



Business & Social Science
IJRBS

Research in Business & Social Science

IJRBS VOL 15 NO 2 (2026) ISSN: 2147-4478

Available online at www.ssbfn.net

Journal homepage: <https://www.ssbfn.net/ojs/index.php/ijrbs>

The domestication and commercialisation of the *savha* (*Sansevieria pearsonii*) to underpin rural development targets at Pfumembe Village of the Musekwa Valley, Limpopo Province, South Africa



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ARTICLE INFO

Article history:

Received 04 December 2025

Received in rev. form 07 March 2026

Accepted 24 March 2026

Keywords:

Poverty, Rural development, Fiber, Savha (*Sansevieria pearsonii*).

JEL Classification:

O1, O3, Q2, Q5

ABSTRACT

This study was conducted at the Pfumembe Village of the Musekwa Valley, Limpopo Province, South Africa. The main objective of the study was to explore possibilities of domesticating and commercialising the savha (Sansevieria pearsonii) plant to underpin a rural economic development strategy meant to fight poverty in the surrounding villages. An interdisciplinary mixed method study was undertaken with data collected through multi-tool and methodological applications, among others face-to-face interviews administered on key informants selected through snowball techniques (n=11), direct observation of the plant habitat through transects walks at the village, Focus Group Discussions (FGDs) and experiential observation. Quantitative data were analysed using excel spread sheet - the results of which were captured in simple figures. The qualitative data were analysed using predetermined themes and sub-themes. The results of the study revealed that the plant was a familiar plant among most of the residents. The plant's historical and cultural significance such as medicinal use was unknown among the residents. However, its use on art making was known by few residents so is the indigenous technology involved in fiber extraction. The plant revealed no strain for domestication, making it possible to develop a farm for its domestication and commercialisation. It is recommended that the plant be domesticated by developing a modern prototype farm. It is crucial to have a study on the use of modern technology to domesticate, propagate and harvest the plant.

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Introduction

Of late, Africa has witnessed the emergence of initiatives and attempts to domesticate and commercialise certain plant species. However, research on this initiative has been minimal if not virtually absent (Leakey & Simons, 1998) – especially research outside the food producing plants' domestication and commercialisation domain. Considering that the domestication and commercialisation of food and non-food plant species has been a growing global initiative which has also reached Africa – especially in the early 1990s as this initiative began to popularise across the globe (Leakey et al., 2022), there is need to initiate ventures outside the food producing plant domain. This research would assist communities to venture into the initiative with appropriate knowledge and readiness to explore the option – especially for rural development initiatives. Leakey et al. (2022) opined that the initiative to domesticate and commercialise certain plant species would assist in initiating communities to diversify their farming systems while enabling them to exploit multiple social, economic, and environmental opportunities and benefits to achieve development targets. These communities could only do this from informed perspective. Some reviewed literature (Okole & Odhav, 2004; Leakey et al., 2022) has revealed that there have been successful and sustainable business ventures which have been established elsewhere in the developing regions based on the domestication and commercialisation of indigenous plant species innovations to the benefit of communities in those regions. This paper aims to add to this scholarship using the uniqueness of the domestication and commercialisation of the *savha* (*Sansevieria pearsonii*) initiative as an inventive idea which could add value in the livelihood options of the residents of Pfumembe Village. Following this introduction, the paper proceeds to present reviewed literature that discusses

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<https://doi.org/10.20525/ijrbs.v15i2.4820>

theoretical and empirical studies on the idea of domestication and commercialisation of certain plant species as adopted across the world. This review is followed by the presentation of the study area and research methodology detailing how the data were collected and analysis carried out. The paper proceeds to present its key findings and the subsequent discussion thereof and concludes by providing the conclusions drawn, and the subsequent recommendations.

Literature Review

The *savha* (*Sansevieria pearsonii*) as shown in figure 1, is a genus of xerophytic perennial herbs which is common in the dry tropical and subtropical regions around the world. It is part of a family of approximately 70 similar species which is scattered in regions such as Africa, Asia to Burma and some islands of the Indian Ocean (Takawira, & Nordal, 2001).



Figure 1: The flowering *savha* (*Sansevieria pearsonii*); *Source:* Author

Sansevieria pearsonii is known as *savha* among the Vhavenda of northern South Africa where the study was conducted. The plant is one of those threatened and endangered species at the study area just as most plant species are in most communities as various human activities such as overexploitation and environmental challenges negatively impact on these species (Takawira & Nordal, 2001; Zimmerman, 2016). Among others Mensah et al. (2026) and Zimmerman (2016) reasoned that factors such as weak environmental policies, institutional frameworks, limited enforcement of resource governance measures, increased urbanism, irresponsible industrial agricultural practices, uncontrolled deforestation, unethical practices have added complexities to the challenge. The weak environmental policies have failed to provide regularisation of, among others processes which must be adhered to during removals of these plant species from their original habitats. On the other hand, Takawira and Nordal (2001) revealed that cultivation of threatened species such as the threatened *savha* (*Sansevieria pearsonii*) has been used with success elsewhere to protect the species from over access and use. The preservation of threatened species has been through various ways and approaches. Bélanger (2025) reported that in some regions, threatened species are preserved by increased breeding and domestication of the plant species using traditional means and biotechnological approaches. This paper aims to adopt the Bélanger (2025) approach by exploring possibilities of domestication of the *savha* at the study area. Existing literature (Takawira & Nordal, 2001) reveals that the *savha* (*Sansevieria pearsonii*) has been successfully domesticated elsewhere for various reasons. Takawira and Nordal (2001) further revealed that the plant could also be domesticated – especially when it is meant for ornamental use. The *savha* (*Sansevieria pearsonii*) could be propagated by seed planting. Its seeds could be sown during spring or summer. However, its seeds are short-lived. The seed must be planted as soon as it is ripe preferably in late spring or early summer. The *savha* (*Sansevieria pearsonii*) is a low maintenance plant which is drought tolerant as it grows well in drier conditions. It only requires minimal watering on planting – say, weekly after the planting, and thereafter monthly if need be. During winter, which is a resting period on its growth, it might need no watering at all. Fertilizer is not a requirement but could be administered once during the growing season. These factors suggest that the plant could be successfully domesticated, and this is the exploration this paper investigated.

