Nxele et al., J Biodivers Manage Forestry 2019, 8:1
DOI: 10.37532/jbmf.2019.8(1).207

Journal of Biodiversity Management & Forestry

Research Article

A SCITECHNOL JOURNAL

Naming Invasive Alien Plants into Indigenous Languages: KwaZulu-Natal Case Study, South Africa

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Abstract

The spread of invasive alien plants (IAPs) across countries does not only dilute the indigenous biodiversity richness and degrade the environmental integrity of local environments, but it also threatens human livelihoods. Although no studies have been conducted on the relationship between IAPs and indigenous knowledge on plants, contributors suspect that IAPs might have negative impacts on cultural application of indigenous plants, more especially in the case of medicinal plant use. In the province of KwaZulu-Natal (KZN), South Africa, where there are mainly isiZulu speakers, the use of plants for various human benefits is still relatively high. Plants are used for many reasons including traditional medicine, food, shelter and cultural rituals such as during burial ceremonies of family members. In certain parts of KZN, when a person is buried, a row of medium-sized logs of Black Wattle (*Acacia mearnsii*) are put on top of the casket to prevent soil from piling directly on top of the casket. Traditional healers rely heavily on certain plants to meet their different objectives and this now includes IAPs. Traditionally, they would use indigenous plants, which are known by their isiZulu common names but with the influx of IAPs, confusion between indigenous and alien plants has crept in.In some instances, an indigenous plant and an alien plant which resemble each other now even share the same isiZulu common name. Alternatively, there is confusion when one has to collect an indigenous plant but cannot differentiate between that and a similar IAP, which might not have an isiZulu common name (in that case it does not matter whether the IAP has an isiZulu common name or not). Additional problems arise when the intention is to propagate an indigenous species and an IAP ends up being unintentionally propagated. Furthermore, where indigenous plants have been over-utilized and become scarce to find and thus switching to an IAP that resembles the scarce indigenous plant, becomes an option. To make matters worse, when naming IAPs if the process is unregulated, IAPs are given attractive, positive names that unintentionally might create an impression that "these plants are good". The intention of this article then was;

a) To advocate for the naming of IAPs into indigenous languages and that the naming process should be structured and regulated,

b) To systematically suggest names for some of the dominant IAPs within eThekwini Municipality, KZN province of South Africa, as a case study,

c) To review existing isiZulu common names of some IAPs to make sure those names are not confused with those of indigenous plants (NB: Some English common names of IAPs also need to be reviewed!);

d) To advocate for IAPs to be given negative names and finally,

e) To facilitate the naming process and adoption of isiZulu common names for IAPs.

Keywords

IsiZulu names for invasive alien plants; Indigenous naming of invasive alien plants; Medicinal plants; Confusion between Indigenous and invasive alien plants; Ecosystem services; Language evolution; Cultural pollution

Abbreviations:

Abbreviation	Explanation
EKZNW:	Ezemvelo KZN Wildlife;
EM:	EThekwini Municipality;
EPCPD:	Environmental Planning and Climate Protection Department;
IAP:	Invasive Alien Plant;
IAS:	Invasive Alien Species;
ITB:	Ingonyama Trust Board;
KZN:	KwaZulu-Natal;
SANBI:	South African National Biodiversity Institute;
NEMBA:	National Environmental Management: Biodiversity Act (Act No. 10 of 2004) ;
DEA:	Department of Environmental Affairs;
NPO:	Non Profit Organization
NGO	Non Government Organization
WESSA	Wildlife Society of South Africa.

Introduction

Increasing the pace and scale of biodiversity conservation in a human-dominated world requires conservationists to effect systemic change in complex and dynamic socio-ecological systems, cultures and habits [1]. Poor decision-making processes, uninformed land-use activities, lack of information-sharing and working in silos, are some of the factors that delay adaptation to climate change [2]. The evidence for climate change is now so strong that efforts to ensure socio-ecological adaption and ecosystem resilience must be mainstreamed as these changes have numerous implications for human livelihoods, ecosystems, and ecological processes that sustain them [3-6]. Adaptation includes improvements in environmental management and restoration of environmental ecosystems, as well as building community awareness, in order to bolster both sustainability and ecosystem resilience to climate change [6-8]. Interventions aimed at relieving environmental degradation, whilst also building environmental awareness and promoting societal adaptation to climate change should be prioritized [7].

