

**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:**

PO Box 5096  
Ausspannplatz  
Windhoek  
Namibia



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## ***THE IMPORTANCE OF SEED PRODUCTION IN ENHANCING FOOD SECURITY IN NAMIBIA***

### **Key Messages**

- Seed is the most crucial input for crop production and quality seed can determine a crop's yield and eventually contribute to food security.
- Namibia's seed production industry is underdeveloped and the country relies on seed imports to meet its demand.
- In 2022, Namibia imported seeds for maize, wheat, pearl millet, and potatoes valued at N\$59,9 million (2,485 tons) and over 80% of this was from South Africa.
- The country also imported about 236,052 tons (64%) of its staple food crops (maize, wheat, pearl millet, and potatoes) to meet its domestic demand, as local production is insufficient.
- Developing the seed industry in Namibia has a high potential to improve the country's local production not only of maize, wheat, pearl millet, and potato but also other essential crops, thereby eventually enhancing the country's food security.
- **However, the local seed production industry has many challenges which include a lack of infrastructure, limited access to technology, the absence of seed production incentives, lack of plant breeders specialists in the country, lack of implementation of the seed policy, seed and seed varieties act, and the absence of laws about plant breeders' rights.**
- Therefore, there is a need to address the abovementioned challenges to grow local seed production in Namibia and policies/strategies that will promote the development of the Namibian seed production industry.

### **1. Introduction**

Seed is the most crucial input for crop production and quality seed can determine a crop's yield and eventually food security at the household or national level (Wimalasekera, 2015). The agricultural sector is faced with many challenges such as poor rainfall, high input costs and limited access to quality seeds.

The seed industry in Namibia is relatively small with no existence of private seed companies involved in the seed production and distribution. The Ministry of Agriculture, Water and Land Reform (MAWLR) through its Division of Crop Research and Production produces what is called “breeder” and “foundation” seeds at some research stations across the country. These seeds (foundation seeds) are then usually multiplied either at the research station itself or through the registered seed growers to produce certified seeds which are later used for planting. The common type of certified seeds produced in Namibia at these research stations is pearl millet, cowpea, sorghum and maize. However, due to other limitations (pests such as birds, low rainfall, and lack of dedicated seed growers), the Ministry is still unable to produce enough above-stated certified seeds to meet local demand. As an alternative, the MAWLR procures (imports) certified seeds to distribute to farmers (mostly subsistence farmers) either through subsidy or as free seeds (MAWLR Annual Report, 2016/17).

The lack of an established seed production industry in Namibia affects the food security status of the country and consequently, the country will find it difficult to achieve its food security agenda, and the country will remain a net food importer. There is a need to address the challenges prohibiting the development of the Namibian seed industry, particularly for staple food crops such as maize, wheat, pearl millet, and potatoes. This policy brief highlights the current status of the seed industry in the country, specifically on staple food crops that are key in contributing to food security in Namibia, namely, **maize, wheat, pearl millet, and potato**. These food crops are among the major imported food types into the country besides being the staple food for most households in Namibia. The brief also suggests key policy recommendations to complement current government interventions for possible adoption to facilitate the development of the country's seed industry and eventually contribute to food security.

## **2. Overview of the seed industry in Namibia: Supply and demand**

Given the underdeveloped seed industry in Namibia, the country relies heavily on seed imports to satisfy its local demand. Furthermore, the bulk of the seeds imported into Namibia were not tested by MAWLR as the competent authority for the seed and seed varieties registration process. Such seed varieties were never tested in Namibia to determine their suitability to the Namibian climatic and soil conditions.

These seeds are often purchased through agents or local retailers (seed dealers) who do not conduct trials in the country on such varieties to determine their suitability to Namibia's environmental conditions. Farmers often purchase seeds from dealers without knowing the performance of such seeds in the Namibian environment and then they later only realise that the seeds do not perform very well in the Namibian environment, in terms of yield or quality, and there won't be proper after-sale-service that is provided to the farmers by seed dealers (NAB, 2021).

Maize, wheat, and potato are largely produced by commercial farmers whilst pearl millet is mostly produced by smallholder farmers in the communal areas. Smallholder farmers in the communal areas

mainly depend on replanting seeds from their previous harvests or purchasing certified seeds at a subsidised price from the MAWLR. Commercial farmers on the other hand totally rely on importing seeds for sowing mainly from South Africa and Zambia.

**Table 1: Namibia import statistics of seeds for sowing - 2022 (Source: ITC Trade Map, 2023)**

Seed Type	HS Code	Imported Quantity (Tons)	Imported Value (in South African Rands) **	Country of import & proportion
Maize	100510	510	30,134,000	SA – 69% Zambia – 22% Zimbabwe – 9%
Wheat	100191 100111	398	6,321,000	SA – 90% Zimbabwe – 8% Zambia – 10%
Pearl Millet	100821	3	66,000	SA – 100%
Potato	070110	1,574	16,394,000	SA – 98% France – 2%
<b>Total</b>		<b>2,485</b>	<b>52,915,000</b>	

\*\* values also equivalent to Namibian Dollars

During 2022, the country imported an overall 2,485 tons of maize, wheat, pearl millet, and potato seeds for sowing, valued at N\$52,9 million. The highest seed import value is that of maize with a value of N\$30,1 million followed by potatoes with a value of N\$16,4 million. Just as with other staple crops under review in this report, maize and potatoes are the top food crops highly consumed in Namibia. South Africa dominates Namibia's seed imports with an average share of over 80%.

