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*Review*

# **Zulu monarchy land engagements and the Section 25 of the South African constitution**

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**This work is an attempt to highlight some landmarks in how the Zulu descendants engaged the issue of land with the settlers of any time in South Africa. The method of telling as it happened is a way to confront the history and try to find a natural way of rectifying land rights in settings where the customary land tenure system was overturned by the fortress based on the Western ways of land management. Dispossessed people's land tenure situations are unique settings where even international actors have their ulterior motives and large interest and influence in the success of any restorative action or recovery. The study approach of telling it as it happened for the dispossessed, it represents real opportunity for practical and policy reform for the advocacy for restoration of customary land tenure system for everlasting peace. The trail of land handling from King Shaka, King Dingane, King Mpande, Cetshwayo and Dinuzulu is testimony of the trail of blood that went along the succession plan of Kingship which ceased to be hereditary from when King Shaka took over "ngeklwa". The whites became aware of this and they got entangled in it for land. The South African Constitution Section 25 needs auctioning as it permeates expropriation without compensation for land reform.**

**Key words:** Land expropriation, Zulu, without compensation, King Shaka.

## **INTRODUCTION**

The issue of land in South Africa has transcended from pre-colonial, colonial, apartheid and post-apartheid scenarios. South Africa got democracy not by a barrel of a gun, but through negotiations as a result of multitudes of pressures directed to the Apartheid System. When democracy took over, new laws were given the opportunity to address land and property issues in the context of what is supposed to be more solidified and peaceful social and legal environment as an outcome.

For purposes of this work, history is told as it happened without any underpinnings to commodification or allegiance to any affinity. The author tried to present history as a journey away from opaqueness about the truth. The article discusses the chronicle challenges regarding land as it got reduced from the hands of black people through the hands of the hegemonistic indigenous leadership which was under pressure of guises of assistance by white landless people gasping and punting

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for land at that time. The setting and tone of relating this history is not pinned to any practical and or policy options but narrates events as they happened. He threaded the events of land grabbing and how it was used as a collateral for military assistance by the Zulu Nation (dishing out within the Zulu Nation clan only from King Shaka to the just deceased (owakhothamayo King Zwelithini).

## KING SHAKA

While the first white people to set their feet in South Africa were around the 1400's, the arrival of white settlers started to be glaring in 1652 when Jan van Riebeeck came to build a refreshment settlement for the Dutch East India Company.

On his arrival he is praised by the Dutch Government or the colonial fraternity as a pioneering explorer and conservator of natural resources, while the other truth is that he was a recovering prisoner who was fresh from trial as an economic capturer of Batavia. Around 171 years later Farewell and Fynn arrived from Cape Town in 1823 as far as St. Lucia Bay and Delagoa Bay respectively. This was the concurrent time when King Shaka's reign was at its infancy as he took over in about 1814 (Stuart, 1913:1). The Zulu resisted the thrust of whites, but encroachment on their territory was continuous, (Butler et al., 1978:9). Julian Cobbing was criticised as pushing a wrong path of historiography for shifting the paradigm on Mfecane (Peires, 1993:295). The misappropriation of land and a resource in it dictated the shift from a domestic mode of production to a tributary mode. This happens during the King Shaka era and beyond. It motivated King Shaka to galvanise for sense of security as population explosion with competition to access to ecological resources was posing a threat to social security. The reintroduction of settlers caused the growth of the European colony on the Cape frontier and the Voortrekkers trekking inland later muscling up the Zulu Kingdom formation which King Shaka had started, expanded during King Dingane's era (Wassermann, 2004:2; Globler, 2011). Drastic changes in the nature of external trade, particularly with the Portuguese on the east coast; (Kuper, 1993:470), all of these caused the Zulu kingship to galvanise for defence, for argument's sake. The first white people to arrive in the Zulu kingdom were Fynn and Farewell who had a claim with King Shaka on land to settle in 1824, (Bramdeow, 1988:28). Maphalala reckons the whites met King Shaka when he was busy with the formation of the Zulu Nation and they were given Sibubulungu and the unoccupied surrounding area which was known as Port Natal by the whites, (Maphalala, 1979:4). Other historians allude that King Shaka recognized the Port Natal settlers

as tributary chiefs in the same year, two years later King Shaka is supported by Port Natal traders with firearms to defeat the Ndwandwe people at the battle of the iziNdolowane Hills and before the Ndwandwe dust settles, in 1827 (Laband, 2009:xxiii). King Shaka's relationship with King James is conceived when Francis Farewell went for a financial backing by Cape merchants for an exploratory voyage to Delagoa Bay and Natal, on ships the Julia and the brig, the Salisbury, which translated to a mature relationship, (Hamilton, 1991:6). The eventuality of the relationship decoded why an armed party from Port Natal under James King assisted King Shaka in subducing the Bheje people (Laband, 2009: xxiii). Amazingly, a year later in August, King Shaka, gets a warning from the whites not to expand his kingdom southwards. Now the people who has asked for land to settle while they find a way to repair their ship which had wrecked, are giving orders to King Shaka not to expand in his ancestral land, and on the 24th September he is assassinated, (Laband, 2009: 23; Maphalala, 1979:2). While as a contemporary writer there is a lot from Stuart that does not make sense, but this foregone allusion about King Shaka gets confirmed in his 1913 thesis which was funded by those who wanted to hear his "truth" the way it is told.

"Among these, practical services of various kinds were rendered by the pioneers from time to time, in a collective as well as individual capacity. For instance, they were occasionally called on to assist in military expeditions; when not so engaged, they established and developed a commerce in sundry commodities, notably blankets, cloth, bangles and beads of different colours and sizes, in exchange for ivory, cattle, goats, corn, maize, etc., which proved as beneficial to the aborigines as it was lucrative for the settlers (Stuart, 1913).

Most of the foothills of the eastern plateaux of the Zulu territory from King Shaka's day were invaded by Whites, (Butler et al., 1978:9), which gets confirmed by Shula when she alludes 2.6 million acres diminished and the Zulus were pushed back and only 3.8 million acres remained (Marks, 1970:127). From the mentioned voracious appetite of land the whites had, it is coincidental that King Shaka's death in 1828 took place just after the visitation he was paid by Farewell, Fynn and Isaacs at Kwa-Bulawayo, who on receipt of the news of King Shaka's death, were more worried about permission he granted them to settle in Natal, and the latter their relationship between King Dingane and the traders at Port Natal was friendly, and the Qwabe tribe that killed lieutenant Farewell got punished severely (Maphalala 1979:3). While this line of argument does not dismiss the action by Prince Mhlangana, King Dingane and Princess Mkabayi being pivotal to the plan, the opportune time of the visitation by Farewell and Isaacs to King Shaka's kraal becomes significant.

## KING DINGANE

The Dutch people decided to trek away from the rule of Britain from the Cape to the interior in the 1830's, (Knight, 2015:3). A party of Boers under Piet Retief arrived in Durban from the Cape Colony, through the coming of traders and missionaries, and their families, were considerably increased. The encounter of King Dingane with Retief was after the Great Trek took a turn in Tlokwe and veered down through the Drakensberg to Natal, (Globler, 2011:131). The first Black community they found was the Khumalo ABeNtungwa who populated the entire area from Qgumaweni down to oThukela which is in Ntabamnyama. INkosi Nqina Khumalo pointed them to King Dingane in Mgungundlovu. On the 5th of November 1837, Retief visits King Dingane at his Royal Palace, (isigodlo), in uMgungundlovu isigodlo where they negotiated for land and King Dingane asked them to bring back his cattle which he said were stolen by Sigonyela (Laband 2009::24).. Literature coils they were to sign an agreement which Globler refers to as dubious as King Dingane was illiterate, so there was no way he could write an agreement and sign it, (Globler, 2011:130). King Dingane assumes a posture of great hostility against the whites hence his unwavering appetite to kill them any time without any proper scheme, (Kunene, 1979:299).

