Contact Details:
Tel. office: +264 61 379 500
Fax office: +264 61 22 5371
E-mail: nabdesk@nab.com.na
Website: www.nab.com.na

Physical address:
Agricultural Boards' Building
30 David Hosea Meroro Road
Windhoek
Namibia

Postal address:
P.O. Box 5096
Ausspannplatz
Windhoek
Namibia

NAMIBIAN AGRONOMIC BOARD

Constituted by Act 20 of 1992

A world-class regulator of a vibrant, diversified and sustainable crop industry

# AGRONOMY AND HORTICULTURE MARKET DEVELOPMENT DIVISION

## RESEARCH AND POLICY DEVELOPMENT SUBDIVISION

### RESEARCH REPORT

# BASELINE STUDY ON THE PRODUCTION OF WHEAT BY SMALLHOLDER PRODUCERS IN THE KUNENE AND ERONGO REGIONS

**2023**

NAMIBIAN AGRONOMIC BOARD

## ~ CONTENTS ~

## EXECUTIVE SUMMARY

This study assessed wheat crop production and marketing activities by defining the production area and quantifying the current status quo of wheat crop production, storage, value addition, and marketing in the Kunene and Erongo Regions, as well as identifying wheat value chain actors and their respective functions.

The quantitative research questionnaire survey method coupled with qualitative questionnaires was used to collect data from wheat producers and traders. A total of 40 respondents comprising of producers (39) and traders (1) participated in this study. The wheat study comprehensively covered five (5) wheat production areas, namely: Fransfontein, Sesfontein, and Okombako in the Kunene Region and Otjimbingwe and Okombahe in the Erongo Region. Collected data were analysed through the descriptive statistical analysis method using Microsoft Excel and the value chain mapping model was applied to present the overall results of the study.

The study revealed that there is a prospect of wheat production in the Kunene and Erongo Regions. However, several challenges which include low production volumes, less area under wheat cultivation, lack of improved varieties, lack of value addition, and poor market accessibility were recorded. Study results also established that the current existing wheat value chain in the Kunene and Erongo Regions is incomplete as some critical value chain components and relationship linkages among chain actors are missing. Despite the high potential of wheat production in these areas, the lack of modern value-addition components promotes the high importation of wheat finished and value-added products into these regions.

With an average annual wheat consumption of 120,828 tons/annum in Namibia, over 94%, equivalent to 111,804 tons/annum of wheat comes from imports (NAB, 2021). The study results further provide wheat production and marketing baseline information and untapped opportunities, thus enlightening potential investors and policymakers to consider stimulating wheat production in the Kunene and Erongo Regions for socio-economic development as a result of reductions in national wheat importation. Thus, recommendations on the stimulation of wheat production and marketing are also provided in this report.

**Keywords:** Food security, wheat, production, marketing, smallholder, Kunene, Erongo

# 1. INTRODUCTION

## 1.1. Background

Wheat (*Triticum aestivum*) is one of the oldest and most important cereal crops. It is among the leading cereal grain crops produced, consumed, and traded in the world, together with maize, barley and pearl millet. Wheat, therefore, is one of the products that incredibly supply food to the world population. Wheat is a winter crop that is only produced under irrigation in Namibia. It is popularly eaten either as bread or pasta in both urban and rural setups. Considering its wide consumption, wheat production enhances livelihoods and food security at both national and household levels (Bushuk & Rasper, 1994). However, with the impact of COVID-19 and then the Russia-Ukraine conflict, global wheat production and supply have been negatively affected. Thus, the Namibian Agronomic Board (NAB) undertook a fact-finding mission through an exploratory study between the 05$^{th}$ and 15$^{th}$ of October 2019 to explore the sustainability and efficient production of wheat crop farming in the Erongo and Kunene regions. The areas visited were Otjimbingwe, Omaruru, Okombahe, Uis, Fransfontein, Warmquelle, Sesfontein, Okombako and Oruvandjei-South. During the mission, the NAB engaged with smallholder wheat producers and extension officials of the Ministry of Agriculture, Water and Land Reform (MAWLR).

The mission established that before independence, indigenous communities who lived along the Swakop and Omaruru rivers as well as in the Kunene region, traditionally cultivated and relied on wheat as a staple food crop. After independence, these communities gradually shifted or dropped the cultivation of wheat, whereby there has been an increase in maize cultivation over wheat. This might be attributed to various factors such as the availability of maize seeds on the local retail market, the low-level transfer of knowledge on wheat cultivation from elderly people to the young generation, and the lack of wheat post-harvest processing equipment.

Furthermore, the NAB noted that the shift in cultivation from wheat to maize has not been bearing good results lately due to the persistence of drought during the past cropping seasons in those specific areas. Maize yields have been declining, thereby making maize cultivation unreliable for the recent past cropping seasons. This is due to the dry climate, high temperatures and low summer rainfall received in these regions. The NAB further noted that although there are limited wheat cultivation practices confined to small-scale in these areas, wheat performance continues to thrive well. This might be because wheat is cultivated during the winter season under irrigation using perennial spring water, whereby, dryness and low rainfall do not have an impact on wheat production.

As part of the research initiative, a stakeholders meeting was held in Otjiwarongo on 12 December 2019 between smallholder wheat producers from Kunene and Erongo regions and the regional officials from

the MAWLR and the NAB. The meeting presented to wheat producers the outcomes of the fact-finding mission as well as the established way forward regarding the revival of the small-scale traditional wheat cultivation practices in the Kunene and Erongo regions.

The producers attested to the information collected by the NAB during the fact-finding mission and in addition, they strongly indicated their willingness to revive wheat production in their regions. Producers also highlighted their challenges, some of which had contributed to the decline in wheat production practices in the two regions. The producers proposed that the initiative should also consider other areas which produce wheat such as Tsumamas, Anigab, Kuvwareb, Otjindaqui, Okaruze, Tsabis, Annawoud, Okatabi, and the entire Sesfontein constituency.

It is against these findings that the NAB seeks to assist the producers in the two regions in reviving the cultivation of wheat. Worth noting is the fact that maize and wheat can be cultivated in different seasons and, therefore, producers do not have to forgo maize for the cultivation of wheat.

The following were also noted during the fact-finding mission:

- Wheat is produced in different mediums such as riverbeds, backyard gardens, and demarcated community gardens;
- Infrastructure for wheat production varies in different areas, for example, some areas have access to water and modern infrastructure while some areas do not;
- There is no modern milling equipment and communities use the traditional method of grinding the grains against stones;
- Production levels differ from place to place, with Sesfontein being the largest wheat-producing area supplying and selling wheat seeds to other producers from various places; and
- Some areas have established wheat producer committees or associations while others do not.

Table 1 hereunder shows the annual average local production, local consumption, and importation of wheat in Namibia from 2015 to 2021. Table 1 illustrates that there has been a decline in overall local wheat production during the 2015 – 2019 period, recording an average production of 9,024 tons/annum. However, there has been a high demand for wheat in the Namibian market with an average annual consumption of about 120,828 tons/annum. However, a slight increase in wheat production, importation, and consumption was displayed between 2019 and 2021. Table 1 further shows that there has been a very high reliance on the importation of wheat, averaging 111,804 tons/annum, with no records of wheat exports (NAB, 2021).