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Received: January 07, 2019 **Accepted:** March 11, 2019 **Published:** March 18, 2019

The experience of the authors indicates that, by addressing the underlying causes of vulnerability and lack of awareness, local communities can be empowered not only to look after their surrounding natural environments but also to adapt to the adverse impacts associated with climate change. The propagation of Invasive Alien Plants (IAPs), dominantly through medicinal-use as well as for ornamental purposes, has been identified as key factors which unintentionally promote the spread of IAPs [9]. The spread of IAPs, through outcompeting indigenous species, compromises the functionality and vigour of ecosystem services [8]. It has been noted that communities often make use of IAPs without much understanding of what plants they are using, the origin of those plants, negative threats associated with those plants on indigenous biodiversity nor the human health implications of being exposed to some of these plants.

As the invasion level of IAPs increases, people are becoming more accustomed to their existence and are gradually and unintentionally beginning to link them to traditional systems. As was observed from Dinokana village in North-West Province, the traditional system for predicting rain is now linked to the opening and closing of an invasive *Cereus jamacaru/Queen of the night* flower [10]. This overrides traditional systems for predicting rain that might have been available before this particular invasive plant. The use of IAPs for traditional health care practices is also evolving, and sometimes substituting that of indigenous plants. Findings from a study by Meama [11] lists a number of IAPs used by Bapedi traditional healers of Mogalakwena Municipality in Limpopo Province. The invasiveness nature and abundance of IAPs makes it more easily accessible influencing the cultural change of relying on indigenous plants which are becoming more and more scare.Just like westernisation pose acculturation on people's cultural and social identity, the use of IAPs over indigenous plants for traditional medicine poses an acculturation threat to cultural and traditional knowledge [12]. In most cases such knowledge is not recorded but is rather passed by the word of mouth from one generation to the next. With the threat of IAPs, consequently it will get polluted or merely lost.

The lack of indigenous names for most of IAPs results in communities giving them names that are similar to those of indigenous plants. Field experience of some of the contributors has shown that this creates confusion not only in terms of which plant is being used, but also leads to active propagation of some IAPs. This suggests a need to give IAPs appropriate isiZulu common names, in order to differentiate them from indigenous plants, and to protect the cultural knowledge and names of indigenous plants. IsiZulu was chosen as the language to work with in this work mainly because the focus of this work was within eThekwini Municipality (KwaZulu-Natal province) and the dominantly spoken language within communities is isiZulu. The aim of this work was to establish and standardize the naming of IAPs into isiZulu. To date, no similar work has been done in South Africa. Research has shown that there is relatively high reliance on natural resources in rural areas and in KwaZulu-Natal, most rural communities do rely on natural resources (for instance medicinal plants). Many of those communities live on land under the custodianship of the Ingonyama Trust Board (ITB) [13-16]. The ITB administers almost 45% of land within the province of KwaZulu-Natal and about 67% of eThekwini Municipality (EKZNW and EM Systematic Conservation Plans). The majority of people living within Ingonyama Trust land are isiZulu speakers. A strategy that proved popular with them might provide a breakthrough in controlling the spread of IAPs, within the Ingonyama Trust land, and a positive turning point in biodiversity conservation, ecosystem service robustness and also in socio-ecological adaptation to climate change.

Biodiversity plays a crucial role in the supply of ecosystem services, which essentially sustain human livelihoods [17,18]. Contrary to this natural provision the invasion of alien species, remains one of a number of significant threats to both biodiversity and the functionality of ecosystems and also to the ecosystem services they provide. IAPs reduce the ability of the land to support people and also affect the resilience and adaptability of ecosystems to climate change [19]. Dedicated budgets that will support improved efforts are needed to control the establishment and spread of IAPs in any bioregions. In light of the currently very limited resources for the management of IAPs, it becomes necessary to create awareness and empower as many land-users as possible, so as to inform decision-making and foster co-management initiatives [16].

In South Africa, the Department of Environmental Affairs (DEA) gazetted IAS Regulations under the National Environmental Management Biodiversity Act (NEMBA), Act No. 10 of 2004. The Act groups IAPs into several categories which clearly stipulates what needs to be done in order to manage each category (Table 1).