King Dingane was critical of endless fraternizing with Strangers as he harboured deep suspicions against them. He despised that they participated deeply to the affairs of the court. King Dingane detested this as a strategy to bring disaster to the whole nation as their love for land was like a disease. From page 4 to 5 Maphalala writes about King Dingane and his ordeal with the Voortrekkers led by Piet Retief and how they were clobbered to death with no witness to tell the story, until the Ncome Battle where King Dingane was defeated by the Boers. King Mpande joined the Voortrekkers in a joint attack on King Dingane. The Zulu army was defeated and chief induna Ndlela of the royal army returned to report his failure to King Dingane. He was violently berated by the king and accused of cowardice and negligence. King Dingane ordered his arrest and had him bound. Later, in full view of his fellow indunas, he was strangled with an ox-hide thong. Despite all his leadership hence King Dingane sustained him when he took over from King Shaka and made him his Commander in Chief (Laband, 2009:189,315). While there could be dual lenses through which Ndlela kaSompisi would be viewed, bearing in mind the approach of the Ncome Museum and the Blood River Museum. What is a main and sustained factor is that King Shaka appointed Ndlela and raised him to the highest echelons of his Militancy as he was the Chief Military Commander. This position cuts across Shaka and Dingane's rule as he was not killed when Dingane took over, but he was Commander in the Voortrekker-Zulu War, the Ncome River Battle of 1838. Ndlela

advised Dingane not to negotiate with the Voortrekkers instead should and execute Piet Retief (Laband, 2009:189). The defeat of Dingane by Mpande at the Civil War of Maqongqo Hills raised suspicion as Ndlela had his daughter married to Mpande and Dingane, like Shaka, had no son to be the next king. This is suggestive of the reason why Ndlela refused to support the killing of Mpande who had children.

## KING MPANDE

While Napier reckoned the Voortrekker project was a disaster for the greater part of northern Natal, his interests were on preventing the Voortrekkers from offloading destabilised blacks who migrated away from Voortrekkers' invasion to Mthamvuna and Mzimvubu, (Shamase, 1999:6). He ordered the soldiers to prevent the Volksraad from settling large numbers of Natal blacks in the area, (Rautenbach, 1989:22). These people of Dutch origin seek land and free African labour, (Porterfield, 1997:67). The alliance between King Mpande and the Voortrekkers was based on the Voortrekkers' assistance to fight his brother King Dingane at the battle of Maqongqo which split the kingdom and land ceded to the Voortrekkers as a token of their assistance, (between 1839 and 1840 the Voortrekkers seized large parts of the Zulu kingdom, including the area between the Thukela River and the iMfolozi Emnyama (Bundy and Gordon, 2020:1). King Mpande promised to protect the Voortrekkers with his last men, and the promised got extended to 14 February 1840 where Pretorius issued a declaration whereby the territory from the sea next to the Black Mfolozi River, through the double mountains, close to the origin and then next to Hooge Randberg in a straight line to the Drakensberg, St. Lucia Bay inclusive was declared as border between KwaZulu and the Republic of Natalia, (Shamase, 1999:4). This relationship between the Voortrekkers and King Mpande saw him assisted at Maqongqo and installed as King of the Zulu subject by the Voortrekkers at Pietermaritzburg, (Porterfield, 1997:67) which unsettled the British as they went to threaten the Voortrekkers' Sovereignty. Despite the fight which broke out on 23 May 1842, which presaged the first of several Anglo-Boer wars, some outdated history maintains the discovery of gold in 1884 caused the war, (van Heyningen, 2016). On the banks of the Klip River the Voortrekkers received about 36 000 head of cattle looted after the Maqongqo battle. In 1842 he gave land to the British through Napier using special agents and missionaries from sources of Mzinyathi to its confluence with uThukela, (Shamase, 1999:7). King Mpande also gave a lot of land to missionaries which their reason to present the Christian gospel to the Zulus is one of the guises Harriet warns about with the British settlers, (Colenso, 2010:29). On the

line up for land were the American Board of Commissioners, English Wesleyan Methodist Society, Norwegian Mission, Berlin Mission, Hanoverian Mission, Church of England and Roman Catholic Mission, whereby King Mpande had hopes they will provide a buffer between his empire and the Colonial establishments in Natal (Shamase, 2015:2; Shamase, 1999:11; Muntu, 2006:1).

### **KING CETSHWAYO**

King Cetshwayo was a clever and a consultative king, (Maphalala, 1979:8). During the reign of Cetshwayo Zibhebhu, son of Maphita, son of Sojiyisa, son of Jama, son of Ndaba, becomes prominent. He belonged to Mandlakazi Royal Homestead. The genealogical line points to King Cetshwayo and Zibhebhu as descendants to the same house of Jama.

In that way, there was no need to fight except what Shepstone malicious behaviour made them fight his battles. This is a culture of the British as post-Anglo-Dutch War; the Natives were made to pay for the war debt in the form of Poll Tax (khanda-mpondo).

Shepstone had a plan to use the Zulus to fight the Boers over the Transvaal/Natal boundary, which never happened and Frere used that to influence the Boundary Commission about the reason to annex the Zulus. He thus presented Cetshwayo with an ultimatum which demanded the Zulus to disband their army within thirty days, which Cetshwayo did not do, and on 22nd January 1879, took most of it, in the British's unawares at Isandlwana where the British army suffered its greatest disaster since the Crimean war, (Maphalala, 1979:11). The English Settlers wanted the whole of Zululand to themselves which got extended to the inclusion of the Zulu population to provide labour in the diamond fields of Southern Africa (Britannica, 2019). Even the coronation of King Cetshwayo was used by Shepstone as bait to get hold of land from Zululand which was set as an ignition to the Anglo-Zulu War (Cope, 1995:2).

After Cetshwayo defeated the English in the Anglo-Zulu War of 1879, Britain solicited a process to destroy the Zulu kingdom in revenge to their defeat by creating a divide and rule of Zululand which was cut into 13 kinglets, (Maphalala, 1979:12). USuthu was allocated to Zibhebhu kaMaphitha and the rest of other kinglets mentioned in literature, (Laband, 2009: 14, 159, 164, 168, 170, 193, 204, 250 and 260). By giving Zibhebhu uSuthu, they knew this was to cause a rift between Cetshwayo and Zibhebhu, wherein the latter, together with Ntshingwayo kaMahole and Mnyamana kaNqengelele, was among the key izinduna in the Anglo-Zulu War (Sutherland and Canwell, 2004) in the aftermath of the Anglo-Zulu War, and vied for the royal succession with another of Cetshwayo's sons, Dinuzulu. Anglo-Zulu War of 1879,

Britain embarked on revenge where they caused a rift between Cetshwayo and Zibhebhu in retaliation of the defeat in the Anglo-Zulu War. A consequence of this was the civil war between King Cetshwayo and Zibhebhu which was solicited by Britain after their defeat by the Zulus at the Anglo-Zulu War of 1879. Zibhebhu assisted by the English won the battle. There are two mistakes which Cetshwayo made which contributed to his destruction. Making John Dunn district chief who ended up being inimical to Cetshwayo and was among the 13 chieftains who were given land when he was in exile, and allowing Fynn to enjoy a close friendship with him while he was the representative of the British government, and clearly after his demise oNdini, he stays with him in the Nkandla Forest and the following year he eventually got poisoned and died, (Laband, 2009:100; Canwell, 2004:155). Cetshwayo should have known Fynn wanted land at any cost and Fynn's relationship with the Zulu is evident in the fact that he was not successful in retrieving the colonists' cattle from Prince Cetshwayo during the Zulu Civil War of 1856. Moreover, it is registered in history that Fynn's main motive in returning to Natal in 1851 was to obtain land and was not ashamed to be into conflict with the government over the distribution of land to the other settlers, (Bramdeow, 1988:3).

### **KING DINUZULU**

Dinuzulu formed an alliance with the Boers from the Transvaal who had for decades invaded western Zululand for grazing to aid him fight Zibhebhu, (Wassermann, 2011:26). Dinuzulu's act of forming a combined force with people who had always showed an overwhelming appetite for land was an irresponsible act to his followers as the land they had been given to them by Mvelinqqangi. The price of 2 700 000 acres of land populated by his loyal followers had to be ceded and from that day Zululand was engaged by the English and the Dutch, some of it even today. On this land, the Boers formed the New Republic with Vryheid as its capital and Lucas Meyer as the President. Beyond the 2 700 000 acres they took from Dinuzulu, they thieved more than discussed and the right to a protectorate over Dinuzulu, the British intervened by recognising, in October 1886, the New Republic. The Boers dropped the thieved land on condition that those who had settled in that area retain their farms. Protests by Dinuzulu and his followers fell on deaf ears and Britain on the 15th July, 1885, through the Natal legislative council executive responded by annexing Zululand, including Proviso B, and turning it into the British Colony of Zululand, (Maphalala, 1979:11).