The *savha* (*Sansevieria pearsonii*) like other species associated with it has ethnomedicinal significance (Chhabra et al., 1987; Gelfand et al., 1985; Hedberg & Staugård, 1989; Hermans et al., 2004; Kiringe, 2006; Owuor & Kisangau, 2006; Takawira-Nyenya & Stedje, 2011; Van Wyk & Gericke, 2000; Watt & Breyer-Brandwijk, 1962) in some communities in Botswana, Congo, Kenya, Southern Benin, Tanzania, South Africa and Zimbabwe for example. The *savha* (*Sansevieria pearsonii*) is believed to “possess antitumor, antibacterial, antidiabetic, antimicrobial, anticancer, antioxidant, and analgesic” properties (Rajashekara, 2024), and to cure ailments such as toothache (Gelfand et al., 1985; Takawira & Nordal, 2001; Takawira-Nyenya & Stedje, 2011). Traditional art makers have also extracted its fibre which they use to weave traditional artwork such as mats (Takawira-Nyenya & Stedje, 2011). This artwork generates crucial household income for them from subsequent entrepreneurship (Takawira & Nordal, 2001; Takawira-Nyenya & Stedje, 2011). The fibres are strong, and the artwork produced are durable and last long (Mishfa et al., 2023). The plant’s extracted fibre provides option for synthetic fiber which some art makers have resorted to using in art making for lack of environmentally friendly fibre (Mishfa et al., 2023). In fact, natural fiber is a recommended option and is also in demand as option for synthetic fiber which comes with negative environmental impacts and unaffordability for poorer traditional art makers. A plethora of literature

(Galag, 2025; Apalla, 2021; Shieddieque et al., 2021) has demonstrated the use of traditionally extracted fiber from various plant species such as the *savha* (*Sanseveria pearsonii*) option. The challenge facing this scientifically recommended option is that the *savha* (*sansevieria pearsonii*) has been grossly underutilized to provide this option (Galag, 2025). It is imperative that this option be explored as asserted by earlier studies (Galag, 2025; Apalla, 2021; Shieddieque et al., 2021; Takawira-Nyenya, 2011).

Theoretical Underpinnings

Domesticating rare and threatened plant species provided an option to sustain their longevity, availability to the users while maintaining sustainable supply. Extinction had to be avoided as the plant would be permanently removed (Xu & Zang, 2023). The domestication and commercialisation of the *savha* (*Sanseveria pearsonii*) would promote creative farming making use of available resources for community economic empowerment. This initiative would align with global attempts to domesticate and commercialise certain plant species to aid community economic development – especially in Africa where this practice has been successfully adopted (Leakey et al., 2022). Domestication has been tried in the food production sub-sector of the economy in some regions of Africa and elsewhere around the world (Nkosi et al., 2020; Okole & Odhav, 2004; Leakey et al., 2022). The domesticated species have provided livelihood options in many communities (Okole & Odhav, 2004). Whereas the food production economy has had immense benefits from the domestication and commercialisation of certain selected plant species over centuries in broader Africa and Sub-Saharan Africa (SSA) region, attempts to domesticate and commercialise none food plant species such as the *savha* (*Sanseveria pearsonii*), or any attempt to initiate a *savha* (*Sanseveria pearsonii*) producing farm has not been common practice. This paper provided groundbreaking opportunity to initiate multi-disciplinary research projects culminating in the initiation of a prototype farm entity. This initiative borrows from the theorizations of Jusu and Cuni-Sanchez (2017) and Nkosi et al. (2020) who posited that there was need to explore development of a small-scale farm enterprises which could provide livelihood options for resource-poor communities. Therefore, this paper was conceptualized on the reemphasis that community-based domestication and commercialisation approaches must be considered critical tools to aid rural economic development targets (Leakey et al., 2022). This assertion aligns with the United Nations (UN)’s Sustainable Development Goals (SDGs) of September 2015 – specifically SDG Goal 1, which speaks to reduction of poverty in all its forms everywhere in society (Vyas-Doorgapersad, 2019; Vyas-Doorgapersad, 2022). This is a pro-poor strategy on poverty reduction as it promotes economic development based on country-specific environments (Vyas-Doorgapersad, 2019). The project encourages grassroots initiatives among the residents and furthermore promotes proactive activities encouraging economic self-empowerment. The study also promotes aspects of SDG Goal 7, which speaks to attainment of environmental sustainability. Here the context was that the domestication of the *savha* (*Sanseveria perasonii*) would negate the factors threatening its existence while promoting its longevity and sustainability. The paper furthermore aligns with SDG Goal 8, which speaks to inclusive and sustainable economic growth of the local economy. Rural areas – especially in the former homelands of South Africa continue to be faced with complexities and challenges which work against their economic growth because of the apartheid policies of the successive apartheid regimes since 1948 which neglected those areas formerly predominated by Black communities from the development agenda. Finally, the paper articulates to factors of SDG Goal 9 which speaks to building of resilient infrastructure which would promote emergence of inclusive and sustainable industrialization through innovation (Nanda, 2016). The *savha* (*Sanseveria pearsonii*) farm is envisaged to anchor future industrialization prospects in the area. The paper is encouraged by Levi Strauss’s theorisation of community-based activities informed by the idea of making use of what’s available and accessible to them to solve their problem – this being activities of the bricolage framework (Blankenship, 2020; Mudau, 2019; Schuld et al., 2023).

