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The ethnobotany of Central Sekhukhuneland, South Africa

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ABSTRACT

The ethnobotany of Sekhukhuneland and the plants used by rural Bapedi people for their everyday needs have not yet been systematically recorded. Available information is mostly focussed on medicinal plants that are used by traditional healers. The aim of this study was to accurately record extant indigenous knowledge on the most important useful plants within Central Sekhukhuneland. The study was conducted from 2015 to 2017 in three rural villages: Frisgewaght, Ga-Moretsele/Tsehlwaneng and Ga-Sekhele. A total of 27 participants of different age groups were interviewed using the matrix method and a flip-file of composite photographs of 152 local useful plants. Sixty-six species (44%) had food uses, 71 (46%) had medicinal uses and 62 (40%) had various craft uses. A total 185 use-records (107 medicinal, 21 food and 57 other) and 98 vernacular names were newly recorded at the time the study was completed. We used the Species Popularity Index (SPI) to quantify the relative importance of the species in the three communities, as well as the Ethnobotanical Knowledge Index (EKI) to assess the level of indigenous knowledge amongst the participants. The study revealed that a rich local culture of everyday plant uses that have not yet been systematically recorded.

1. Introduction

The focus of this study is the extant ethnobotanical knowledge of Central Sekhukhuneland (Fig. 1). Sekhukhuneland was officially declared as "The land of the Bapedi" in 1881 but the Bapedi have been living sustainable lives off the land for a long time prior to this land declaration (Monnig, 1967). Sekhukhuneland was named after the great chief Sekhukhune I, who reigned in the area during the second half of the eighteenth century. Judged by the extensive small-scale farming activities that are still evident in the area, the rural settlements and communities of Sekhukhuneland still rely on the environment for survival.

The majority of published work on the Bapedi culture is centred on anthropological studies, which have been written by non-Sepedi speaking individuals and therefore raises questions about authenticity due to the language barrier (Makgeru, 2014). The most detailed ethnobotanical study thus far is the thesis by Quin (1959) on the 'Feeding habits of the Bapedi'. There are also some references to the uses of plants in the thesis of Rampedi (2010) and the dissertation of Moeng (2010). In recent years, several scientific papers have been published by Semenya and co-workers (Semenya and Maroyi, 2013; Semenya and Potgieter, 2013a, 2013b, 2014; Semenya et al., 2012a, 2012b, 2013a, 2013b; Erasmus et al., 2012, 2015), who focused on the medicinal plants that are used by traditional healers. The need for comprehensive ethnobotanical surveys in southern Africa has been emphasized in reviews by Liengme (1983) and Van Wyk (2002, 2008). This study of the ethnobotany of Central Sekhukhuneland was aimed at providing primary data of high quality on all categories of plant use (medicine, food, and crafts, including firewood and other household uses) that can be used as a first starting point for more detailed research and comparative studies. Once the most popular species and their uses become known, studies can be conducted on their use value, including nutritional analyses, chemical analyses and ethnopharmacological assesments. Quantitative ethnobotanical data can also be used to compare the patterns of plant use between communities and different cultures, and how these patterns may change over time. It may also contribute to a much-needed systematic documentation and synthesis of Bapedi indigenous plant use knowledge.

2. Material and methods

2.1. Study area

Sekhukhuneland has a subtropical climate, with warm, moist summers and cool dry winters (Victor et al., 2005). Rain is experienced between the months of December and April, which ranges from 350 mm in the dry season to about 650 mm in the wet season (Siebert, 2001). Generally, the warmer northern parts of Sekhukhuneland experience a mean temperature of 24.6 °C and the cooler southern areas have a

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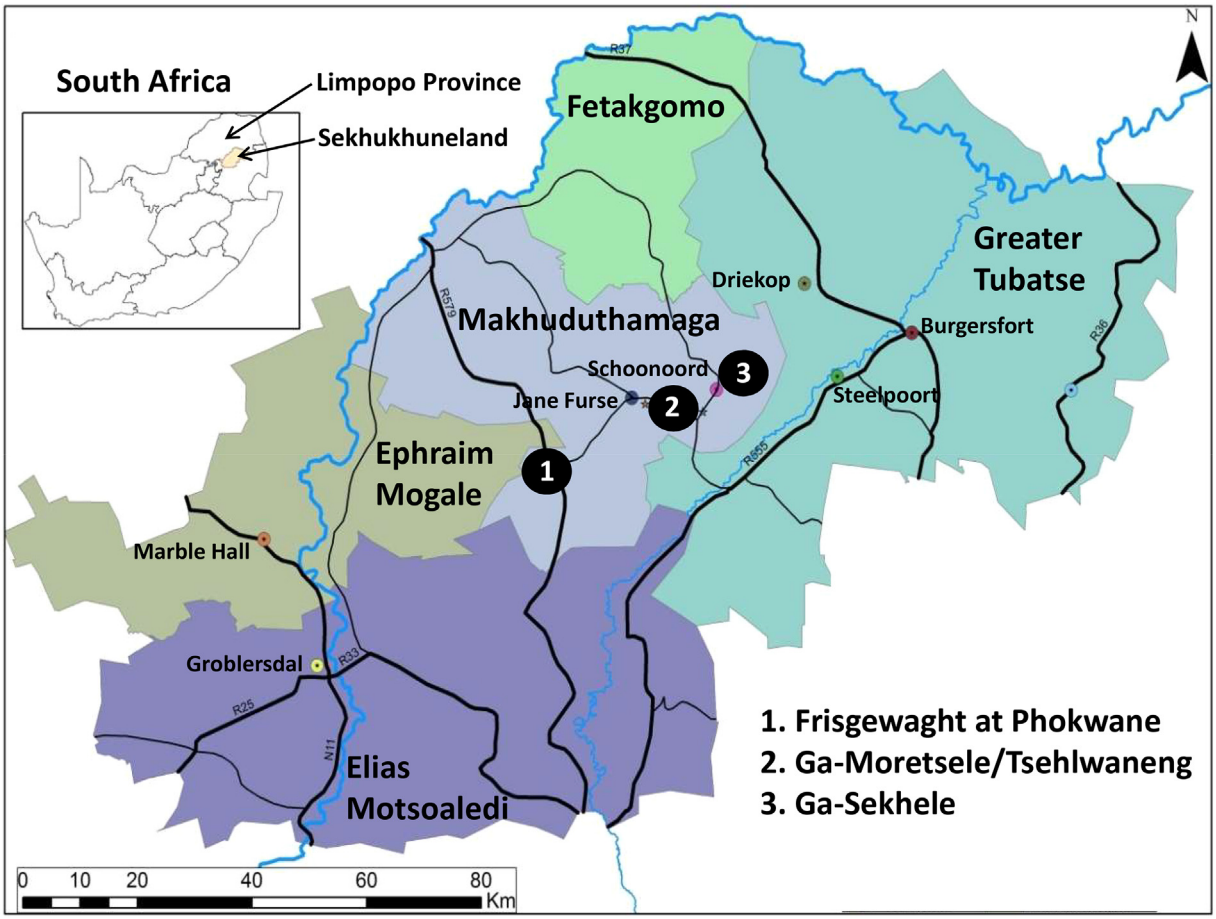

Fig. 1. Map of the Sekhukhuneland District in the Limpopo Province, South Africa, showing the three villages of the study area in Central Sekhukhuneland (Makhuduthamaga Municipality): (1) Frisgewaght at Phokwane; (2) Ga-Moretsele/Tsehlwaneng near Jane Furse; (3) Ga-Sekhele near Schoonoord. (Based on an unpublished map created by Mahlatse Kgatla, SANBI).

mean temperature of 20.1 °C (Siebert, 2001; Rutherford et al., 2006). The major river that flows through Sekhukhuneland is the Olifants River. One of its main tributaries, the Steelpoort River (traditionally known as *Tubatse*) marks the place where the first Bapedi village was established in 1650, at a place called *Mogokgomeng* (Sküsel, 2008). Three villages were selected for this study, namely Frisgewaght at Phokwane, Ga-Moretsele/Tsehlwaneng near Jane Furse and Ga-Sekhele near Schoonoord (Fig. 1).

