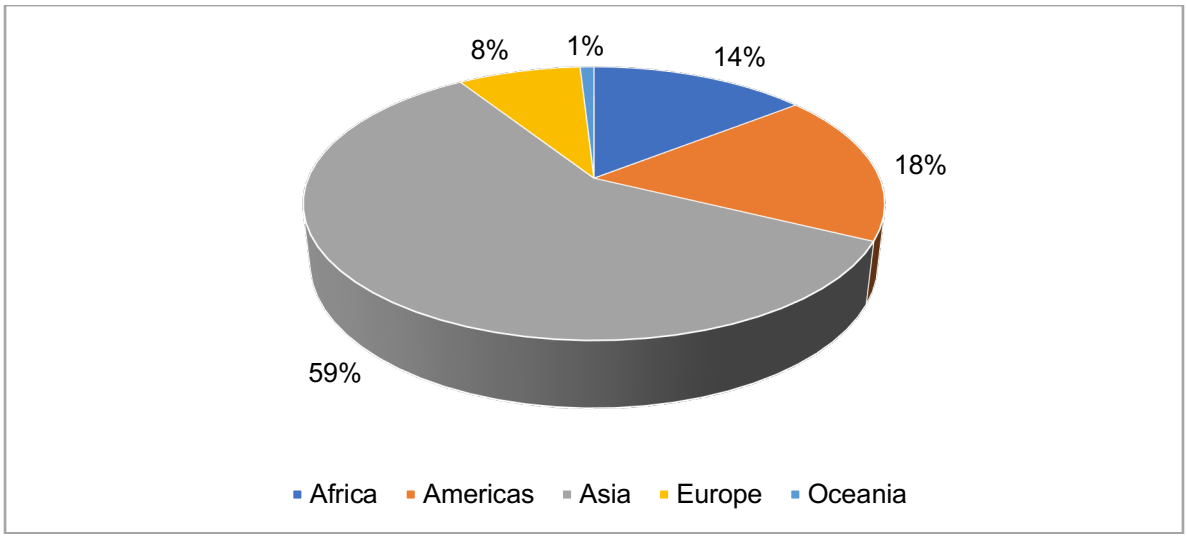


Figure 5: Global fruit production by region/continent - 2023. Source: FAOSTAT (2025)

5.2. Fruit production and trends in Africa

An upward fruit production trend in Africa can be observed, with a lowest production of 121.7 million tons reported in 2019 and the highest production of 137.15 million tons reported in 2023 (**Figure 6**). This steady increase in production may indicate improvements in the agricultural technologies used to produce the fruits, expansion of cultivated land, or a general rise in demand for fruits in Africa.

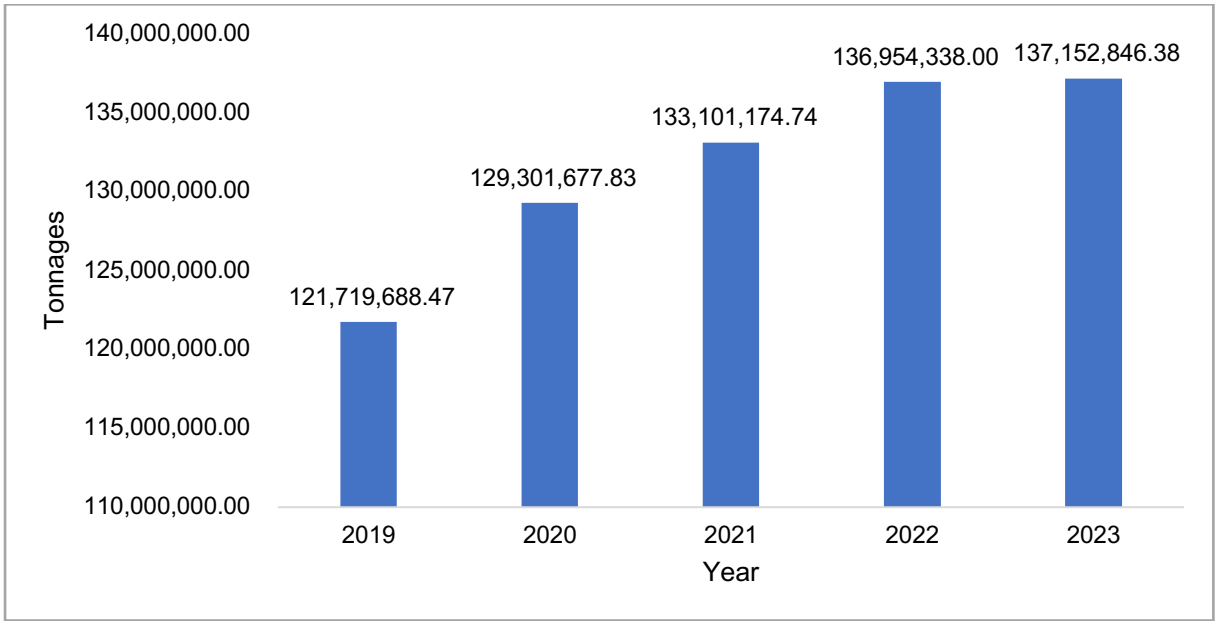


Figure 6: Fruit production trend in Africa Source: FAOSTAT (2025)

Among the top fruit-producing countries in Africa, Egypt leads the list with 16.21 million tons (12%), followed by Nigeria with 16.18 million tons (12%) and Uganda with 11.15 million tons (8%) in 2023. South Africa comes fourth amongst the top 10 fruit-producing countries in Africa, recording a production volume of 8.39 million tons in 2023, which is equivalent to 6% of Africa's fruit production for that year. Other producers among the top 10 include Algeria, DRC, Angola, Ghana, Cameroon and Tanzania (**Figure 7**).

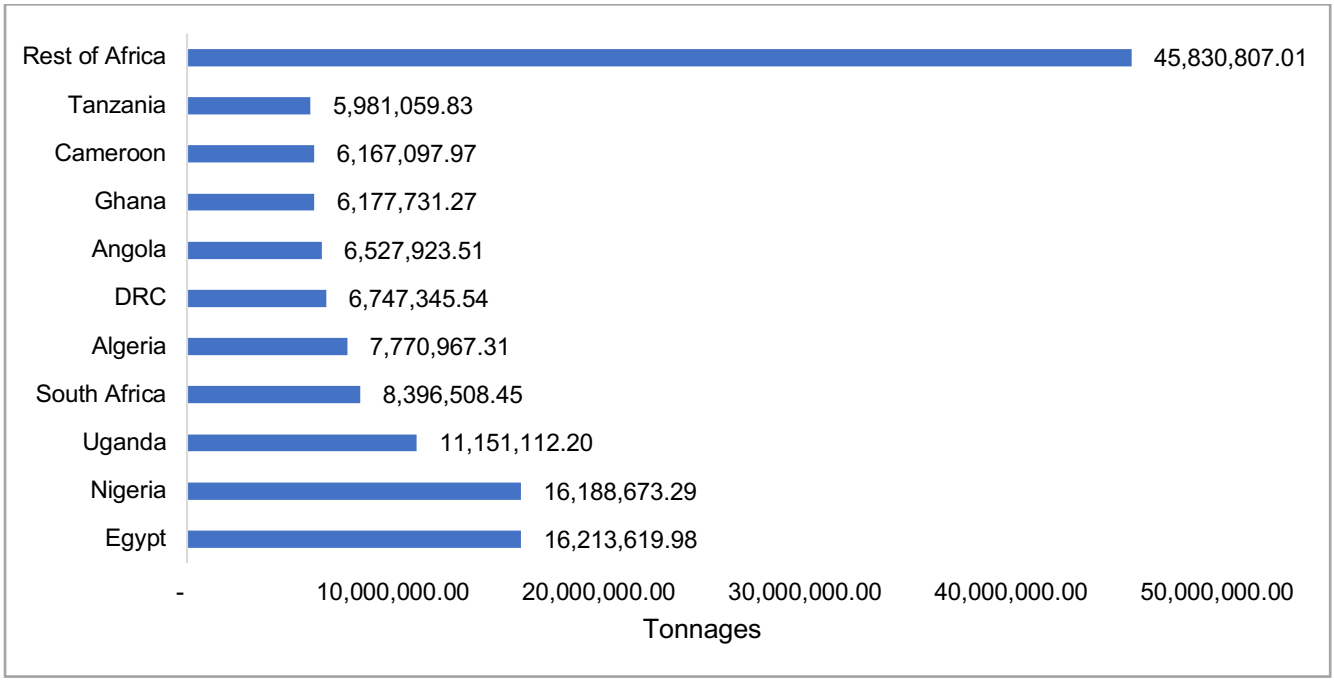


Figure 7: Fruit-producing countries in Africa – 2023 Source: FAOSTAT (2025)

Table 3 indicates an overview of the major or top 10 fruit types produced in Africa in 2023, whilst also highlighting the leading producing countries of each fruit type. Bananas are the top-produced fruit type in Africa, with 31.27 million tons produced, of which Nigeria accounts for 23.4%. Plantains and cooking bananas are the 2nd-most-produced fruits in Africa, totaling 30.68 million tons, and Uganda accounted for about 36% of that total.

Citrus fruits, comprising oranges (10.60 million tons) and other citrus fruits (5.44 million tons), are also widely produced in Africa, with Egypt and Nigeria accounting for 35% and 78%, respectively. In terms of grapes, South Africa produces the highest quantity of 1.97 million tons out of the continent's total of 5.09 million tons, which is equivalent to 39%. Dates are primarily produced in Egypt, at 42% or 1.86 million tons of the total 4.39 million tons produced in Africa in 2023.