Domestication and Commercialization of Selected Plant Species for Sustainable livelihood

Throughout the world humans have been adopting domestication and commercialization of wildlife – especially plants as a strategy to satisfy development imperatives and safeguarding of livelihood needs (Lei et al., 2024). In fact, “the domestication of new plant species is an ongoing phenomenon” (Chrysargyris et al., 2023) which the authors further argued that it remains of “great importance nowadays” Domestication of plant species is a transformational artificial process whereby certain plant species with desirable characteristics is selected by humans and harvested from the wild to be brought into a human created environment through cultivation for adaptation in this unfamiliar environment. This definition was informed by the framework provided by Gepts (2014) and Lei et al. (2024). Gepts (2014) revealed that domestication of plant species has been used by modern humans (*homo sapiens*) over many years as a strategy meant to reduce competition among plant species in the wild to aid higher productivity for harvests, and this inventive strategy played a crucial role in the advancement of humans as they transitioned from the age when humans were hunter-gatherers (HG) into the era of the cultivation of crops and tending of animals for example. This transition came to be known as the Neolithic Revolution (Gepts, 2014; Von Wettberg et al., 2020). Leakey and Simons (1998) revealed that ever since this period, initiatives for domestication of plant species have been in advance with humans seeking to integrate certain plant species and their products which traditionally were not domestic with farming systems into mainstream farming systems. This innovation has been popular in Sub-Saharan Africa (SSA) and the tropical regions where certain plant species had been identified as having “high potential to become novel cultivated plants” (Chrysargyris et al., 2023). Domestication creates farm entities aimed at bringing the species into the livelihood value chain from which the farmer households and other community members benefit (Bélanger, 2025; Chrysargyris et al., 2023). This paper builds from this context with the hope that the development of the *savha* (*Sanseveria pearsonii*) farm in the Musekwa Valley would catalyse rural economic development responding to the call for development policy makers and planners, practitioners and other stakeholders to be innovative in the selection and design of strategies to address rural economic development limitations. This would be deviant from the rhetorical approach adopted for rural economic development which has failed to emerge

with any tangible outcome (Swanepoel, 1988). This paper therefore hypothesizes that domestication followed by commercialisation of the plant would provide improved livelihood prospects for the residents thereby assisting them to fight hunger and poverty by increasing and maximisation of livelihood options (Leakey & Simons, 1998). The envisage 'development' would therefore offer the beneficiaries diverse options to exploit for survival, among others by broadening choices, capabilities, freedoms, and economic empowerment for example (Nanda, 2016). The activities of the paper increase the prospects of the beneficiary community to command and drive their own economic empowerment by exploiting their natural resources in the quest to attain and enjoy improved standards of living (Nanda, 2016). The envisaged community-owned farm enterprise development innovation anchors on the theory that small-scale farm enterprises could create jobs for resource-poor rural communities as part of the broader small, micro and medium enterprises (SMMEs) economic framework (Abor & Quartey, 2010; Makwara, 2019) for example. However, this paper refrains from creating the perception that the envisaged farm would be the *panacea* to totally reverse economic hardships, underdevelopment and poverty among the residents. Strydom and Van der Merwe (2025) have reported on some of the challenges and complexities SMMEs of this nature face. The paper borrows tenants of similar projects elsewhere in SSA, among others the Eswatini project (Nhlengetfwa & Mamba, 2024) and some other parts of South Africa (Mafukata, 2012) for example. Developed entities from these initiatives operated as community-owned Cooperatives where beneficiaries collaborated to engage in transactional exchange of goods to address their socio-economic needs such as employment creation and household income generation (Mbokazi & Maharaj, 2025). According to Mbokazi and Maharaj (2025) Cooperatives are in the ownership and proprietorship of the resident owners who the entities are envisaged to serve. This model serves well within the context of the case study as residents would be encouraged to volunteer participation in the activities therefore becoming part of the ownership cohort. Importantly is that Cooperatives have been in the main the most popular entrepreneurial model adopted in most developing regions to economically empower economically vulnerable groups such as women. Mbokazi and Maharaj (2025) corroborate this assertion reasoning that Cooperatives were helpful in addressing economic inequalities among diverse gender groups. Reviewed literature (Mafukata, 2012; Stroebel, 2004) revealed that women in the Musekwa Valley were the most vulnerable to socio-economic ills in society, and therefore the Cooperative model as contextualised is envisaged to provide women with opportunities to participate in the local economy. This has been a proven tool used for poverty alleviation and facilitation of rural economic development in some developing regions (Khowa & Mukasi, 2021).

The Selection of the Study Area and the Significance of the Study

Pfumembe Village has significant population of the *savha* (*Sansevieria pearsonii*) but its use as tool to facilitate local economic development has not been sufficiently explored despite the ethnocultural and economic significance of this plant. The plant is a natural asset which could underpin heritage and local economic development for the village and other surrounding communities while ensuring that the communities have sustainable livelihoods reserves (Mensah et al., 2026). First, the plant must be conserved and protected as it is under threat. This paper reviewed a plethora of literature to explore the ways, tools and means which could be adopted for the conservation and protection of this plant from the threats. Xu and Zanga (2023) reported that the conservation and protection of threatened plant species – especially regarding possible extinction could be managed through reintroduction of the plant species and propagation. In addition, introduction of appropriate conservation legislation, encouragement of public participation in the conservation and protection efforts of the threatened plant species and replenishment of the species – especially those with dwindling and/or having small populations are other option. Based on this, the paper formulated the conceptualisation of 'the domestication' of this plant at Pfumembe Village.