2.2. Ethics and survey methodology

Ethical clearance for this study was obtained from the Ethics Committee of the Faculty of Science, University of Johannesburg. The priniciples outlined in the Code of Ethics of the International Society of Ethnobiology, (http://www.ethnobiology.net/what-we-do/core-programs/ise-ethics-program/code-of-ethics/) were strictly adhered to, especially the concept of educated prior informed concent. The first author has close family ties in the area, so that that cultural procedures and protocols were easily and correctly dealt with. All interviews were conducted in the Sepedi language.

A reconnaissance field trip was conducted in January 2015 in Central Sekhukhuneland to select suitable villages according to the following criteria: (1) the community must be dominated by Sepedi-speaking individuals; (2) the location of the villages should be semi-isolated and the people must still depend on the natural resources;(3) knowledgeable individuals must be available to assist in guided field walks, as well as community members interested in participating in formal interviews.

Rapid Ethnobotanical Appraisals were done in the early phase of the study (several visits during the period January–December 2015) to meet potential participants and to identify all useful plants around the villages that are still used on a daily basis for survival and for meeting daily needs (Łuczaj, 2010). During this phase, digital photographs were taken of all the plants, and herbarium specimens were collected. A thorough literature search was conducted in the Mary Gunn Library of the South African National Biodiversity Institute and the labels on Sekhukhuneland herbarium specimens (in PRE) were scrutinized for possible ethnobotanical notes and anecdotes. The digital photographs were combined into a photo plate for each species, to serve as a visual cue during the interviews. These composite photographs were printed in colour and bound in an album (flip-file) for use as the main survey instrument during the interview (quantification) phase.

A total of 27 participants were interviewed (Table 1). As far as possible, a representative sample of four age groups were selected: children and teenagers (7–18 years), young adults (19–35 years), adults (36–54 years) and seniors (55 years and older). The volunteers participated in relatively short interviews (30 min–1 h) during which three simple questions were asked about each plant species appearing in the flip-file; (1) whether they recognized the plant, (2) whether they had a name (scientific and/or vernacular) for the plant and (3) whether they knew of any uses for the plant. Answers were allocated scores of 0, 1, 2 and 3 (0 for no knowledge, 1 if the person knew only the plant but not its name, 2, if the name was known and 3 if one or more uses could be recalled). This leads to five possible total scores for each plant (and each participant): 0, 1, 3 (=1+2+0), 4 (=1+0+3) or 6 (1+2+3), as shown in Table 2.

Table 1
Comprehensive list of all Bapedi useful plants of Central Sekhukhuneland. Newly recorded species, vernacular names and plant uses are given in **bold**; voucher specimen numbers or photographic voucher numbers in square brackets (given as Appendix A in Mogale, 2018); naturalized exotics are marked with a single asterisk *, crop plants are marked *cv.
The names of participants are abbreviated, together with their dates of birth, as follows: **Seniors** (55 years and older): Rankwe Simon Madutla – RSM (1944); Kgoputso Mampuru – KM (1944); Simon Mallekene Mamosadi – SMM (1953); Mathabathe Namule – MN (1950's); Tiakale Sekele – TK (1967); Monti Seloane – MS (1948); Rosilina Morata Mothupi – RMM (1947); Simon Mothupi – SM (1951); **Adults** (36–54 years old): Jankie Choenyana – JC (1961); Mositsa Moses Sedi – MMS (1976); Letty Mpokwane – LM (1964); William Senayne Makua – WSM (1972); Thebe Mothapa – TM (1984); Matshekge Linah Sekele – MLS (1968); Mogale David Sekele – MDS (1965); Mamasele Joseph Makola – MJM (1963); Tswaledi Maggy Sekele – TMS (1976); Tseke Kleinbooi Sekele – TKS (1963); Kgaola Matlala – KM (1981); **Young adults** (19–35 years old): Mmabatho Mmakola – MM (1987); Marcia Phaphedi – MP (1994); Koketso Makabola – KM (1990); Mothupi Bridget Namole – MBN (1982); **Children and teenagers** (7–18 years old): Moname Tlologelo Makola – MTM (1997); Joseph Mokofane – JM (1997); Gift Bostiilo – BG (2002)

Species (family); [voucher specimen no. and/or photographic voucher no.]	Vernacular names	Bapedi plant use: A = Bapedi plant uses (as recorded during this survey or in the literature); B = uses recorded elsewhere in southern Africa and the rest of the world
Acanthus montanus L.* (Acanthaceae) [1a]	–	A: The root is used to treat stomach complains (Semenya et al., 2012a, 2012b; Semenya and Maroyi, 2013; Semenya and Potgieter, 2014). B: Apparently not used elsewhere.
Agapanthus inapertus P. Beauv. (Agapanthaceae) [2a]	*leta la phofu* (Sepedi)	A: Plant used to treat chest problems, wounds (Moeng, 2010) and tuberculosis (Semenya and Maroyi, 2013; Semenya and Potgieter, 2014). B: Numerous uses have been recorded for *Agapanthus* species (Arnold et al., 2002).
Agave americana L.* (Asparagaceae) [11a]	***segogopha*** (Sepedi), ***toga*** (Sepedi), *mobepi* (Sepedi), *kgopha yapala* (Sepedi) *nswareke ya robeg* (Sepedi) ***lekomani*** (Sepedi) ***tsimanyana*** (Sepedi), *garembomo* (South Sotho), *lekgala* (South Sotho), *lekgalaleputswa* (South Sotho)	A: **The leaves are boiled to remove the fleshy pulp from the veins, and then the leaf veins are used to make fibres** [JC (1961)] **for weaving (baskets, ropes for roofing, etc.)** [ASS (1969), MM (1987), BG (2002), JC (1961), JM (1997),KM (1944), MLS (1968), KM (1981), KM (1990), MDS (1965), MS (1948), MMS (1976), RMM (1947), SMM (1953), MN (1950's), TM (1984), TKS (1963), TMS (1976), MN (1950's)] and also believed to be used to build car bodies [KM (1944),TM (1984)]. The leaves are also used to treat hypertension (Semenya et al., 2012a, 2012b; Semenya and Potgieter, 2014). **The inflorescence stem (*mankomane*) is used as reinforcement (post) for kraals, walls and roofing** [KM (1944), MJM (1963), MS (1948), JM (1997), BG (2002), JM (1997), MP (1994)]. **The plant is also used as medicine for cows** and young men [WSM (1972), LM (1964), MTM (1997), RSM (1944)]. B: Numerous craft uses and medicinal uses are known (Liengme, 1981; Rankoana, 2000; Arnold et al., 2002; Moffett, 2010).
Alepidea setifera N.E.Br. (Apiaceae) [8a]	*lesoko* (Sepedi), *lesokwana* (South Sotho)	A: Used to treat toothache [WSM (1972), RSM (1944)]; flu, colds, and used as charms (Moeng, 2010]. B: *Alepidea* species are widely used in traditional medicine (Arnold et al., 2002; Moffett, 2010).
Allium cepa L.*cv (Alliaceae) [4a]	*eie* (Sepedi, South Sotho), ***keye*** (Sepedi), *hanyanese* (South Sotho)	A: Edible, ingredient to mix with food (All). B: A widely used crop (onion) (Moffett, 2010).
Allium schoenoprasum L.*cv (Alliaceae) [4b]	***konofolo*** (Sepedi), *eie* (Sepedi), *keie* or *keye* (Sepedi)	A: **Planted in the home garden to ward off snakes** [KM (1981), SMM (1953), TM (1984), TKS (1963)] **and the bulb is also edible** (JM (1997), WSM (1972), KM (1944), MS (1948), MBN (1982), RSM (1944)]. B: A widely used culinary herb (chives).
Aloe arborescens Mill. (Asphodelaceae) [12a]	***sekgopha*** (Sepedi), *kgopha ya fase* (Sepedi), ***mothapo*** (Sepedi), ***kgopana*** (Sepedi)	**A: Old dry leaves** (*motabo*) [MJM (1963)] **are burned and mixed with tobacco to make snuff which elderly women smoke as medicine** [MN (1950's), MBN (1982), ASS (1969), MJM (1963), MLS (1968), JM (1997), KM (1944), BG (2002), JC (1961), (JC (1961), MP (1994), MM (1987), MDS (1965), MS (1948), MMS (1976), RMM (1947), TMS (1976), TS (1967), MN (1950's), RSM (1944). **Leaf is mixed with poultry drinking water as medication**, and is also used as medicine for high blood pressure (All). **Dry leaves are burnt, crushed and the powder is mixed *with bupi ba mabhele*** (porridge made from sorghum) [TS, (1955)]; the leaves can also be chewed or licked as medicine [WSM (1972), LM (1964), SM (1951)]; the nectar is edible [KM (1990)] **and can be used to make jam** [SMM (1953), TM (1984)]; the plant is also used in treatments of HIV/AIDS (Semenya and Potgieter, 2014). B: Numerous medicinal uses are known (Arnold et al., 2002).
***Aloe castanea* Schönland** (Asphodelaceae) [12b]	*sekgopha sa setswiki* (Sepedi) ***segafane*** (Sepedi)	A: Medicine (All). **Fresh whole leaves are used to make perfumes** [MMS (1976)]. The leaves are boiled and the water drank as blood medication [KM (1944), ASS (1969), MDS (1965), RMM (1947), SM (1951)] and hypertension (Semenya and Potgieter, 2014). **Leaves are also crushed and ingested** [TKS (1963)] **or boiled in water and the decoction is taken orally as treatment for high blood pressure** (All). **Dry leaves are burned, crushed and the powder is used to treat burns (as first aid kit)** [TS (1955), MN (1950's), TS (1967), MN (1950's)], the edible nectar is known as *monupe* [(WSM (1972), KM (1981), KM (1990), LM (1964), MP (1994),SMM (1953), TM (1984), RSM