### **HENRY FRANCIS FYNN**

With King Shaka's permission, Henry Francis Fynn



settled on the banks of the Umzimkulu River, south of Natal, where he got married and became a chief and had his Nsimbini tribe (Bramdeow, 1988:6). King Shaka's death in 1828 took place shortly after the return of Farewell, Fynn and Isaacs from their successful visit to his royal kraal at Kwa-Bulawayo.

When news of his death reached the whites, they were very upset because King Shaka had granted them permission to settle in Natal, (Maphalala, 1979:3), and they got worried if King Dingane will ever entertain that. The historical confusion happens when Mkhulu Mavundla in Mbele and Houston thesis concurs King Shaka did not just give Fynn the permission to trade in Durban but this got extended to land around the Port Shepstone area. This extension is questionable as King Shaka got murdered shortly after the Henry Francis Fynn and John Dunn visited KwaBulawayo isiGodlo. Mbopha who was ostracised by his own people, the Bafokeng, which he was a rightful heir, migrated to kwaZulu and joined King Shaka as his right-hand man (insila). He is used in killing King Shaka, hence his last words, "Nawe Mbopha kaSithayi". Mhlangana got killed by King Dingane while Mbopha fled and settled round where Gamalakhe in Sayidi (Buthelezi 1983), (Port Shepstone), is today and changed his name to Mvundla, hence the AmaVundla., (Mbele and Houston, 2011:144). The coincidence of Fynn characterised as a freebooter, and their visit to King Shaka's kwaBulawayo sigodlo and King Shaka's sudden death, and the fact that he killed a Zulu chief named Lukilimba and his deteriorating relationship with the Zulus, (Bramdeow, 1988:2) his unyielding appetite for land. Marjory Davies has a decidedly European bias. Although Davies, the great grand-daughter of William Mc Dowe II Fynn, brother of Henry Francis Fynn also known as Mbuyazi, concentrates on her lineage she focuses only on Henry Francis Fynn and his white descendants and neglects Henry Francis' more numerous descendants of mixed ethnic origin, which bothers into a racial burden where some people are captured in the notion that racial mixture is something derogatory (Adhikari, 2013:8).

## JOHN DUNN

Following his parents "deaths, a teenaged Dunn left the nascent colony for Natal's borderlands, eventually moving to Zululand in the 1850s. His movement to Natal in 1851 was to obtain land which caused bad blood between him and the white government, (Bramdeow, 1988:3). Dunn later served as a sub-chief under the Zulu monarch Cetshwayo (1873-1879) before changing allegiances during the Anglo-Zulu War; he was subsequently appointed chief over a Zulu district by the British government following Cetshwayo's defeat" in 1879. This is a lesson as it is known in history of the

Nguni people that "Umlungisi uzithela isisila". The interpreters very likely had their own particular interest in communicating a version of history palatable to their masters.

## LAND IN THE HANDS OF INGONYAMA YAMAZULU

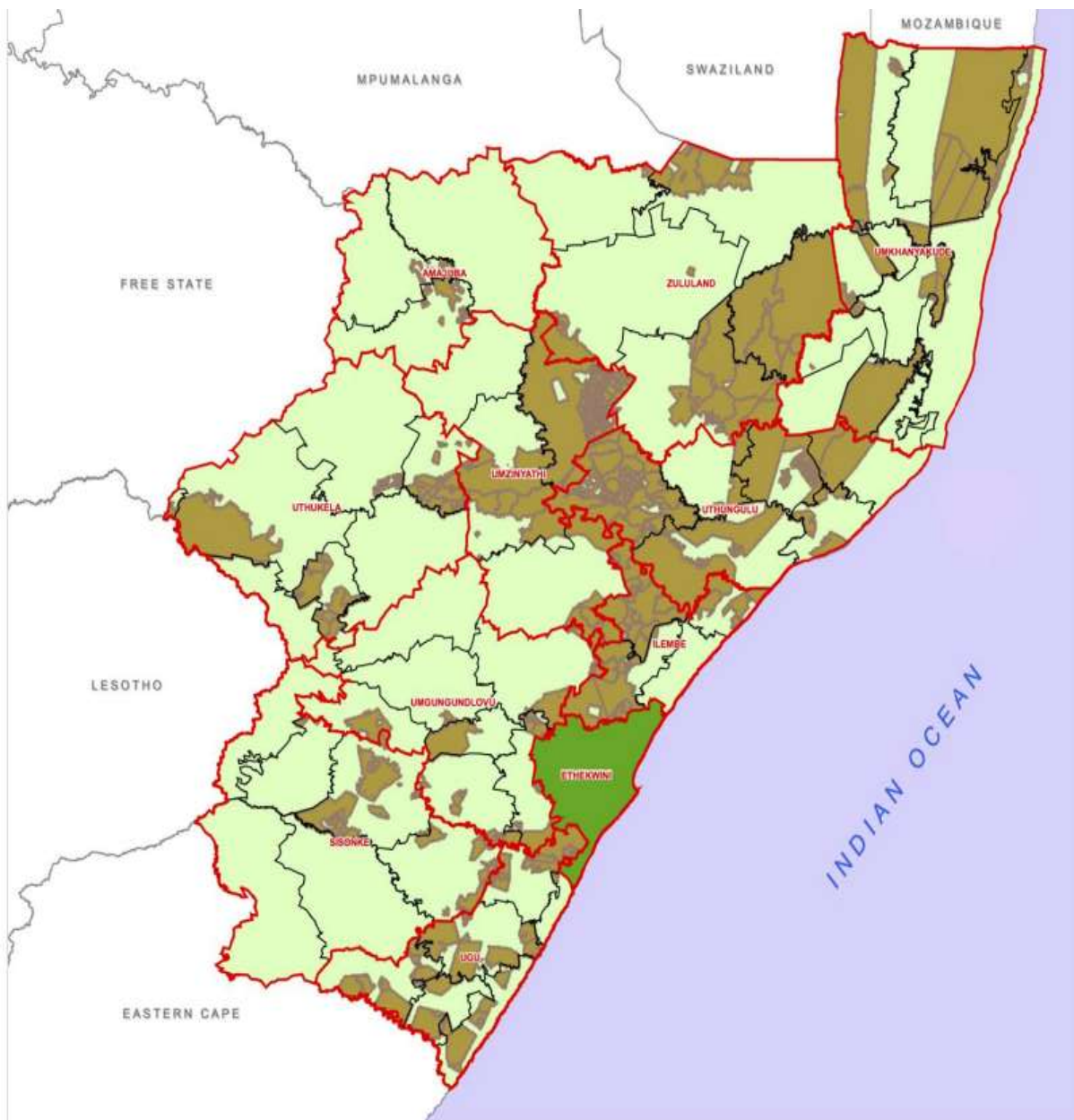
The Royal Zulu Kingship itself never had any political boundaries in as much as the whole of Africa as a continent (Amadife and Warhola, 1993:553), until the scramble for the Southern part of Africa by colonial invasion. Ingonyama Trust Board is a Schedule 3A Public Entity in terms of the Public Finance Management Act (PFMA). It is responsible for the administration of the affairs of the Ingonyama Trust. The Ingonyama trust was established in 1994 by the erstwhile KwaZulu Government in terms of the KwaZulu Ingonyama Trust Act, (Act No 3KZ of 1994) to hold all the land that was owned or belonged to the KwaZulu Government. The mandate of the Trust is to hold all this land for the "benefit, material welfare and social well-being of the members of the tribes and communities" living on the land. The sole trustee to land is under Ingonyama Trust His Majesty the King of the Zulus, as the holding is in trust for the Zulu Nation (Ngwenya, 2020:5). This was also one of those last minute hems which nearly reduced the country to wasteland like the Anglo-Dutch War, (van Heyningen, 2016:999). The map on Figure 1 displays land that is accessible to the Zulu Monarchy under Ingonyama Trust. This ownership transcends into all tribes in South Africa, like the Bafokeng in North West where the ownership of land is on behalf of the people. The influence of the white to impoverish black people has never been confined in KwaZulu, but the footprint of the colonial governing authorities got extended everywhere in South Africa. This had social and economic consequences of the wars of dispossession; the interference of the colonial government and the missionaries in the relations even between amaGcaleka and amaMfengu (Mvenene, 2014:38).