*Table 1: Wheat production, consumption, importation and exportation – Average annual tonnage from 2015 - 2019*

| Quantity in tonnage | Years | | | | | | | Average |
|---|---|---|---|---|---|---|---|---|
| | 2014/15 | 2015/16 | 2016/17 | 2017/18 | 2018/19 | 2019/20 | 2020/21 | |
| *Local production marketed* | 11,600 | 11,411 | 9,822 | 6,863 | 7,508 | 4,466 | 11,498 | ***9,024*** |
| *Local consumption* | 114,635 | 106,601 | 131,083 | 111,107 | 126,206 | 118,829 | 137,336 | ***120,828*** |
| *Import* | 103,035 | 95,190 | 121,261 | 104,244 | 118,698 | 114,363 | 125,838 | ***111,804*** |
| *Export* | - | - | - | - | - | - | - | **-** |

Source: NAB (2021)

## 1.2. Problem Statement

Wheat in the Kunene and Erongo regions is a staple food and a traditionally prized crop that has been cultivated far back before Namibia's independence (on the 21st of March 1990). The production of wheat is currently at a small-scale level and this is mainly for household consumption. Despite the drought and low rainfall impact that has negatively affected the production of other grain crops such as maize and mahangu in these regions, wheat continues to thrive as it is a winter crop. Unlike maize and mahangu, wheat does not rely on summer rainfall, thus it is cultivated using the perennial spring-water irrigation cropping method where wheat endures the prevailing harsh weather pattern in these regions, of which other crops hardly yield optimally under these conditions.

There are several limitations to wheat crop production in the Kunene and Erongo Regions. Wheat is currently narrowed to small-scale production mainly for household use, which might be due to a lack of market opportunities, value addition, and technological wheat processing machines. Therefore, it can be perceived that wheat cultivation in the Kunene and Erongo regions can be viable but it requires sustainable interventions with a business model approach for better improvements.

Thus, this study aimed to create baseline information on wheat producers, processors, and traders and the current status quo of wheat crop production, storage, value addition, and marketing in the Kunene and Erongo Regions of Namibia. The study further assessed how wheat commercialisation can be stimulated. The study also examined crucial production constraints and identified opportunities for improving wheat production, storage, value addition, and marketing. The study suggests recommendations on what should be done to stimulate the growth of the wheat crop industry in these two regions.

## 1.3. Objectives of the Study

1. To quantify the current status quo for wheat crop production, storage, value addition, and marketing in the Kunene and Erongo Regions of Namibia.
2. To examine and understand important production constraints and identify opportunities for improving wheat production, storage, value addition, and marketing.
3. To suggest recommendations on what should be done to stimulate the growth of the wheat crop industry in the Kunene and Erongo Regions.

## 1.4. Significance of the Study

Reviving market-led wheat crop production might be of massive benefit not only to the Kunene and Erongo residents but also to national food security, with a particular focus on smallholder farmers. The results provide a wide understanding of wheat production constraints and opportunities for wheat marketing in Kunene and Erongo Regions, and the promotion of entrepreneurship that can attract more small-scale producers to venture into wheat production, and promote both local production and formal market participation by local producers, processors, and traders, and thus reduce reliance on wheat importation. As such, the practice will contribute to the improvement of livelihoods and uplift the living standards of the Namibian people in general.

The practical recommendations on how best wheat production, storage, processing, and marketing in these two regions may be stimulated can be useful to stakeholders in the crop sector at both regional and national levels. Further recommendations on this study could also aid policy interventions that can facilitate the increment of local wheat production.

The study, therefore, establishes or identifies wheat value chain actors (producers, processors, and traders), and estimates volumes and values while explaining the prevailing bottlenecks and opportunities as perceived by these key value chain actors. Moreover, this study can bring about wheat value chain competitiveness in both regional and national markets.

## 2. METHODOLOGY

A stakeholder consultation approach was used for this study. The quantitative research questionnaire survey method coupled with qualitative questionnaires were administered to the producers, processors, and traders. All relevant stakeholders and lead individuals were engaged through consultations and involvement meetings for broader in-depth interviews and observations.

### 2.1. Sample size

The following principal wheat-producing sites were earmarked and selected purposely for this study, namely, Otjimbingwe, Okombahe, Fransfontein, Sesfontein and Okombako. The sample population size consisted of a total of 40 respondents comprising 39 producers and 1 trader.

Furthermore, the identification and consequently registration of all wheat producers and related production data shall be established for accurate baseline information for necessary future reference use in the Kunene and Erongo Regions.

*Table 2: Target sample population size as per each production site*

| Region | Production site | Targeted/sampled respondents | | | Total |
|---|---|---|---|---|---|
| | | Producers | Traders | Input suppliers | |
| **Erongo** | Otjimbingwe | 14 | 0 | 0 | 14 |
| | Okombahe | 4 | 0 | 0 | 4 |
| **Kunene** | Fransfontein | 9 | 0 | 0 | 9 |
| | Sesfontein | 5 | 1 | 0 | 6 |
| | Okombako | 7 | 0 | 0 | 7 |
| **Total number of respondents** | | **39** | **1** | **0** | **40** |

### 2.2. Study area

The study covered 2 wheat-growing regions (Kunene and Erongo Regions) in Namibia, focusing on the above-mentioned production sites. Figure 1 above shows the selected small-holder wheat-producing areas (Fransfontein, Sesfontein, Okombako, Otjimbingwe and Okombahe) in their respective regions (Kunene and Erongo Regions). The study area covered Central and North Central Agronomy Production Zones.

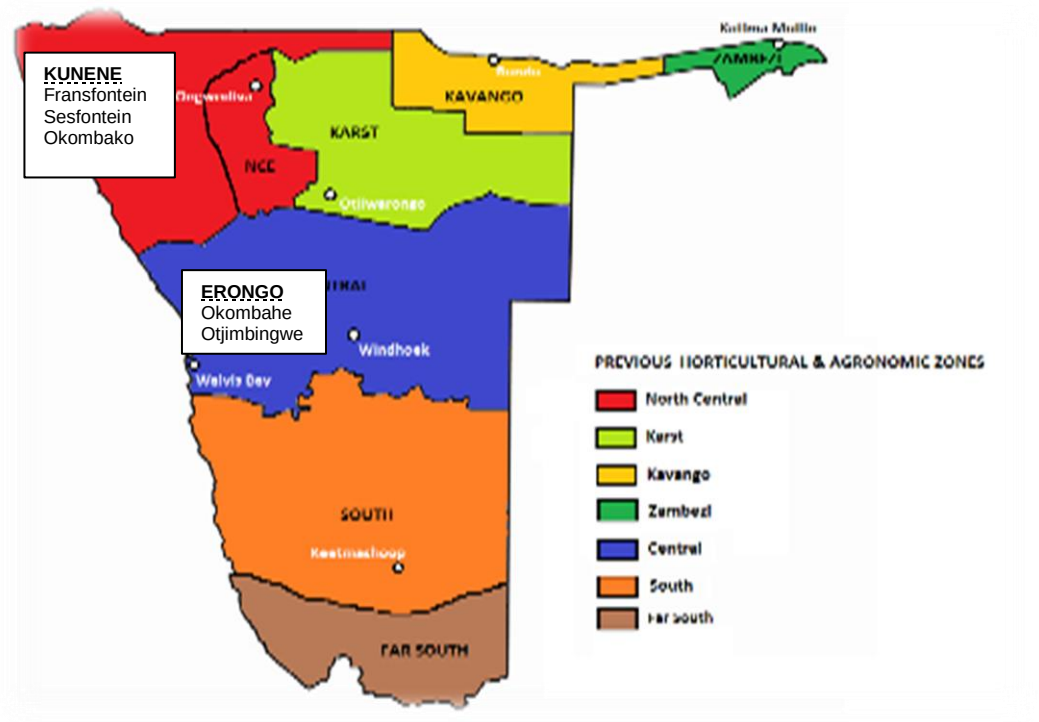


*Figure 1: Namibian map showing study area - Kunene and Erongo Regions (Source: Maps of the World, 2015)*

## 2.3. Data collection and analysis

An individual questionnaire survey was used for data collection from producers, processors, traders, and other value chain actors for wheat commercialisation prospect analysis. A descriptive analysis method was employed in this study to provide a summary in the form of tables and figures to enable comparisons across units of variables.