Table 1 (*continued*)

Species (family); [voucher specimen no. and/or photographic voucher no.]	Vernacular names	Bapedi plant use: A = Bapedi plant uses (as recorded during this survey or in the literature); B = uses recorded elsewhere in southern Africa and the rest of the world
		(1944)]. **The leaf sap is used as livestock medication** [KM (1944), MLS (1968), MMS (1976)] **and also to treat stomach pains**. **Dry leaves are mixed with snuff** [MSS (1948), TMS (1976), SM (1951), MBN (1982)] **or crushed, burned and mixed with brown pap** [MN (1950's), TS (1967)]. B: *Aloe* species are widely used medicinally (Mabogo, 1990; Arnold et al., 2002; Luseba and Van der Merwe, 2006; Moffett, 2010).
Aloe davyana Schönland, *A. transvaalensis* Kuntze (spotted aloes) (Asphodelaceae) [12c]	*sekgopha* (Sepedi), ***marobadigale*** (Sepedi)**,** ***thoga*** (Sepedi), *lekgala* (South Sotho), *lekgala la Lesotho* (South Sotho), *lekgala la quthing* (South Sotho), *lekgala la thaba* (South Sotho), *lekgala le leholo* (South Sotho), *lekgalana la Lesotho* (South Sotho)	A: **Planted in the home garden and used during ceremonies to communicate with ancestors** [ASS (1969), KM (1944), MJM (1963), MS (1948), JM (1997), BG (2002), MDS (1965), RMM (1947)], **the leaf is placed in hot water and used to rub over a sprained ankle/joint** [(JC (1961), KM (1981), (TKS (1963), TMS (1976), (TS (1967), SM (1951), MN (1950's), MBN (1982)] **and benign growths** [MDS (1965), TM (1984)] and other medicinal properties [MM (1987), MMS (1976), WSM (1972), RSM (1944)] and whole plant has medicinal properties (Rasethe et al., 2013). B: Widely used in traditional medicine (Arnold et al., 2002; Moffett, 2010) and for craft purposes (Liengme, 1981)
Aloe marlothii A. Berger (Asphodelaceae) [12d]	***sekgopha*** (Sepedi), *kgopha ya go ema* (Sepedi), ***hlabo*** (Sepedi)**,** *sekgopha sa goema* (Sepedi), ***hlatswa*** (Sepedi) *bindamutshe* (Tshivenda), *mhangani* (Tsonga)	A: The flowers produce sweet edible nectar called *monupe* which people can eat **(*gonopela*)** [ASS (1969), KM (1990), SMM (1953)]. **Elderly women would burn the old dried up leaves sometimes together with old *Opuntia* leaves, ground to fine powder (dust) and mix with *motshoko* (snuff)** [KM (1981)]. **Dried leaves are crushed, boiled, and the decoction is drunk as a remedy for ingested poisons** [SMM (1953)]. Medicine for blood related ailments (All). **The thorny leaves are used to clean cow hide** [KM (1944), MJM (1963), JM (1997), JC (1961), MS (1948), TMS (1976), MBN (1982)]. Leaves are chewed as medicine [LM (1964), RSM (1944)] **or crushed and mixed with cattle drinking water** [MP (1994)]. The thorns are removed from the leaves and the leaves are mixed with water and drank as remedy for diabetes [MN (1950's), TS (1967), MN (1950's)]. The leaves and roots and used to treat diabetes mellitus and chlamydia (Semenya and Potgieter, 2014 and Semenya et al., 2012a) and the roots are used to treat gonorrhoea (Erasmus et al., 2012). B: This *Aloe* species is widely used in traditional medicines (Mabogo, 1990; Rankoana, 2000; Arnold et al., 2002; Luseba and Van der Merwe, 2006).
Alternanthera pungens Kunth* (Amaranthaceae) [5a]	*mosweetswe* (Sepedi), *tšatšu* (Sepedi), ***tsehlo ya di gomo*** (Sepedi), *bohobe bo naming* (South Sotho), *bohome bo naming* (South Sotho), *bohome bo naming* (South Sotho), *lemanamana* (South Sotho)	A: **An enema for constipation to induce bowel movement** [MJM (1963), KM (1944), MDS (1965)] **and treatment for women with womb problems** [KM (1944)]. Root tuber is used to treat gonorrhoea and drop (Erasmus et al., 2012; Semenya et al., 2012a, 2012b; Semenya et al., 2013b; Semenya and Potgieter, 2014). B. Has numerous medicinal uses (Arnold et al., 2002).
Amaranthus spinosus L.* (Amaranthaceae) [5b]	*theepe* (Sepedi, South Sotho), *serepelele* (Sepedi), *theepe e kgolo* (Sepedi), *tshithavhamisisi* (Tshivenda)	A: **The plant is used as pig fodder** [JM (1959)] and the leaves are harvested and eaten as a *morogo* [All except JC (1991); Quin, 1959]. B: *Amaranthus* species are widely used as *morogo* (Liengme, 1981; Mabogo, 1990; Rankoana, 2000; Moffett, 2010).
Anredera cordifolia **(Ten.) Steenis*** (Basellaceae) [14a]		A: **Live fence** [MJM (1963), MDS (1965), MMS (1976), RMM (1947)]. B: No known recorded uses elsewhere.
Arachis hypogea L.*[cv] (Fabaceae) [31a]	*peanut* (Sepedi), *ditloo* (Sepedi), *tokomane* (Sepedi), *ditloo marapô* (Sepedi), *nduhu*, *makotomane* (South Sotho) (Tshivenda), *manga* (Tsonga)	A: The underground nuts are boiled [All except MM (1987), MP (1994), MTM (1997), LM (1997)] or fried and eaten as a snack [MDS (1965), MMS (1976), TM (1984)]. B: *Arachis* is widely cultivated and has known medicinal uses (Liengme, 1981, Mabogo, 1990; Moffett, 2010).
Argemone mexicana L.* (Papaveraceae) [47a]	***seja bagekolo*** (Sepedi) ***sehlaba magotlwana*** (Sepedi), *ntshwantshwane* (South Sotho), *sehlabahlabane* (South Sotho), *sehlohlo se seholo* (South Sotho), *sehlohlo se sesweu* (South Sotho)	A: **The leaves are crushed and used as a plaster over a growth on a limb** [KM (1944)]. **The roots are cooked and the water used to apply on an injury** [MS (1948)]. B: The Sotho use *Argemone* species for various ailments (Moffett, 2010).
Aristida diffusa **Trin. subsp. *diffusa*** (Poaceae) [48a]	*matulwane* (Sepedi), *moswelo* (Sepedi), *bjwang ba leswelo* (Sepedi), *bohlanya ba dipere* (South Sotho), *lefielo* (South Sotho), *mohlolohadi* (South Sotho), *monya* (South Sotho), *bohlanya ba pere* (South Sotho), *sebonyane* (South Sotho)	A: The dried grass is used to make *maswelo* (brooms) [JM (1997), BG (2002), JC (1961), KM (1944), MLS (1968), KM (1981), KM (1990), MJM (1963), MP (1994), MDS (1965), MMS (1976), MTM (1997)), RMM (1947), SMM (1953), TM (1984), TKS (1963), TMS (1976), TS (1967), SM (1951), MN (1950's), MBN (1982), RSM (1944)]. B: *Aristida* sp. has various craft uses (Rankoana, 2000; Moffett, 2010).