Table 3: Key fruit types produced in Africa vs its largest producer – 2023 Source: FAOSTAT (2025)

Fruit type	Quantity (Tons)	Top-producing country	Quantity by top producing country (Tons)
Bananas	31,270,349.29	Nigeria	7,308,103.18 (23%)
Plantains and cooking bananas	30,681,485.09	Uganda	11,090,315.96 (36%)
Oranges	10,608,631.18	Egypt	3,700,000.00 (35%)
Mangoes, guavas, and mangosteens	9,846,394.63	Malawi	2,131,449.09 (22%)
Watermelons	7,842,836.17	Algeria	2,507,140.41 (32%)
Other fruits, n.e.c.	6,715,457.23	Burkina Faso	1,412,461.84 (21%)
Other citrus fruit, n.e.c.	5,442,859.81	Nigeria	4,229,445.99 (78%)
Pineapples	5,427,144.82	Nigeria	1,615,621.53 (30%)
Grapes	5,096,206.85	South Africa	1,973,818.52 (39%)
Dates	4,397,718.14	Egypt	1,867,064.49 (42%)
The rest of the fruits	19,823,763.15		
Africa Total	**137,152,846.36**		

NOTE: n.e.c. Means “not elsewhere classified”

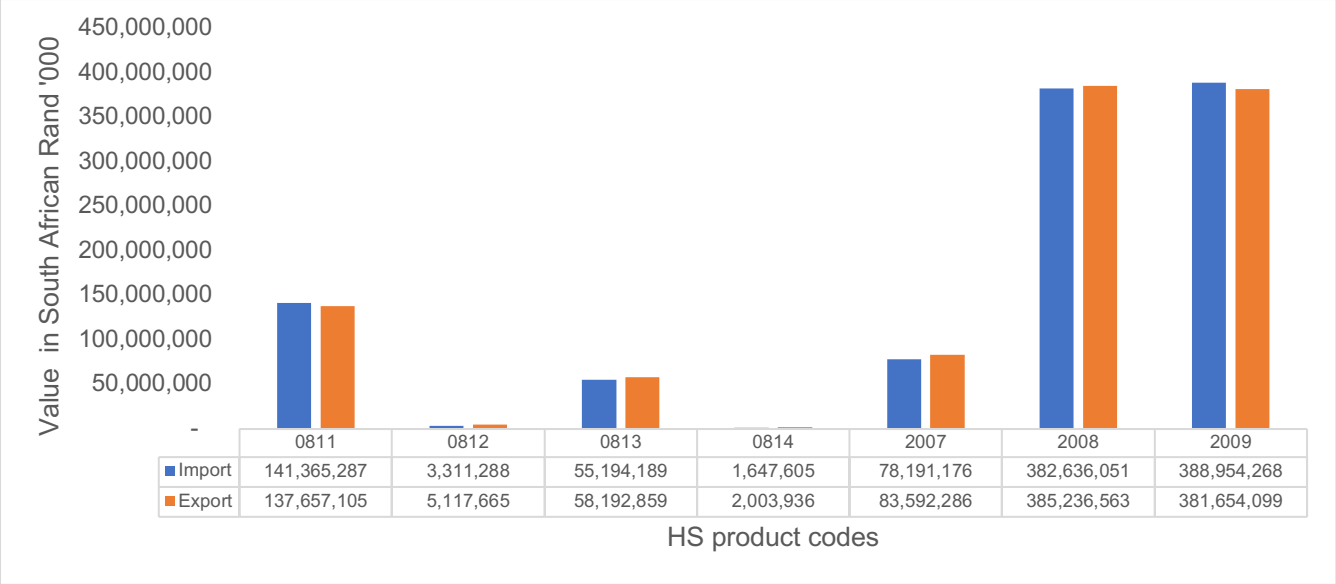
Fruit production in Namibia is relatively small, with the country recording at least 96% of its fruit imports (NAB, 2023) and heavily relying on South Africa as its supplier. Namibia can, however, take advantage of the high demand to locally produce some fruits that are well-adapted to the local climate.

5.3. Value addition in the fruit sector

Fruits are not only consumed as fresh fruits but can also be processed to enhance their value, reduce post-harvest losses, etc. Value-added fruit products can provide significant benefits to both farmers and producers, including reduced waste, enhanced economic opportunities, and greater consumer convenience. They can further contribute to a country's overall agricultural sector (Singh et al., 2024). Value addition can be categorised into three main categories, namely, primary processing, which involves cleaning, sorting, grading, packaging, branding, etc; secondary processing, which involves pulping, cutting/dicing, drying, peeling, etc; and tertiary processing, which involves freezing, canning, juicing, fruit-based snacks, jams, and jellies, etc.

Figure 8 presents the global imports and exports for various selected value-added or processed fruit products in 2024. HS code products 2008 (Fruits, nuts and other edible parts of plants, prepared or preserved) and 2009 (Fruit juices, incl. grape must, and vegetable juices) indicate the highest trade

activities of over R380 billion and therefore suggest a strong global demand, meaning that they are the major processed fruit commodities (ITC Trade Map, 2025).



	0811	0812	0813	0814	2007	2008	2009
Import	141,365,287	3,311,288	55,194,189	1,647,605	78,191,176	382,636,051	388,954,268
Export	137,657,105	5,117,665	58,192,859	2,003,936	83,592,286	385,236,563	381,654,099

Figure 8: Global trade analysis (import vs export) of selected processed fruit products - 2024

Source: ITC Trade Map (2025)

HS Product Code Descriptions

0811 Fruit and nuts, uncooked or cooked by steaming or boiling in water, frozen
0812 Fruit and nuts, provisionally preserved
0813 Dried apricots, prunes, apples, peaches, pears, papaws "papayas", tamarinds, and other edible fruits, and mixtures of edible and dried fruits or edible nuts
0814 Peel of citrus fruit or melons, incl. watermelons, fresh, frozen, dried or provisionally preserved in brine, or water with other additives
2007 Jams, fruit jellies, marmalades, fruit or nut purée, and fruit or nut pastes,
2008 Fruits, nuts, and other edible parts of plants, prepared or preserved
2009 Fruit juices, incl. grape must, and vegetable juices

As with production, fruit value addition in Namibia is almost non-existent. There is very minimal fruit processing done in the country, and for the few that are trying, there are no reliable statistics to estimate the extent of value addition. This is despite the country's high consumption of processed fruit products. For instance, Namibia imported *Fruit juices, including grape must, and vegetable juices (HS code 2009), valued at R467.89 million. It exported the same products, valued at R5.73 million (including re-exports valued at R238,000.00),* during 2024 (ITC Trade Map, 2025).

6. EXISTING POLICIES AND FRAMEWORKS SUPPORTING FRUIT PRODUCTION IN NAMIBIA

Namibia has several policies and frameworks in place to support the development of the crop industry, including the fruit sector. Such policies and frameworks mainly focus on overall agricultural development, economic growth, and improved food security. Some key policies and frameworks that exist in Namibia and are related to fruit production include:

6.1. Namibia Agriculture Policy, 2015

Firstly, established in 1995 as the National Agriculture Policy (NAP), the policy was later revised in 2015 and renamed the Namibia Agriculture Policy. The overall goals of this policy are to create a conducive environment for increased and sustained agricultural production and productivity; to accelerate the agriculture sector's contribution to the National Growth Domestic Product (GDP); and to promote the development of the national agriculture sector across the value chain.

In terms of the specific support that this policy provides to the fruit production sector in Namibia, the policy advocates for encouraged investment in irrigation and water efficient technologies including through the development of Green Schemes; the policy promotes research and development which is vital in fruit production especially when selecting suitable fruits types and/or varieties; it also supports the intensifying of training and development, emphasising on Good Agricultural Practices (GAP) that are essential for the production of safe and quality products as well as to trade on international markets (Ministry of Agriculture, Water and Forestry, 2015).

6.2. National Development Plans (NDPs 1 - 6)

The National Development Plans (NDPs) were derived from Vision 2030 as tools to guide national development. All NDPs focus on different economic sectors of the country to drive development, and the agriculture sector, specifically the crop sector, is among the areas identified as having great potential to spur economic development.

The latest NDP6, which was recently launched on 21 July 2025, fully supports fruit production and fruit value addition through two of its focus areas, which are *agriculture value chains development (climate-smart, sustainable, and competitive crop value chain)* and *agro-processing (increased value addition and locally agro-processed products for export)* (National Planning Commission, 2025).

6.3. Green Scheme Policy, 2008

The Green Scheme Policy was enacted in 2008, and it is based on the NDPs and the Vision 2030 strategy. This policy directly supports fruit production and value-addition initiatives in Namibia through

its objectives, namely: To increase agricultural production and the sector's contribution to GDP; To promote investment in food production and agro-industry; To mobilise private and public capital for investment in agriculture; To promote food security at national and household levels; To diversify agricultural production and products for the domestic and export markets; To promote research and adaptation of technology to increase productivity; To promote value addition and job creation; To promote skills development and transfer of technology. The policy also extensively supports the development and expansion of irrigation land along perennial rivers for crop production, including fruit production and value addition (Ministry of Agriculture, Water and Forestry, 2008).

6.4. National Horticulture Development Initiative (NHDI)

This strategy was established in 2002 by the Namibian Agronomic Board (NAB) in collaboration with the then Ministry of Agriculture, Water and Fisheries, for the sole purpose of increasing local production and supply of horticultural fresh produce, including fruits, and reducing reliance on imports in Namibia. Through this strategic initiative, a grow-at-home strategy called the Market Share Promotion Scheme (MSP) was established in 2005, requiring importers to purchase a minimum percentage of locally produced horticulture products before they can import.

Unfortunately, due to very low local fruit production, this scheme is currently applied only to vegetables, not to fruits. The scheme started at 4% in 2005, and it is now at 47% in 2025, representing an improvement, especially in local vegetable production, an approach that can be extended to fruit production, provided the fruit industry picks up production (NAB, 2025).

The NAB also ensures the development of crop-specific marketing quality standards (e.g., grapes, dates, blueberries) and that food safety and traceability regulations are in place under the Agronomic Industry Act (Act No. 20 of 1992) to gain trust and access to higher-value markets, both local and export.

6.5. Agro-Marketing and Trade Agency (AMTA)

As an agency of the government under the Ministry of Agriculture, Fisheries, Water, and Land Reform (MAFWLR), AMTA was established to coordinate and manage the marketing and trading of agricultural products in Namibia.

AMTA’s mandate is to manage the Fresh Produce Business Hubs (FPBHs) and the National Strategic Food Reserve (NSFR) infrastructure to attain food safety and security. The FPBHs directly support fruit production and value addition by ensuring access to markets for locally produced fruits or fruit value-added products in Namibia (AMTA, 2025).

6.6. Drought relief and climate adaptation programmes

There are several drought relief and climate adaptation programmes in place to mitigate the climate risks affecting agriculture and crop production. Several programmes that closely support fruit production include the provision of input subsidies such as fertilisers, mechanised services, and seeds; Climate-smart and conservation agriculture practices that encourage conservation practices such as mulching, crop rotation, minimal tillage, and rainwater harvesting, which could also be beneficial to fruit production; Agroforestry and nurseries, whereby integrated farming is encouraged, as well as the distribution of quality fruit tree seedlings at a subsidised price through public nurseries.

While several policies and frameworks are in place, more targeted interventions are needed to support sector development, as many other challenges persist. These frameworks can therefore be harmonised, and through a specific institution, a specific strategy can be formulated and implemented for the purpose of enhancing the sector.

7. RESULTS AND DISCUSSIONS

This section presents the findings obtained from the questionnaire that was administered to the sampled fruit producers and processors as part of this study. The data highlights the perceptions of the engaged respondents from a producer and processor perspective, especially regarding the challenges (production or value addition) affecting the sector, as well as possible solutions they think can help develop the fruit sector in Namibia.

The study targeted 98 fruit producers and 18 fruit processors; however, due to time constraints, discontinued production, and limited/unknown numbers of processors, only 71 fruit producers and 8 processors were interviewed.

7.1. Demographic characteristics

7.1.1. Fruit producers' demographics

As summarised in **Table 4**, the majority of respondents were from the Zambezi production zone (23.9%), followed by the South and Orange river production zones (22.5%), whilst the Kavango and Central production zones had the least representation (8.5% each). In terms of gender, 83.1% of respondents were male, indicating male dominance in the fruit production sector. The table also indicates that the majority (62%) of the fruit-producing respondents are aged 35–59 years, and no respondents fall in the 0–14 years category.