These interconnections among collective identity struggles, land struggles and state policies and practices in post-apartheid South Africa, are confused by the government's contradictory policies and ambivalent practices (Turner, 2013:507).

## INGONYAMA TRUST ACT CONTENTS

### Key provisions of the act

Section 2(2) – provides that the Trust shall, in a manner not inconsistent with the provisions of this Act, be administered for the benefit, material welfare and social well-being of the members of the tribes and communities



**Figure 1.** Land owned by Ingonyama Trust in KwaZulu-Natal  
Source: Centre for law and Society 2015.

as contemplated in the KwaZulu Amakhosi and Iziphakanyiswa Act.” Section 2(3)- “The Ingonyama shall be the trustee of the Trust which shall be administered subject.

The Act that gave birth to the above setting in Figure 1 as established on the 24th April 2004 resulted in a new landscape whereby:

a. Land owned by the iNgonyama Trust at 2 700 000 ha.

b. The population within iNgonyama Trust Land at 455 8 698.

c. Traditional Authorities at 241.

d. Section 2(4) - bides the Ingonyama to deal with land with reference to section 3(1) in accordance with Zulu indigenous law or any other applicable law.

e. Section 2(5) - which accentuates the powers of the traditional authority, who in turn obtains a written concern from community members which then gives power to the

Ingonyama to encumber, pledge, lease, alienate or otherwise dispose of any of the said land or any interest or real right in the land

f. 2(7) –promoting any national land reform programme established and implemented in terms of any law shall apply to the land referred to in section 3(1): with consultation with Ingonyama.

g. Section 2(8) – which upholds existing rights and interests and protects them against any infringement by Ingonyama?

### **THE SOUTH AFRICAN DEMOCRATIC ENGAGEMENT OF LAND ISSUE: LEGAL FRAMEWORK ON LAND**

Besides the land which has to do with the Zulu Monarchy, there is land which is outside the confines of the Ingonyama Trust. Some of that land was once privately owned by people who bought land when Reverend Colenso advised so The South African Constitution provides for the land restitution programme in section 25(7) and section 25(5); Section 25(7) which situates that an individual or community dispossessed of property after 19 June 1913 as a consequence of past racially discriminatory laws or practices is eligible to restitution of that property or to equitable redress through restitution, land redistribution and tenure security. This law becomes a problem as it looks at dispossessions as some event that just happened in 1913 and forcible removals are not spelt out clearly. If a person was forcibly removed, there should be no negotiation on redressing that situation. People lost land from the day white people came to South Africa. Land was what they wanted. The following is part of our Section 25 of the Constitution through programmes of restitution, which aimed to return land to Africans who had once had title and lost their property during the apartheid era (p.32). That was going to be done through redistribution, restitution and tenure as spelt out in the subsequent paragraphs a) Redistribution, using government subsidies to buy farms and tenure reform (Provision of Land and Assistance Act, 126 of 1993, as amended by Act 58 of 2008 (Section 10); b) Tenure reform which aimed to safeguard the rights of residents of white farms and state land in the former homelands and thus protect poor people from summary eviction by securing their existing rights or by buying alternative land on which they could live” (Moore, 2011: 33). c) The last bout on land has been the land expropriation without compensation, which is highly contestable. This is extended by arguments which Kloppers and Pienaar wrote about from page 677 to page 678 (Kloppers and Pienaar, 2014:677-678), which reminds one that indeed the Holocaust was a racial crime perpetrated against racialized whites in Europe, (Ce’saire in Mignolo, 2007:155). All what these authors worry about, is none of the dispossessed people’s problems as

land grabs were introduced by the white colonialists with their expansionist project, voyages of discovery and explorer conservationists with the eventuality of from Cape to Cairo projects. The land they possess is entangled with a long umbilical cord of racialized dispossessions (Moyo, 2015:108). With the act of their Parliament, they promulgated all notorious acts to disposes Black people of their land without compensation. The pharmaceutical industry intends using same apparatus and laboratories.

### **Squatters Act (No: 11) of 1887**

This is one of the acts of parliament which disenfranchised thousands of indigenous communities who found themselves being called squatters in the ancestral land. The South African Republic (ZAR) government promulgated the Squatters Act to regulate 'squatting' on White owned farms. In terms of the Act, not more than five families of Blacks were permitted to live on farms. This caused a lot of forced removals as when blacks have exceeded five families, they would be removed. The blacks would provide cheap labour to white farm owners.

### **NOTORIOUS ACTS**

#### **Natives Land Act (No: 27)1913**

This act prohibited the indigenous people from buying or hiring land in 93% of South Africa as its section 1, sub section 'a' says, “a native shall not enter into any agreement or transaction for the purchase, hire, or other acquisition from a person other than a native, of any such land or of any right thereto, interest therein, or servitude there over.” The 1913 Natives Land Act and the so called Mfecane were seen as accomplishing the thieving process of black man’s land by foreigners, as both are referred to as close companions, (Cobbing, 1984:16).

#### **The native administration bill 1917**

This was a Bill that made recommendations for acquiring more land from Black people on a scale that was even broader than the Natives Land Act of 1913.

#### **Prevention of illegal squatting Act (No: 52) 1951**

This anti-squatting act forced private landowners and local government authorities to demolish and remove all structures or buildings that were built without permission of the land owner.

### **Bantu laws amendment act (No: 42) 1964**

This law gave the government the power "to expel any African from any of the towns or the white farming areas at any time" (Thompson, 1990:199).

### **The group areas act of 1950**

The Population Registration Act No 30 of 1950 is one of the pillars of Apartheid and had to be promulgated to lay a foundation for the Group Areas act of 1950. The Population Registration Act required people to be identified and registered from birth as one of four distinct racial groups: White, Coloured, Bantu (Black African), and other. Apartheid model of the city was a commercial city centre, transitional mixed-use area, white residential, coloured residential, black residential on outskirts.

### **The native land act of 1913**

Theophilus Shepstone, in 1846 drove the Native Policy of the British Natal, in 1847 managed the Locations System which is the reason why the years between 1843 to 1855 are registered as "Shepstone's System", as this system caused Africans to be relegated to reserves and rocky lands which continues to haunt the post-Apartheid generation (McClendon, 2002:531). The ANC-led Government has caused a lot of pain to the remaining Elderly of the dispossessed indigenous South Africans by fixing dispossession in 1913 as if one was dispossessed on the 31st December 1912 that makes a huge difference from the person dispossessed the following day in 1913. The day the land-grabbers promulgated the 1913 Land Act continues to haunt Black people as the Whites who grabbed the land in 1912 are secured with stolen continuing the legacy of a generational wealth for their generations when its actual owners continue to suffer landlessness. Dispossessions were in gradations and people were moving away from visible places to deep areas in mountains and forests so they did not even know when they felt actual dispossession as this was a political issue where people would negotiate their existence. This becomes a legacy of neoliberalism that benefits the white elite and global capital system, (Mudau, 2021:1).

Despite all the policies which were instituted during the period from 1991 to 1997, which were aimed at abolishing racially-based laws and practices related to land, 70% of land is still in the hands of white people in South Africa. Section 25(3) of the South African Constitution spells the calculation of just and equitable compensation of land is governed by s 25(3), which reads:

"The amount of the compensation and the time and manner of payment must be just and equitable, reflecting

an equitable balance between the public interest and the interests of those affected, having regard to all relevant circumstances, including:

- (a) The current use of the property;
- (b) The history of the acquisition and use of the property;
- (c) The market value of the property;
- (d) The extent of direct state investment and subsidy in the acquisition and beneficial capital improvement of the property; and
- (e) The purpose of the expropriation."