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Table 1 (*continued*)

Species (family); [voucher specimen no. and/or photographic voucher no.]	Vernacular names	Bapedi plant use: A = Bapedi plant uses (as recorded during this survey or in the literature); B = uses recorded elsewhere in southern Africa and the rest of the world
Artemisia afra Jacq. ex Willd. (Asteraceae) [13a]	*lengana* (Sepedi, South Sotho), *wildeals* (Afrikaans), *wilde als* (Afrikaans), *als* (Afrikaans), *alsem* (Afrikaans), *umhlonyane* (Zulu)	A: Boil the leaves and drink the water [MJM (1963), TMS (1976), JM (1994), BG (2002)] or smoke the dried leaves as treatment for flu [All except MLS (1968), JC (1961), MP (1994), MTM (1997), TMS (1976)] and tuberculosis (Semenya and Potgieter, 2014; Semenya and Maroyi, 2013); roots are used to treat impotence (Semenya et al., 2013a); plant also used to treat colds, flu, stomach problems and malaria (Moeng, 2010). B: A widely used medicinal plant (Arnold et al., 2002; Steenkamp, 2003).
Asparagus laricinus Burch. (Asparagaceae) [MM27/11b]	***leutlautlane*** (Sepedi), *mophatlalatsa maru* (Sepedi), *sephatlalatsa* (Sepedi), ***mosesele*** (Sepedi), *govhakhanga* (Tshivenda)	A: **The whole plant is burned to ward off rain clouds during ceremonies (weddings, funerals etc.)** [MJM (1963), MS (1948), JM (1997), ASS (1969), JC (1961), SMM (1953), KM (1944), KM (1981), MDS (1965), MMS (1976, RMM (1947), TM (1984), TKS (1963), TMS (1976), SM (1951), MBN (1982), RSM (1944)]. **The spines are removed from the stems which are then softened in fire; the smooth stems are then used to make bracelets** (KM (1944)]. **The roots are used to treat a person who has fallen ill from ingesting pregnant women food** [TS (1967), MN (1950's)] and as treatment for blood clotting (Rasethe et al., 2013). B: *Asparagus* species are widely used medicinally and there are a few craft uses recorded (Liengme, 1981; Mabogo, 1990; Arnold et al., 2002).
Athrixia phylicoides DC. (Asteraceae) [MM38/13b]	*letori* (Sepedi), *phefshwana* (South Sotho) *mutshatshaila* (Tshivenda), *mubostee* (Tshivenda), *mhlonyana* (Tsonga), *kofi ya nhova* (Tsonga)	A: Leaves are used to make tea (Mabogo, 1990; Rampedi, 2010) and the stems are used to make brooms [KM (1944), ASS (1969), MJM (1963), MDS (1965), MMS (1976), TKS (1963), TMS (1976), SM (1951), MBN (1982)]. B: *Athrixia* species are well documented for their craft and medicinal uses (Liengme, 1981; Mabogo, 1990; Arnold et al., 2002; Moffett, 2010).
Bidens pilosa L.* (Asteraceae) [13c]	*mophodisa* (Sepedi), *mokolonyane* (Sepedi), ***mokgoti*** (Sepedi), ***moloka*** (Sepedi), the seed is known as ***seloka*** (Sepedi) *monyane* (Sepedi), ***mogwete*** (Sepedi), *mohomenyana* (South Sotho), *mohonyane* (South Sotho), *mokolonyane* (South Sotho), *moonyane* (South Sotho), *mushidzh*i (Venda), *muxiji* (Tsonga)	A: Leaves are cooked and eaten as *morogo* [KM (1944), KM (1981), KM (1990), MJM (1963), MDS (1965), MMS (1976), RMM (1947), TM (1984), TKS (1963), TMS (1976), MBN (1982)]. **The root is used as treatment for high blood pressure** [LM (1964), WSM (1972), ASS (1969), SM (1951), RSM (1944)] and to treat menstrual disorders (Semenya et al., 2012a, 2012b; Semenya et al., 2013a; Semenya and Potgieter, 2014). B: Has multiple uses including medicinal and food uses (Liengme, 1981; Mabogo, 1990; Arnold et al., 2002).
Boophone disticha (L.f.) Herb. (Amaryllidaceae) [6a]	***lehwame*** (Sepedi), *titikwane* (Sepedi), *kgutana ya naha* (South Sotho), *kgutsana ya noha* (South Sotho), *leshoma, thibi* (South Sotho)	A: **Bulb leaves are used to cover wounds like a bandage/elastic plaster** [MJM (1963), KM (1944), Moeng, 2010] **or to cover cooked traditional beer** [MS (1948)]. Whole plant is grown in the yard and used to communicate with ancestors during ceremonies [ASS (1969), JC (1961), SM (1951), KM (1944), MDS (1965), MMS (1976), WSM (1972), RMM (1947), TMS (1976)], Moeng, 2010); the bulb is boiled and the decoction drank as treatment for blood circulation [TM (1984), TKS (1963), MN (1950's), MBN (1982), RSM (1944)]; **the water is used to bath crying children to soothe pain** [LM (1964) (MLS (1968), KM (1981), MDS (1965), SMM (1953), RSM (1944)] **and used as medication to keep a person awake** [SM (1951), KM (1990)]. B: Though the species is known be toxic it has numerous medicinal use records and religious significances (Rankoana, 2000; Arnold et al., 2002; Moffett, 2010; Van Wyk et al., 2002).
Boscia albitrunca (Burch.) Gilg & Gilg-Ben (Capparaceae) [19a]	*mohlophi* (Sepedi), *mohlopimolelwa* (Sepedi), *muthobi* (Tshivenda)	A: Plant is scarce in the area, it is found long distances from villages and it is edible [MJM (1963), KM (1944)) (MS (1948)]. **The ground bark was used to make soft porridge during times of starvation** [WSM (1972) LM (1964), SMM (1953), KM (1944), MMS (1976), SM (1951), RSM (1944)]. The plant is used to treat HIV/AIDS and to make beverages (Rampedi, 2010). B: The species has multiple uses including medicinal, food and ethnoveterinary uses (Mabogo, 1990; Rankoana, 2000; Arnold et al., 2002).
Brassica oleracea L. var. *capitata* L.f. *alba* DC.*[cv] (Brassicaceae) [15b]	*cabbage* (sepedi), *blomkoel* (South Sotho), *kgabetjhe* (South Sotho), *koel* (South Sotho)	A: Nutrition, domestic animal feed (All). B: Widely cultivated crop (Moffett, 2010).
Brassica oleracea L.* (Brassicaceae) [15a]	***cabbage ya tabeng*** (Sepedi), wild cabbage (English)	A: Nutrition [ASS (1969), KM (1981), LM (1964), MM (1987), MMS (1976), WSM (1972), RMM (1947), SMM (1953)] and as domestic animal feed [WSM, 1972) MJM (1963),SM (1951), JM (1997), ASS (1969), JC (1961), SM (1951), KM (1944), KM (1990), MDS (1965)]. B: Cabbage is a well-known leaf vegetable.
*Caesalpinia decapetala** (Roth) Alston. (Fabaceae) [31b]	*mokgabane* (Sepedi)	A: The plant is used to treat gonorrhoea (Semenya et al., 2013b; Semenya and Potgieter, 2014) and the root is used to treat drop (Semenya et al., 2012b; Erasmus et al., 2012). B: Used medicinally in Africa (Arnold et al., 2002).