Table 4: Fruit producers' demographics

Variables	No. of respondents	Percent (%)

Production Zone	Kavango	6	8.5%
	North Central	11	15.5%
	Zambezi	17	23.9%
	South & Orange River	16	22.5%
	Central	6	8.5%
	Karst	15	21.1%
	Total	**71**	**100.0%**
Gender	Male	59	83.1%
	Female	11	15.5%
	Prefer not to say	1	1.4%
	Total	**71**	**100.0%**
Age of Respondent	0 - 14 years	0	0.0%
	15 - 34 years	6	8.5%
	35 - 59 years	44	62.0%
	>60 years	20	28.2%
	Prefer not to say	1	1.4%
	Total	**71**	**100.0%**

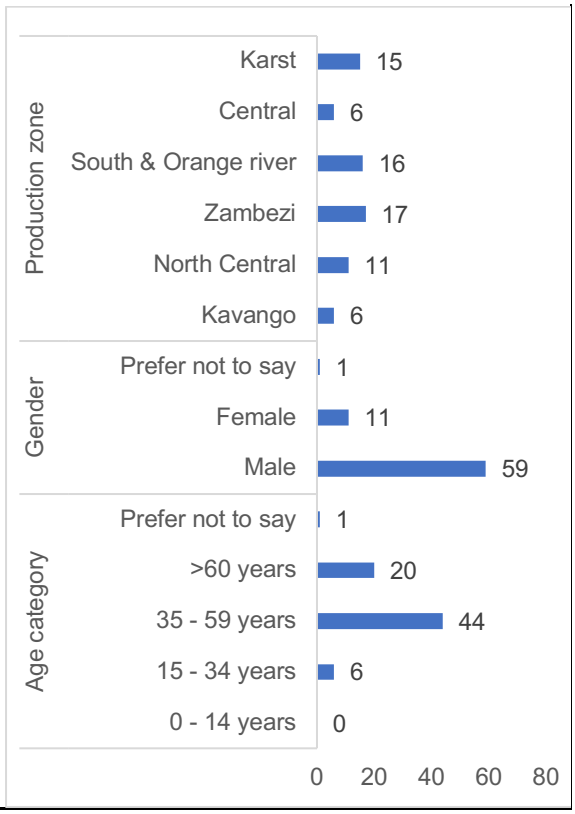


Table 5 indicates that the majority of respondents (63.4 %) who were interviewed own a fruit farming business or operation, followed by managers. There is also a small percentage of respondents categorised as 'others' who represent mostly CEOs, Operations Directors, and other roles. The table also shows that over 60% of the respondents have more than 7 years of experience in fruit production, which may represent reliable data on their perceptions of fruit production in Namibia.

Table 5: *Nature and duration of involvement in fruit farming*

	Variable	No. of respondents	Percent (%)
Role in the farm	Owner	45	63.4%
	Manager	15	21.1%
	Foreman	2	2.8%
	Consultant	0	0.0%
	Technician	1	1.4%
	General Worker/ Labourer	0	0.0%
	Other	8	11.3%
	Total	**71**	**100.0%**
Years of experience in fruit farming	<1 year	1	1.4%
	1 - 3 years	9	12.7%
	4 - 6 years	13	18.3%
	7 - 10 years	19	26.8%
	11 - 15 years	4	5.6%
	16 - 20 years	10	14.1%
	> 20 years	15	21.1%
	Total	**71**	**100.0%**

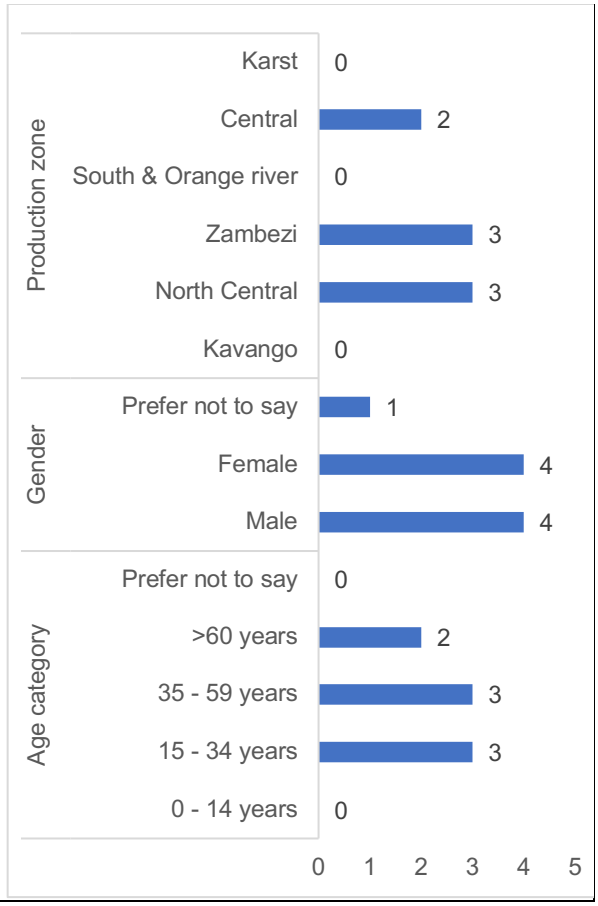
7.1.2. Fruit processors demographics

For the demographic characteristics of the interviewed fruit processors (**Table 6**), an equal number of respondents were from the North Central and Zambezi production zones, with 37.5% each. A small 25% came from the Central production zone, and none came from the Kavango and Karst production zones. There was equal gender representation, with males and females in the 15–34 and 35– age categories, each representing 37.5%.

Table 6: *Fruit processors demographics*

Variables		No. of respondents	Percent (%)
Production Zone	Kavango	0	0.0%
	North Central	3	37.5%
	Zambezi	3	37.5%
	South & Orange River Central	0	0.0%
		2	25.0%
	Karst	0	0.0%
	Total	**8**	**100.0%**
Gender	Male	4	50.0%
	Female	4	50.0%

	Prefer not to say	0	0.0%
	Total	**8**	**100.0%**
Age of Respondent	0 - 14 years	0	0.0%
	15 - 34 years	3	37.5%
	35 - 59 years	3	37.5%
	>60 years	2	25.0%
	Prefer not to say	0	0.0%
	Total	**8**	**100.0%**



The data in **Table 7** shows that 62.5% of the interviewed respondents are owners of the fruit processing facilities/businesses, whilst a small portion of 12.5% are technicians at these facilities. Additionally, at least 62.5% of these respondents have 1-3 years of experience in fruit processing, while only 25% have more than 11 years.

Table 7: *Nature and duration of involvement in fruit processing operations*

	Variable	No. of respondents	Percent (%)
Role at the facility	Owner	5	62.5%
	Manager	2	25.0%
	Foreman	0	0.0%
	Consultant	0	0.0%
	Technician	1	12.5%
	General Worker/ Labourer	0	0.0%
	Other	0	0.0%
	Total	**8**	**100.0%**
Years of experience in the fruit processing business	< 1 year	1	12.5%
	1 - 3 years	5	62.5%
	4 - 6 years	0	0.0%
	7 - 10 years	0	0.0%

	11 - 15 years	1	12.5%
	16 - 20 years	0	0.0%
	> 20 years	1	12.5%
	Total	**8**	**100.0%**

7.2. Current state of fruit production in Namibia

Table 8 indicates that, based on the respondents, fruit production in Namibia is dominated by small-scale farmers who own less than 1 hectare of land and by large-scale farmers who own more than 15 hectares of land, with 32% in each category. There is minimal fruit cultivation by farmers in the medium category who own 11 – 50 hectares of land, dedicating only 7 – 15 hectares to fruit production.

Table 8: *Total land size vs land under fruit production*

		Land size under fruit production (ha)						**Total**
		< 1 ha	*1 - 3 ha*	*4 - 6 ha*	*7 - 10 ha*	*11 - 15 ha*	*> 15 ha*	
Total size of land (ha)	*< 1 ha*	5	0	0	0	0	0	**5**
	1 - 5 ha	12	3	1	0	0	0	**16**
	6 - 10 ha	3	2	0	0	0	0	**5**
	11 - 20 ha	1	5	0	0	0	1	**7**
	21 - 50 ha	1	1	1	0	0	1	**4**
	51 - 100 ha	1	1	2	0	1	2	**7**
	> 100 ha	0	0	3	3	2	19	**27**
Total		**23**	**12**	**7**	**3**	**3**	**23**	**71**

Table 9 indicates the types of fruits planted by the survey respondents, with some respondents selecting more than one fruit type, resulting in a total of 211 responses (297.2% of the cases among 71 respondents). The table shows that mangoes were the most commonly planted fruit, with 33 responses (15.6%) representing 46.5% of all responses, followed by oranges with 35.2%, and thereafter lemons and naartjies with 29.6% and 25.4% respondents respectively. This shows a clear preference for tropical and citrus fruits, indicating that these fruit types are likely well-suited to the Namibian climate.

Bananas (18.3%), papayas (15.5%), avocados (12.7%), and grapefruits (11.3%) follow, also indicating good potential. Other least-planted fruit types include kumquats, pears, peaches, quinces, strawberries, pomegranates, and various nuts, which were grown by fewer than 5% of respondents. Overall, the dominance of mangoes and oranges suggests strong potential for value addition and upscaling in Namibia. At the same time, other fruit types also show potential with the support of much-needed research and policy.

Table 9: *Types of fruit trees planted*

Types of fruits planted	No. of responses	Percent (%)	Percent of Cases (%)
Oranges	25	11.8%	35.2%
Lemons	21	10.0%	29.6%
Limes	3	1.4%	4.2%
Grapefruits	8	3.8%	11.3%
Naartjies	18	8.5%	25.4%
Mandarins and tangerines	4	1.9%	5.6%
Kumquats	2	0.9%	2.8%
Other citrus fruits	3	1.4%	4.2%
Bananas	13	6.2%	18.3%
Mangoes	33	15.6%	46.5%
Pineapples	2	0.9%	2.8%
Papayas	11	5.2%	15.5%
Avocadoes	9	4.3%	12.7%
Strawberries	2	0.9%	2.8%
Raspberries	1	0.5%	1.4%
Blueberries	3	1.4%	4.2%
Pomegranates	2	0.9%	2.8%
Guavas	5	2.4%	7.0%
Other berries fruits	3	1.4%	4.2%
Table grapes	16	7.6%	22.5%
Apples	5	2.4%	7.0%
Pears	2	0.9%	2.8%
Quinces	1	0.5%	1.4%
Other pome fruits	2	0.9%	2.8%
Peaches	1	0.5%	1.4%
Olives	4	1.9%	5.6%
Dates	7	3.3%	9.9%
Almonds	1	0.5%	1.4%
Pecan nuts	1	0.5%	1.4%
Other nuts fruits	1	0.5%	1.4%
Watermelons	2	0.9%	2.8%
Total	**211**	**100.0%**	**297.2%**

Table 10 below highlights the various fruit types cultivated in Namibia, focusing on the number of trees, the land area under cultivation (hectares), and total yield (tons). Some data may be missing due to unknown figures or a lack of records, or because of some trees that are still too young to produce measurable yields.