The descriptive analysis was done using Microsoft Excel Software, and tables and figures are interpreted accordingly. Data was further collected through consultations with local extension officers on wheat production activities in Kunene and Erongo Regions, covering all stages of the wheat value chain starting from production until marketing. Literature sourcing was used to substantiate primary data.

## 3. RESULTS AND DISCUSSION

This section presents the findings of the research study with narrative discussions of their implications on the wheat supply chain (production and marketing) in the Kunene and Erongo Regions.

### 3.1. Demographic

Wheat production in the Kunene and Erongo Regions is largely done by women and the elderly age groups. The results show that 56% of wheat producers are female (see Figure 2 below). As per the present study results, the majority of wheat producers in the Kunene and Erongo Regions are above 60 years of age which accounts for 36% and 20% of producers are aged between 50 and 59 years, while the youth under the age of 30 represent 8% only (Figure 2).

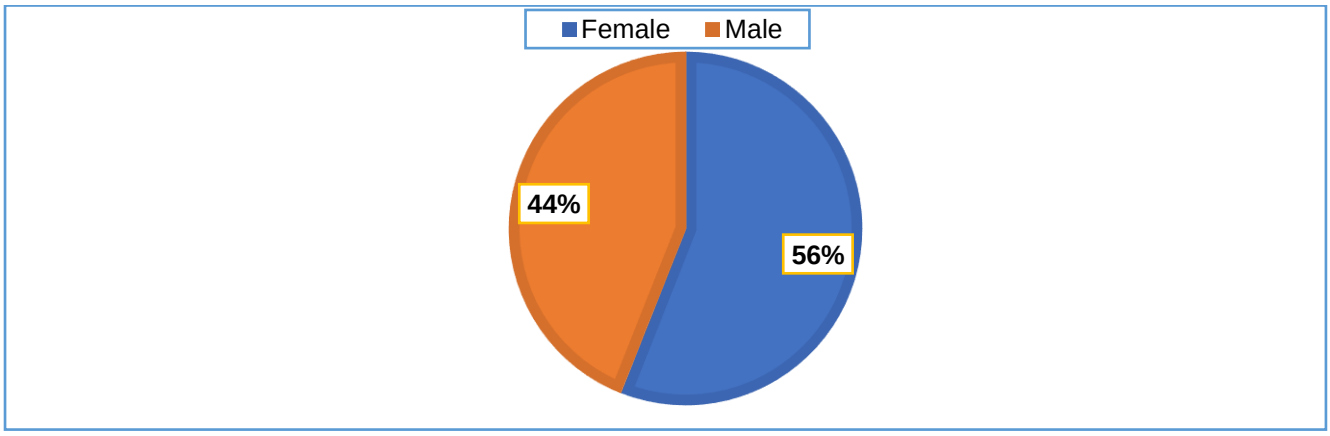


*Figure 2: Wheat producers' gender representation*

Figure 3 below shows that very few youths participate in wheat production. There is a huge gap in the transfer of wheat production and cultivation activities from the elderly group to the youth or the next generation.

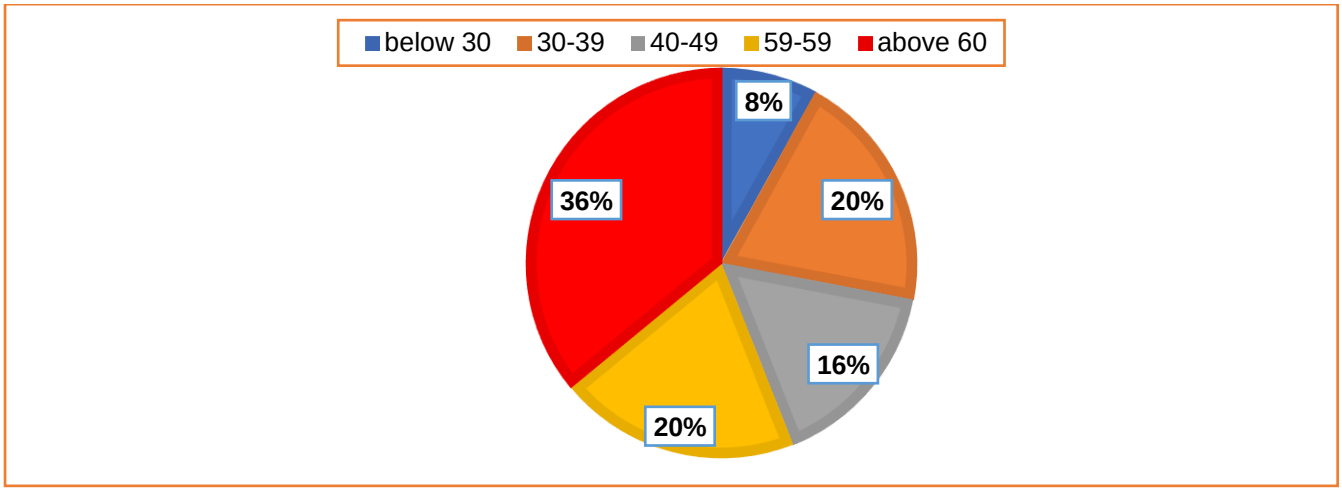


*Figure 3: Wheat producers' age distribution*

Evidence reveals that there is a declining involvement of youth in agriculture, which might pose some negative implications on food security, promote unemployment, and slow the government's efforts to stimulate socio-economic growth through agriculture in rural areas (Maina & Maina, 2012).

## 3.2. Wheat production and output in the Kunene and Erongo Regions

An effective wheat production system is a vital tool for both rural and national socioeconomic development and food security in a country (Musara et al., 2019). Thus, this section focuses on the status quo of wheat production practices and the supply chain of wheat in the Kunene and Erongo Regions.

### *3.2.1. Land under wheat cultivation in the Kunene and Erongo Regions*

As per the study results as shown in figure 4 below, the total land size under crop cultivation differs from farmer to farmer and region to region. However, most farmers on average devote land sizes of up to 2.8 ha per producer. Otjimbingwe in Erongo Region recorded the largest average cropland of 5.7 ha per producer and Sesfontein in Kunene Region recorded the lowest average area of 1.1 ha per producer.