Table 1 (*continued*)

Species (family); [voucher specimen no. and/or photographic voucher no.]	Vernacular names	Bapedi plant use: A = Bapedi plant uses (as recorded during this survey or in the literature); B = uses recorded elsewhere in southern Africa and the rest of the world
Callilepis laureola DC. (Asteraceae) [13d]	*phelana* (Sepedi), *phela* (Sepedi)	A: **Chicken feed** [SM (1951)]; tuber used to treat gonorrhoea, HIV/AIDS and leukaemia (tuber), colds, flu, intestinal worms in children and ulcers (Moeng, 2010), erectile dysfunction, low sperm count and kidney dysfunction (Erasmus et al., 2012; Semenya and Potgieter, 2013b; Semenya et al., 2013b and Semenya and Potgieter, 2014). B: Many recorded medicinal uses but potentially toxic (Arnold et al., 2002; Steenkamp, 2003).
Cannabis sativa L. var. *sativa** (Cannabaceae) [18a]	*zol* (Sepedi), ***lebakhe*** (Sepedi), *mopatse* (Sepedi), matekwane, *matakwane* (South Sotho), *matekwane* (South Sotho), *matokwane* (South Sotho), *mmoana* (South Sotho), *moana* (South Sotho), *setekwane* (South Sotho), *tekwane* (South Sotho), *dagga* (Afrikaans)	A: Recreational drug and flu medicine (All). **The whole plant is boiled and the decoction is used to treat epilepsy** [KM (1944), MBN (1982)] **or, one teaspoon of the decoction is administered to ill children to treat coughs/flu** [MP (1994)]. The leaves are used to treat tuberculosis (Semenya et al., 2012b; Semenya and Maroyi, 2013; Semenya and Potgieter, 2014). B: Widely used medicinally and for recreational purposes (Arnold et al., 2002; Moffett, 2010).
Capsicum annuum L.*cv (Solanaceae) [58a]	*mopherefere* (Sepedi), *green pepper* (English)	A: Mixed with food for flavour (All) and the roots are used to treat period pains (Semenya et al., 2012b; Semenya et al., 2013a; Semenya and Potgieter, 2014). B: Widely used vegetable.
Capsicum frutescens* L.cv (Solanaceae) [58b]	*pherefere* (Sepedi), *chilis* (children) (Sepedi), ***lebela bela*** (Sepedi), *viriviri* (Tsonga)	A: Mixed with food for flavour (All). B: Has various medicinal uses in southern Africa and is a well--known cultivated crop (Liengme, 1981, Arnold et al., 2002).
Carica papaya L.*cv (Caricaceae) [20a]	*mophopho* "*wapoo*", *mophoophoo* (Sepedi) , *mopawpaw* (Sepedi), *mupapawe* (Tshivenda)	A: Fruit is eaten (All). The plant is used to treat erectile dysfunction (Semenya and Potgieter, 2014; Lourens et al., 2015) and diabetes mellitus (Semenya and Potgieter, 2013a). The root and tuber are used to treat gonorrhoea (Semenya et al., 2012a, 2012b). The fruit and root are used to carry out abortions and treat drop (Semenya et al., 2013b) and the leaves used to treat tuberculosis (Semenya and Maroyi, 2013). Leaves are used to treat skin ailments and sexually transmitted diseases (Mongalo and Makhafola, 2018). B: Cultivated in other parts of Limpopo and used medicinally (Mabogo, 1990).
Carpobrotus edulis (L.) L. Bolus subsp. *edulis* (Aizoaceae) [3a]	*le blommo* (Sepedi), *lepolomo la go naba* (Sepedi), *tina* (Sepedi), *suurvy* (Afrikaans), *hotnotsvy* (Afrikaans), *rankvye* (Afrikaans), *ghaukum* (Afrikaans), *vyerank* (Afrikaans), *nautsi amma* (Nama)	A: The leaves are used to treat diabetes mellitus and goitre (Semenya et al., 2012a and Semenya and Potgieter, 2014) also, **the succulent leaves are chewed on and solid plant material is spat out, only the leaf juices are swallowed as treatment for toothache, sore throat and tummy aches** [KM (1981), MDS (1965), MM (1987), TM (1984)], ornamental [WSM (1972), KM (1944), MMS (1976)]. B: Has multiple medicinal uses (Arnold et al., 2002).
Catharanthus roseus (L.) G. Don* (Apocynaceae) [MM32/[9a]	*lepolomo le le pinki la drop* (Sepedi), *lilucha* (Tshivenda), *mabobe* (South Sotho), *sebabetsana*	A: Plant has ornamental value [JM (1997), BG (2002), ASS (1969), BG (2002), KM (1981), KM (1990), MP (1994), MMS (1976), TMS (1976)] **and used as medication for toothache** [LM (1964), WSM (1972), SMM (1953), RSM (1944)]. The root is used to treat gonorrhoea (Semenya and Potgieter, 2014 and Semenya et al., 2013a) and drop (Semenya et al., 2012b; Mongalo and Makhafola, 2018). B: Has multiple medicinal uses (Arnold et al., 2002; Steenkamp, 2003).
***Ceiba speciosa* (A.St.-Hil.) Ravenna** * (Malvaceae) [39a]	-	A: The tree is used for its shade but also makes good firewood because of its ability to burn slowly for long hours [MS (1948), MJM (1963)]. B: No known recorded uses elsewhere in southern Africa.
Chenopodium murale L.* (Amaranthaceae) [21a]	*serua* (Sepedi), *thumana* (South Sotho), *thumane* (South Sotho)	A: Leaves are eaten as *morogo* [WSM (1972), LM (1964), MDS (1965), MMS (1976), RMM (1947), SMM (1953), TKS (1963), SM (1951), MN (1950's), RSM (1944), Quin, 1959]. B: *Chenopodium* species are widely used for food (*morogo*) and medicinally across southern Africa (Mabogo, 1990; Arnold et al., 2002; Moffett, 2010).
Citrullus lanatus (Thunb.) Matsum. & Nakai*cv (Cucurbitaceae) [26a]	*lerotse* (Sepedi), *mokopu* (small)(Sepedi), *moretse* (Sepedi), *legapo* (Sepedi), *mokolotwane* (Seped), *morogo wa motsatsa* (Sepedi), *kaate* (South Sotho), *lehapu* (South Sotho), *mokakawane* (South Sotho), *mokopuntja* (South Sotho), *qhomo* (South Sotho), *qhoomo* (South Sotho), *qootho* (South Sotho), *qotho* (South Sotho), *thomo* (South Sotho), *thoomo* (South Sotho), *tjoko* (South Sotho), *tjoto* (South Sotho), *habu* (Tshivenda), *khalavatla* (Tsonga)	A: *Lerotse* is eaten as a fruit. The seeds are fried and eaten with a starch supplement (All) or to stimulate appetite (Semenya and Potgieter, 2014), they can also be crushed and mixed with maize powder to make *kgodu* (yellow pap). The fruit pulp is used to make bitter jam [JM (1997), BG (2002), JC (1961), MS (1948)]. The leaves are eaten as *morogo wa motsatsa* [LM (1964), WSM (1972)]. The fruit is also used as domestic animal feed [JM (1997), BG (2002), JC (1961), MS (1948)] and to treat HIV/AIDS (Semenya et al., 2012b and Semenya et al., 2013b). B: Recorded to have a variety of medicinal, craft and food uses (Arnold et al., 2002; Moffett, 2010).

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Table 1 (*continued*)