Inappropriate use, as well as the naming, of invasive alien plants (IAPs) pose threats to the culture and language of local communities, much as the invasion of IAPs threatens the biodiversity and landscapes of the areas invaded [20]. As people increasingly fail to identify and differentiate between IAPs and indigenous plants, traditional knowledge about plants is likely to get polluted and gradually forgotten [21]. Educating isiZulu-speaking communities about IAPs is challenging. They find it difficult to pronounce and to remember scientific names and the common names in other languages. Most IAPs do not have isiZulu or African names because they originate from other countries and this contributes to the already existing incompatibility between science and non-science perceptions [22,23].

Methodology

Authors of this article came from different regions within the province of KwaZulu-Natal (Figure 1). This further increased the knowledge of what a particular alien plant might be called in the different regions of the province thus minimizing chances of name-clashes between an indigenous and an IAP. The list of IAP species

Table 1: Categorization of invasive species in South Africa as stipulated in the environmental legislation, National Environmental Management Biodiversity Act, (Act No. 10 of 2004).

NEMBA Category	Legislated/Required Management Action
1a	Invasive species in this category must be combatted and eradicated. Any form of trade or planting is strictly prohibited.
1b	Invasive species in this category must be controlled and whenever possible removed and destroyed. Any form of trade or planting is strictly prohibited.
2	Invasive species in this category require a permit to carry out a restricted activity. Species covered in this category include commercially important species such as certain pine, wattle and gum species used in forestry.
3	Invasive species in this category may remain in prescribed areas or provinces. Further planting, propagation or trade is prohibited. Plants in riparian areas are however classified as **Category 1b** and must be controlled.

doi: 10.37532/jbmf.2019.8(1).207

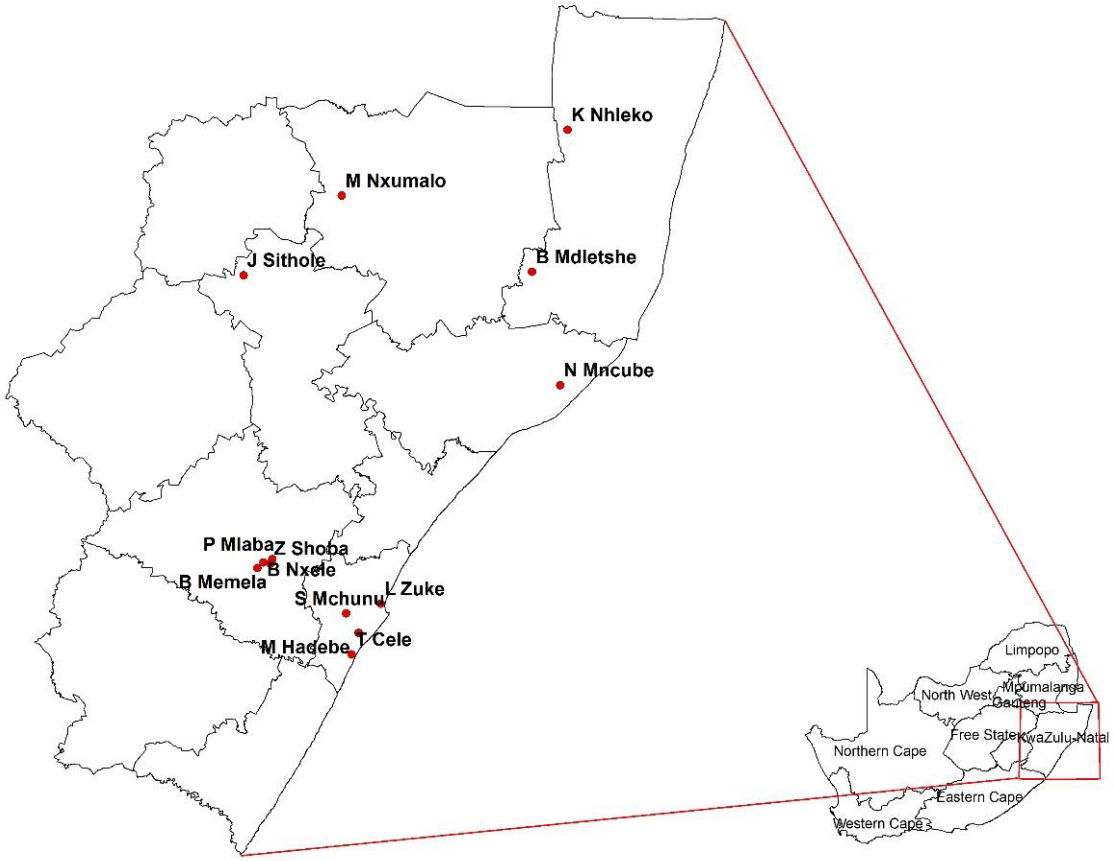

Figure 1: Representativeness of isiZulu lexicon, within the province of KwaZulu-Natal of South Africa, by the area of origin of the authors. Although isiZulu language is prevalent in the province of KwaZulu-Natal, there are regional variations of the isiZulu vocabulary across the province.