Furthermore, the same section 25 allows for the expropriation without compensation, which has been highlighted as some event that once happened in the history of the country as far back as 1915, where the Appellate Division recognised that Parliament had a right to expropriate without compensation (Ngcukaitobi and Bishop, 2018:1). What remains a mystery is how people who expropriated the land without compensating the black people (Atuahene, 2011: 121) expect to be compensated. Moreover, lawyers maintain that there is no need to amend the Constitution as it permeates expropriation without compensation if that is to advance land reform, (Ngcukaitobi and Bishop, 2018:2). The application of the 1913 Land Act as a significant landmark of dispossession of land which was inflicted by Whites in South Africa is contentious rhetoric application of a polemic discourse aimed at supporting a specific position by forthright claims and to undermine the opposing position. While authorship applaud the post 1994 era which saw women winning cases of land claims (Sihlali 2018). The illiterate dispossessed ageing frail members of the indigenous societies are locked outside their ancestral lands by Whites whose ancestors stole the land and the state thinks that is so constitutional. The gap on legalistic and litigious culture is so wide as from day one the whites grabbed the first piece of land in Zululand, whetted their appetite for stealing more land, and they closed doors of social institutions they found here which would have evolved technically, technologically and otherwise. The ANC-led government positions the White Farmers to have available to them a repertoire of moves denied to their Black counterparts (White, 1992:54).

### **LAND AND POWER**

In Quijano's seminal article the colonial matrix of power has been described in four interrelated domains: control of economy (land appropriation, exploitation of labour, control of natural resources); control of authority (institution, army); control of gender and sexuality (family, education) and control of subjectivity and knowledge (epistemology, education and formation of subjectivity). With what Quijano puts forth, the author conceptualised

that the land that has been syphoned from black ownership to foreigners has never been bought but blacks were forcibly removed and given dry and mountainous areas. The economy was developed from the centre and black people were at the periphery. They would move from the periphery to the centre to provide labour, sometimes without pay. Squatters would pay for their squatting with labour. Paying for a stay in your ancestral land, which leaves much to be desired if the present government believes the paradigm has shifted as people are still dispossessed.

## CONCLUSION

Indigenous communities have a special affinity with land. The sense of ownership as a property in their land is about asserting a permanent physical kinship and an in-depth spiritual relationship with their land. This claim is about the legitimacy of one's personal space in a specific land as they assert that the land is 'proper' to them and they have, as an electorate, a significant self-constituting identity with the land. This spiritual connection with the land acts as a measure that venerates their origin to the soil, as they daily traverse in it, consume its waters and gaze through its firmament and their destined internment. The land confirms an embodiment of one's personality and autonomy. To indigenous communities in South Africa, the property in the soil means the appropriation of a limited form of sovereignty over the land and not a generic of it. This means selling of land or exchanging it for another land was never an option as they say the soil is where one originates, (uhlanga lomhlabathi), where one's body waste is deposited (ukusala kwensila) and where their navel gets deposited, (inkaba yakho isala khona) as a reminder of place of origin. It is to allege the emotion and an invested compounded relationship with the ancestors as the land presages an ultimate, a deeply instinctive self-affirming sense of belonging and control. Being buried in their soil is a negotiation for a permanent spiritual rest and to attain that one would have had an organically sanitized relationship with the people of that land, which is a reason why when a visitor was sick to die, that visitor would yearn to die in their proper domicile.

## CONFLICT OF INTERESTS

The author has not declared any conflict of interests.

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*Full Length Research Paper*

# Sociocultural conservation strategies of prioritized medicinal plants, their historical context and space for integration

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**The conservation of medicinal plants must be an all-inclusive endeavor that factors in the contribution of all stakeholders, both formal and informal. This paper highlights the importance of sociocultural aspects in the conservation of medicinal plant sources and resources using both traditional and modern conservation strategies. Efficacious traditional conservation strategies that featured prominently in the study include cultural methods of preventing overharvesting, enforcing social and cultural taboos, totemism, rituals and norms. Modern conservation strategies are mainly *in situ* and *ex situ* refined with education and research. The paper underscores the application of both local and modern conservation approaches ensuring a multipronged measure to have a sustainable traditional medicine trade and practice alongside market expansion. There is need for a well-structured harmonization of both traditional and modern conservation strategies for a holistic conservation of medicinal plant species.**

**Key words:** Conservation, medicinal plants, sociocultural aspects, harmonization.

## INTRODUCTION

Conservation of medicinal plants can be done locally by the traditional medicine practitioners (TMPs) or conventionally with the aid of modern conservation agencies or institutions. Medicinal plants or herbal remedies are harnessed for socioeconomic, sociocultural, environmental purposes and are invaluable in supporting livelihoods. The principal holders of the key sociocultural values and taboos are mainly the elderly people, rural folk and rich indigenous people leading traditional lifestyle (Plieninger et al., 2020). Traditional indigenous knowledge

is mostly passed orally or verbally and this largely contributes to the gradual decline in folk knowledge, and this calls for sustainable conservation and protection of medicinal plants and their sources (Tilahun, 2018; Ageh and Lall, 2019). Sustainability is a broad terminology that emphasizes on meeting the needs of the present and the future, ensuring a constant supply of the natural resources in demand (Shahrajabian et al., 2019). It is common knowledge that most of the traditional medicines (TM) are gathered from the wild, and the common

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documented threats include but not limited to overharvesting, unsustainable exploitation of medicinal plants for other uses, unmonitored and unregulated trade, habitat and biodiversity loss, agricultural expansion and intensification, human encroachment, irresponsible mining activities, uncontrolled urbanization, inadequate data on threatened medicinal plants, secretive nature of the TM practice, unfair competition from imported TM, covert bioprospecting and biopiracy, overgrazing and excessive browsing, population pressure, detrimental exotic and invasive plants, indiscriminate forest fires and adverse climate change (Barata et al., 2016; Ibrahim et al., 2016; Sanwal et al., 2017; Amsalu et al., 2018; Duguma and Mesele, 2019; Chebii et al., 2020). Most traditional healers uphold secrecy for posterity and thus find it hard to disclose or even patent the esoteric elements of TM since they directly affect their livelihoods. Disclosure of esoteric elements of TM comes with financial compensation, patenting or intellectual property rights (IPR), therefore secrecy carries out the role of patents (Kwame 2016, Masango 2020). The concept of secrecy for posterity can either be in the sharing of traditional medicine knowledge and practice characterised by scanty documentation, poor dissemination of knowledge and intentional transmission of knowledge to close relatives and dependants (Ozioma and Chinwe, 2019). Secrecy is a form of protection by itself; it is regulated by local customary ethics and is largely esoteric (Tong, 2010).

Climatic variability is known to affect plant phenology, alter habitat, floral distribution, change individual species population, and disrupt collection periods of some medicinal plant species (Maikhuri et al., 2017). Biopiracy and few academic publications targeting local plant resources for profit making or patent rights threatens sharing of traditional knowledge systems and cultural innovations of the local communities (Ageh and Lall, 2019). This notion heightens suspicion and exacerbates the decline in the wealth of indigenous or traditional medicine knowledge, decreased cultural practices and affect transfer of TM knowledge to future generations (Ens et al., 2016). The decline in cultural-based conservation measures has been associated with the ever changing societal dynamics due to religious influence, migration, education, westernization or modernization. These factors among others have been linked to the continued weakening of the present traditional natural resource management practices (Abugiche et al., 2017).

It has also been reported that lack of a robust and a supporting scientific knowledge, rising poverty, ignorance, unsustainable land development, unemployment and total disregard of public participation requirement continue to threaten the TM conservation agenda (Khan et al., 2019). Other notable threats in the conservation of medicinal plant species include: pollination inadequacies,

lack of sufficient potential seed dispersers and unproductive scattered plant distribution. Efficacious conservation efforts should be directed at saving the endemic, economic and endangered plant taxa (Chen et al., 2019). Unfortunately, most areas of the developing world lack adequate capacity to effectively assess the conservation status of medicinal plants and thus lack informed guidance on the prioritization of actual species for conservation and protection (Rajasekharan and Wani, 2020). Without affecting the extraction and use of the medicinal plant species, sustainable harvesting is one of the reliable means of ensuring that the growing demand matches to a considerable extent the supplies (Susanti and Zuhud, 2019; Gakuya et al., 2020). Sustainable harvest was noted as the most important conservation strategy particularly for wild harvested medicinal plant species. However, major hurdles for a sustainable wild collection include ambiguous land use rights, ignorance on appropriate harvest practices, poverty, absence of relevant laws and policies, and weak traditional controls (Schippmann et al., 2006). In most instances, the attitudes of local community members are largely dictated by their ecosystem needs and their cultural-religious beliefs that help conserve their forest resources (Talukdar and Gupta, 2018).