Species (family); [voucher specimen no. and/or photographic voucher no.]	Vernacular names	Bapedi plant use: A = Bapedi plant uses (as recorded during this survey or in the literature); B = uses recorded elsewhere in southern Africa and the rest of the world
Citrus limon (L.) Osbeck.*[cv] (Rutaceae) [54a]	*moswiri* (fruit is swirir) (Sepedi) *suurlamani* (South Sotho), *tshikavhavhe* (Tshivenda)	A: The fruit is edible (All). The fruit juice is mixed with boiled water and drank as a treatment for flu or **mixed with glycerine for nourishing the skin** [ASS (1961), SM (1951)]. The root is used to treat malaria (Semenya et al., 2012b; Semenya and Potgieter, 2014) and the leaves are used to treat tuberculosis (Semenya and Maroyi, 2013). B: Widely cultivated genus and used medicinally in Limpopo (Mabogo, 1990; Moffett, 2010).
***Cladium mariscus* (L.) Pohl subsp. *jamaicense* (Crantz) Kük.** (Cyperaceae) [27a]	*legogwa* (Sepedi)	A: Used to weave the traditional mat known as *legogwa* [BG (2002), MMS (1976), TMS (1976), SM (1951)]. B: No known recorded uses.
Cleome gynandra L. (Capparaceae) [19b]	*lerotho* (Sepedi), *morogo wa lerotho* (Sepedi), *murudi* (Tshivenda)	A: Used as *morogo*, the leaves are cooked and eaten with pap (All; Quin, 1959). B: Eaten as *morogo* in other areas of Limpopo and other species eaten by the Sotho (Mabogo, 1990; Rankoana, 2000; Moffett, 2010).
Combretum apiculatum Sond. subsp. *apiculatum* (Combretaceae) [23a]	***mohwelere tsipi*** (Sepedi)**,** *khuditshwane* (Sepedi), *mpotsa* (Tsonga), *mpoza* (Tsonga), *mugarasaka* (Tsonga)	A: Wood is tough and it can burn for 24 hrs without the need to reignite [KM (1944)] thus it is excellent firewood [KM (1981), MP (1994), MDS (1965), RMM (1947), TM (1984), TMS (1976), Rasethe et al., 2013]. **Branches are stronger than whips and are used as instruments of punishment for criminals and naughty young men** [SMM (1953)]. **Stems can also be used to make utensils** [MJM (1963), ASS (1969), MDS (1965), RMM (1947), SMM (1953), SM (1951)]. B: Used medicinally in other parts of Africa and as firewood (Arnold et al., 2002; Liengme, 1981).
Combretum molle R.Br. ex G. Don (Combretaceae) [23b]	***mohwelere*** (Sepedi), *mokgwethe* (Sepedi), *mugwiti* (Tshivenda)	A: **Firewood** [JM (1997), BG (2002), KM (1981), MJM (1963), MM (1987), MDS (1965), MMS (1976), TM (1984), MBN (1982), RSM (1944)]; the bark is boiled in water and the extract is taken orally as a treatment for body pains [KM, (1994)]; the root is used to treat wounds and general injuries (Semenya and Potgieter, 2014; Moeng, 2010) and stomach problems (Moeng, 2010). B: Used medicinally in Africa (Arnold et al., 2002).
***Commiphora africana* (A.Rich.) Engl. var. *africana* (Burseraceae)** [16a]	***mogongoro*** (Sepedi)	A: The tree is used as a symbol to lay judgment in the royal yard. When a person's wrong doing are to be discussed, they are discussed under this tree [SMM (1953)]. B: Used medicinally in other parts of Africa (Arnold et al., 2002).
Conyza scabrida DC. (Asteraceae) [13e]	*mokotedi wa thaba* (South Sotho), *meidebos* (Afrikaans), *perskebos* (Afrikaans), *oondbos* (Afrikaans), *oondbesembos* (Afrikaans)	A: The root is used to treat depression (Semenya and Potgieter, 2014). B: Used medicinally in other parts of Africa (Arnold et al., 2002).
Corchorus tridens L. (Malvaceae) [39b]	*nthelele* (Sepedi), *delele* (Tshivenda), *guxe* (Tsonga)	A: The leaves are cooked and eaten as *morogo wa thelele* [WSM (1972), ASS (1969), LM (1964), MDS (1965), MMS (1976), RMM (1947), TM (1984), TKS (1963), TMS (1976), RSM (1944)] and sometimes mixed with *morogo wa lerotho* because of *thelele* undesirable slimy nature when cooked [KM (1944), KM (1990), SM (1951), MBN (1982)]. B: Eaten as *morogo* in the Limpopo Province (Liengme, 1981; Mabogo, 1990).
Cotyledon orbiculata L. (Crassulaceae) [25a]	***moshimane wa maratana*** (Sepedi), *tsebe ya kolobe*, (Sepedi), ***moshimane morake*** (Sepedi), ***tsebe ya fase*** (Sepedi), *moshimane wa tabeng* (Sepedi), *seredile* (South Sotho), *beesore* (Afrikaans), *plakkie* (Afrikaans), *varkoor* (Afrikaans)	A: Used as medication [LM (1964), WSM (1972), TKS (1963), RSM (1944)]. **The leaf is placed in the sun to dry which can take up to eight months. After drying, the leaf is crushed to powder which is used to awaken fainted patients. People suffering from *lefufunyane* (mentally disturbed patients) are also administered the leaf powder as snuff, believed to enable them to communicate with ancestors** [MJM (1963)]. **Shepherd boys play with the leaves like frisbees** [MJM (1963), SMM (1953), TM (1984)]; fresh leaves are crushed and the juices are sniffed to induce sneezing to cure certain ailments [KM (1944)] or to treat aching feet [TS (1967), MN (1950's)]. The plant is believed to be sold at Faraday muthi market and is used for flu [MMS (1976)] and the root is used to treat gonorrhoea (Erasmus et al., 2012; Semenya and Potgieter, 2014). B: Has various medicinal uses across Africa and the Sotho use it as a children's toy (Arnold et al., 2002; Moffett, 2010).
Crassula sarcocaulis* Eckl. & Zeyh. subsp. *sarcocaulis (Crassulaceae) [MM28/25b]	***inoni*** (Sepedi)**,** ***inwame*** (Sepedi), *seredilenyana* (South Sotho)	A: Plants can be grown in the yard around rocks, as it is a rock loving plant and the **stem is used for tonsil problems** [MJM (1963)]. **Whole plant is cooked in water and the decoction is used as medication for pregnant women, the plant can also be chewed for constipation** [KM, (1944)]. **Juice from the leaves can be used to make babies stop suckling** [TS (1967), MN (1950's)]. B: Is used in traditional medicines in southern Africa (Arnold et al., 2002).

Table 1 (*continued*)