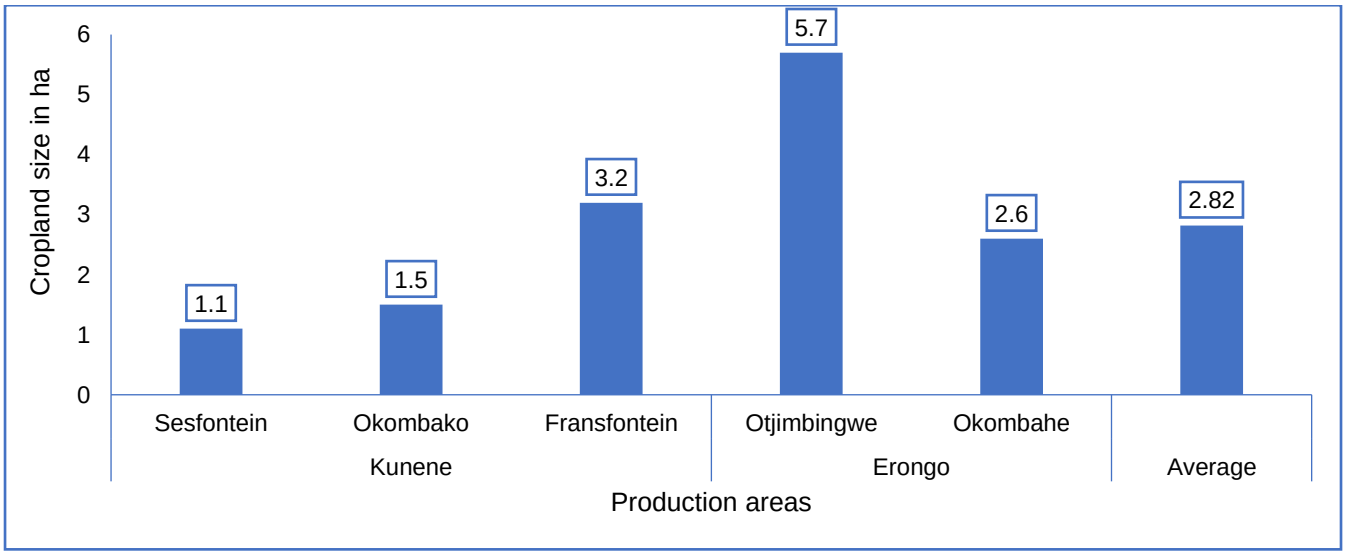


*Figure 4: Total average cropland size (ha) per producer in each production area*

Figure 5 shows the average area size (ha) allocated for wheat cultivation per farmer in each production area. On average, local producers in the Kunene and Erongo Regions allocate 1.2 ha for wheat cultivation.

Figure 5 below depicts that on average, producers in Erongo Region production areas (Otjimbingwe and Okombahe) allocate more area for wheat cultivation at 2.2. ha and 1.5 ha per farmer respectively, while in Kunene Region, Sesfontein, Okombako, and Fransfontein allocate 0.9 ha, 0.6 ha, and 0.9 ha per producer for wheat cultivation respectively.

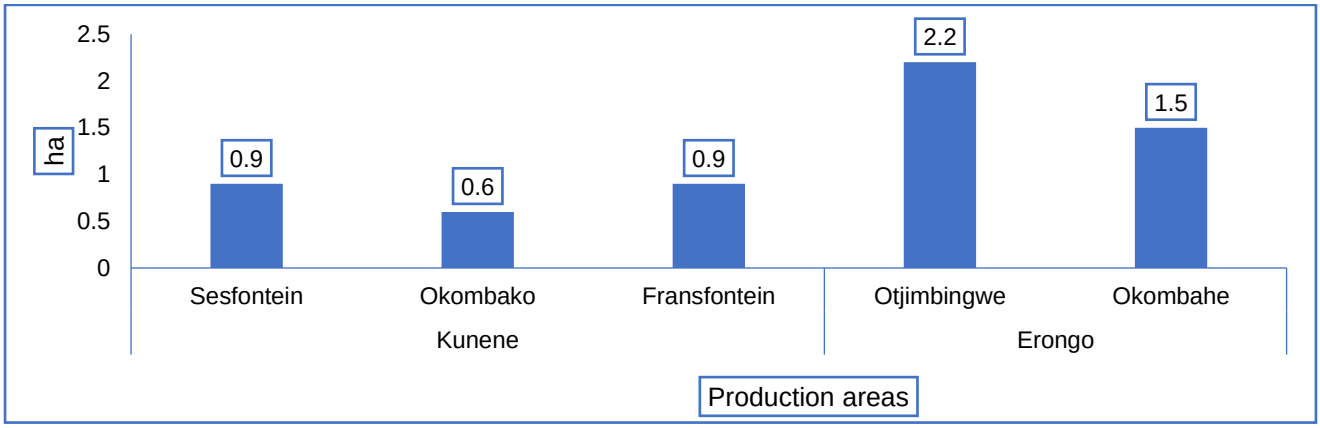


*Figure 5: Average area size (ha) allocated for wheat cultivation by producer in each production area*

According to Kimhi (2006), market imperfection and inaccessibility are attributable to the declining area under crop cultivation. This could be the same scenario with wheat cultivation in the Kunene and Erongo Regions. The absence of a well-established wheat market that is accessible by local wheat producers might be negatively attributed to small land size allocation for wheat cultivation in the Kunene and Erongo Regions. Therefore, comprehensive interventions and policies are needed to effectively revive wheat production and promote its consumption through market facilitation and other related support mechanisms.

### *3.2.2. Seed production and supply systems*

Figure 6 shows that the majority of farmers (over 64%) in the Kunene and Erongo Regions use traditional landrace seeds retained from the previous harvest, and only a few wheat farmers (36%) source seeds from the Ministry of Agriculture, Water and Land Reform and the informal village market. Very few local wheat producers use improved commercial varieties such as SST 884 sourced from local retailers such as Agra and Kaap-Agri.

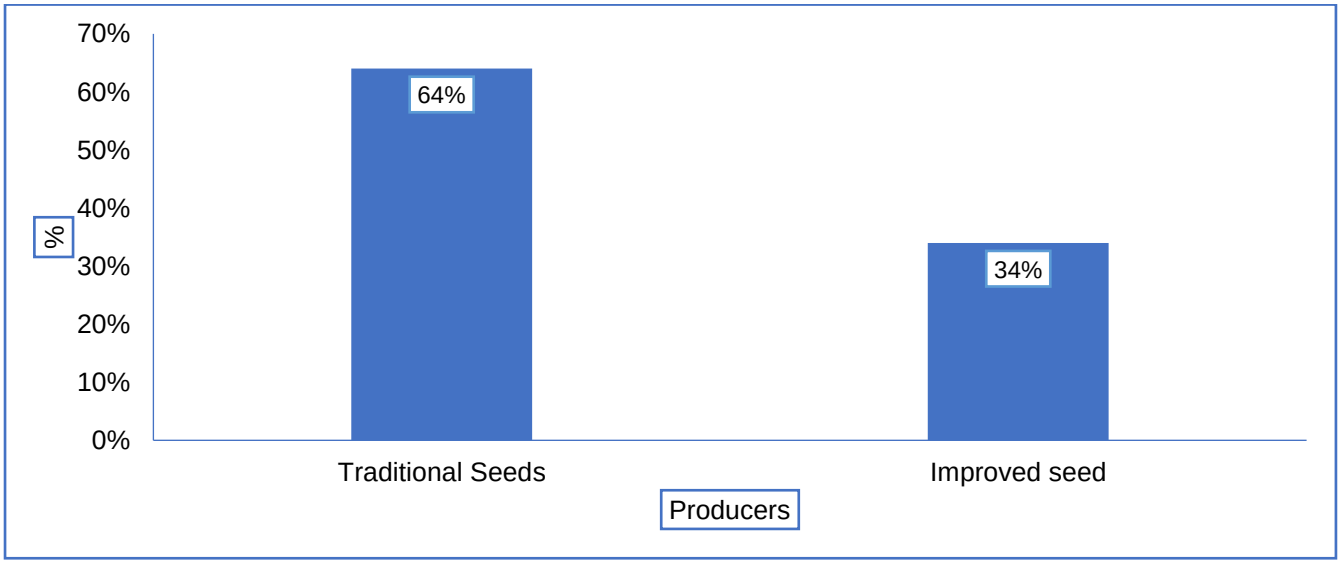

*Figure 6: Farmers' proportion on the utilisation of certified seeds versus traditional seeds*

Currently, there is no seed production and supply system in operation in Kunene and Erongo Regions as farmers mainly use their reserved traditional seeds for production, and there is no seed certification process. Hamukwala et al. (2010) argue that significant productivity enhancements are impeded by low access to improved technologies such as high-yielding seed varieties. Traditional local wheat varieties might have low yield productivity in comparison to improved varieties (Hamukwala et al., 2010).

