Unveiling the Arable Agriculture Landscape: A focus on Botswana's Path to Unlocking its Potential

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Introduction:

Embarking on a journey of curiosity, I delved into the agricultural industry in Botswana, a country not far removed from South Africa. It sparked a series of questions in my mind: Why does Botswana heavily rely on food imports from its neighbouring country? And why hasn't it emerged as an arable agricultural exporter? Intrigued by these queries, I embarked on a thorough investigation to shed light on this topic and share my findings.

Methodology:

In crafting this insightful essay report, I analysed data and employed data visualization techniques to identify trends and patterns in farming. To gain a comprehensive understanding of the farming landscape in South Africa and Botswana, I studied published research and articles from reputable sources on the internet. Botswana was the focus of the research and Statistics from South Africa's Agricultural sector were used on a comparative basis and on the gaining of perspective on differences between the two countries' Agricultural sectors.

Note: Data analysed is from statistics Botswana is available up to the year 2019. It is also representative of traditional farmers who comprise majority of the arable farming population in Botswana.

The Data:

Crop Failure rate was analysed by calculating percentage harvested of hectares sowed. The data revealed that there has been a shift to sowing Maize from Sorghum as it is the most planted crop by hectare area. Of the four crops analysed (Sorghum, Maize, Millet, and Beans/Pastels) the most sowed crop (Maize) had the highest average failure rate at 54,5%, while the least sowed crop (Millet) had the lowest average failure rate at 37%. Beans and Sorghum had average failure rates of 48.8% and 42% respectively.

Yield per hectare was calculated by dividing the total crop production by Area Harvested. It showed that, Sorghum had the highest yield per hectare(ha) at 558.7kg/ha despite not being the crop of choice for most traditional farmers. Lacking far behind were the three crops: Millet, Maize and the lowest, Beans, with yields per hectare of 288,2Kg/ha, 255Kg/ha and 190,8Kg/ha respectively. These numbers are extremely low compared levels of output achieved in South Africa.

Furthermore, the data revealed that the agriculture, forestry, and Fishing sectors of the economy contributed approximately 2% to the GDP of Botswana; a number that is similar to that of the South African economy.

Grain Storage:

One striking disparity between Botswana and its importing counterpart, South Africa, lies in grain storage. Botswana's grain reserves, managed by the Botswana Agricultural Marketing Board, amount

to a mere 70,000 Metric tonnes, translating to a paltry 29.8kg of grain reserve per person. In contrast, South Africa boasts a staggering 16.3 million metric tonnes, equating to a relatively impressive 282.7kg of grain reserve per person. This glaring discrepancy highlights Botswana's pressing need to address food security. To bolster food security and encourage surplus agricultural production, the country must invest in infrastructure capable of supporting ample strategic grain reserves (SRG).

During the 1950s-1990s, government storage through cooperatives came to end in South Africa and privatized grain storage (85% privately owned as of 2016) took over. Although expensive and challenging to secure funding for and establish, private grain storage has fostered competition among grain storage facilities. This has led producers being the clients of agri-businesses and innovation in the strategic grain storage industry, resulting in superior grain management.

Farming:

Botswana's agricultural landscape heavily relies on rain-fed agriculture due to its semi-arid climate. However, the country experiences considerable variability in rainfall from year to year and within each rainy season. Irrigated farming is out of reach for most traditional farmers as they are lacking the necessary resources to fund such projects. Furthermore, high evaporation rates, exceeding 2000mm in areas like Maun and western parts, exacerbate the challenges of water storage. Counter intuitively, while the eastern parts of the country receive enough rainfall to support higher yields than western parts, the arid western regions largely cultivate maize, despite its lower water efficiency. Resulting higher crop failure and lower yields.

Opportunities do exist for livestock rearing and cultivating drought-resistant, water-efficient crops in the arid western regions, while the wetter eastern parts can be better utilized for less resistant crops like maize. Enhancing agricultural research in Botswana will enable the development of environmentally suitable solutions to combat soil fertility issues, high temperatures, and insufficient highly variable rainfall.

Economics and Policy:

Although Botswana's Agriculture, Forestry, and Fishing industry (AGF industry) contributes approximately 2% to its GDP, like South Africa’s, it is important to note that Botswana's 2019 GDP per capita stood at approximately $5300, nearly equivalent to South Africa's approximate $5100. Clear data not being available to explain Botswana’s lower arable produce per person, indicated the possibility of agricultural produce being skewed towards livestock farming as fishing and forestry are infant sectors in Botswana. The government has implemented various programs such as Subsidies for agriculture, the Arable Land Development Programme (ALDEP), the Financial Assistance Policy (FAP), and the National Agricultural Master Plan for Arable Agriculture and Dairy Development (NAMPAAD) to support agricultural development. However as indicated by the data, improvements in yield did not come from yield per hectare but from increased area planted.

Conclusion:

To transform Botswana into a prominent agricultural hub, concerted efforts are required from both the private and government sectors. While schemes and policies play a vital role in stimulating agriculture, the importance of treating and structuring agricultural operations as businesses is often overlooked but is significant. Nurturing an environment that prioritizes input efficiency and embraces a business approach to farming will help propel Botswana to high levels of food security and self-sufficiency. A collaborative effort between the government and the private sector is essential to optimizing agricultural land usage. Enhancing agricultural research in Botswana will enable the

development of environmentally suitable solutions to combat soil fertility issues, high temperatures, and insufficient highly variable rainfall.

Post Conclusion:

Despite the bleak picture painted by this essay report, the year is 2023 and I can say there are changes happening in Botswana's industrial complex that I view as the beginnings of development on a grand scale. A visit to the outskirts of the city shows huge facilities being put up, wearing the logos of international well-known companies. This to me serves as an indication of performance on both the government and private sector on the joining of efforts to help the country become a dominant economic player. A drive along B-roads, one sees fields upon fields of cultivated land and preparation for land cultivation. Listen to locals talking and soon you start to realise that there is also a big change in mindset as progress and development is the language in which they talk. All this development in my view is serving not just as an economic but also a major agricultural catalyst.

Data sources and Acknowledgements:

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- L.H.N for the reviewing and guidance in this essay report