Species (family); [voucher specimen no. and/or photographic voucher no.]	Vernacular names	Bapedi plant use: A = Bapedi plant uses (as recorded during this survey or in the literature); B = uses recorded elsewhere in southern Africa and the rest of the world
***Cryptolepis cryptolepidioides* (Schltr.) Bullock** (Apocynaceae) [MM11/9b]	***moralala*** (Sepedi), ***mohlologwetsana*** (Sepedi), ***moapara*** (Sepedi)	A: **When an old lady is widowed she carries the plant around as a symbol** [WSM 1972), (LM (1964), RSM (1944)]. B: No known use records.
***Cucumis zeyheri* Sond.** (Cucurbitaceae) [26b]	*morogo wa monyaku* (Sepedi), *morogo wa motsatsa* (Sepedi), *lerakana* (South Sotho), *monyaku* (South Sotho)	A: Eaten as *morogo*; the younger leaves are cooked and eaten with pap as older leaves are too bitter for ingestion [BG (2002), MN (1950's), KM (1944), TM (1984), ASS (1969), KM (1981), KM (1990), LM (1964), MM (1987), MS (1948), MMS (1976), WSM (1972), TMS (1976), TS (1967), SM (1951), MBN (1982), RSM (1944)]. B: Used medicinally across Africa (Arnold et al., 2002; Moffett, 2010).
Cucurbita moschata Duchesne ex Poir. *[cv] (Cucurbitaceae) [26c]	*lefodi* (Sepedi), *mpodi* (Sepedi)	A: Edible fruit (All). B: *Cucurbita* species are widely cultivated as crops (Liengme, 1981; Moffett, 2010).
Cussonia paniculata Eckl. & Zeyh. (Araliaceae) [10a]	*motšhetšhe* (*Cussonia spicata*) (Sepedi), *malebathe* (Sepedi), *motsetse* (Sepedi), *motshetshe* (South Sotho)	A: **Wood can be used to make wooden utensils** [KM (1990), SMM (1953), TM (1984), TKS (1963), TMS (1976), SM (1951], MBN (1982)). **The trunk can easily be hollowed to make a drum** [ASS (1969), MDS (1965)] **sealing the top with cow hide, the hollow trunk is also used as a flower pot** [MJM (1963), MS (1948)]. Like the mopane tree the plant is also home to edible worms [ASS (1969), MJM (19630, JC (1961), TMS (1976), JM (1997), MP (1994), MM (1987), BG (2002), MDS (1965), MS (1948), MMS (1976), WSM (1972), RMM 1947), RSM (1944)]. Plant can be used for traditional medicines [JC (1961), RSM (1944)] and to induce vomiting [KM (1944), MN (1950's)]. **Tree sap can also be mixed with bathing water** and the root is used to treat stomach complaints (Semenya and Potgieter, 2014). B: Is used for various medicinal purposes (Arnold et al., 2002; Moffett, 2010).
Cyperus austro-africanus C.Archer & Goetgh. (Cyperaceae) [27b]	***modula*** (Sepedi) *mohlaka* (Sepedi)	A: **The stem is used to makes straw mats** (all); the whole plant is used to treat menstrual disorders (Semenya et al., 2013a; Semenya and Potgieter, 2014). B: No known use records.
***Cyperus sexangularis* Nees** (Cyperaceae) [27c]	*mohlahla* (Sepedi), *mutate* (Tshivenda), *nhlahle* (South Sotho), *risama* (South Sotho), *moseme* (South Sotho)	A: Used to weave traditional mats (*legogwa*) using a wooden stand called a *pere* [BG (2002), MLS (1968), ASS (1969), KM (1990), LM (1964), MJM (1963), MDS (1965), MS (1948), MMS (1976), WSM (1972), RMM (1947), SMM (1953), TM (1984), TKS (1963), TMS (1976), TS (1967), SM (1951), MN (1950's), MBN (1982), RSM (1944)]. Currently strings from orange bags are used to weave the mats but in the olden days *Acacia* species (*mogotho* (S), *lekkeruik peul* (A) were used: fibres were obtained from the branches and bark to make strings that keep the mats together. The plant is grown in home garden as a sign of presence of a traditional healer [KM (1944, LM (1964), WSM (1972), RSM (1944)]. B: Used to make mats along with other species in the genus (Liengme, 1981; Mabogo, 1990; Moffett, 2010).
Datura stramonium L.* (Solanaceae) [58c]	**makura or mokura** (Sepedi), *lechoe* (Sepedi) *thoba* (Sepedi), *letjhoi* (South Sotho), *letjhowe* (South Sotho), *lethwe* (South Sotho), *letjoi* (South Sotho), *mohlafotha* (South Sotho), *zavhazavha* (Tshivenda), *olieboom* (Afrikaans)	A: A person who ingests the plant can go crazy/mad within 24 hours [SMM (1953), KM (1990), MDS (1965), MS (1948), MMS (1976), RMM (1947), SMM (1953), TM (1984), TKS (1963), TMS (1976), TS (1967), SM (1951), MN (1950's), MBN (1982), (ASS (1969)]. **The leaves are used as Elastoplast** [KM (1944)]. **Seeds are ground to powder, mixed with cattle or pork fat and used to seal wounds** [LM (1964), WSM (1972), RSM (1944)] **and to treat aching feet** [MJM (1963)]. **Traditionally the oil from the seeds was used to polish floors** [MSS (1948)] and the plant is used to treat stroke victims (Semenya et al., 2012b; Semenya and Potgieter, 2014). B: Widely used medicinally (Mabogo, 1990; Arnold et al., 2002; Moffett, 2010).
Dodonaea viscosa Jacq. (Sapindaceae) [56a]	*mofentse* (Sepedi), *mofenshe* (Sepedi), *mudodivisa* (Tsonga)	A: Used as live fence [KM (1944), ASS (1969), KM (1990), MJM (1963), MP (1994), MDS (1965), MS (1948), MMS (1976), RMM (1947), TM (1984), TMS (1976), TS (1967), SM (1951), RSM (1944)] and the roots are used to treat HIV/AIDS (Semenya and Potgieter, 2014). B: Widely used medicinal plant and used as live fence in Limpopo (Mabogo, 1990; Arnold et al., 2002).
Dombeya rotundifolia (Hochst.) Planch. (Malvaceae) [MM47/39c]	*mokgopa* (Sepedi), *mogokobu* (Sepedi), *tshiluvhari* (Tshivenda), *mbikanyaka* (Tsonga), *nsihapukuma* (Tsonga), *xiluvarhi* (Tsonga), *nyangala* (Tsonga)	A: Known to be the first tree to flower after winter*, the wood is used as **firewood** [KM (1944), TM (1984), KM (1981), MP (1994); Rasethe et al., 2013] **and as poultry medication** [LM (1964), WSM (1972), RSM (1944)] The root is used to treat diarrhoea and hypertension (Rasethe et al., 2013; Semenya and Potgieter, 2014). B: Widely used medicinally and for craft (Liengme, 1981; Mabogo, 1990; Arnold et al., 2002).

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Table 1 (*continued*)

Species (family); [voucher specimen no. and/or photographic voucher no.]	Vernacular names	Bapedi plant use: A = Bapedi plant uses (as recorded during this survey or in the literature); B = uses recorded elsewhere in southern Africa and the rest of the world
Dovyalis caffra (Hook.f. & Harv.) Warb. (Salicaceae) [55a]	*Mohlono* (Sepedi) *mutunu* (Tshivenda), *nvisangani* (Tsonga), *hipachipachane* (Tsonga)	A: Edible fruit [ASS (1969), MDS (1965)]. B: Fruit is edible, widely used medicinally and has several craft uses (Mabogo, 1990; Rankoana, 2000; Arnold et al., 2002).
Elephantorrhiza praetermissa J.H. Ross (Fabaceae) [31c]	***motšatšane*** (Sepedi), ***motshitshane*** (Sepedi)	A: Tuber is known to be eaten by baboons [MS (1948), KM (1944), TKS (1963), TMS (1976)]. **When boiled the water turns red and the decoction is used to treat stomach pains** [MS (1948), MN (1950's)]. Plant used in treatments of blood ailments [KM (1944), TS (1967)]. **Dry wood used as firewood** [KM (1981), MDS (1965), MS (1948), MMS (1976), RMM (1947), MJM (1963), SM (1951)] and **the seeds are used to make beads** [SMM (1953)]. B: No known recorded uses elsewhere.
Englerophytum magalismontanum (Sond.) T.D. Penn. (Sapotaceae) [57a]	*mohlatswa* (fruit known as mahlatswa) (Sepedi), ***mahlatswa a hlateng*** (Sepedi)	A: The fruit is edible [BG (2002), JM (1997), KM (1944), KM (1990), MJM (1963), MP (1994), MM (1987), MDS (1965), MS (1948), MMS (1976), RMM (1947), TM (1984), TMS (1976), SM (1951), RSM (1944)] which is also used to make beverages (Rampedi, 2010) **and the wood is used to make wooden utensils** [MJM (1963]. The bark is used to treat diabetes mellitus (Semenya and Potgieter, 2014). The roots are used to treat HIV/AIDS (Semenya and Potgieter, 2014) and erectile dysfunction (Semenya et al., 2012b). B: Fruit is edible and plant widely used medicinally (Rankoana, 2000; Arnold et al., 2002; Steenkamp, 2003).
Eriobotrya japonica (Thunb.) Lindl.* (Rosaceae) [52a]	***mohlatswa wa segua*** (Sepedi)	A: Edible fruit [JM (1997), KM (1944), ASS (1969), KM (1990), MP (1994), MM (1987), MDS (1965), RMM (1947), TM (1984), TKS (1963), TMS (1976), MN (1950's), MBN (1982)]. The root is used to treat hypertension (Semenya et al., 2012b; Semenya and Potgieter, 2014) and tuberculosis (Semenya and Potgieter, 2014; Semenya et al., 2012b; Semenya and Maroyi, 2013). B: Fruit edible and some known medicinal uses.
Eucalyptus camaldulensis Dehnh.*cv (Myrtaceae) [44a]	***moplandaas*** (Sepedi), *mopilikomo* (Sepedi), *tholodi* (Sepedi), *blukom* (Sepedi), *bloukomo* (South Sotho)	A: Leaves are smoked or placed in hot water and the steam is inhaled to treat flu [MJM (1963), BG (2002), JM (1997), LM (1964), MP (1994), WSM (1972), RMM (1947), TKS (1963), TMS (1976), RSM (1944)]. The wood is used for construction [TKS (1963), KM, (1994), ASS (1969), KM (1990), MM (1987), MDS (1965), MS (1948), RMM (1947), TMS (1976)]. Children play with the fruits [JC (1961)]. The leaves are used to treat tuberculosis (Semenya et al., 2012b; Semenya and Maroyi, 2013; Semenya and Potgieter, 2014). B: Widely used for construction and several medicinal uses (Arnold et al., 2002; Moffett, 2010).
Euclea crispa (Thunb.) Gürke subsp. *crispa* (Ebenaceae) [29a]	*mokwerekwere* (Sepedi), *mohlakola* (South Sotho), *motsetlela* (South Sotho)	A: Edible fruit [TKS (1963), SM (1951)]; root is used to treat HIV/AIDS (Semenya and Potgieter, 2014). B: Widely used medicinal and craft plant (Liengme, 1981; Arnold et al., 2002; Moffett, 2010).
Eucomis pallidiflora Baker subsp. *pole-evansii* (N.E.Br.) Reyneke ex J.C. Manning (Asparagaceae) [11c]	*mathuba difala* (Sepedi), *maphuma difala* (Sepedi)	A: **Ornamental** [MS (1948)], used to treat blood related ailments [MN (1950's)]. The bulb is used to treat tuberculosis (Semenya and Maroyi, 2013), blood clotting as a blood purifier treatment for chlamydia, erectile dysfunction (Erasmus et al., 2015), and the root is used to treat chest problems, STDs, mental illness and mixed with other plants and used as an aphrodisiac (Moeng, 2010). B: Widely used medicinally (Arnold et al., 2002).
***Euphorbia excelsa* A.C.White, R.A. Dyer & B.Sloane** (Euphorbiaceae) [30a]	*mogkwalangwata* (Sepedi), *mogwangwata* (Sepedi)	A: The plant has a poisonous latex [BG (2002), JM (1997), MLS (1968), KM (1990), LM (1964), MDS (1965), MMS (1976), WSM (1972), RMM (1947), MJM (1963), TM (1984), TMS (1976), TS (1967), SM (1951)] that induces vomiting. **The milky latex is also mixed with *bupi* (mealie meal) to make tablets that are taken as a laxatives** [KM (1944), RSM (1944)]. B: No known records.
Euphorbia ingens E. Mey. ex. Boiss. (Euphorbiaceae) [30b]	***mogkwalangwata*** (Sepedi), ***mogwangwata*** (Sepedi) *mohlohlokgomo* (Sepedi), *mukonde* (Tshivenda)	A: Poisonous latex [ASS (1969), KM (1990), LM (1964), MDS (1965), MMS (1976), WSM (1972), MJM (1963), TM (1984), TKS (1963), TMS (1976), TS (1967), SM (1951), MBN (1982)]. Monkeys have been observed to escape into the plant when hunted **and it is used as a poison to kill enemies/people** [MJM 1963]. **The milky latex is mixed with *bupi* (mealie meal) to make tablets that are taken as a laxative** [KM (1944), RSM (1944)]. The stem is used to treat breast cancer (Semenya et al., 2013b; Semenya and Potgieter, 2014). B: Widely used medicinally (Mabogo, 1990; Arnold et al., 2002).
Euphorbia maleolens E. Phillips (Euphorbiaceae) [30c]	***mogkwalangwata*** (Sepedi), ***mogwangwata*** (Sepedi), *rofa bja Tau* (Sepedi)	A: Poisonous latex and the whole plant is used to treat HIV/Aids (Semenya and Potgieter, 2014). B: No known records.