Therefore, the planting of high-yielding improved and certified seed varieties might have a valuable contribution to wheat production in the Kunene and Erongo Regions. Therefore, an effective and efficient seed production and supply system could enhance wheat production and productivity in the Kunene and Erongo Regions.

#### *3.2.2.1. Seed source, varieties, and prices*

Although some wheat producers select and reserve seeds from the main harvest and sell them to other fellow farmers during the planting season, these could be grains that are sold as seeds. The price of seeds in the Kunene and Erongo Regions varies from area to area ranging from N$10 to N$50 per kilogram, and averaging at N$30 per kilogram. According to the respondents, producers within Sesfontein areas are the major wheat seed suppliers.

Local landraces (traditional local varieties) are the most commonly planted wheat varieties by local wheat producers at an average seeding rate of 15kg/ha. Local producers' seeding quantities differ from place to place, of which some use 5-10kg/ha while others use more seeds of up to 15-25kg/ha. Seeds are mainly acquired from informal vendors (especially in Sesfontein) or among farmers themselves as well as at local shops and from the Ministry of Agriculture, Water and Land Reform (MAWLR).

### *3.2.3. Wheat production in Erongo and Kunene Regions*

#### *3.2.3.1. Production practices*

Wheat in the Kunene and Erongo Regions is cultivated during the winter season and this is currently limited to household use only. Cultivation is done under irrigation using perennial spring/aquifer water. Flood irrigation is the most commonly practised irrigation type, whereas some farmers use riverbed moisture for irrigation. Organic fertilizer is the main type of fertilizer applied by all wheat producers in the Kunene and Erongo Regions.

#### *3.2.3.2. Cost of production*

Wheat production cost among farmers in these areas ranges from N$1,400/ha to N$8,000/ha, averaging at N$4,373/ha (mainly costs of seeds, fertilizer, labour and irrigation water pumping). The figure below

shows the average production cost per ha at each production area. Figure 8 below shows that Sesfontein reported the highest production cost of N$5380/ha followed by Okombako with N$5,103/ha, while Okombahe recorded the lowest production cost of N$3,750. The cost estimates established in this study were by respondents, of which the majority of producers attested that wheat production is very expensive.

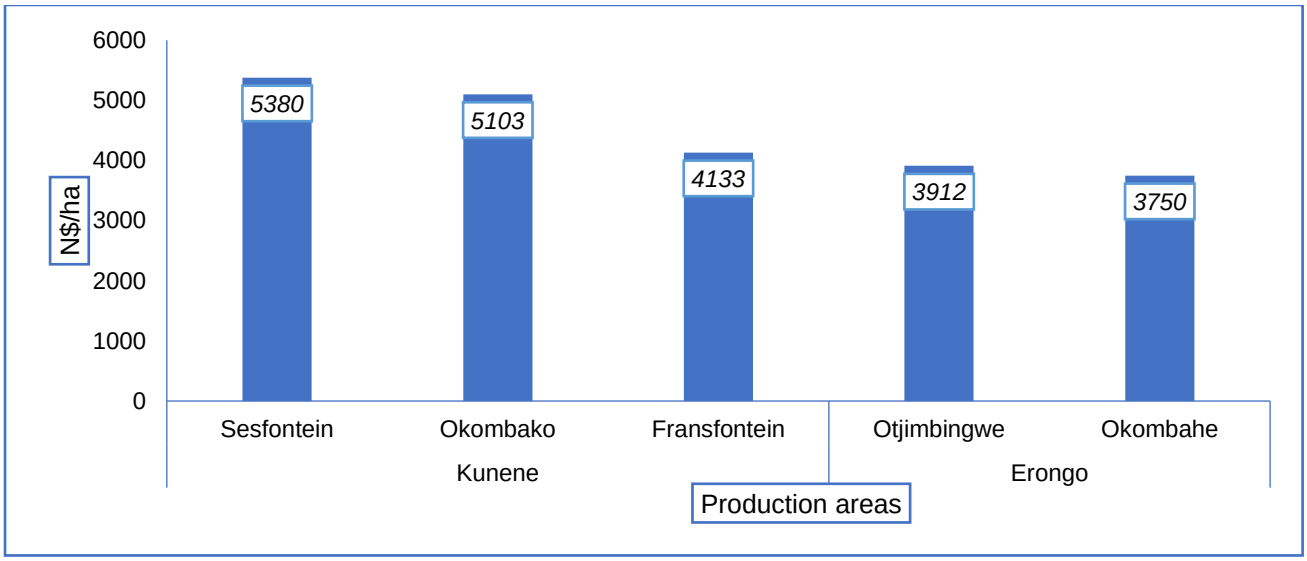


*Figure 7: Wheat average production costs per ha as per production area*

#### *3.2.3.3. Productivity*

As per results illustrated in Figure 8, wheat productivity in these production areas is very low, estimated approximately at 342 kilograms per ha on average. This could be attributed to the reliance on landraces (traditional local varieties), low-yielding native varieties and lack of production technical training. Figure 8 shows that Fransfontein has the highest yield productivity of 600kg/ha followed by Okombahe with 350kg/ha, while Okombako recorded the lowest yield of 242kg/ha.