This paper conscientizes the residents on the need to explore the benefits of the domestication and commercialisation of this plant in the context of aiding local economic development. The paper argues that by domesticating and commercialising the plant, opportunities would be increased in household income generation, employment creation, economic development, promotion of cultural heritage and environmental conservation by preventing possible extinction of the plant (Mensah et al., 2026; Okole & Odhav, 2004). I argue that the resuscitation of the ethnocultural significance of *savha* (*Sansevieria pearsonii*) at Pfumembe would revitalise the lost ethnocultural heritage significance the plant once held – especially among the youths who may have never had the privilege to have known about this plant. Crucial skills in ethno-craft making from the fiber of this plant could be harnessed and transferred to the younger generations. This is in context of the work of Chrysargyris et al. (2023) and Takawira-Nyenya (2011) who reasoned that certain plant species bear this cultural significance. The paper adds voice in the pool of existing literature on the significance of the *savha* (*Sansevieria pearsonii*) and its related family species in traditional communities elsewhere in Sub-Saharan Africa (SSA). However, this study expands its inquiry by exploring the idea of commercialising the plant by developing a model farm. The farm would ensure its sustained survival at the village while supplying the fiber market to its heritage chain.

Description of the Study Area

This study was conducted at the Musekwa Valley in the Nzhelele area under the Mphephu Traditional Council of the Makhado Local Municipality in Vhembe District, Limpopo Province (figure 2).



Figure 2: Map showing the Vhembe District; *Source:* Mafukata et al. (2024)

Vhembe District Municipality comprises four local municipalities which are Musina (LIM341), Thulamela (LIM343), Makhado (LIM344) and Collins Chabane (LIM 345) (Mafukata et al., 2024). The municipality borders Zimbabwe which is situated just across the Limpopo River in the north of the country and the Limpopo Province respectively. The municipality has a population of approximately 1 653 022 people (Mafukata et al., 2024). This study was conducted at a small village of Pfumembe which is part of the Makhado Local Municipality in which the Musekwa Valley is found. Makhado Local Municipality has significant influence of the province economic commitment to develop rural areas through innovative means such as promotion of entrepreneurship – and hence its selection for this study.

Research and Methodology

The paper adopted a quantitative-qualitative mixed method design (Ahmed, 2024). Ahmed (2024) reasoned that the integration of the two approaches enables the research benefit from the strengths of each approach. This approach provides “a more comprehensive understanding of research questions” (Ahmed, 2024). According to Ahmed (2024), “researchers can triangulate data, validate findings, and gain deeper insights into research questions” emanating from an exploration of diverse perspectives informed by rich, contextual data backed by statistical analysis...allowing for a more nuanced interpretation of results” (Ahmed, 2024). The qualitative design provided a structured framework which enabled the paper to examine the attitude, thoughts, ideas, and behaviour of the residents at Pfumembe Village which allowed the study to establish well informed meaning (Creswell & Creswell, 2023; Maluka & Mulaudzi, 2006). On the other hand, the quantitative data was key to assist the study to use numerical values to identify patterns and trends (Slater & Hasson, 2024) to determine if any differences (on growth or lack of it) were noticed on the leaves of the *savha* (*Sansevearia pearsonii*) over the period of the observations. A plethora of literature (Blinkova et al., 2023; Kuan et al., 2022; Rosas et al., 2020; Schrader et al., 2021; Sun et al., 2019) was reviewed to establish how leaf height, diameter and size were measured to capture the required data. The quantitative data enabled the study to emerge with descriptive results from the analysis on the height and diameter of the leaves for example. The outcome was expected to monitor growth patterns of each leaf of the sampled cluster. This was envisaged to assist the study to determine the quality of the expected fiber in terms of its length. It was hypothesised that good leaf growth would encourage the domestication of the plant because the outcome would be sufficient to encourage the establishment of the envisaged farm. The collected data was captured and recorded in a specifically created Excel Spreadsheet table spreading over four months. The captured data were ready for statistical analysis, but few areas of possible errors were randomly noticed. It was crucial to have proper management of the data prior to the analysis process and the presentation of the results. The data were ‘quality assured’ to remove the identified errors and inconsistencies. A second opinion from a qualified statistician was sought to validate the data. This process of data cleaning was guided by the recommendations made by Slater and Hasson (2024).

Prior to settling for the Excel Spreadsheet as the tool for the analysis, other options were explored among others the use of tools such as LIMINA (Leaf shApe deterMINAtion) developed by Bylesjö (2008) and the Qualitative Trait Loci (QTL) potential to assist with the mapping of leaf development, measurement of leaf size and shape for example. Conclusion was that the Excel Spreadsheet provided the best option for small-scale data sets for this study and was enough for the study to emerge with the required descriptive results. The data sets were extracted and entered in an Excel spreadsheet to analyse growth trends and patterns of the leaves. Comparative data were captured between the original site at Pfumembe Village and that of the created site at Mauluma Village. This was necessary to assist opinion on whether the removed plant from the original habitat would still grow or not in the envisaged farm. This was the most critical results of this study since the envisaged farm could only proceed if the leaf structure of the plant showed survival ability and ability to produce healthy leaf good enough for domestication. The paper therefore went beyond descriptive format into an analytical nature enabling generation of proper meaning by citing the interpretivist implications of the descriptive data. The analysis was key in assisting the study to determine the adaptive strategies which could be needed to support the performance of the plant in the envisaged farm environment where the conditions were expected to be different in some respects from those at the original habitat. For example, this result could assist to determine if fertiliser could be used to assist the growth pattern of the plant.