Some fruit trees with high-performing fruit crops in Namibia include table grapes, with 2.6 million trees (vines) planted over 2,110 ha of land, yielding over 34,000 tons. Dates follow closely with 48,012 trees on 778 ha, yielding over 1,800 tons. Oranges (31,179 trees) and mangoes (13,479 trees) are also majorly produced, yielding 579 tons and 308 tons, respectively. Blueberries with 700,000 plants over 149 ha, producing 508 tons, therefore, also indicating a high productivity and growing interest in blueberry production.

There are also other fruit types with moderate yields and potential for expansion, such as naartjies (341.8 tons) and grapefruits (245 tons). Others with notable yields, although cultivated over a small area of 1 or fewer hectares, are lemons and papayas, with yields of 108.6 tons and 3.2 tons, respectively. Several fruit types with low or no reported yield due to data gaps or not yet in the productive stage are pineapples, avocados, peaches, pears, and pecan nuts, despite a considerable number of trees and land cultivated, such as pecan nuts with 4000 trees over 40 hectares and avocados with 2,136 trees cultivated on over 7.3 hectares.

Table 10: Fruit tree production data: Number of trees, land size, and yield

Fruit tree type	Number of trees	Land size (ha)	Total Yield (tons)
Oranges	31,179	81.9	579.0
Lemons	3,152	8.4	108.6
Limes	101	1.0	1.0
Grapefruits	23,775	33.1	245.0
Naartjies	11,372	40.3	341.8
Mandarins and tangerines	40,800	75.1	40.0
Kumquats	7	-	0.2
Other citrus fruits	-	-	-
Bananas	6,889	3.5	14.9
Mangoes	13,479	45.8	308.0
Pineapples	456	0.6	-
Papayas	6,208	3.3	3.2
Avocadoes	2,136	7.3	-
Strawberries	-	3.0	19.5
Raspberries	-	0.0	2.0
Blueberries	700,000	149.0	508.0
Pomegranates	5,600	9.5	14.3
Guavas	18	-	0.8
Other berries fruits	-	-	-
Table grapes	2,604,325	2,110.2	36,492.1
Apples	45,022	26.0	0.4

Pears	4	-	-
Quinces	-	-	-
Other pome fruits	-	-	-
Peaches	-	4.0	-
Olives	3,048	24.0	3.7
Dates	48,012	778.0	1,878.4
Almonds	-	-	-
Pecan nuts	4,000	40.0	-
Other nuts fruits	-	-	-
Watermelons	-	1.0	40.0
Total	**3,549,583**	**3,444.9**	**40,600.7**

7.3. Status of fruit value addition in Namibia

As indicated in **Figure 9** below, the majority of respondents processing fruits are operating on a small-scale basis of processing less than 50 tons of fruits per year. No large-scale fruit processors were interviewed, and the remaining 13% were medium-scale processors, processing 50–100 tons of fruits per year.

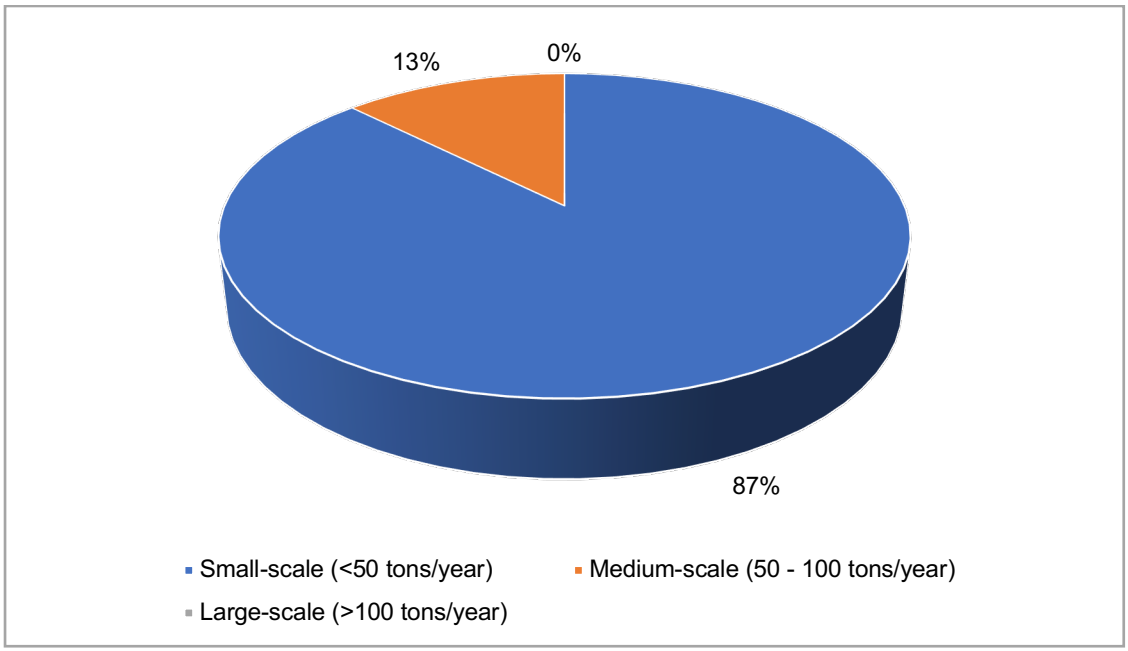


Figure 9: *Fruit processor's scale of operation*

As presented in **Table 11**, mangoes are the most commonly processed fruit by the respondents, representing 31.6% of the total responses. Lemons and olives follow mangoes, each representing 10.5% of responses, thereby also highlighting strong potential. Oranges, bananas, papayas, avocados, and others show limited processing activity, accounting for only 5.3% of responses each.

Table 11: *Types of fruits processed*

Type of fruits processed	No. of responses	Percent (%)	Percent of Cases (%)
Oranges	1	5.3%	12.5%
Lemons	2	10.5%	25.0%
Other citrus fruits	1	5.3%	12.5%
Bananas	1	5.3%	12.5%
Mangoes	6	31.6%	75.0%
Papayas	1	5.3%	12.5%
Avocadoes	1	5.3%	12.5%
Pomegranates	1	5.3%	12.5%
Apples	1	5.3%	12.5%
Olives	2	10.5%	25.0%
Other nuts fruits	1	5.3%	12.5%
Watermelons	1	5.3%	12.5%
Total	**19**	**100.0%**	**237.5%**

Table ***12*** below highlights the types of fruits processed and their forms of value-added products produced from each to understand the scale of fruit value addition in Namibia. Mangoes are processed in various forms, with dried mango, juice, jam, pulp, and yoghurt produced in quantities of 2.76 tons and 1,000 litres. Lemons and oranges also have potential for value-added juice, tea, and jam, with production of 1,000 litres and 0.5 tons, respectively. Pomegranates and apples are also processed into tea and dried fruits. The table also highlights the potential of avocado and olive oil, with 65 litres and 375 litres produced, respectively. Overall, the data indicate that fruit processing in Namibia is relatively minimal, with low processing volumes, hence indicating that the sector is very underdeveloped.

Table 12: *Value-added fruit processing data*

Type of fruits processed	Type of value-added product	Quantity produced per year
Oranges	Jam,	1,000 litres
Lemons	Tea, juice	0.5 tons & 1,000 litres
Bananas	Juice	0.012 tons
Mangoes	Dried mango, juice, jam, pulp, yoghurt	2.67 ton, 1000 litres
Papayas	Juice	15 litres
Avocadoes	Oil	65 litres
Pomegranates	Tea	300 litres
Apples	Dried apples	100kg
Olives	Oil	375 litres
Watermelons	Juice	12 litres

7.4. Current fruit production trends and farmer coping mechanisms in Namibia

Over half (52.1%) of the respondents reported an increase (slight or significant) in fruit production over the last five years, suggesting that these fruit producers experienced growth driven by various factors. A total of 15.5% of the respondents reported a stable growth, whilst 22.5% and 5.2% reported a decreased and fluctuating production trend, respectively (**Table 13**).

Table 13: *Perception of changes in fruit production volume over the last 5 years*

How has your fruit production volume changed over the last five years?		
	No. of respondents	**Percent (%)**
Significantly increased	17	23.9
Slightly increased	20	28.2
Remained stable	11	15.5
Slightly decreased	13	18.3
Significantly decreased	3	4.2
No answer	3	4.2
Fluctuating	4	5.6
Total	**71**	**100.0**

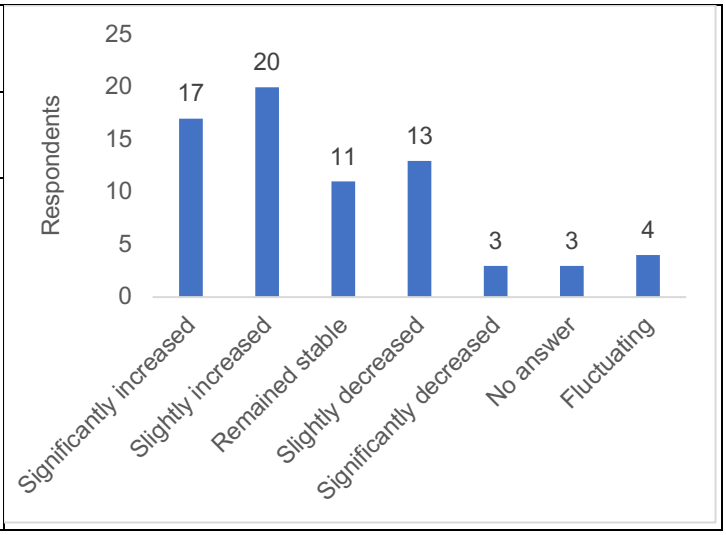


Table 14 indicates that 19.1% of the fruit producers experienced an increase in production due to improved farming practices. Approximately 15.1% experienced changes in climate or weather patterns, which also contributed to changes in production volumes, most of which were negatively affected. Other notable factors that contributed to changes in production volumes, whether positively or negatively, were input costs (high) (10.5%), changes in the availability of water (9.2%), and the adoption of new technologies (8.6%).

Table 14: *Perception of causes of changes in production levels*

Causes of change in production levels			
	No. of responses	**Percent (%)**	**Percent of Cases (%)**
Improved farming practices	29	19.1%	42.6%
Adoption of new technologies	13	8.6%	19.1%
Pests and diseases	15	9.9%	22.1%
Input costs (fertilisers, pesticides, etc.)	16	10.5%	23.5%
Changes in water availability	14	9.2%	20.6%
Changes in climate or weather patterns	23	15.1%	33.8%
Changes in market demand	10	6.6%	14.7%

Availability of labour	4	2.6%	5.9%
Increased or decreased land under cultivation	8	5.3%	11.8%
Government policies or subsidies	4	2.6%	5.9%
Other factors	16	10.5%	23.5%
Total	**152**	**100.0%**	**223.5%**

To adapt to the changes in fruit production as a result of some of the factors highlighted in **Table 14**, the majority of the fruit producers (23.1%) shifted to cultivating more resilient fruit varieties. Others opted to invest in improved irrigation or water management systems (18.5%), and some diversified their crop farming (17.7%) (**Table 15**).