Dwindling medicinal plant resources and the attempts to restore their sources should be the main focus of TM practitioners and conservationists. Therefore a holistic sustainable management and conservation efforts must be an all-inclusive venture that draws in all stakeholders (Sen and Bhakat, 2020). Holistic conservation of vital natural resources calls for a multipronged approach that factors the economic, ecological, ethical, social-cultural and political strategies in reversing a declining biodiversity (Pati, 2017). This paper therefore aims to lay out all traditional and modern conservation strategies that will ensure sustainability of medicinal plant sources and resources. The paper therefore laid down the possibility of integrating both traditional and modern conservation strategies particularly for most sought, rare, and slow growing medicinal plant species.

## METHODOLOGY

Twenty one traditional medicine traders plying their trade in the seven surveyed counties of the Western Kenya (Uasin Gishu, Elgeyo Marakwet, Trans Nzoia, Kakamega, West Pokot, Siaya and Vihiga). Their respective GPS coordinates and elevation in metres above sea level were recorded using a Garmin etrex 20x instrument (Table 1). All the respondents were purposively selected based on their expertise in TM knowledge and willingness to be interviewed followed an oral prior consent after a short brief on the study objective. A semi-structured questionnaire was used in the face-to-face interviews (February – September, 2019) where respondents were more recruited using a snow ball sampling technique. Major sociocultural and conservation responses collated were qualitatively and quantitatively processed using MS excel spreadsheet. In



**Table 1.** Traditional medicine practitioners interviewed on socio-conservation approaches in the Western Kenya traditional medicinal markets.

County	Medicine market	Market GPS coordinates		Altitude (m asl)	Number interviewed
Uasin Gishu	Eldoret	N 00° 31.010'	E 035° 16.364'	2080	3
Elgeyo Marakwet	Arror	N 00° 57.838'	E 035° 36.967'	1049	2
Trans Nzoia	Kitale	N 01° 01.206'	E 035° 00.087'	1898	3
West Pokot	Makutano	N 01° 15.425'	E 035° 05.549'	2060	4
Kakamega	Kakamega	N 00° 17.231'	E 034° 45.206'	1556	3
Vihiga	Luanda	N 00° 01.427'	E 034° 35.167'	1505	5
Siaya	Yala	N 00° 05.301'	E 034° 32.387'	1389	1
Total					21

Source : Authors

addition, a systematic literature review on the conservation of medicinal plant species was conducted on carefully selected peer reviewed scientific papers published online on Google scholar, Scopus, Scimago and Web of Science databases. The selection was conducted using a google search engine using the following key words: sociocultural, conservation, sustainability, traditional medicine and medicinal plants. The search was thematic driven and not location specific so as to develop a universal theory applicable to conservation of medicinal plants.

## RESULTS

The traditional healers favored esoterism perpetuated by sharing traditional medical knowledge within a small circle of traditional experts, their close relatives and dependants as a local means of regulation. Secretive collection expeditions (90%) were most cited as a way of protecting the medicinal plants from over-exploitation or misuse. Some traditional healers operate on a closed-diary manner and organize collection expeditions at night, dawn or even at dusk to prevent unnecessary exposure of the medicinal plant species. This secrecy or limited disclosure of traditional medical knowledge (86%) was extended to control sharing of the medicinal plant's folklore identity, botanical name or even its trade name to clients, researchers and formal regulators. Traditional healers believe that secrecy for posterity is the most viable conservation principle and acts as a local patent or IPR. Conservation takes several forms and one being the protection of local means of treatment of diseases by a group of people or community and prevented from being exposed to other groups as regulated by local customs or social taboos. Therefore, most traditional healers favored the conservation of traditional health systems and environment (86%) and the preservation of indigenous medical knowledge (81%).

Sociocultural conservation strategies also cited by traditional healers include responsible harvesting practices that bar uprooting of lone medicinal plant species (76%), promote covering of exposed roots (81%),

sociocultural ban on excessive debarking (67%) and preclude harvesting of plant primary roots (Table 2).

Sociocultural conservation strategies are conspicuous and also evident in all the surveyed traditional medicine markets. The display of well dried and powdered herbal remedies in packets, bottles and cartons or boxes free from contamination or moulds. The perpetuation of secrecy as a strategy to regulate flow of traditional medical knowledge can be seen in the TM markets (Figure 1) in the absence of complete labeling to conceal the folklore or botanical name, and to some extent not writing exact dosage prescription and excluding the exact mode of preparation and ethics of administration.

## DISCUSSION

### Sociocultural aspects of medicinal plants conservation

The conservation efforts of rural communities are more inclined to community perceptions rather than evidence-based conservation. An advantage attributed to conservation based on community perceptions is the inclusion and understanding of deep seated sociological beliefs, ecological outcomes and positively improve conservation policies, actions and outcomes (Bennett, 2016). For decades, local communities have survived on their cultural innovations, traditions and practices that also dictated the type of medicine used in treatment of various diseases (Ageh and Lall, 2019). Despite lacking the conventional grasp of modern species concept, there exists a wealth of indigenous knowledge on species use and diversity although the sustainable utilization of medicinal plants is largely dependent on sociocultural protocols. Cultural-rich societies demonstrate an intricate and dependent relationship with nature and tend to value conservation and preservation of traditional medicine and other invaluable natural resources. Notable sociocultural protocols important in conservation include but not limited



**Figure 1.** A display of a diverse TM in the Luanda medicine market in the Vihiga County.  
Source : Authors

**Table 2.** Leading sociocultural conservation strategies of the traditional medicine practitioners in the surveyed medicine markets of Western Kenya.

Sociocultural conversation strategy	Frequency number of citations	% response
Avoid multiple harvesting of the same medicinal plant and allow recovery	15	71
Limited disclosure of traditional medical knowledge	18	86
Discourage harvesting of the primary plant roots	15	71
Covering exposed roots with soil mounds	17	81
Bars uprooting of a solitary whole plant	16	76
Discourage excessive debarking of a medicinal plant	14	67
Secretive collection expeditions, sometimes at odd times(dawn, dusk, night)	19	90
Need for domestication of overexploited, rare or slow growing wild medicinal part species	10	48
Conservation of tradition health system and environment	18	85
Conservation of intellectual property rights and preservation of indigenous medical knowledge	17	81

Source: Authors

to taboos, customs, traditions, rituals, ceremonies and organized festivals with a deep emotional attachment and veneration of ancestors. This places traditional healers at the centre of rural conservation approach being the principal custodians of the rich indigenous knowledge (Ssozi et al., 2016; Singh et al., 2017). Local community social rituals, customs, myths and taboos constitute the Traditional Ecological Knowledge (TEK) and can be passed from one generation to another (Sinthumule and Mashau, 2020).

Local communities often conduct prudent governance of their natural resources and biodiversity through set norms and practices as dictated by strong traditional and largely informal community-based institutions. Sociocultural norms therefore help in the harmonious reconciliation and integration of human needs in the conservation agenda (Janaki et al., 2021). Harnessing of medicinal plants locally are mainly controlled by management procedures that include taboos, seasonal and social constraints. Social taboos normally controls who is allowed to harvest or manage medicinal plants, at what time and at which suitable location (Sen and Bhakat, 2020; Janaki et al., 2021). The needs, worries, social relations, ethical and spiritual values of the local communities help shape conservation management strategies and decisions. Where the laid strategies respond to uncertainty and enables realization of customs, emotions and curiosity and forms part and parcel of management decisions (Rangel-Landa et al., 2017). The conservation of medicinal plants may take place consciously or intentionally on available spaces among local communities. Environmentally conscious conservation can be exercised directly by effecting conservation measures from the grassroots to the national level (Doffana, 2017).