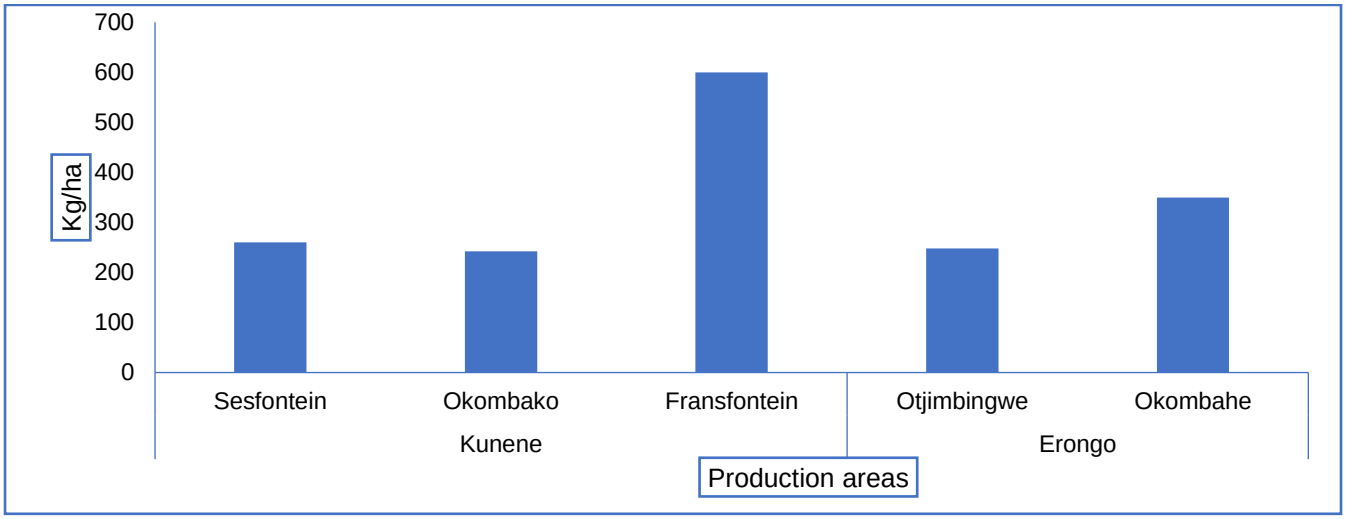


*Figure 8: Wheat average production yield per ha (kg) as per production area*

#### 3.2.3.4. *Production output*

On average, farmers obtain a total harvest of 451 kg per farmer per season. Figure 9 below shows the total average wheat production per season per producer in each production area. Otjimbingwe recorded the highest volume of 752 kg per season, followed by Fransfontein with 527 kg per season per producer, while Okombako recorded the lowest production of 242 kg per season per producer.

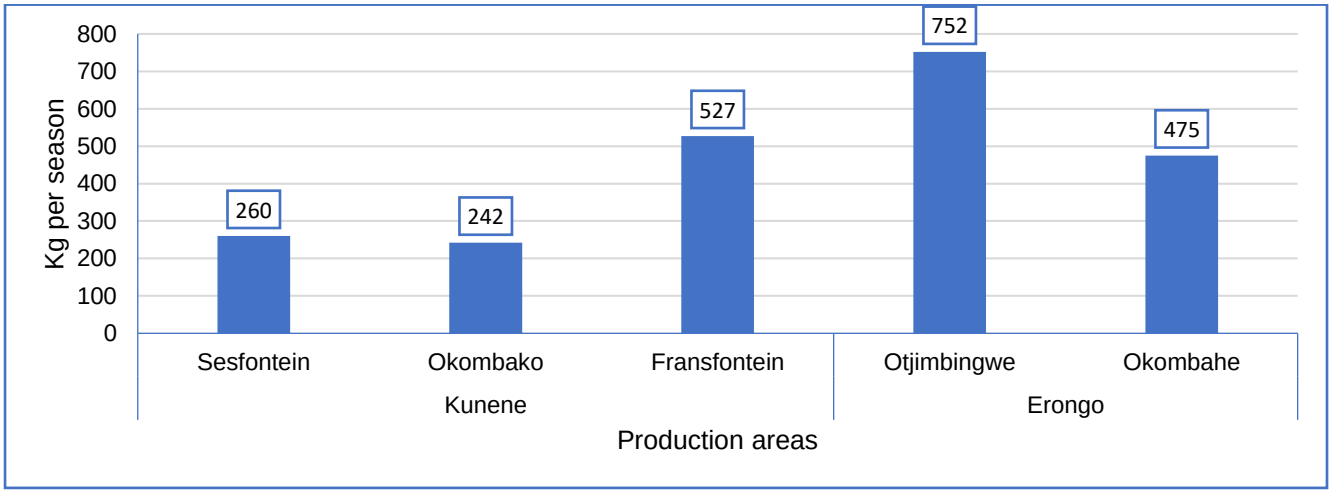


*Figure 9: Total average wheat production per producer per season (kg) as per production area*

### 3.2.4. Storage

The present study revealed that all wheat producers do not have a packhouse or cold storage system. Instead, on-farm traditional storage methods are commonly used for storing wheat grains in the Kunene and Erongo Regions. According to Nyambo (1993), grains stored in improved granaries suffer less insect attack and less loss than in traditional granaries. Therefore, it is critical to improve storage facilities in these wheat-producing areas.

### 3.2.5. Transport to the market

The results revealed that wheat producers in the Kunene and Erongo Regions do not transport their products to the market but rather sell them at the farm or use them for household consumption.

## 3.3. Regulatory compliance and protection

### 3.3.1. Certified Seeds and Food Safety Accreditation

Wheat producers in the Kunene and Erongo Regions mainly rely on their own retained seeds from the previous harvest for wheat production. Thus, more than 90% of the producer population does not use certified seeds from accredited seed suppliers. Instead, less than 10% of producers sometimes have access to accredited and certified seeds mainly through the Ministry of Agriculture, Water and Land Reform and informal local shops (Figure 10). Farmers don't know the Seed and Seed Varieties Act 23 of 2018, and there is no food safety accreditation system in place.

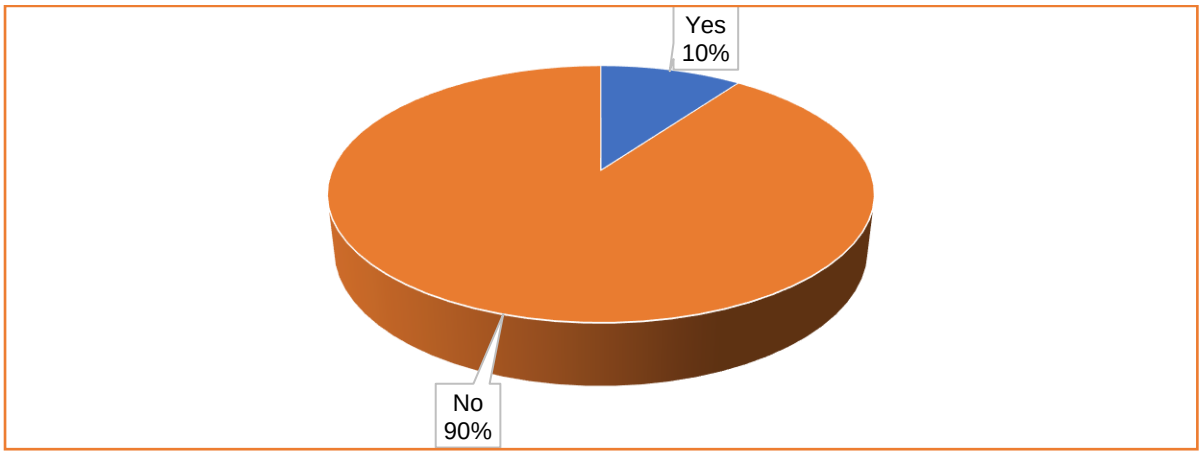


*Figure 10: Proportion (%) of producers using certified seeds from accredited suppliers*

### 3.3.2. Government protection

Farmers pleaded to the government for the establishment of a formal market, training, and protection in related compliance, safety certification systems, and market price regulation.

## 3.4. Marketing and price information

### 3.4.1. Market share

The majority of wheat producers are willing and prepared to produce and market wheat and wheat products in bulk. However, the lack of a formal market deprives these farmers from partaking in this formal mainstream economy. Consequently, producers opt to produce and sell their produce at informal markets and use some for household purposes only. Sometimes, smallholder farmers store and sell some of the wheat back to farmers during the peak planting season at high prices as seeds. Due to a lack of markets, some producers opt to use their produce for household production. Over 46% of wheat producers in the Kunene and Erongo Regions do not have a market, thus they don't sell but produce

the wheat for their consumption. Moreover, 54% of wheat producers in these regions sell their products at home, of which the buyer (local communities) bears the costs (Figure 11).