Table 15: *Strategies implemented to adapt to changes in production*

Strategies to adapt to production changes			
	No. of responses	**Percent (%)**	**Percent of Cases (%)**
Diversified crop types	23	17.7%	34.3%
Shifted to more resilient fruit varieties	30	23.1%	44.8%
Increased use of technology (precision agriculture)	15	11.5%	22.4%
Adopted new farming techniques	20	15.4%	29.9%
Invested in irrigation or water management systems	24	18.5%	35.8%
Other strategies	18	13.8%	26.9%
Total	**130**	**100.0%**	**194.0%**

7.5. Value addition potential, constraints, and required support

7.5.1. Fruit producers' perspective

As presented in **Figure 10**, the majority (51%) of the respondents who produce fruits indicated that they do not engage in any fruit value addition activities, and the remaining 49% do engage in some value addition activities (presented in **Figure 11**).

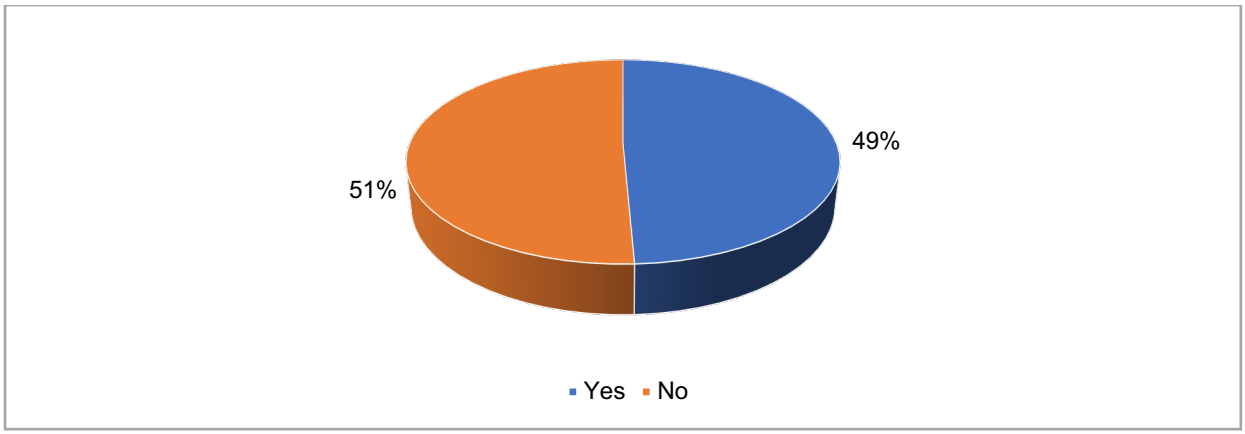


Figure 10: *Fruit Producers engaged in fruit value addition*

Figure 11 indicates that 51% of fruit producers engage in primary processing, which involves cleaning, sorting, grading, packaging, and branding, and 25% of them are engaged in tertiary processing, which involves freezing, juicing, jams and jellies, cooling, mixed punnets (grapes), and cold pressing (oil). The remaining 24% are engaged in secondary processing, which involves blanching, drying, and peeling.

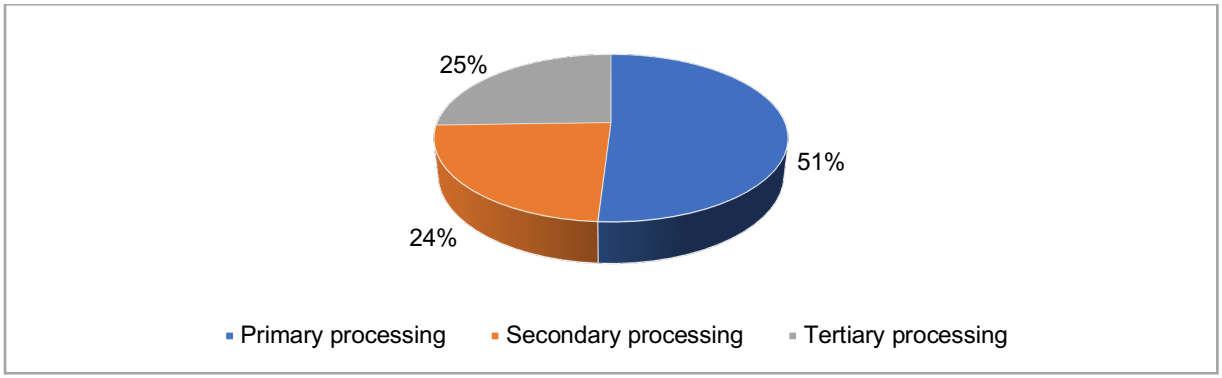


Figure 11: *Fruit value addition category - Producers*

Table 16 below presents factors that prevent producers from engaging in or expanding fruit value addition. Lack of access to financing or capital for equipment and technology, limited knowledge or expertise in value addition, and limited access to reliable markets or distribution channels are cited as the most significant factors limiting fruit value addition in Namibia, as cited by 60.9%, 39.1% and 31.3% of the respondents, respectively. Other notable challenges include a lack of industry or government support (28.1%), limited access to skilled labour (26.6%), and high transportation or logistics costs (25.0%). These challenges overlap and require a coordinated policy approach to improve the industry.

Table 16: *Factors preventing producers from engaging or expanding fruit value addition*

Q: What is currently preventing you from engaging in or expanding your fruit value-adding activities to your fruit products?			
	No. of responses	**Percent (%)**	**Percent of Cases (%)**
Difficulty in maintaining product quality or consistency	11	5.7%	17.2%
Lack of access to financing or capital for equipment and technology	39	20.2%	60.9%
Limited knowledge or expertise in value addition	25	13.0%	39.1%
Difficulty in meeting regulatory or certification requirements	7	3.6%	10.9%
Lack of industry or government support	18	9.3%	28.1%
No interest or perceived need to add value	1	0.5%	1.6%
Limited access to reliable markets or distribution channels	20	10.4%	31.3%
Uncertain or unstable supply of raw fruits	14	7.3%	21.9%
Limited access to skilled labour	17	8.8%	26.6%
Competition from other producers or processed products	3	1.6%	4.7%
Uncertainty about market demand for value-added products	11	5.7%	17.2%
High transportation or logistics costs	16	8.3%	25.0%
Other reasons	11	5.7%	17.2%
Total	**193**	**100.0%**	**301.6%**

The fruit producers also highlighted some of the strategies they perceive can help them expand or start engaging more in fruit value addition, as presented in **Table 17**. In line with the factors preventing value addition as presented in **Table 16** above, fruit producers highlighted that training and capacity building in value addition techniques (11.6%), access to financing or loans for equipment and infrastructure (10.4%), as well as improved access to distribution channels and markets (9.1%) are amongst the most important support or interventions required for them to expand or engage in fruit value addition activities (**Table 17**).

Table 17: *Required support by producers to help expand or engage in fruit value addition*

Q: What support or resources would help you expand or start engaging in fruit value addition activities?			
	No. of responses	**Percent (%)**	**Percent of Cases (%)**
Training and capacity building in value addition techniques	38	11.6%	55.9%
Market research and information on consumer demand and preferences	27	8.2%	39.7%

Access to financing or loans for equipment and infrastructure	34	10.4%	50.0%
Partnerships or collaborations with processing companies	20	6.1%	29.4%
Access to skilled labour or workforce training	21	6.4%	30.9%
Improved access to distribution channels and markets	30	9.1%	44.1%
Access to affordable and reliable modern technology or processing machinery	20	6.1%	29.4%
Access to raw materials and inputs at lower costs	18	5.5%	26.5%
Assistance with regulatory certification and compliance (e.g., organic, Global/local-GAP, HACCP, etc.)	21	6.4%	30.9%
Government subsidies or grants for value addition projects	27	8.2%	39.7%
Support with branding and packaging development	21	6.4%	30.9%
Technical support or consultancy services	19	5.8%	27.9%
Networking opportunities with other value-added businesses and industry experts	22	6.7%	32.4%
Other support	10	3.0%	14.7%
Total	**328**	**100.0%**	**482.4%**

7.5.2. Fruit processors' perspective

Table 18 below summarises the challenges processors face when sourcing raw fruits for processing. Factors such as a lack of proper storage facilities to maintain fruit quality before processing (62.5%), difficulty in finding reliable and consistent fruit suppliers (50%), and limited collaboration with farmers to ensure a steady supply of fruits (50%) are the most significant challenges they experience when sourcing raw fruits required for processing.

Notably, 75% of the challenges were classified as 'others', which comprised various reasons such as high costs of maintaining fruit trees, distance, and phytosanitary restrictions (i.e., sourcing mangoes from areas beyond the redline, like mangoes from Katima Mulilo), short fruit harvest season limiting fruit availability, and lack of a National Food or Fruit Safety Bill (**Table 18**).

Table 18: *Challenges for processors when sourcing raw fruits for processing*

Q: What challenges do you face in sourcing raw fruits for your processing activities?			
	No. of responses	**Percent (%)**	**Percent of Cases (%)**
Inconsistent supply of raw material (fresh fruits)	3	9.7%	37.5%
Difficulty in finding reliable and consistent fruit suppliers	4	12.9%	50.0%
Limited access to locally grown fruits leads to dependence on imports	1	3.2%	12.5%
Lack of proper storage facilities to maintain fruit quality before processing	5	16.1%	62.5%
Inadequate infrastructure, such as cold chain systems for preserving fruit freshness	2	6.5%	25.0%
Regulatory barriers or restrictions on fruit imports or exports	2	6.5%	25.0%
Limited collaboration with farmers to ensure a steady supply	4	12.9%	50.0%
Lack of certification or quality standards compliance from fruit suppliers	2	6.5%	25.0%
Difficulty in sourcing specific fruit varieties required for processing	2	6.5%	25.0%
Other Challenges	6	19.4%	75.0%
Total	**31**	**100.0%**	**387.5%**

Table 19 presents some of the steps, processors take to ensure a reliable supply of raw fruits for processing. Processors indicated taking steps such as sourcing raw fruits from multiple suppliers to reduce dependency on a single source (71.4%) and utilising cold storage facilities to extend the shelf life and availability of fruits, especially during off-seasons (71.4%), to ensure a reliable and consistent supply. Others opted to establish their own fruit farm or orchard to improve the supply of raw fruit.