reviewed in this project were sourced from the Beautiful but Dangerous Posters and Flashcards produced by the Environmental Planning and Climate Protection Department (EPCPD), of eThekwini Municipality (Invasive Alien Plants of eThekwini Municipality). Additional information was sourced from work done by the Wildlife Society of South Africa, WESSA [24,25].

Most of IAPs have a Latin (scientific) name as well as their respective English Common Name. The review process sought to give each invasive alien plant an isiZulu Common Name. Some plants already had isiZulu name, whilst others did not. The naming process was motivated by the growth form, phenotypical appearance, habitat and/or negative effects of a species. Naming IAPs with isiZulu name that is also used for an indigenous plant was regarded as a fundamental source of confusion. Where an IAP has a widely used name not used for an indigenous plant, that name was retained. If there was a clash with an indigenous plant (see selected species in Table 2), the name was replaced with a new one. Plants with no isiZulu name, were given new negative names. A negative name was favoured so that people would see the plant negatively (i.e. give "negative" plants, "negative" names). However, caution was given not to give plants too strong a negative name that they would encourage evil-doers and witch-doctors to experiment with such plants in performing witchcraft. In instances where a plant is widely known by its English Common Name and where contributors felt deriving a new name would cause unnecessary confusion, the English Common Name was formalized and adopted as a borrowed word. This was done by writing the name in isiZulu in order to retain the pronunciation aspect which ensured people would continue recognizing and calling the plant by the same name (Table 3).

Plants with existing isiZulu name were cross-referenced through consultations and engagements with local communities to ensure the same name was not also used for an indigenous plant. Before the new names could be adopted as names of the respective plants, they were presented at community forums. Choosing a Community Forum wherein to present the proposed names, was informed by where particular plants occur in order to ensure community knowledge of the plants in question. The process engaged in this IAP naming process, should not be confused with translation. The process is rather aimed at deriving new names, reshaping the isiZulu lexicon and facilitating its coevolution with biological and cultural evolution. The contributors reviewed the most commonly occurring IAPs within the province, which includes eThekwini Municipality. The list included IAPs either with no isiZulu name, with a name that is not confused with an isiZulu common name for an indigenous plant (Table 4) or with names similar to those for indigenous plants (Table 5). Proposed names were presented at various stakeholder forums such as Non-Profit Organizations (NPOs), Community Forums, Biodiversity Stewardship Workshops and in discussions around the topic of IAP management (Table 3). This served to get an understanding of what they think about the proposed name(s), spark discussion, get buy-in and also get knowledge of whether the proposed names were already in use or not. In all spheres of biodiversity and ecosystem service management we need to create awareness, forge partnerships and include indigenous

Table 2: Selected list of invasive alien plants with isiZulu Name similar to isiZulu Name for an indigenous plant.

Invasive Alien Plant	Photo	Current isiZulu Name	Corresponding Indigenous Plant	Photo	Comments
Albizia lebbeck (Lebbeck tree)		Usolo	*Albizia adianthifolia*		Both plants have somewhat similar leaf arrangements, which might have contributed to the common isiZulu name.
Caesalpinia decapetala (Mauritius thorn)		Ubobuluncane	*Adenopodia spicata*		Both plants, invasive and indigenous, belong to the Family Fabaceae and pinnated leaves.
Campuloclinium macrocephalum(Pom pom)		Indlolothi	*Morea spathulata*		Unclear why communities called Pompom Indlolothi when it has far less resemblance to *Morea spathulata*.
Leucaena leucocephala (Leucaena)		Ubobo	*Adenopodia spicata*		Both plants, invasive and indigenous, belong to the Family Fabaceae and pinnated leaves.
Pereskia aculeate (Pereskia)		iqwaningi	*Capparis tomentosa*		No striking similarities between the two plants, but maybe medicinal value was a common factor and hence the same name.
Schinus terebinthifolius (Brazilian pepper)		Isibhaha	*Warburgia salutaris*		No striking similarities between the two plants, but maybe medicinal value was a common factor and hence the same name.