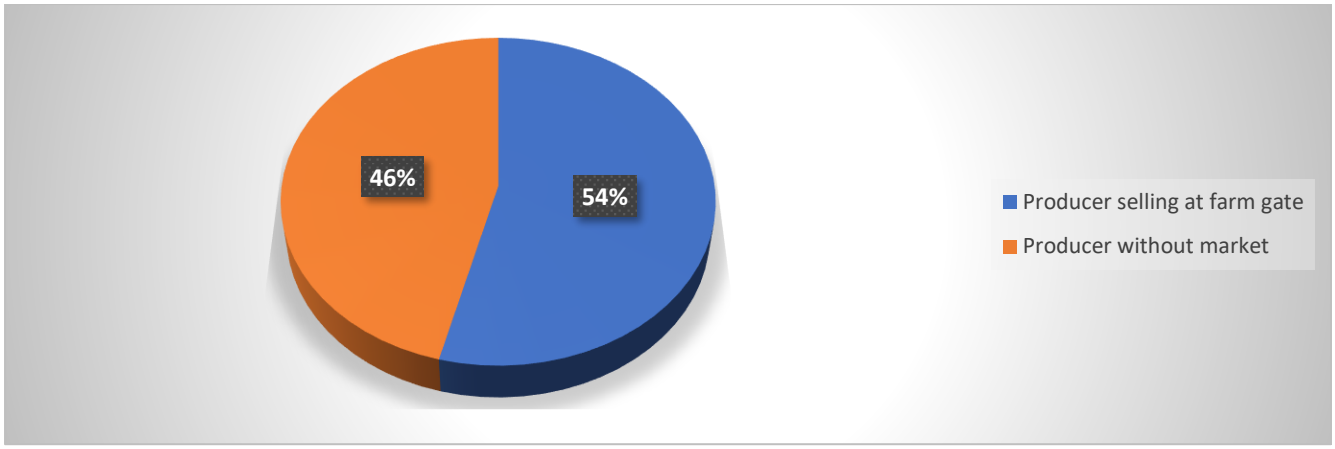


*Figure 11: Market share (%) distribution*

### 3.4.2. Value addition

Currently, there is no value addition taking place apart from the traditional milling of wheat grains by grinding them with stones into flour mainly for own consumption. There is a lack of modern milling equipment that is available in the production sites, thus the communities use the traditional milling method of grinding the grains against stones (Figure 12).

*Figure 12: Traditionally milled wheat flour using grinding stones (Source: Author's compilation)*

### 3.4.3. Supply contract

Currently, wheat producers in these areas don't have any existing supply agreement contracts. However, all showed a high willingness to enter into supply contract agreements if availed to them.

### 3.4.4. Storage

The present study reveals that all the sampled sorghum producers do not have a packhouse or cold storage system. Instead, on-farm traditional storage methods are commonly used for storing sorghum grains in Namibia.

### 3.4.5. Traders/processors

Due to the missing market linkage, the farmers are currently producing wheat for household consumption and marketing through the informal market some small quantities that are of insignificant volume. On average, 538 kg of wheat grains per producer is sold at the local community level per season at a price range of N$10/kg to N$50/kg, averaging at N$15/kg.

### 3.4.6. Consumption

Wheat is commonly sold as grain and seeds in these areas. However, local wheat farmers currently process wheat grain into flour for home consumption only, using traditional processing methods such as grinding stones for milling. Wheat is commonly eaten as boiled grains, roasted, and processed into bread. Despite the lack of a market, a high demand for wheat was displayed among the community members. However, the consumption tonnage is not quantified due to the informal market set-up of wheat production and consumption.

## 3.5. Financing information, training, and industry affiliation

### 3.5.1. Financing Information

The study revealed that all wheat producers finance their wheat production activities with their own money from savings without a loan or financial assistance from any financial institutions.

### 3.5.2. Industry affiliation

As illustrated in Figure 13, overall, only 32% of total wheat producers are affiliated or registered with farmers' associations or organisations such as Otjimbingwe Farmers Association (5%), Okombahe Farmers Association (5%), Otjikuyu Farmers Association (10%) and Fransfontein Community Garden (2%), while the remaining (68%) wheat farmers are not affiliated to any association. Thus, there is a need for organised group farming awareness creation for the benefit of farmers' associations.

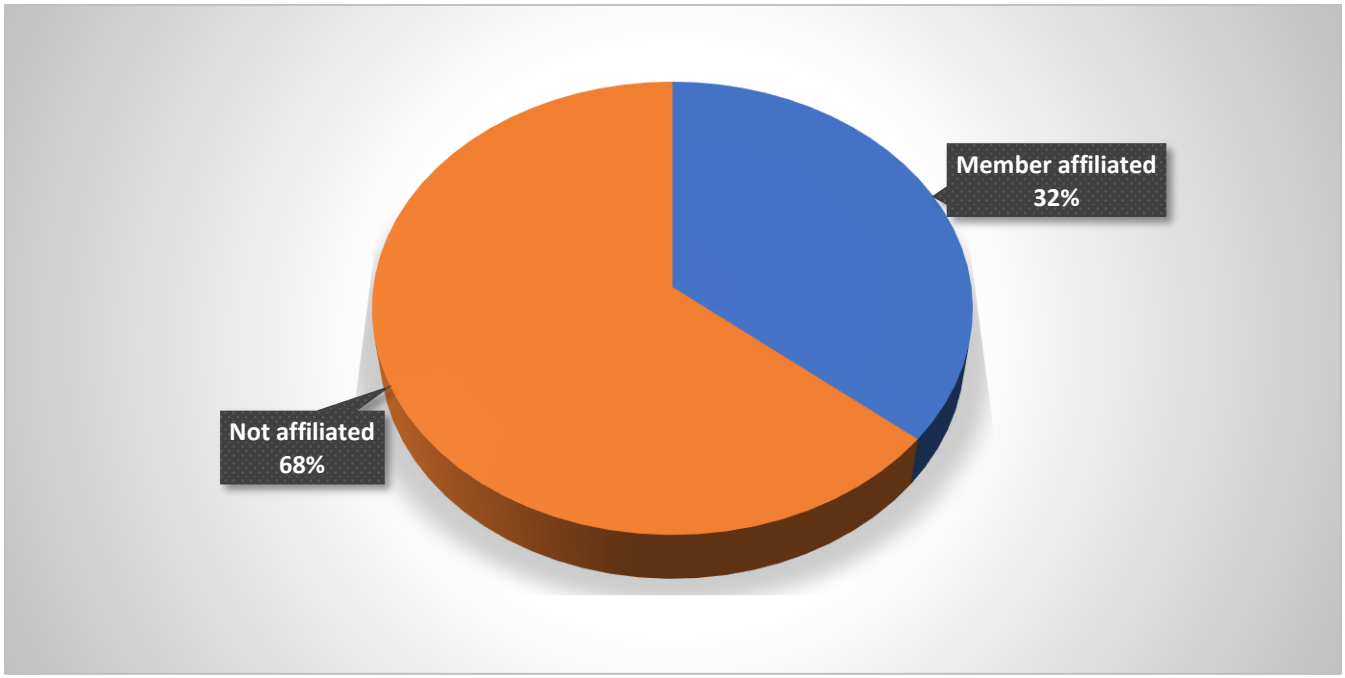


*Figure 13: Producers' industry affiliation*

### 3.5.3. Training in wheat cultivation

Furthermore, the majority of wheat producers (over 92%) have not received any training on wheat cultivation techniques or related skills, while only 8% indicated having received training on wheat production through the Ministry of Agriculture, Water and Land Reform (Figure 14).