Table 19: *Steps taken by processors to ensure a reliable supply of raw fruits for processing*

Q: What steps have you taken to ensure a reliable supply of raw materials/ fruits for your processing activities?			
	No. of responses	**Percent (%)**	**Percent of Cases (%)**
Establish long-term contracts with local farmers or fruit suppliers and cooperatives	1	5.3%	14.3%
Invest and establish your fruit farm to improve supply	3	15.8%	42.9%
Importing fruits from international suppliers during local off-seasons	1	5.3%	14.3%
Providing training and resources to suppliers to improve fruit yield and quality	2	10.5%	28.6%
Sourcing raw fruits from multiple suppliers to reduce dependency on a single source	5	26.3%	71.4%

Utilising cold storage facilities to extend the shelf life and availability of fruits, especially during off-seasons	5	26.3%	71.4%
Other steps taken	2	10.5%	28.6%
Total	**19**	**100.0%**	**271.4%**

7.6. Market access, export potential, and challenges

As indicated in **Figure 12**, about 75% of the interviewed fruit producers do not export their fruits, and only 25% sell their fruits in export markets.

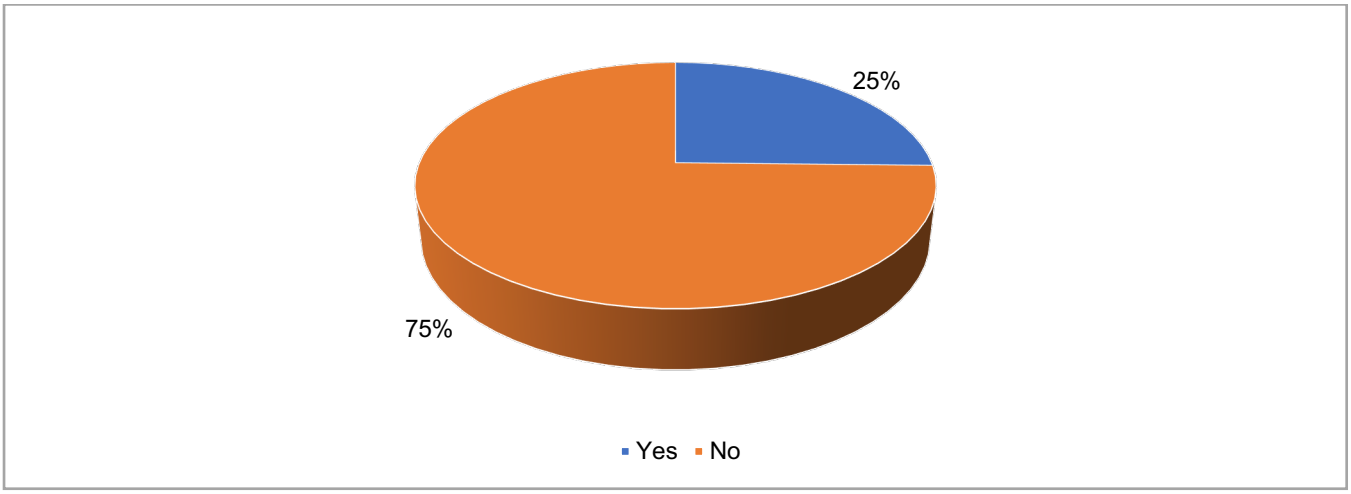


Figure 12: *Proportion of producers exporting fruits*

Most fruit producers who are exporting their fruits indicated challenges such as high shipping and freight costs (64.7%), lack of reliable transportation and logistics services (41.2%), and too many restrictive regulatory requirements in the target market (29.4%) as the most significant challenges experienced when exporting their fruits, as noted in **Table 20**.

Table 20: *Challenges experienced by fruit producers when exporting fruits*

Q: What challenges/ barriers do you experience accessing your export markets?			
	No. of responses	**Percent (%)**	**Percent of Cases (%)**
High export taxes or tariffs	1	2.3%	5.9%
Delays in customs clearance	2	4.7%	11.8%
High shipping or freight costs	11	25.6%	64.7%
Too many restrictive regulatory requirements in the target market	5	11.6%	29.4%
Difficulties in meeting the minimum required standards or certifications	2	4.7%	11.8%
Competition from local or international producers	2	4.7%	11.8%
Lack of reliable transportation and logistics services	7	16.3%	41.2%

Inadequate support or resources from trade agencies or the government	2	4.7%	11.8%
Lack of established distribution channels or partners in export markets	1	2.3%	5.9%
Challenges in maintaining product quality during transportation	4	9.3%	23.5%
Limited access to market information and consumer preferences in target countries	3	7.0%	17.6%
Other challenges/ barriers	3	7.0%	17.6%
Total	**43**	**100.0%**	**252.9%**

For processors, 50% indicated that they experience some challenges, whether in local and/ or export markets when selling their processed fruit-based products (**Figure 13**).

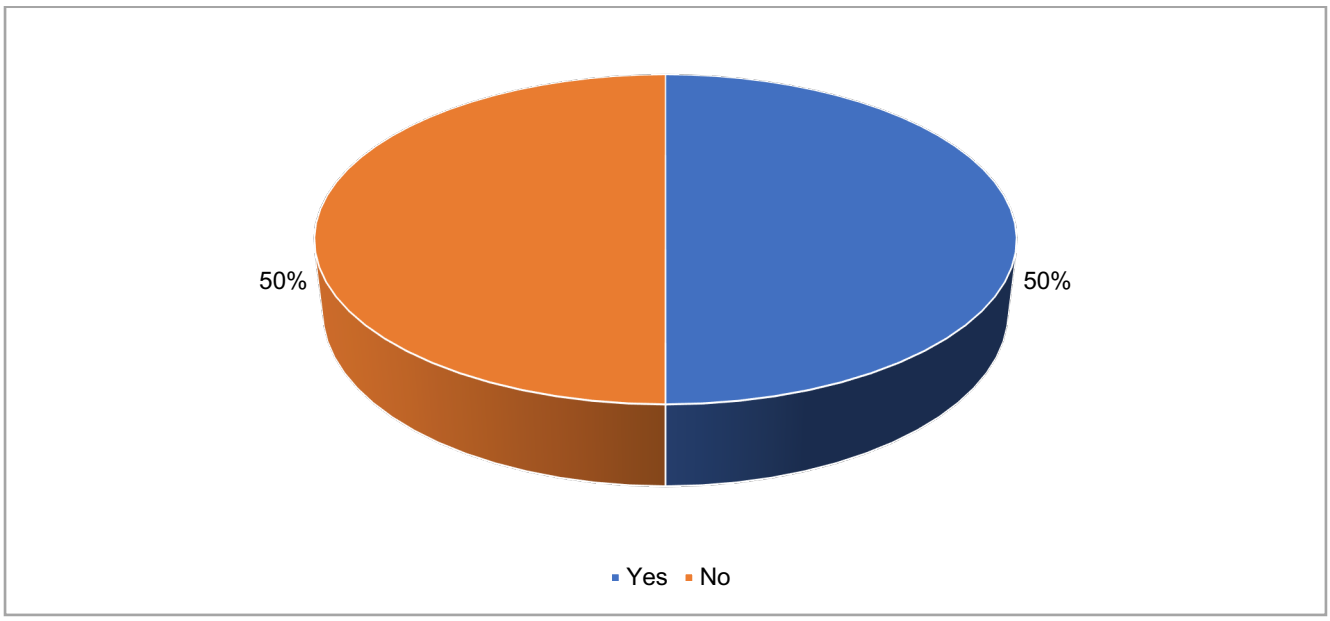


Figure 13: *Proportion of processors experiencing barriers to local or export markets*

According to **Table 21**,100% of the respondents (fruit processors) reported lack of consumer awareness or demand as the most experienced challenge in the local market, suggesting a low interest in locally processed fruits. Other challenges, such as high marketing and promotional costs to build product visibility, inadequate distribution networks, or insufficient infrastructure to reach broader local markets, were also highlighted as significant by 75% of the respondents. Additionally, 50% of respondents reported challenges due to high competition from cheaper imported processed products and consumers' low purchasing power, making it challenging to sell value-added products.

Table 21: *Challenges experienced by fruit processors – Local market*

Q: What challenges/ barriers do you experience accessing your markets – Local market			
	No. of responses	**Percent (%)**	**Percent of Cases (%)**
Lack of consumer awareness or demand for processed fruit products	4	23.5%	100.0%
High competition from cheaper imported processed products	2	11.8%	50.0%
Difficulty in meeting retailers' or distributors' requirements	1	5.9%	25.0%
Regulatory barriers, such as labelling, packaging, or food safety standards	1	5.9%	25.0%
High marketing and promotional costs to create product visibility	3	17.6%	75.0%
Limited access to retail or supermarket shelves for locally processed products	1	5.9%	25.0%
Inadequate distribution networks or infrastructure to reach broader local markets	3	17.6%	75.0%
The low purchasing power of consumers makes it difficult to sell value-added products	2	11.8%	50.0%
Total	**17**	**100.0%**	**425.0%**

As highlighted in **Table 22** below, 100% of the respondents (fruit processors) reported lack of knowledge about potential export markets or trade opportunities and tariffs or trade barriers imposed by target export countries as the most substantial challenges experienced in export markets when selling their processed fruit-based products. All other listed challenges are also notably significant, as they were reported by 50% of the respondents.

Table 22: *Challenges experienced by fruit processors – Export markets*

Q: What challenges/ barriers do you experience accessing your markets – Export market			
	No. of responses	**Percent (%)**	**Percent of Cases (%)**
High cost of complying with export regulations and documentation	1	12.5%	50.0%
Difficulty meeting international standards and certification requirements (e.g., organic, fair trade)	1	12.5%	50.0%
Lack of knowledge about potential export markets or trade opportunities	2	25.0%	100.0%
High logistics and shipping costs, particularly for refrigerated products	1	12.5%	50.0%
Tariffs or trade barriers imposed by target export countries	2	25.0%	100.0%

Challenges with establishing relationships with international distributors or buyers	1	12.5%	50.0%
Total	**8**	**100.0%**	**400.0%**

7.7. Investment needs and growth potential

Figure 14 illustrates producers' perceptions of the potential for expansion in local fruit production. A total of 97% of the producers interviewed in this study indicated a potential for expansion in fruit production, while only 3% did not.

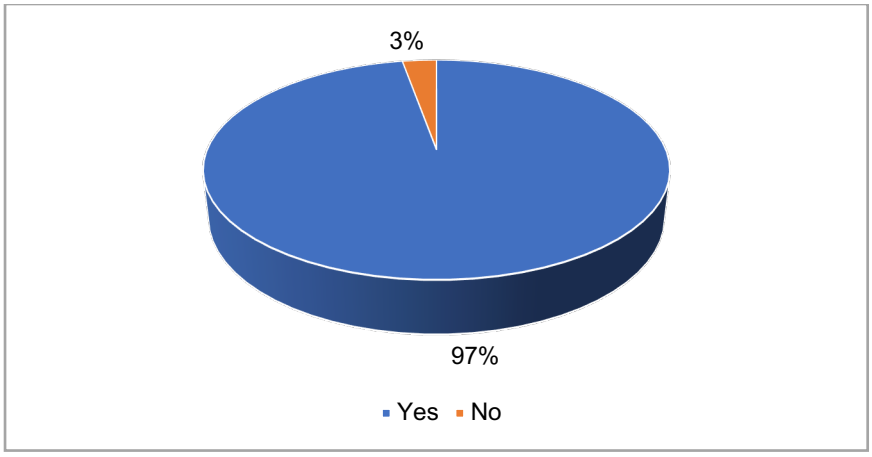


Figure 14: *Producers' perception of whether there is potential for expansion in local fruit production*

The reasons producers believe that there is potential for fruit production expansion in Namibia are presented in **Table 23**. The most frequent reasons include improved access to high-quality seeds or planting materials (58.2%), training and education on advanced farming practices, and access to reliable and affordable inputs (e.g., fertilisers, pesticides).