NB: Images of IAPs were sourced from the Beautiful but Dangerous Posters whilst those of Indigenous Plants images were sourced from SANBI website (plantza website: http://pza.sanbi.org).

Table 3: List of most common Invasive Alien Plants, in KwaZulu-Natal, with isiZulu Name that is not confused with any isiZulu Common Name used for an indigenous plant. The NEMBA Category listing of each IAP is also indicated.

No.	Scientific name	English Common Name	isiZulu Common Name (Existing/Proposed)	NEMBA Category of listing	Explanation of the Name	General comments
1	*Solanum mauritianum*	Bugweed	Ubhongabhonga	1b	The isiZulu common name originates from 'ukubhongozela', which in this context, means to grow hastily and Bugweed grows relatively fast which is why the name "ubhongabhonga" is fitting	One proposed name was 'umbhangabhanga' but this name is for an indigenous plant, *Trema orientalis*. Elsewhere, people might know the species as "imphetho" and/ or "isanywana" but for standardization, the name "ubhongabhonga" is strongly recommended as an isiZulu common name for this species since it is widely used
2	*Lantana camara*	Lantana	Ubhici/ ubhicilwesalukazi	1b	In isiZulu, Lantana is called 'ubhicilwesalukazi' because it is liked and eaten by old women. In short, the plant is called 'ubhici' because of the mushy, fruits when ripe.	*Lantana rugosa* is an indigenous Lantana which is similar to *Lantana camara*
3	*Rubus cuneifolius*	American bramble	Ijikijolo-elinomhobholo	1b	ijikijolo-elinomhobholo (direct translation is "berry-with-jealousy"). The plant grows quickly covering vast areas of land as though it is overwhelmed with jealousy or selfishness (E)	
4	*Canna indica*	Indian shot	Udabulamaxhaphozi	1b (sterile cultivars or hybrids are not listed)	This plant is commonly found in wetlands (emaxhaphozini), where it forms dense thickets and outcompetes indigenous plants and transforms or reduces the extent of a wetland. The isiZulu name highlights the fact that the plant reduces the expanse of a wetland.	udabulamaxhaphozi- 'dabula' – to tear, 'ixhaphozi'- is a wetland. *Canna indica* mainly "tears wetlands apart".

No.	*Scientific name*	English Common Name	isiZulu Common Name (Existing/Proposed)	NEMBA Category of listing	Explanation of the Name	General comments
5	*Cardiospermum glandiflorum*	Balloon vine	Ugigane	1b	This plant is a climber and grows by entangling itself onto other plants.	
6	*Parthenium hystephorus*	Famine weed	Umbulalazwe	1b	The effects associated with this plant, for instance the blisters that form on the lips of herbivores (e.g. rhino), skin rash on humans, asthma symptoms and the fact that when it grows it forms continuous thickets rendering the land of less value to people. When vast areas of land are non-profitable, it is as though the land itself has become "dead" hence the name "umbulalazwe", because the plant kills the land and that which lives on it	umbulalazwe- 'bulala' – is to kill, 'izwe' – is a country, Parthenium invasions have severe socio-economic and ecological impacts that cripple, destroy a country's economy.
7	*Pistia stratiotes*	Water lettuce	Indwane	1b	A name used by old people, which refers to Water lettuce. No other plant, more especially indigenous plants, is known by this name.	
8	*Campuloclinium macrocephalum*	Pom pom	Uphomuphomu	1b	Proposed names derived from the English common name since there is no isiZulu name for Pom pom	
9	*Senna didymobotrya*	Peanut butter cassia	Umakhephuka	1b	'ukukhephuka' (odour production) in this context refers to the production of an odour	umakhephuka- a way of expressing a strong smell, *Senna didymobotrya* has a strong smell
10	*Pontederia cordata*	Pickerel weed	Ihleza	1b	The flower of this plant resembles a corncob. Among isiZulu speakers, 'ihleza' is something or someone useless and this is the negative part of the naming)	ihleza- maize cob, the *Pontederia cordata* flower looks like a maize cob
11	*Arundo donax*	Giant reed	Umhlangawezimvu	1b	Current common name has no negative connotation but may be retained as there is no indigenous plant with such a name. However, this name creates an incorrect impression the plant can be used by livestock farmers, which is misleading.	Umhlangambumbulu-'umhlanga' is a reed, 'mbumbulu' is a negative way of implying 'it looks like, but it is not'
12	*Eucalyptus grandis*	Gum tree	Ugumtlee	2 but in riverine systems 1b	(isiZulu does not have 'tlee'), but ugamthilini'sounds more appropriate. In essence, retain existing name but only correct current name to become 'ugamthilini'	Ugamthilini- is a well-known name for Gumtree

Table 4: Invasive Alien Plants with isiZulu Name confused with existing isiZulu Common Name of indigenous plants.