Conservation of medicinal plants revolves around protection, maintenance, exploitation and sustainable utilization of natural resources (Rajasekharan and Wani, 2020). In a holistic conservation approach, the traditional ethno-ecological knowledge should be promoted in the silvicultural management that is applied mostly to over-exploited medicinal plant species. A shift from a pure ecological and sociological fashion to an ideal environment that integrates societal values into conservation enjoys prioritization in the global conservation agenda (Beltrán-Rodríguez et al., 2017). An effective collaborative engagement or partnership should integrate management strategies with the development needs of the local communities and fully embrace bottom-up collaborative approaches (Lake et al., 2018). Conservative traditional practices combined with cultural and seasonal restrictions particularly in the harvesting of medicinal plants have contributed immensely to the conservation of medicinal plants (Khan et al., 2018). Ironically, the most dominant players in the traditional medicine trade are partially educated or holders of basic

education but not illiterate as widely perceived (Isiko, 2019). In essence, they imbibe most of their wealth of experience from a largely uneducated and gifted traditional healers who are mostly based in the village settings (Susanti and Zuhud, 2019). Regarding consumption and utility of TM, the less educated tend to consume more traditional medicine than the educated lot (Aabdousse et al., 2020).

Sociocultural factors that have been reported to cause a decline in traditional indigenous knowledge and practices include the distance to TM sources, age, family member ill health, access to modern medicine and agricultural intensification (Atreya et al., 2018). Traditional knowledge should factor in the most important facets of a community structure including the natural, cultural, usefulness or/and even religious or spiritual aspects, customary laws and traditions critical for biodiversity conservation (Duguma and Mesele, 2019; Susanti and Zuhud, 2019). Susanti and Zuhud (2019) documented the role played by three pro-conservation stimuli critical in TEK namely: natural, usefulness and religious stimuli. Natural stimuli is inclined more to sustainable agriculture, usefulness stimuli touches on the utilization of the individual species in meeting human basic needs, whereas the religious stimuli appreciates the role of customary laws by communities for sustainable extraction of plant species products and their respective conservation (Susanti and Zuhud, 2019).

Regarding sex and gender roles in conservation, women are motivated to participate in more environmental activities because of the benefits they draw from it, whereas the elderly and women attach some cultural and religious importance to some medicinal plants and thus impose stricter conservation customs towards their protection (Ondiba and Matsui, 2021). Men are favoured as architects of a more diverse medicinal plant gardens whereas women were identified as leading broadcasters of traditional ecological knowledge to the next generation (Caballero-Serrano et al., 2019).

### **Traditional conservation strategies**

Sustainable harvesting and cultivation methods are still ranked as leading conservation strategies applied by most conservationists. With cultivation, the debate shifts to organic farming which should be prioritized because of improved quality, maintenance of natural attributes, heightened production, genetic diversity, enhanced biosynthesis of bioactive compounds, improved growth rates and biomass. Economically, organic farming help improve prevailing market prices, economic growth and attainment of social stability among the traditional healers, collectors, farmers and suppliers (Shahrajabian et al., 2019). Major significant cultural and traditional practices critical in TM conservation include: totemism,

maintaining sacred and protected areas like shrines, evil forests, sacred groves and burial grounds for the conservation of natural resources. (Xego et al., 2016; Eneji et al., 2019). The use of local knowledge in conservation in combination with the use of customary rules and regulations, customs and rituals, taboos and totems, application of metaphors and proverbs positively promote local conservation efforts (Mavhura and Mushure, 2019).

### **Totemism and deities in conservation**

Totemism or holding in high regard totems (forbidden items) is defined as a belief system where humans have a mystical or spiritual relationship with plants or animals (Eneji et al., 2019). Totemism can be further explained as a practice where some communities believe that certain animals, plants or physical features have some ancestral significance or mythical relevance and hence cannot be harmed but protected (Singhal et al., 2021). Totemism and deity worship in many traditional communities help conserve both the revered plants and animals even though it is not conventionally supported by any environmental consciousness or pragmatism.

The baobab (*Adansonia digitata* L.) is revered in most parts of the African continent (Benson, 2021). *Euphorbia ingens* E. Mey ex Boiss has also been documented to enjoy protection due to the associated beliefs, emotions and ethical societal controls in order to serve as traditional lightning arrester (Reniko et al., 2018). Other totemic plant species include: *Croton oblongifolius* Roxb., *Ficus benghalensis* L., *Tamarindus indica* L. and *Ficus religiosa* L. (Singhal et al., 2021). Other infamous and protected plant species in the Indian sub-continent include *Butea monosperma* (Lam.) Taub. and *Mangifera indica* L. which serve as popular cremation zones (Talukdar and Gupta, 2018). Reverence to supreme deities, ancestors, spirits and strong beliefs in animism, sorcery and witchcraft has contributed immensely to conservation of forests and plant resources. The conservation is in tandem with the calling to preserve natural resources and biodiversity in order to please the supernatural beings and not to attract a curse, wrath and punishment from the spirit world (Adom, 2018).

Other than the prevailing religious undertones, totemism has helped conserve plants by ascribing some spiritual importance and are thus immune to exploitation (Marumo, 2019). Religious beliefs and worshipping of some identified and revered god trees is reported to have positively contributed to conservation and regeneration of valuable plants. In the Gairsain region of Chamoli of Uttarakhand, *Quercus leucotrichophora* A. Camus., *Prunus cerasoides* D. Don, *Celtis australis* L. and *Myrica esculenta* Buch.-Ham. ex D. Don. among others are totemic and therefore revered by the villagers (Khasim et

al., 2020).

### **Social taboos and conservation**

Traditionally, access to natural resources was controlled by stringent beliefs, taboos and customs as regulated by community leadership structure. It is believed that complete devolution of natural resources to the grassroots community level enhances the conservation agenda by instilling some ownership values (Chigonda, 2018). Social taboos have succeeded in preventing local communities from cutting down trees in sacred natural forests. These taboos are passed through generations as part of local practices, indigenous beliefs, customary laws and a host of prohibition systems (Maru et al., 2020). The traditional medicine practitioners, particularly the local herbalists need to be properly trained on how to practice sustainable harvesting and ensuring safe use of medicinal plant species (Mugomeri et al., 2016). Some of the documented and sustainable harvesting practices include avoiding girdling, encouraging collection of minimal number of roots, restrained debarking, covering exposed roots with soil mounds (Mbinile et al., 2020).

### **Modern conservation strategies**

Efficacious conservation strategies for medicinal plant species are mainly classified in four main areas mainly *in situ* conservation and *ex situ* conservation strategies whereas education and research components were added into the category. *In situ* habitats simply refer to where plant species are found naturally and they include: biosphere reserves, sacred groves and forests whereas *ex situ* habitats are areas outside the species natural habitat and they include: field gene banks: botanical or herbal gardens, kitchen gardens, arboreta and seed banks (*in vitro* seed and gene banks, DNA banks, cryobanks) that enable storage and preservation of seeds and propagules essential for propagation of the marked plant species.

In addition, species inventory, botanical checklists and databases are key decision making tools that guide the conservation of threatened medicinal plants (Rajasekharan and Wani, 2020). Prudent keeping of historical records backed by good and reliable data is invaluable in the conservation of medicinal plant resources (Jamshidi-Kia et al., 2018). New and modern cultivation strategies and domestication of the medicinal and aromatic plants are considered improved methods for biodiversity conservation in their natural habitat and their adoption is highly encouraged. These modern progressive cultivation strategies are mostly aimed to grow threatening wild medicinal plants or improving their growth rates and yields, increase the concentration of

active ingredients or even improved plant part quantities to meet the growing market demands and enable sustainable industry (Phondani et al., 2016; Xego et al., 2016). The extent and limits of domestication have been found to be largely influenced by a number of socioeconomic, cultural and gender factors which include age, wealth, ethnic affiliation, household size and land acreage (Kideghesho and Msuya, 2010).