Method, Participants, Instruments, and Tools

The researcher approached *Vhamusanda* (headman) Nepfumembe to introduce the project. This approach was encouraged by the recommendations made by Mavhandu-Mudzusi (2024) who argued that doing research in traditional areas of Venda in northern South Africa required readiness to know and implement the cultural protocol involved. Mavhandu-Mudzusi (2024) recommended that researchers doing research in traditional spaces must be guided by principles underpinned by African methodological and ethical paradigms. Doing research here is different from doing research in traditionally modern, cross-cultural and cosmopolitan communities where adherence to traditional protocols may not be a demanding requirement. The idea was to emerge with research “faithful to the essential tenets of the African culture” (Ibhakewanlan & McGrath, 2015). The headman has had a good working relationship with the researcher emanating from an earlier study at the village undertaken in 2019. The headman gave the researcher permission to undertake the study. However, the project was interrupted by the Covid-19 outbreak which lasted until late 2021. Other logistical complexities also interrupted its resumption until 2024. The headman passed on in the 2nd half of 2024 further delaying the resumption of the research. To respect tradition on bereavement and mourning of the headman as the traditional leader of the village, the project was suspended for a while. The mourning of a deceased person is a strong tradition among most African communities (Sibisi, 2025), and in cultures such as that of the VhaVenda of northern Limpopo Province where the study was undertaken, such *tshiila* (mourning) is mandatory and therefore without exception for at least 12 months (Radzilani, 2010). However, the Nepfumembe Royal family allowed the researcher to resume the project against tradition before the 12 months mourning period could lapse. They cited the need to have the project to safeguard community interest. The project resumed in March 2025. The Royal family advised the researcher to introduce the project to the villagers through the *musanda* (chief’s kraal) and the residents’ Civic Association to obtain their support. It is imperative to obtain support of the villagers as most research projects failed because of the researchers undermining the villagers – especially where projects were envisaged (Mafukata et al., 2024). Simatele (2021) and Monaheng (1995) corroborate this assertion contending that African rural development initiatives must lobby for active involvement of the residents in crafting their own development initiatives noting that “the people are their own liberators” who must “bring real and lasting change for the better” through collaborated community-based work (Sithole et al., 2005).

Accessing the Participants

During the 1st visit to the village to introduce the project to the residents, one of the elders suggested the names of two elderly residents who could assist the researcher with some of the needed information. The discussion to locate possible informants revealed that nearly in every community there would always be those ‘hidden’ people who would have those largely ‘unknown’ information and informants with histories about their areas even if it meant through generational oral narratives from others – especially the elderly (Gumbi, 2002). This informed the decision to consider snowball techniques to develop the list of possible informants. This elder advised that the younger residents might not be of major assistance as most of them might not even know the *savha* (*Sansevieria pearsonii*) plant let alone its historical ethnocultural significance and use, including the technologies involved in the extraction of its fiber. The researcher contacted the two identified possible key informants. They were keen to participate in the study as key informants providing the needed information. They also suggested two more possible informants who were resident at the village. A list of eleven (n=11) possible key informants was developed.

Data Collection Methods and Approaches

Data collection methods and approaches were selected from multi-disciplinary contexts (Leakey et al., 2022). For the qualitative data, each of the eleven (n=11) voluntary key informants were interviewed using face-to-face approach at the comfort of their homes after having received consent to participate and having allowed the researcher to visit their homes for data collection. The data was entered into a notebook for post-interview analysis. This was followed by field work at the habitat site of the plant along the road (D6371) where clusters of the plant had been located prior to the initiation of the research project. Several transect walks at the village were undertaken collecting the targeted data. Thirdly, some data was collected through Focus Group Discussions (FGDs) administered on a group of eight (n=8) purposively selected participants from among the residents. The data included among others the native name of the plant, the ethnocultural history of the plant; that is, what it was used for and whether the residents still used the plant for that purpose, whether the participants have noticed the threats against the plant and to suggest ways and means to manage the threats, whether the participants would consider domestication and commercialisation of the plant, to source for strategies to domesticate and commercialise it, and furthermore whether they would want to donate land for the envisaged farm project, the strategies used by the residents to protect the plant from over-use and other threats, what the plant could be used for in future, the economic status of the residents and whether they liked the proposed project or not.

Fourthly, three clusters of the plant were harvested from the original habitat at Pfumembe to be re-planted at an accessible ‘mock’ farm at Mauluma Village. The three clusters harvested at the village were re-planted on Thursday 20 March 2025 at 9:30am (SAST). Each cluster was fed 40 litres of water once a week at 9am until 20 April 2025. This was reduced to 20 litres per week for another month. For the month of June, no water was fed to the plant. This was necessary to test possibility for domestication, and to provide the data to be used in analysing the growth trends of the leaves. This would enable the researchers to explore if the replanted plant would survive the new habitat, and to explore if the fiber would still be of the same or better quality. This would assist the researchers to decide if it was worthwhile to develop the envisaged farm considering the outcome of this experiment. Furthermore, the collected data on the leaf characteristics of the plant would assist the researchers to plan ahead and better on the intended domestication

highlighting among others the domestication season to manage climatic factors which could impact on the exercise, the determination of the replanting methods, breeding methods, genetic engineering of the plant, and review of the technologies which could be needed for the domestication and further breeding techniques for the plant, among others in selection, harvesting and replanting for domestication for example (Verma et al., 2024). The three clusters provided data on the length of the leaf and its circumference immediately at planting, and the subsequent months earmarked for observation thereafter. The length and circumference of the leaf would determine the plant's suitability to produce the fiber – especially if it were to be used in art making. After the re-planting, the three clusters' data were recorded, among others (1) the number of leaves per cluster to ascertain if any new leaves emerged, (2) the size of each leaf per cluster in length and (3) the circumference of the leaves. This data was collected and recorded in March, June and September 2025. The performance trends per cluster are presented as findings of the study.