No.	Scientific name (English Common Name)	Current isiZulu Common Name (s)	NEMBA Category of listing	Problem with the current name	Proposed isiZulu Common Name and Rationale
1	*Schinus terebinthifolius* (Brazilian pepper tree)	uthango; isibhaha	1b in Eastern Cape, KwaZulu-Natal, Limpopo, Mpumalanga, 3 in Free State, Gauteng, North-West, Northern Cape and Western Cape	'Isibhaha' is a name of an indigenous tree *Warburgia salutaris* 'Uthango' refers to anything used as a hedge, any plant used for fencing is called 'uthango'	'Isihlekehleke'- this refers to the shape of the tree crown, which is untidily spread. In isiZulu, this is not a polite word and thus a fitting negative name for an IAP.
2	*Albizia lebbeck* (Lebbeck tree)	unjengosolo, isolo	1b	usolo is a Zulu name for an indigenous tree *Albizia adianthifolia*	"Unjengosolo' – 'unjengo'- it looks like, *Albizia lebbeck* looks like an indigenous tree *Albizia adianthifolia*. The proposed name indicates that it is an imitation of something else (a wannabe)
3	*Leucaena leucocephala* (Leucaena)	ubobo, ulusina	2	ubobo, is name for an indigenous tree *Adenopodia spicata*	'Umdungazwe' – 'dunga' agitate/ disturb, 'izwe' – country or region. The invasions of *Leucaena leucocephala* creates ecological disturbance.
4	*Caesalpinia decapetala* (Mauritius thorn)	ubobolucane	1b	'ubobolucane', sounds like it is a subspecies of an indigenous tree *Adenopodia spicata*, and this is misleading.	'Uvimbangameva' – (direct translation would be "hold-back-with-thorns"). 'vimba' – is to restrict or prevent movement, 'ameva'- thorns. Where it invades it forms a thick mass that blocks pathways
5	*Pereskia aculeata* (Pereskia)	iqwaningi	1b	Sikhona isimila sendabuko esibizwa ngoqwaningi. Indigenous climber(*Capparis tomentosa*) is already called 'uqwaningi'	'uzimbeva' The name 'zimbeva' is usually used to characterize an angry, shouting person
6	*Eichhornia crassipes* (Water hyacinth)	uzibo	1b	There is an indigenous plant called 'izibu/ amazibo'known by the same name	Umantuntanamanzi- 'ntunta'- up and down movement of a floating item, the *Eichhornia crassipes* is a floating waterweed moving with the direction of water. The name 'umantuntanamanzi' is made up of a verb 'ukuntunta' which means to float and 'namanzi', which means with water (direct translation would mean "floating on water"). "Ukuntunta" means to wander or to move about aimlessly. The plant wanders only aided by water, which determines where it eventually ends up, hence the name "umantuntanamanzi".

7	*Lilium formosanum* (St' Josephs lily)	intebe	1b	Intebe is a name for an indigenous plant, *Zantedeschia aethiopica* (White arum lily)	The proposed name was 'icilongo (trumpet)' because the shape of the flower of the plant resembles a trumpet. Another proposed name was 'ubhubha' (destroy) because the plant transforms and destroys grasslands into St Joseph's lily fields (E).

Table 5: Public engagement workshops where the concept of naming Invasive Alien Plants (IAPs) into isiZulu was presented either for awareness purposes or for the testing of proposed names for IAPs.