Other factors, such as access to affordable financing or loans for expansion, and government subsidies or incentives for fruit production, are also reported as important by 49.3% and 43.3% of the respondents, respectively.

Table 23: *Factors that would enable fruit production growth or expansion - Producers*

Q: What do you think would enable you to grow or expand your fruit production?			
	No. of responses	**Percent (%)**	**Percent of Cases (%)**
Improved access to high-quality seeds or planting materials	39	13.4%	58.2%
Access to affordable financing or loans for expansion	33	11.4%	49.3%
Availability of more land or expansion of existing farm area	20	6.9%	29.9%
Training and education on advanced farming practices	34	11.7%	50.7%
Government subsidies or incentives for fruit production	29	10.0%	43.3%
Access to reliable and affordable inputs (e.g., fertilisers, pesticides)	34	11.7%	50.7%
Enhanced market access or guaranteed buyers for produce	27	9.3%	40.3%
Collaboration or partnerships with other farmers or cooperatives	14	4.8%	20.9%
Improved infrastructure (e.g., roads, storage facilities)	16	5.5%	23.9%
Better irrigation systems or water management solutions	31	10.7%	46.3%
Other factors	13	4.5%	19.4%
Total	**290**	**100.0%**	**432.8%**

Figure 15 indicates that 87% of interviewed processors believe that there is potential to improve or invest more in fruit processing or value-addition activities in Namibia. They further stated reasons as to why they believe so, as presented in **Table 24**.

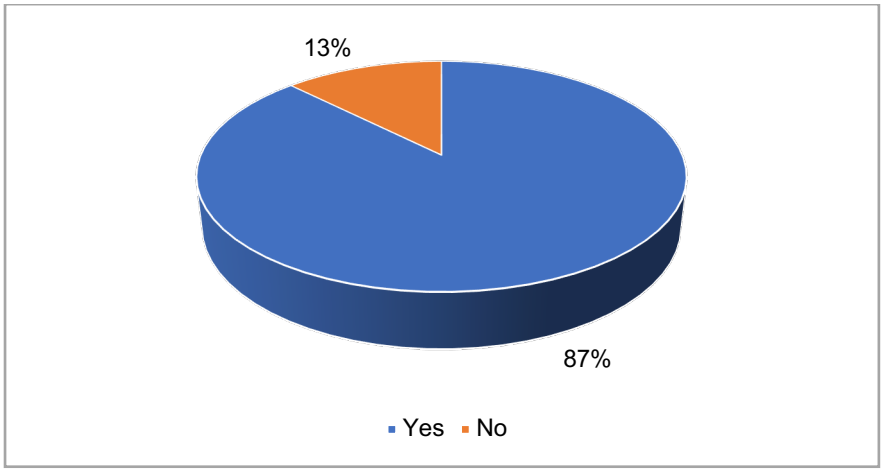


Figure 15: *Processors' perception of whether there is potential to improve or invest more in fruit value addition activities in Namibia*

As highlighted in **Table 24** below, 85.7% of the respondents believe that there is a growing demand for processed fruit products both locally and internationally, indicating a potential opportunity to improve or invest more in fruit processing. About 71.4% stated that there are high post-harvest losses of fruits; thus, there is an opportunity to reduce post-harvest losses of fruits, there is an increased opportunity for job creation and income generation through processing, and therefore also highlighting the growth potential. Others indicated that untapped export markets for value-added products are available (57.1%) and that Namibia has a favourable climate for producing high-quality fruits suitable for value addition (57.1%).

Table 24: *Reasons why there is potential to improve or invest more in fruit value addition activities – Processors' perspective*

Q: Why do you think there is potential to improve or invest more in fruit value addition activities in Namibia – Processors' perspective			
	No. of responses	**Percent (%)**	**Percent of Cases (%)**
There is a growing demand for processed fruit products both locally and internationally	6	20.0%	85.7%
There is an availability of untapped export markets for value-added products	4	13.3%	57.1%
Namibia has a favourable climate for producing high-quality fruits suitable for value addition	4	13.3%	57.1%
There are high post-harvest losses of fruits; thus, there is an opportunity to reduce post-harvest losses of fruits	5	16.7%	71.4%
Increased opportunities for job creation and income generation through processing	5	16.7%	71.4%
There are government incentives and support programs that can stimulate value addition	2	6.7%	28.6%
There is access to new technologies that can make fruit processing more efficient and profitable	3	10.0%	42.9%
Another reason why there is potential	1	3.3%	14.3%
Total	**30**	**100.0%**	**428.6%**

Table 25 below summarises the respondents' perceived high-potential fruit types for growth and export in Namibia. Mangoes (63.2%) and oranges (60.3%) were reported as the most favoured fruits with high growth potential in Namibia, and thus also export potential. These are followed by lemons, table grapes, and bananas, with 45.6%, 33.8%, and 30.9%, respectively, probably due to growing interest in citrus and banana production and the existing experience in grape production in the Southern region of Namibia.

Avocados (26.5%), blueberries (17.6%), and dates (20.6%) were also selected, therefore indicating a moderate potential. Other fruit types with potential for niche markets include pomegranates (14.7%), papayas (13.2%), strawberries, and apples (8.8% each).

Table 25: *Perceived high-potential fruit types for growth and export in Namibia*

Q: What type of fruits do you see as having the most potential for growth and export in Namibia?			
	No. of responses	**Percent (%)**	**Percent of Cases (%)**
Table grapes	23	8.7%	33.8%
Wine grapes	2	0.8%	2.9%
Apples	6	2.3%	8.8%
Oranges	41	15.6%	60.3%
Lemons	31	11.8%	45.6%
Mangoes	43	16.3%	63.2%
Avocados	18	6.8%	26.5%
Bananas	21	8.0%	30.9%
Papayas	9	3.4%	13.2%
Pineapples	2	0.8%	2.9%
Dates	14	5.3%	20.6%
Pomegranates	10	3.8%	14.7%
Strawberries	6	2.3%	8.8%
Blueberries	12	4.6%	17.6%
Olives	4	1.5%	5.9%
Figs	3	1.1%	4.4%
Other fruits	18	6.8%	26.5%
Total	**263**	**100.0%**	**386.8%**

Regarding investment or funding, only 34% of producers reported receiving any investment or funding to improve or expand their fruit production operations. A large proportion of 66% indicated that they did not receive any investment or funding (**Figure 16**).

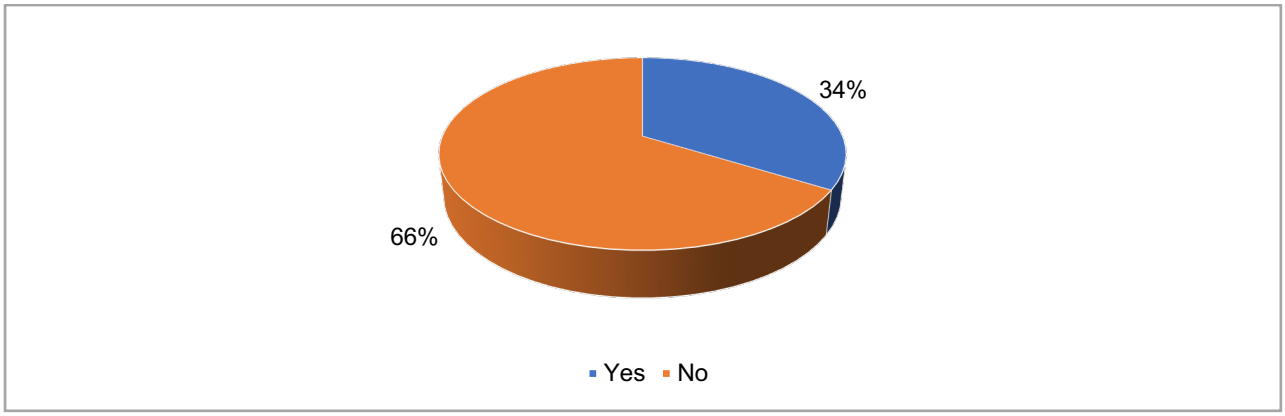


Figure 16: *Indication of whether the producer received any investment/ funding for their fruit production*

For those who received funding or investment, 32% indicated that they received their investment of funding from private investors, 32% from government grants and subsidies, 16% from banks and other financial institutions, 13% from government agencies, and the remaining 7% received funding from family members (**Figure 17**).

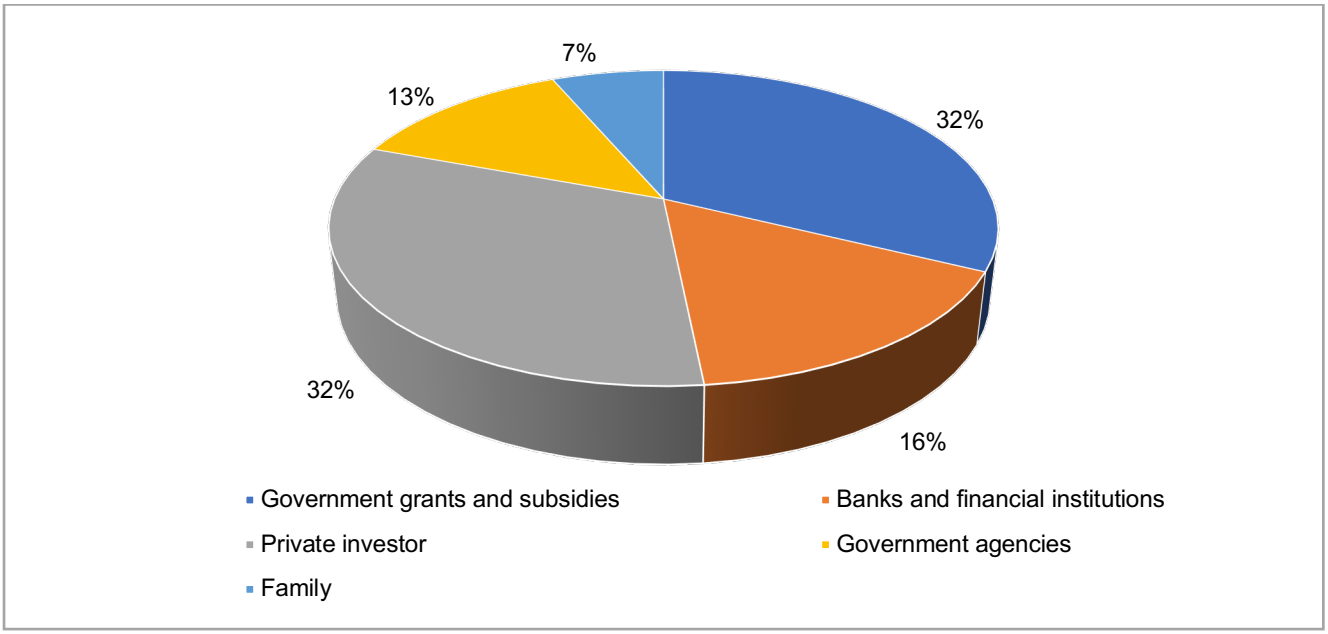


Figure 17: *Producer's source of investment or funding*

Table 26 shows the respondents' perceived challenges to secure investment or funding for fruit production in Namibia. At least 52.1% of the producer respondents indicated that high loan interest rates are the main challenge when trying to secure investment or funding for fruit production in Namibia. Other factors such as difficulty in securing loans due to lack of collateral (35.4%), high risk and uncertainty associated with fruit production (33.3%), inadequate knowledge on preparing business proposals, project plans and how to apply for investment opportunities (25.0%) and limited government or institutional support for agricultural investments were also stated as some of the most significant challenges experienced when sourcing investment or funding.