Findings and Discussions

The *savha* (*Sansevieria pearsonii*) is found scattered in clusters in the lower lying areas of the Pfumembe Village along the banks of the Nzhelele River (figure 3).



Figure 3: The *savha* (*Sansevieria pearsonii*) plant in cluster; *Source:* Author

As it appears in figure 3, the plant grows under other plant species in bushy areas. Transect walk revealed that it surrounds itself with among others the *muswu* (*Vachellia terilis*), *mutswiriri* (*Bauhinia galpinii* NE. Br), *mudzwiri* (*Combretum hereroense* or *Combretum Imberbe*), *mubvumela* (*Kirkia acuminata* Oliv.) and *murabva* (*Grewia bicolor* var. *bicolor*) for example. *Muvhuyu* (*Adansonia digitata*) and *tshikhophatshituku* (*Aloe* sp.) are also common in the neighbourhood. No clusters were observed under the *muvhuyu* (*Adansonia digitata*), and *tshikhophatshituku* (*Aloe* sp.). It appears the plant thrives under the thorny species. It was observed that the clusters along the road were the most threatened as anthropogenic factors such as the expanding human settlement and the road encroached into the plant's habitat. These factors threat the survival of the plant. Key informants suggested that the factors had significantly reduced the population of the plant. The residents removed some of this plant to clear space for settlements. It was evident that further expansion on the road would lead to more encroachment and removal of the plant leading to reduced population of the plant and/or total extinction. The flooding Nzhelele river also posed a threat as its banks erode into the nearby habitat area of the plant. Littering on the habitat also poses considerable environmental challenge. Figure 4 shows the littering on the habitat.



Figure 4: Pollution at the *savha* (*Sansevieria pearsonii*) habitat; *Source:* Author

Debris of soft drink plastic bottles, other beverages and paper material such as napkins could be observed in the habitat. Key informants revealed that the residents lacked knowledge and understanding on the impact of environmental pollution on the survival of the plant. The debris is often swept into the nearby Nzhelele River during the rainy seasons causing water pollution. With the

Nzhelele dam which supplies water to the nearby citrus farm area just a distance away from this village, this pollution could be costly for the farmers. In addition, the littering posed health challenges to the community. The polluted water also endangers the fish species which play a critical role in the village's food system. This fish is critical food source of the community. It also generates household surplus income for those residents who fish to sell. Furthermore, the plant contends with adverse climatic conditions characterised with adverse temperatures ranging between 32 and 42 degrees Celsius during harsh summers – especially between September and February. The plant has been able to survive these conditions. Survival under these conditions suggests the plant may not require demanding attention such as watering. Observed human activities such as uncontrolled and illegal extraction of the plant in the form of poaching were also mentioned by the key informants as a factor exacerbating the threats against the plant. Uncontrolled removal of the plant from the habitat has significantly reduced the plant population. Similar activities have been observed in Zimbabwe (Takawira & Nordal, 2001). According to Takawira and Nordal (2001) communities must put measures in place to protect the threatened plant species from over exploitation and illegal removals from the habitat. Some poachers masquerade as researchers, government officials and development advisers while removing the plant and other rare species from the village. Residents have witnessed incidences of strangers removing clusters of the plant from the village without informing the village *vhamusanda* (headman) who is the custodian of the community resources. Key informants informed the researchers that some extracted plants are sold to an unknown but growing market – especially to those wanting the plant for their gardens and use as indoor ornamentals (Takawira-Nyanya & Stedje, 2011). This has become a common trend in South Africa where rare and drought-resistant *flora* is targeted by the 'expanding illicit trade' cartels (Nombembe, 2025). The Global Initiative Against Transitional Organised Crime has confirmed the trend suggesting that the country has had sophisticated criminal syndicates targeting rare and prized species for ornamentals (Nombembe, 2025). Poaching exposes vulnerable and rare plant species to possible extinction while also effecting economic damage in the affected communities. However, it was not immediately clear if the illegal activities of poaching were from the macro-poaching groups with an offshore market. The key informants revealed that activities only remove small quantities of the plant although the impact is profound. The activities are difficult to manage. Key informants revealed that residents lacked knowledge on the cultural and economic significance of the plant and therefore the interest to protect is low. The poachers take advantage of the illiterate residents and removed the plant with ease. However, when made aware of the devastating impact of the illegal activities on the plant, the participants conceded that there was need to protect the plant. They called for increased efforts to increase conservation efforts to curb the crime as Mgunda (2025) suggested in a similar study. According to Mgunda (2025), rare, threatened, and endangered plant species are heritage of the nation, and to illegally harvest such would be to endanger a heritage.

The key informants were asked if those involved in the activities were residents. The report was that the frequently seen intruders were non-resident and were neither from the neighbouring villages. The key informants and the participants in the FGDs recommended that the *Vhamusanda* (headman) take responsibility over the activities by ensuring that everyone who entered the village is known and required to obtain permission to perform any activities at the village. Removal of the plant must be regulated using bylaws of the village often developed by the village *khoro* which is a resident meeting regularly held at the headman's kraal to deliberate on the issues affecting the residents. Furthermore, law enforcement agencies must punish the culprits to deter others from committing similar crimes. The challenge however was that most residents would not want to report suspicious and illegal incidences to the authorities, and neither would they want to be witnesses should the culprits be brought before the courts. This trend is common in the area (Mafukata, 2016; Mafukata et al., 2024). For lack of consequences the poachers continue to cause damage hampering resource-based development efforts.