Forum	Forum scale	Area name where meeting held	Audience	Purpose of presentation	Date	Number of attendees
KZN IAS Forum	Provincial	Krantzkloof Nature Reserve	Government Departments; Government Agencies; Academics; Conservancies; Conservation Authorities; Consultants; NGOs; NPOs; civil society	Awareness	August 2013	40
				Awareness	August 2015	41
eThekwini Municipality IAS Management Plan Forum	Regional	Paradise Valley Nature Reserve	National & Provincial Government Departments; Academia; Conservancies; Conservation Authorities; Consultants; NPOs; NGOs; Government Agencies;	Awareness	May 2018	62
Ugu District Municipality IAS Forum	Regional	Ugu District Municipality	Municipal officials	Awareness	September 2015	25
Abathembu Traditional Authority	Local	Molweni	Leadership Council	Awareness	August 2014	23
			Leadership, traditional healers	Testing	April 2014	41
			Leadership, traditional healers and members of the community	Testing	August 2014	61
KwaCele Traditional Authority	Local	Engonyameni	Traditional Healers	Testing	June 2018	18
			Mixed community members including teachers & leadership	Testing	July 2018	36
eThekwini Biodiversity Forum	Regional	eThekwini Municipality	Environmentalists; Ward Councillors; Ecologists; Government Departments; Academics; Government Agencies; Conservancies; Consultants; NPOs & NGOs	Awareness	November 2017	52
eThekwini Weed Buster Week	Provincial	eThekwini Municipality	Environmentalists; Ward Councillors; Ecologists; Government Departments; Academics; Government Agencies; Conservancies; NPOs & NGOs	Awareness	November 2017	60

communities around invasive alien species, and this submission is aimed at serving such objectives [26].

Results and Discussion

In instances where IAPs have isiZulu name not used for any indigenous plant extra effort was given on finding indigenous plants that might look similar to that IAP, for instance *Lantana camara* (IAP) and *Lantana rugosa* (indigenous). Where there were such similar looking plants, the contributors ensured such plants had different isiZulu names. During the naming process, when a name was suggested contributors would ensure the proposed name is not already used for any other plant whether IAP or indigenous. For instance *Solanum mauritianum* (Bug weed) is commonly known as 'umbhangabhanga' whereas this is isiZulu Common Name for an indigenous tree *Trema orientalis*. The acceptable isiZulu Common Name for Bug weed should be 'ubhongabhonga', which is interchangeably used with "umbhangabhanga" and is taken from the verb 'bhongozela'- meaning ubraptly fast.

In relation to naming IAPs with negative names, *Parthenium hystephorus* (Famine weed), which has numerous negative impacts such as large-scale transformation of habitats and forming continuous thickets that render the land of less value to people, was given the name 'umbulalazwe'. When vast areas of land become of less value, it becomes as though the land itself has 'died'. Parthenium invasions have severe socio-economic and ecological impacts that cripple, destroy a country's economy. This name was derived from 'bulala' – which is to kill, and 'izwe' – which is land (Table 3).

Another example of applying negativity in the naming process was demonstrated in naming *Senna didymobotrya* (Peanut Butter Cassia) into 'umakhephuka (Table 3). The name 'umakhephuka' was derived from 'ukukhephuka' which means production and in this instance, production of odour. This was informed by the terrible, pungent smell the plant produces in spite of how beautiful it looks. The contributors then capitalized on this attribute of the plant.

Plants widely known by their English Common Name, which did not clash with names of indigenous plants, had their borrowed names formalized and adopted. Examples were *Campuloclinium macrocephalum* (Pom pom) and *Eacalyptus grandis* (Gumtree), the names of which were adopted as "uphomuphomu" and "ugamthilini", respectively (Table 3). This was done by writing the name in isiZulu in order to retain the pronunciation aspect which ensured people would continue recognizing and calling the plant by the same name.

For IAPs sharing isiZulu name with an indigenous plant, it appeared people would name a plant based on what known plant it resembles. Within the Zulu culture, many indigenous plants are used for cultural and/or medicinal purposes. For example, an erect unarmed IAP shrub *Leucaena leucocephala* is called 'ubobo'. Ubobo is the isiZulu Common Name for an indigenous shrub *Adenopodia spicata,* while the very different thorny IAP scrambler *Ceasalpinia decapetala* is called 'ubobo oluncane' as if it is a variety or subspecies of *A.spicata* (Table 4). All of these three shrubs belong to the family *Fabaceae,* have scrambling stems, bipinnately-compound, opposite leaves but *Leucaena leucocephala* has no thorns. To a non-botanist's eyes all three of these plants look similar, suggesting to the uninformed that both *L. leucocephala* and *C. decapitala* could also be used as a traditional cure for chest pains or to increase the power of Sangomas as *A. spicata* is used by traditional Zulu communities for both those purposes.