Botswana's republic capitalized on their semi-arid and sub-tropical climate to domesticate her most sought and threatened medicinal plant species that include an *Harpagophytum procumbens*, antimalarial *Artemisia afra*, , appetite suppressant *Hoodia gordonii* and highly nutritive *Sclerocarya birrea*. These domesticated plants boosts income generation of the local traders and reduces claws of poverty (Daniel and Shimane, 2011). The fast growing and multipurpose medicinal plant species should always be prioritized for cultivation (Ibrahim et al., 2016). With the increasing human populations, cultivation is mostly constrained by decreasing land sizes, competing land uses, uncontrolled harvesting, slow growing or long maturation species, low value monetary value species and practitioners lacking adequate knowledge on modern silvicultural practices (Ebifa-Othieno et al., 2017). These ultra-modern conservation priority should be assigned to endangered plant species that has the potential to cure or treat many of diseases (Khan et al., 2018; Dadjo et al., 2020). However, these modern conservation strategies are beyond the grasp of most traditional healers but can be complemented alongside traditional conservation strategies. The traditional medicine practitioners should progressively employ new technologies that would realize an increase in the TM quantity and quality in order to meet the market needs. These technologies should be designed to influence sustainable extraction, quality development of the herbal products, exquisite packaging and prevent any forms of contamination of medicinal products (Cahyandito and Oktasari, 2019).

### Conservation and protection of medicinal plants

Conservation measures are crafted to ensure a continuous supply of traditional medicine for the present and future, and at the same time facilitate perpetuation of species (Barata et al., 2016). Traditional methods of harvesting among world communities are subjected more to social controls and taboos than conventional regulations. Fundamentally, most of the traditional medicine and herbal practitioners follow cultural gathering restrictions (Monica et al., 2016). Restrictions on harvesting some plant species and plant parts can be imposed by local communities as a management method.

These restrictions can be extended to cover seasons or periodic harvesting of a plant or plant parts with close

emphasis on multi-purpose species. *In situ* management strategies calls for harvesting of plant parts right in their natural habitat (Rankoana, 2016).

Medicinal species that are not easy to domesticate or manage are most often conserved *in situ*. Conservation can also take place in well managed smaller spaces or even informal protected areas including farm-back or front-yards.

Although those medicinal plants conserved *in situ* are often vulnerable to overharvesting or over-exploitation and must be protected well to preclude decline in wild populations (Xego et al., 2016; Bizuayehu and Assefa, 2017; Doffana, 2017; Pati, 2017). The major bottleneck in the establishment of home gardens among the rural-based or local medicine practitioners is the cost of production as compared to the cheaper collections from the wild (van Wyk and Prinsloo, 2018). Agronomically tested management practices for a well-groomed diverse home garden include intercropping and crop rotation. Diversity can be achieved through cultivation of more annual and perennial herbs and shrubs (Amsalu et al., 2018). The urge and the need to exploit unregulated common plant resources for individual gain or profit overrides the need to conserve the resource. Recapitulation of the Hardin's tragedy of commons, game theory logic and the Prisoner's Dilemma theories can lead to the common assertion that the private incentive to exploit a common resource is way stronger than their sustainable utilization and conservation. (Rath and Ormsby, 2020).

The creation and realization of an indigenous conservation policy serves a boost in the quest for a cultural and biodiversity conservation and matches the benefits drawn from the medicinal plant species (Ens et al., 2016). Therefore the contribution of traditional indigenous, tribal and cultural practices cannot be underscored in the conservation agenda, although the pressure from industrialization, over-exploitation and the expansion of agricultural activities is a glaring reality and should be properly contained (Rath and Ormsby, 2020).

### Sociocultural governance and management of TM

Public policies should enhance the traditional community practices that are effective in the conservation of the medicinal plants. Efficacious regulations should promote good harvesting and ensure sustainability of medicinal plants trade and practice (Beltrán-Rodríguez et al., 2017). Four criteria and several indicators have been developed to achieve long term economic and environmental sustainability of medicinal plants trade and practice and they include governance, sociocultural, environmental or ecological and an all-inclusive economic criterion that considers cultivation, marketing, industry, research and development (Negi et al., 2018).

Sustainability hiccups emerges from a host of biological factors which include low reproductive rates, slow growth, endemism and sensitivity to climate change. On a broader scale, government can impose trade and consumption restrictions on endangered medicinal plant species (Cheung et al., 2021). The efficacy of governments enforcing trade bans is still widely contested since illicit trade of vulnerable species are still carried out informally. The regulatory institutions usually effect bans on collection of plant species or ban the actual trade of the listed plant species. The effectiveness of a top down conservation approach is also a debatable issue, it is imperative to cushion marked plant species from wanton harvesting by devolving management rights to the local communities other than overly relying on formal collection and trade bans (Pyakurel et al., 2019). Conventionally, local users may be asked to obtain a permit first in order to extract forest resources or face a fine for any recorded breach. Regardless of its informal nature, customary laws impose restrictions to preclude over-exploitation of forest resources (Susanti and Zuhud, 2019).

### Medicinal plant diversity and conservation

Some plant families have a disproportionately high number of medicinal plant species and some have more threatened species. Based on a scientific determination of commonly used or traded taxa, more attention can be directed in the conservation and protection of the highly ranked or prioritized taxa (Chen et al., 2016; Bizuayehu and Assefa, 2017).

The multipurpose medicinal species are more threatened than the single use species; this applies mostly in commonly used taxa or those used in drug combinations or drug synergies (Bizuayehu and Assefa, 2017). Species diversity and abundance are always affected by over-exploitation, uncontrolled deforestation, poor harvesting practices and general habitat destruction (Chen et al., 2016). Assessment of the conservation status of most frequently used medicinal plants based and constant update on their IUCN status based on field evidence helps conserve threatened, rare, vulnerable and endangered plant species (Dapar et al., 2020). The importance of accurate botanical identification of the traded medicinal plants points out at the appropriate conservation of the exploited species based on their use frequency (Lima et al., 2016). Proactive conservation measures starts with plant inventories, correct identification and prioritization of medicinal plants and geographic hotspots for conservation. Local communities should be educated through a series of awareness campaigns in the creation of robust legislations, development of seed banks and importance of modern germplasm repositories (Ouedraogo et al., 2020). Some

governments, for instance, India, has enforced measures to promote *in situ* conservation of medicinal plants through creation of somewhat special medicinal plants conservation development areas (Biswas et al., 2017). *In situ* conservation not only allows for conservation of threatened medicinal plants in their habitat but help reduce pressure on our forest ecosystems (Sanwal et al., 2017). Other than cultivation or sustainable agriculture, substitution of root plant parts with parts having same empirically tested biochemical and pharmacological activity aid in the conservation and protection of bioresources. This is exemplified by substituting roots or root barks with leaves as seen in the *Premna latifolia* Roxb (Jena et al., 2017).

### A viable conservation vision and future perspective

The traditional systems of conservation have a role to play in the modern conservation agenda. Blending the existing myths, rituals and perceptions with the present conservation measures and legislations by involving the traditional healers and local communities in the conservation of their natural resources is the most promising avenue (Abugiche et al., 2017). An effective conservation approach for medicinal plant sources should adequately follow both the conservation and resource management strategies. Modern biotechnological approaches should be observed in the quest to improve yield and the quality of medicinal plants (Chen et al., 2016). The development of medicinal germplasm and gene banks also are invaluable in the conservation of the rare and endangered medicinal plants (Pati, 2017). Basic training of traditional medicine practitioners in seminars or workshops assist in the conservation of highly valued or exploited species can be conducted using their indigenous knowledge rather than the elite taxonomic language. The trained or sensitized traditional healers in turn will train their apprentices in key processes like collection, administration of rituals, and in the inspiration of young members of society to embrace traditional medicine (Mathibela et al., 2015; Tilahun, 2018). Adopting an integrated ecological and socioeconomic approach help minimize species loss and realize sustainable utility of biodiversity, prioritized conservation and high regard for urgent research attention (Tali et al., 2019).

There is need to advance learning and emphasize on the importance of traditional knowledge and important plant species to be prioritized for conservation (Aabdousse et al., 2020).

### Conclusion

The conservation of medicinal plants for sustenance of

the TM industry needs a multidisciplinary approach that encompasses both the least published traditional conservation strategies and most researched modern conservation strategies. The harmonization of these two strategies will make conservation of medicinal plants an all-inclusive venture and a huge success devoid of major push and pull of the major players. The role of traditional healers and local communities should not be underestimated, the modern conservationists and policy makers should include local players in the conservation efforts. The only difficulty in integration of traditional conservation strategies in the modern conservation approach lie in their secrecy and are mostly limited by social taboos and customary regulations.

## CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

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