The Ministry of Agriculture, Water and Land Reform through its seed subsidy programme sold 118 tons (valued at N\$22,000/ton<sup>#</sup>) of pearl millet seeds and 30.5 tons (valued at N\$59,086/ton<sup>#</sup>) of maize seeds to farmers during the year 2020/21 farming season. There is currently no government seed subsidy programme for wheat and potato seeds. Although the government is making efforts to produce sufficient certified seeds for mahangu at some of its research stations, it is still unable to meet the country's demand, especially for the four crops under review (MAWLR, 2021).

**NB:** Values marked with # above are calculated based on import values in Table 1. The figure could differ from the MAWLR actual records.

### 3. Importance of the seed production industry to food security

The seed production industry is an essential aspect of crop production, and it involves the development, multiplication, and distribution of seeds to farmers. Seed production plays a crucial role in the global food supply chain by ensuring the availability of high-quality seeds for planting and supporting crop yield, sustainability, and food security.

Food security is largely determined by agricultural production with crop production being the main contributor. Given the underdeveloped seed production industry in Namibia, the high seed import

(amongst other important inputs) contributes to the high cost of production of staple food crops and food insecurity in the country.

As illustrated in Table 2, Namibia only managed to produce 36% of its total commercial domestic demand for maize, wheat, pearl millet, and potatoes during the 2022/23 season, and this only takes into account the tonnage produced locally and marketed through formal markets. Overall, local farmers are still unable to produce enough staple food crops to become self-reliant. This can be partly attributed to a lack of improved and high-quality seeds that are adapted to Namibia's environmental conditions.

**Table 2: Staple food crops domestic demand for Namibia (2022/23 Financial Year) (Source: NAB, 2023)**

Crop type	Domestic production (Tons)	Imported (Tons)	Quantity	Total domestic demand (Tons)
Maize	98,824	92,205		191,029
Wheat	24,696	114,370		139,066
Pearl Millet	2,928	673		3,601
Potato	8,898	28,804		37,702
<b>Total</b>	<b>135,346</b>	<b>236,052</b>		<b>371,398</b>

According to FAO (2006), food security exists when all people at all times, have physical and economic access to sufficient, safe, and nutritious food that meets their dietary needs and food preferences for an active and healthy life. In terms of food security for Namibia, the Office of the Prime Minister (OPM) (2023), estimated that a total number of 376,000 people (equivalent to 16% of Namibia's population) experienced a food crisis or worse between October and December 2022, with regions such as Kavango West, Kunene, Omaheke and Oshikoto being the most affected. This situation was projected to get worse in January – March 2023, as the number would rise to 390,000 people. A well-established seed system, with combined efforts from both the government and the private sector, combined with other factors, is required by the country to improve its food security through assurance of the availability of quality seeds to all farmers be it in commercial or communal setups.

#### 4. Challenges in the Seed Production Industry

Despite the critical role of seed production in the crop subsector, the subsector faces several challenges, including the following:

##### 4.1 Lack of infrastructure

Seed production requires specialised infrastructure such as seed testing facilities, storage facilities, and transportation networks, which may be lacking in some regions. The lack of adequate infrastructure can impede the distribution of high-quality seeds, thereby resulting in reduced crop yields and food insecurity.

## **4.2 Limited access to technology**

Seed production requires access to advanced technology, including biotechnology, genomic research, and data analytics, to develop and produce high-quality seeds. However, limited access to technology can prevent seed producers from adopting innovative solutions that can enhance crop yield, reduce production costs, and improve the nutritional content of crops.

## **4.3 Lack of implementation and the absence of relevant regulations**

Regulations promote fair trade in the seed production industry and also protect the breeders from illegal and unfair practices. The Namibia Seed Policy and the Seed and Seed Varieties Act 23 of 2018 have been enacted and approved but they are not being implemented, while the Plant Breeders Right Policy is still being developed by the Ministry of Agriculture, Water and Land Reform. Currently, Namibia does not have seed certification standards and regulations on intellectual property rights for both locally produced and imported seeds.

## **4.4 Lack of incentives**

The Namibian seed industry is relatively small, while the cost of production is very high, and to attract investment, there is a need to introduce seed production incentives such as tax relief or subsidy.

## **5 Conclusion**

Access to locally produced, improved and high-quality seed is an important input in crop production because it has a direct impact on crop yield when combined with other production inputs. Namibia is a net importer of all types of seeds, including seeds of staple food crops, with over 99% being imported mainly from South Africa, as local seed production is underdeveloped in Namibia. Developing the seed production industry in Namibia has a high potential to improve the country's local production of not only maize, wheat, pearl millet, and potato but also other essential crops. Continued reliance on seed imports will only worsen the country's food security as many Namibian producers do not have access to affordable, improved and quality seeds. An improved local seed industry has the potential to enhance the country's food security.

## **6 Recommendations**

To ensure that the seed production industry remains a critical contributor to national food security and agricultural productivity, some key recommendations are stipulated below:

1. The government, through the MAWLR, private sector actors, and civil society organisations must collaborate to invest in seed production infrastructure, and develop innovative technologies.

2. The MAWLR should create supportive policy frameworks that promote sustainable seed production and distribution.
3. The MAWLR should spearhead the development of the seed certification standard, finalise the plant breeder's right law, and implement the Namibia Seed Policy and the Seed and Seed Varieties Act 23 of 2018.
4. The MAWLR, together with the NAB, should drive to develop local capacity for seed certification through training and mentorship.
5. The MAWLR to introduce seed production incentives to seed producers such as tax (VAT) relief or subsidy on all types of seeds, to promote production in the country.
6. Academic institutions should introduce short courses and bachelor of science courses in plant breeding, as the country does not have expertise in this field.
7. Seed production should take place under irrigation to minimise the impact of water shortage on the quality and quantity of seeds produced by any seed producers.
8. A national seed production strategy must be developed and implemented by the MAWLR to stimulate local seed production.

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