The herbaceous invader, *Lilium formosa* is commonly known as 'St Joseph's lily' or Trumpet lily (Table 4). The adjective 'St' is taken from the noun 'Saint' referring to 'a holy person'; the name suggests

it is a good plant but how then can the public get rid of a plant that is synonymous with a holy person? In isiZulu it is called 'intebe' whereas that is a name for an indigenous White arum lily scientifically known as *Zantedeschia aethiopica*. The new Zulu name devised for a St Joseph's lily is 'ubhubha', taken from the verb 'ukubhubhisa' meaning 'to destroy'. It mainly invades grasslands and converts it into St Joseph's lily field, characterized by funnel-shaped white flowers.

Caesalpinia decapetala has been given the name "uvimbangameva" based on its aggressive behaviour, 'uvimbangameva', the verb 'vimba' means to stop/restrict or prevent movement and 'ameva' are thorns (Table 4). Therefore, the name "uvimbangameva" implies that the plant prevents movementby its thorns. Passing through a heavy infestation of this plant is impossible without getting hurt by its strong thorns which hook and scratch. Thorns and spines are called 'ameva' in isiZulu. *Pereskia aculata* is another thorny IAP which has been proposed (through this submision) to be called 'izimbeva' (Table 4). This isiZulu common name depicts an aggressive behavior of *Pereskia aculata* because it of its terrifying and dangerous spines.

After names were proposed, they were presented at various platforms including Community Forums (Table 5). The advantage of such engagements was not only to test the proposed names but also to get access to what the community might be calling these plants. A classic example was the Pistia stratiotes, which the contributors had named "umantuntanamanzi". During the community engagement process, an old name "indwane" came through after a few old women requested to go and consult their elders and reported back at the following engagement. This showed that the plant already had a name, which was somehow forgotten. As a result the proposed name "umantuntanamanzi" was replaced by "indwane".

Calling IAPs by the same isiZulu Common Names of indigenous plants creates confusion, especially amongst the young generation and amongst those communities who no longer know their indigenous plants well.

Recommendations and Concluding Remarks

Naming IAPs into indigenous languages should be seen as another means of curbing and controlling their spread. This initiative should be extended into all indigenous languages in South Africa and across the globe. The notion of reviewing common names such that "negative" species are given "negative" names, should also be extended to the English Common Names where names such as "The Tree of Heaven", "Lollipop Climber", "Morning Glory", "Queen of the Night", etc., have been adopted as common names yet they are not negative to convey a need for controlling the species they represent. In the case of *Tradescantia zebrina* "Wondering Jew", the name is not only positive but it is also insensitive. In fact, instead of raising the need to control the plant they represent, they may end up creating internal conflict to the person controlling them because these names sound either positive or glamorous. Sometimes invasive alien plants are given lovely names that contradict the negative impacts they impose.

The intended plea of this submission is that negative species such as the IAS should be given negative common names. Whilst at it, they should also be given names in indigenous languages, which do not conflict with names of indigenous species. This will minimize potential confusion and unintended utilization and/or propagation of unwanted species. It is the intention of the authors of this article to regularly review, standardize and guide the naming of IAS, going forward. This exercise should not only be limited to invasive alien flora, fauna also needs to be addressed. Furthermore, the naming process should not only be confined to the province of KwaZulu-Natal, other provinces and countries are strongly encouraged to do the same if they have not already done so.

Acknowledgments

The authors would like to thank the following stakeholders;

- Mr Mkhipheni Ngwenya of the KwaZulu-Natal Herbarium in Durban for his contribution during the naming process and also his guidance.
- Thabiso Cele, former intern for the South African National Biodiversity Institute (SANBI)
- Samukelisiwe Mkhwanazi, Area Manager for Department of Environmental Affairs for her input during the early stages of the project.
- The Environmental Planning and Climate Protection Department (EPCPD), of eThekwini Municipality for access to its products, the Beautiful but Dangerous Posters and Flashcards. These provided the foundation of the species reviewed.
- The South African National Biodiversity Institute (SANBI) and the Wildlife Society of South Africa (WESSA) for invasive species out of their invasive species lists. Once again, these species contributed as a foundation of species under review by the authors of this project.
- The respective organizations and institutes, serving as employers of the authors, for allowing their respective employees to be part of this undertaking.
- Dr Sandra J. Land from the Durban University of Technology (DUT), South Africa.

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