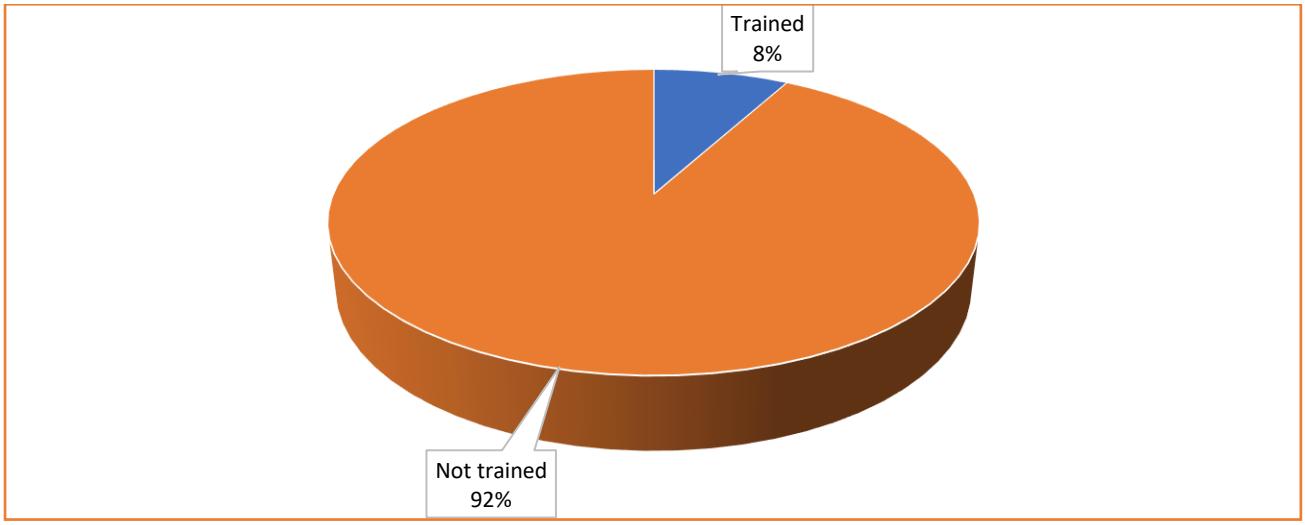


*Figure 14: Proportion (%) of local farmers trained in wheat cultivation in the Kunene and Erongo Regions*

## 3.6. Wheat constraints and opportunities in Kunene and Erongo Regions

This section focuses on the challenges encountered by wheat producers and the untapped potential opportunities in wheat production in the Kunene and Erongo Regions.

### 3.6.1. Opportunities

This section focuses on the challenges encountered by wheat producers, processors, and traders, and the untapped potential opportunities in wheat production in Namibia. The study revealed that input suppliers/seed growers, producers, and traders encounter several challenges as presented in Table 12.

*Table 3: Opportunities and challenges encountered by wheat input suppliers, producers, and traders*

| Value chain actor | Challenges | Opportunities |
|---|---|---|
| Producers | Wheat production and marketing have various constraints that hinder the full benefit of wheat value chain existence and operation in the Kunene and Erongo Regions. The following among others are the major challenges associated with wheat production and marketing in the Kunene and Erongo Regions:<br>• Lack of a formal market<br>• Draught recurrence resulting in low water flow at the river<br>• Price fluctuations and volatility<br>• Poor accessibility to improved seed varieties<br>• Lack of training and technology cultivation techniques in wheat farming<br>• Lack of value addition, milling or processing and storage facilities<br>• Lack of support services such as water tanks and fencing materials | Despite challenges associated with wheat production in Kunene and Erongo Regions, there are various opportunities such as income generation, and high marketability as wheat is highly demanded, and importantly, it affords food security at the household level and can be used as animal feed. The following, among others, are the major opportunities associated with wheat production and marketing in the Kunene and Erongo Regions:<br>✓ There are many end uses of wheat which can ensure food security at household and national level<br>✓ An opportunity for income generation, livelihood improvement, and women empowerment<br>✓ The promotion of wheat production will ensure reduced reliance and dependence on maize as the main food crop in these regions<br>✓ Promotion of wheat production will ensure reduced reliance and dependence on pearl millet and |

| | | |
|---|---|---|
| | | maize as these two crops do not perform optimally during below-average rainfall or drought seasons |
| Traders | • There are no known traders other than farmers who produce and do trading | ✓ Wheat commodities possess a high economic return on sales as the product is in high demand<br>✓ Good business opportunities for local farmers, food security, income generation, and livelihood improvement<br>✓ Wheat is demanded throughout the year as it is considered a pride staple food for these communities |
| Input suppliers | • With no established input supply system, farmer reserves their own seeds and sell them among themselves. | ✓ Revenue generation |

## 4. CONCLUSIONS

The commercialisation prospect of wheat crops in Namibia is feasible. However, wheat production predominated by smallholder farming set-ups and the infrastructural inadequacies that characterise smallholder farming have reduced wheat market expansion and value extraction from the wheat value chain at each nodal link in Kunene and Erongo Regions.

There is a noticeable importation of wheat products, especially wheat meal flour and other processed wheat products from other regions which indicates high demand. Wheat production in Kunene and Erongo Regions lacks technological levels and standardised processing machines at the farm level which could be of significant benefit to the wheat sector in Kunene and Erongo Regions.

Therefore, it is recommended to have in place some possible intervention measures to directly or indirectly improve and upscale wheat production, processing, and the creation of a formal marketing stream in the Kunene and Erongo Regions' wheat-producing areas. Currently, local farmers mainly use irrigation production systems by utilising natural perennial surface aquifers or springs. Therefore, the upscaling of wheat production in the Kunene and Erongo Regions requires resources and support such as improved seed varieties, irrigation facilities and pressure pumps. Furthermore, the expansion of wheat production requires the clearing of new land currently underutilised within the production areas.

## 5. RECOMMENDATIONS ON THE IMPLICATIONS FOR POLICY

- ✓ The identification and consequently registration of all wheat producers in the Kunene and Erongo Regions should be conducted to establish accurate baseline information for necessary socio-economic development.
- ✓ Effective and adequate infrastructures for wheat processing, storage, and marketing facilities within smallholder wheat production areas are strongly recommended as a way to increase value extraction from wheat products.
- ✓ The creation and promotion of awareness of wheat production for food security for both household-level consumption and commercialisation in these areas can ensure consistent supply and a sustainable market chain.
- ✓ The promotion of organised group and contract farming and coordination among wheat producers, processors, and traders is of significant benefit to the establishment of commercialised wheat production in the Kunene and Erongo Regions.
- ✓ Furthermore, conducting wheat field trials to investigate the performance of different varieties in such a unique environment shall assist in determining the quality of the grains produced and yield improvement.

## REFERENCES


Bushuk, W., & Rasper, V. F. (Eds.). (1994). *Wheat: production, properties, and quality*. Springer Science & Business Media.

Hamukwala, P., Tembo, G., Larson, D., & Erbaugh, M. (2010). *Wheat and pearl millet improved seed value chains in Zambia: Challenges and opportunities for smallholder farmers*.

Kimhi, A. (2006). Plot size and maize productivity in Zambia: Is there an inverse relationship? *Agricultural Economics*, *35*(1), 1-9.

Maps of the World (2015). *Political map of Namibia*. https://www.mapsofworld.com/namibia/namibia-political-map.html

Namibian Agronomic Board. (2021). *Wheat Market Report 2020-2021*. Namibia Agronomic Board