***Savha* (Sansevieria Pearsonii) as Heritage**

It was observed that there were only a few people at the village who had knowledge of what and how the plant was historically and traditionally used at the village. Only two elderly women were identified as having that knowledge. They were aged between 70 and 75 years of age. When contacted as additional sources of the data, they did contribute useful information. Both had their grandmothers as active harvesters of the plant which they sold to ethno-artmakers from other villages while also producing art for themselves. The activities were popular in the mid-1970s. The activities dwindled early 1970s to date. This is because of lack of interest; demand of traditional art made from the plant and lack of skills transfer in the art. In fact, the informants revealed that they too had limited knowledge on how to harvest, process and use the plant for production of fibre and the production of the artwork. This could still be harnessed to rebuild the activities. The key informants opined that if this does not happen, the historical technology of harvesting and skills for the artwork could eventually disappear. This supported the idea of the domestication and commercialisation of the plant as these would resuscitate the technology of its production and to sustain the art making skills from its fiber. It was observed that the extraction of the fiber from the plant was easy as it requires no complicated tools. It was easy to remove the skin of the plant to extract the fiber. The domestication and commercialisation process by way of creating a farm would assist the initiative to modernise the use of the plant while economically benefiting the community.

The Height Trends of the leaves Per Cluster Over the Observation Period

The results revealed that the leaves in each cluster have had growth (figure 5).

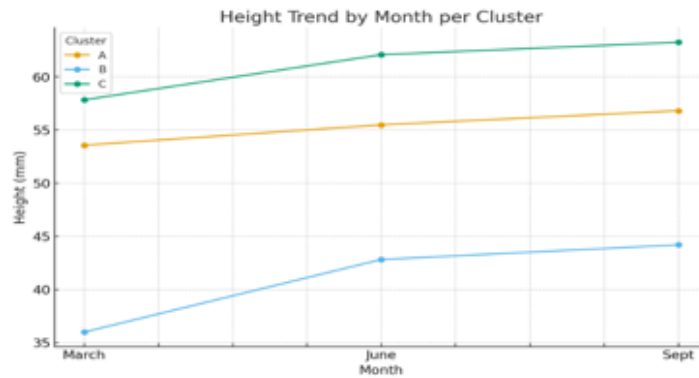


Figure 5: Height trend by month per cluster; *Source:* Author

In cluster A, the growth pattern revealed that the leaves grew by between 0.7 and 3.7mm during the observation period. In cluster B, the growth pattern of the leaves ranged between 1.8mm and 15.7mm whereas cluster C revealed mixed performance outcomes of growth and decline. It was observed that the growth rate was between 0.7mm and 24.7mm. However, leaf '3' revealed contrary results as it showed a decline in the growth trend by -2.1mm. The implication of the results is that the plant was showing encouraging growth rates which would be positive to produce the envisaged fibre.

Circumference Trends Per Cluster Over the Observed Period

Figure 6 presents the leaf circumference performance trends during the observation periods of March, June and September 2025.

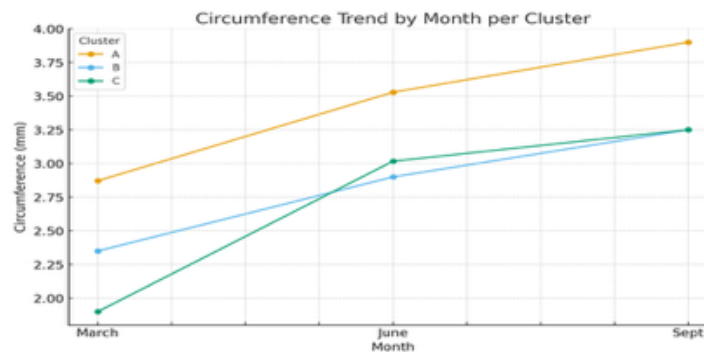


Figure 6: Leaf circumference trend by month per cluster; *Source:* Author

The results of this study as presented in figure 9 revealed that in cluster A, the circumference of the leaves grew by between 0.6mm and 1.7mm whereas in cluster B, the growth showed range of between 0.4mm and 1.2mm with the final growth rate of between 1.0mm and 1.7mm in cluster C. The growth pattern in circumference has positive significance as this could be pointing to good fibre.

The Final leaf Structure in September

Figure 7 captures data depicting the leaf characteristics as captured in September 2025.

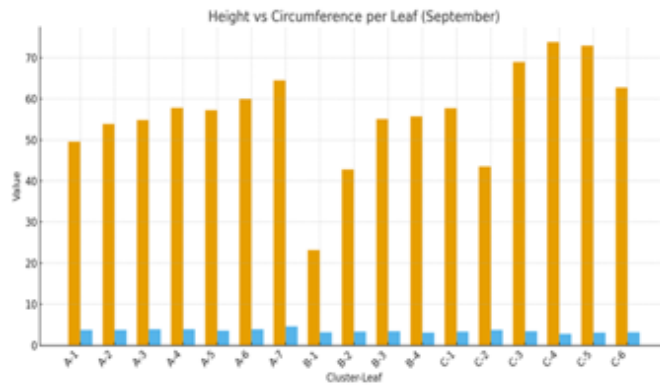


Figure 7: The final leaf structure in September; *Source:* Author

The results captured both the height and circumference data of the plant's leaves in the last period of observation. The results revealed that each leaf in each cluster had growth of some kind with exception recorded in leaf '3' of Cluster A which reduced in height from 71.0mm to 68.9mm. The cause of the unexpected reduction or shrinkage in the size of this leaf was not immediately clear. However, because it happened with only one leaf, the data didn't in fact necessitate a compelling reason to establish the facts just because it wasn't a trend. The general outcome on the analysis of the performance pattern of the leaves in this cluster was sufficient to assist the study to conclude that the plant was a domesticable species which could feed to the purpose of the envisaged farm.