Table 26: *Perceived challenges to secure investment or funding for fruit production in Namibia*

Q: What are the main challenges you experience in accessing investment?			
	No. of responses	**Percent (%)**	**Percent of Cases (%)**
Difficulty in securing loans due to a lack of collateral	17	13.7%	35.4%
High interest rates on loans	25	20.2%	52.1%
Inadequate knowledge of preparing business proposals, project plans, and how to apply for investment opportunities	12	9.7%	25.0%
High risk and uncertainty associated with fruit production	16	12.9%	33.3%
Limited government or institutional support for agricultural investments	12	9.7%	25.0%
Inadequate understanding of available investment options or opportunities	10	8.1%	20.8%
Strict regulatory or documentation requirements for securing investment	4	3.2%	8.3%
Poor credit history or financial track record	5	4.0%	10.4%
Difficulty in meeting environmental or sustainability criteria set by investors	4	3.2%	8.3%
A complicated application process that delays investment	7	5.6%	14.6%
Other challenges	12	9.7%	25.0%
Total	**124**	**100.0%**	**258.3%**

7.8. Policy recommendations and strategies for improvement

This section presents a summary of policy recommendations and suggestions for improvement gathered from fruit producers and processors during data collection or surveys. The recommendations offer insight into how to unlock the full potential of the country's fruit sector through a holistic approach.

As highlighted in **Table 27** below, local fruit producers considered the implementation of subsidies or grants for agricultural inputs such as seeds, fertilisers, and equipment (as cited by 72.5% of producers) as a priority, indicating that most farmers are struggling with production costs. Following closely are recommendations to lower interest rates on agricultural loans and financing (55.1%) and to expand access to international markets through trade agreements or export support programmes, both of which are also important to consider first. Other significant recommendations cited include increasing government investment in infrastructure development (e.g., roads, storage facilities, electricity,

irrigation) (46.4%), establishing government-backed loan guarantee programmes for farmers (43.5%), and providing tax incentives or credits for investments in fruit production and value addition (39.1%).

Table 27: *Policy recommendations to improve the fruit sector in Namibia – Fruit producers' perspective*

Policy recommendations to improve the sector – Producer's perspective			
	No. of responses	**Percent (%)**	**Percent of Cases (%)**
Lowering interest rates on agricultural loans and financing	38	9.4%	55.1%
Implementing subsidies or grants for agricultural inputs (e.g., seeds, fertilisers, equipment)	50	12.3%	72.5%
Providing tax incentives or credits for investments in fruit production and value addition	27	6.7%	39.1%
Encouraging the development of agricultural cooperatives to pool resources and attract investment	19	4.7%	27.5%
Establishing government-backed loan guarantee programs for farmers	30	7.4%	43.5%
Supporting and establishing public-private partnerships to co-invest in fruit production and processing facilities	20	4.9%	29.0%
Increasing government investment in infrastructure development (e.g., roads, storage facilities, electricity, irrigation)	32	7.9%	46.4%
Reducing import duties on essential agricultural inputs and processing equipment	27	6.7%	39.1%
Streamlining regulatory approvals for agricultural and value addition projects	18	4.4%	26.1%
Facilitating land tenure reforms to provide clearer property rights and collateral for loans	12	3.0%	17.4%
Enhancing access to insurance products that protect against crop failure or market volatility	14	3.5%	20.3%
Simplifying and streamlining the loan application process for farmers	19	4.7%	27.5%
Expanding access to international markets through trade agreements or export support programmes	38	9.4%	55.1%
Expanding access to financial literacy and business management training for farmers	18	4.4%	26.1%
Supporting research and development in fruit production and processing techniques	28	6.9%	40.6%

Other policy changes	15	3.7%	21.7%
Total	**405**	**100.0%**	**587.0%**

In terms of priority interventions, fruit processors' perspectives are summarised in **Table 28** below. The frequently cited policy interventions to enhance Namibia's fruit value chain and agro-processing development are supporting and establishing public-private partnerships (PPPs) to co-invest in fruit processing facilities (75%), infrastructure development; i.e. roads, cold storage facilities, processing hubs etc. (62.5%) and training and capacity building; technical assistance and advisory services to processors, offer trainings to workers involved in fruit processing (62.5%).

Financial and market support in terms of tax incentives and financial support to processors i.e. tax breaks/credits, grants or subsidies, low interest loans, government-backed loan guarantee programs (50%) and market access and promotion; marketing and promotional campaigns to boost the visibility of Namibian processed fruit products, support participation in international trade shows and exhibitions to connect with potential foreign buyers (50%) were also cited as significant interventions to consider implementing as soon as possible.

Table 28: *Policy recommendations to improve the fruit sector in Namibia – Fruit processors' perspective*

Policy recommendations to improve the sector – Processor's perspective			
	No. of responses	**Percent (%)**	**Percent of Cases (%)**
Market Access and Promotion: marketing and promotional campaigns to boost the visibility of Namibian processed fruit products; support participation in international trade shows and exhibitions to connect with potential foreign buyers.	4	10.5%	50.0%
Tax incentives & financial support to processors, i.e., tax breaks/credits, grants or subsidies, low-interest loans, government-backed loan guarantee programs	4	10.5%	50.0%
Supporting and establishing public-private partnerships to co-invest in fruit processing facilities	6	15.8%	75.0%
Infrastructure development, i.e., roads, cold storage facilities, processing hubs, etc.	5	13.2%	62.5%
Streamlining regulatory approvals for setting up fruit processing operations	2	5.3%	25.0%
Facilitate access to international markets through trade agreements or export support programmes, acquiring international certifications, and global standards compliance	4	10.5%	50.0%
Training and capacity building; technical assistance and advisory services to processors, offering training to workers involved in fruit processing	5	13.2%	62.5%

Supporting research and development in fruit processing techniques and encouraging collaborations with research institutions	4	10.5%	50.0%
Other policy changes	4	10.5%	50.0%
Total	**38**	**100.0%**	**475.0%**

8. CONCLUSION

This research study provides a comprehensive assessment of the potential and challenges of fruit production and value addition in Namibia, with industry perspectives collected from both fruit producers and processors across all production zones. The key findings indicate that small-scale producers dominate the fruit production industry in Namibia (cultivating on <1 ha), while large-scale producers (cultivating on >15 ha) have significant experience. The study also revealed that tropical and citrus fruits such as mangoes, table grapes, oranges, and lemons are the most cultivated fruits in Namibia, with mangoes also leading in processing activities (dried mango, juice), therefore suggesting potential for expansion in such fruits.

Value addition in Namibia, unfortunately, remains underdeveloped, as the study revealed that 49% of producers are not engaged in any fruit processing, primarily due to a lack of finance, limited expertise, and market challenges. From the few processors interviewed, very few are involved in producing juices, dried fruits, oils, and jams; however, on a tiny scale. Despite the several challenges such as lack of finance, lack of infrastructure and high input costs, both stakeholder groups (producers – 97% and processors – 87%) remain optimistic on the potential of the sector to expand and improve, as they believe there is a growing demand for fruits (either raw or processed products), and there is high post-harvest losses. There are more untapped export markets that can be tapped.

Notwithstanding the challenges faced by both stakeholders, scaling up local fruit production and expanding the fruit processing industry could create more jobs, reduce post-harvest losses, and increase exports. These milestones will, however, only be reached if issues such as policy gaps, financial barriers, insufficient infrastructure, and limited markets are sufficiently addressed through a coordinated approach.

9. RECOMMENDATIONS

Namibia's fruit industry has the potential to improve, unlock its full potential, and reduce dependency on fruit and fruit products' imports. This potential can also improve rural economic development, especially among small-scale producers, create more jobs, improve food security, and position Namibia in regional and global fruit and agro-processing markets. Based on the findings of this study, as presented in this

report, the following goals and recommendations are highlighted as priorities to help Namibia improve the sector through coordinated efforts among government ministries and their OMAs.

a) **Improved access to finance and investment support.** This involves lowering interest rates on agricultural and agro-processing loans, structuring and providing targeted grants, subsidies, or government-backed loan guarantees to both fruit producers and processors to reduce the financial burden and encourage absorption of such facilities. It is also necessary that the targeted beneficiaries of these financial supports are provided with financial literacy and are sufficiently capacitated to access these funding opportunities.
b) **Improved infrastructure and logistics.** Most producers (46.4%) and processors (62.5%) prioritised the development of roads, cold storage facilities, and processing hubs as interventions much needed to improve the sector. Improved rural transport networks and logistics services will help reduce transportation costs and facilitate market access, e.g. fruit producers in the South and Orange river production zones called on the infrastructure development of the Lüderitz port (reduced costs as it is closer), to reduce the costs of transporting the products through Cape town – South Africa, of which sometimes shipments are delayed due to bad weather.
c) **Capacity building and market enhancement.** Providing training on processing techniques and regulatory requirements (e.g., certifications) will enhance industry performance. Training should also expand across the entire fruit value chain, including cultivation, processing, packaging, branding, and marketing. There is also a need to sensitise the local consumers about locally processed fruit products to boost local demand. Participation in international trade fairs, negotiation of trade agreements, and streamlining export procedures with other countries will help Namibia acquire international markets for its fruit products.
d) **Support research and innovation.** Some fruits, such as mangoes, oranges, table grapes, lemons, blueberries, dates, and avocados, have a high potential to perform well in Namibia with adequate support. Therefore, research on high-yielding, drought-resistant varieties, climate-smart irrigation techniques, and efficient processing methods is strongly encouraged for Government offices, academic institutions, farmers, and other interested stakeholders.
e) **Policy and institutional reforms.** There is a need to simplify processes, such as exporting finished products and importing the much-needed agricultural inputs that are often not available in Namibia (phytosanitary issues). Some stakeholders indicated the lack of land ownership as a barrier to accessing funds. There is, therefore, a need to implement land tenure reforms, especially in rural areas, to improve access to collateral. A national food and fruit safety bill would also greatly support quality assurance for fruits and fruit products produced in Namibia, as well as provide confidence in export standards.

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