Propagation

Possibility for propagation was measured by exploring the seeding patterns of the plant. The flowering period of the plant was observed between August and early October (figure 8).



Figure 8: The flowering *savha* (*Sansevieria pearsonii*) at the 'domestication' site; *Source:* Author's

Figure 9 shows the seeding branch of the *savha* (*Sansevieria pearsonii*).



Figure 9: The seeding branch of the *savha* (*Sansevieria pearsonii*); *Source:* Author

Transect walk revealed that after the flowering season, the purplish flowers began to produce greenish fruit which later produces seeds. The seeds were scattered around the cluster (figure 8 and figure 9). Comparison regarding flowering and seeding were made between the cluster at the original site at the village and the 'transplanted' cluster brought to the control sight at Mauluma Village to determine if the 'disturbed' cluster used to test possibilities of domestication would also be flowering and seeding (figure 8). Another

critical observation was that the plant did very well surviving also in open space without the thorny bushes it usually grows under at the study area. This points to the assumption that even on domestication, there might not be any need to provide such an environment.

Conclusion

This paper investigated the possibility to domesticate and commercialise the *savha* (*Sansevieria pearsonii*) plant at the Pfumembe Village of the Musekwa Valley in the Vhembe District of Limpopo Province, South Africa. The study adopted mixed method design making use of quantitative-qualitative data which were collected through multi-tool and methodological applications such as face-to-face interviews from purposively selected key informants (n=11), direct observation of the plant habitat through transects walk at the village, Focus Group Discussions (FGDs) administered on eight (n=8) purposively selected participants and an experimental 'mock' farm. Quantitative data were analysed using excel spread sheet which captured frequencies - the results of which were captured and presented in simple figures. The qualitative data were analysed using pre-determined themes and sub-themes designed from conversations with the gatekeepers at Pfumembe Village.

The results of the study revealed that the plant was a familiar species known by most of the residents at the village. However, knowledge on the plant's historical and ethnocultural significance – especially on artmaking and technology involved in the extraction of fiber was low among the residents. This suggested that incredible indigenous heritage could be lost among the younger generations. Despite this observation, it was evident that the plant has had implacable cultural and economic significance as the residents of old used it to produce traditional artefacts. Whereas this plant has had medicinal significance in some communities in most regions of the world – especially Africa where people used the plant to cure different ailments, including among others treatment of haemorrhoids, expulsion of intestinal worms, toothache, ear infections and earache, combating of malaria, treatment of snake bite wounds, treatment of convulsive fever, prevention of miscarriage, treatment of sexually transmitted infections such as gonorrhoea and open wounds and sores while some used it to increase appetite in children, in the study area, the results of this study revealed no such ethnomedicinal significance. The results furthermore revealed that the plant was domesticable and could be commercialised to serve the traditional art making industry and the fibre demand of potential commercial sector. This assertion was informed by the quantitative data analyses which concluded that the performance of the leaves in the period under observation; that is March, June and September has been positive because both the length and the circumference demonstrated good performance of growth. Therefore, domesticating the plant would not result in reduced performance of the plant, and therefore on domestication, the plant wouldn't lose its quality. This study encountered limitations. The case study was limited to a small area of observation at the village as the researcher could not venture deeper into the village because of personal circumstances. The results assume therefore that the plant was only found within the residential area – an assumption which could not be conclusive. Furthermore, it could be that the plant may also be found in the neighbouring villages, and this could alter the concept of having to transplant it to a commonly accessible place by the residents of the other villages. The researcher's academic limitations as a social scientist needed support from across multi-disciplinary expertise, which was not possible at this stage suggesting therefore that the follow up studies may have to consider roping in other disciplinary expertise. Having acknowledged these limitations, the researcher still concludes that the insights gained from this study are sufficient to provide the needed strong foundation regarding the domestication and commercialization of the plant. There is need for a better approach in terms of a collaborated approach in subsequent research to expand into the suggested farm development possibly with a broader base of the residents, development agencies and planners, policy experts, botanists, environmentalists, historical, social and educational expertise to deal with community engagement (CE) facilitation coming on board.

It is recommended that the plant be domesticated by developing a modern prototype farm in one of the villages in the Musekwa Valley to facilitate its protection against the threatening factors of its existence and to revitalise its cultural use and heritage in art making to trigger some economic targets. Further studies are critical – especially on domestication and the prospects of commercialisation; that is the establishment of the farm to produce more of the plant. It is crucial to have a study on the use of modern technology to propagate and harvest the plant and extract fibre. It is not in the scope of this paper to delve into the detail in this regard, but a follow up project would be developed to determine the way forward.

Acknowledgement

The author acknowledges the encouragement and support he received from colleagues at the Department of Development Studies, College of Human Sciences, University of South Africa. Mr Thama Edmund-Roebert "Jersey 15" Mafukata is acknowledged for his role and inputs on quantitative data capturing and analysis.

Author Contributions: Conceptualization, M.A., and M.A.; methodology, M.A., validation, M.A.; formal analysis, M.A., investigation, M.A.; resources, M.A.; writing—original draft preparation, M.A.; writing—review and editing, M.A. All authors have read and agreed to the published final version of the manuscript.

Institutional Review Board Statement: Ethical review and approval were waived for this study, since the research does not deal with vulnerable groups or sensitive issues.

Data Availability Statement: The data presented in this study are available on request from the corresponding author. The data are not publicly available due to privacy.

Conflicts of Interest: The authors declare no conflict of interest.

Funding: Self-funded.

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Conflicts of Interest: The authors declare no conflict of interest.

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