Table 1 (*continued*)

Species (family); [voucher specimen no. and/or photographic voucher no.]	Vernacular names	Bapedi plant use: A = Bapedi plant uses (as recorded during this survey or in the literature); B = uses recorded elsewhere in southern Africa and the rest of the world
Euphorbia milii* Des Moul. (Euphorbiaceae) [30d]	*le blommo* (Sepedi), ***malese*** (Sepedi)	A: Whole plant is used as a live fence and has ornamental value [ASS (1969), MM (1987), MMS (1976), RMM (1947), TMS (1976), SM (1951), MBN (1982)]. The whole plant is also used to treat patients that have difficulty to urinate [KM (1944), MLS (1968)] **or it can be crushed and the powder is thrown into a flame, the radiated heat is used to treat stroke patients** [KM (1944), LM (1964)]. B: No known records.
Euphorbia tirucalli L. (Euphorbiaceae) [30e]	*mohloko* (Sepedi), ***mofiwa maswi*** (Sepedi), *mutungu* (Tshivenda)	A: The milky latex produced by the plant causes extreme itchiness [MMS (1976), RMM (1947), TKS (1963), TMS (1976)]. The plant was used as a live fence to **prevent snakes from coming into the yard and goats from escaping** [SMM (1953), MMS (1976)]. B: Widely used medicinally (Mabogo, 1990; Rankoana, 2000; Arnold et al., 2002).
Euphorbia tithymaloides* L. (Euphorbiaceae) [30f]	***malese*** (Sepedi)	A: Plant is poisonous [RMM (1947), TKS (1963), SM (1951), MBN (1982)] and has ornamental value [MLS (1968), MDS (1965)]. It is also used as traditional medicine to **treat patients that have difficulty urinating** [MP (1994)]. B: No known records (but a popular garden plant worldwide).
Ficus abutilifolia (Miq.) Miq. (Moraceae) [MM24/41a]	***mofaya*** (Sepedi)	A: Edible fruit [KM (1981), KM (1990), MDS (1965), MMS (1976), RMM (1947), MJM (1963), TM (1984), TKS (1963), TMS (1976), SM (1951), MN (1950's), MBN (1982)]. B: Widely used medicinal plant in southern Africa (Arnold et al., 2002).
Ficus carica L.*cv (Moraceae) [41b]	***mofaya*** (Sepedi), ***mpaya*** (Sepedi), *mofeiye* (Sepedi)	A: Plant is cultivated for its edible fruit [ALL, except MM (1987)]. The bark is used to treat tuberculosis (Semenya and Maroyi, 2013; Semenya and Potgieter, 2014) and the roots are used to treat diabetes mellitus (Semenya et al., 2012b). B: No other recorded uses.
Ficus ingens (Miq.) Miq. (Moraceae) [41c]	**mofaya** (Sepedi), ***mpaya*** (Sepedi), *monokane* (Sepedi), ***mmogo*** (Sepedi), ***mokômo*** (Sepedi), *tshikululu* (Tshivenda)	A: Edible fruit [ASS (1969), KM (1981), KM (1990), LM (1964), MJM (1963), MDS (1965), MS (1948), MMS (1976), WSM (1972), RMM (1947), TM (1984), TKS (1963), TS (1967), SM (1951), MBN (1982), RSM (1944), Rasethe et al., 2013]. B: Veterinary uses (Mabogo, 1990).
Gardenia volkensii* K.Schum. subsp. *volkensii (Rubiaceae) [53a]	***muthuduntša*** (Sepedi), ***tiya motse*** (Sepedi), *morala* (Sepedi), *tshiralala* (Tshivenda)	A: **Traditional doctors are known to harvest the roots for medicine** [JC, KM (1944), MJM (1963), MS (1948) – at the time a new record]; Branches are used to treat chest complaints and stem bark is used as magic medicine (Mongalo and Makhafola, 2018). B: Used for crafts and various traditional medicines in southern Africa (Mabogo, 1990, Arnold et al., 2002).
***Gazania krebsiana* Less. subsp. *serrulata* (DC.) Roessler)** (Asteraceae) [13f]	***boyetse*** (Sepedi), *shweshwe* (South Sotho), *tsikitlane* (South Sotho)	A: **The thin leaves are used as fibre to make rope** [MJM (1963), ASS (1969), MDS (1965), MS (1948)] **also to make bracelets** [KM (1944)] **or string to weave the *lebole* (traditional skirt)** [MMS (1976), RMM (1947), TKS (1963), SM (1951), MBN (1982)]. B: Widely used medicinal plant (Arnold et al., 2002; Moffett, 2010).
***Gerbera jamesonii* Bolus ex Adlam** (Asteraceae) [13g]	***mokedikentsana*** (Sepedi)	A: **The flower is worn as decoration during weddings, funerals and Christmas** [SMM (1943), ASS (1969), MMS (1976), RMM (1947)]. B: No other uses elsewhere.
Gomphocarpus fruticosus (L.) Aiton f. subsp. *fruticosus* (=*Asclepias fruticosa* L.) (Apocynaceae) [MM42/9c]	***leshika nokana*** (Sepedi), ***lehlanya*** (Sepedi), *mosotsa poo* (Sepedi), *kweteleboima* (South Sotho), *lebajana* (South Sotho), *lanajana la thaba* (South Sotho), *lebejane* (South Sotho), *modimola* (South Sotho), *modimola wa thaba* (South Sotho), *moethimolo* (South Sotho), *moethimolo wa thaba* (South Sotho), *moduko* (South Sotho), *moduku* (South Sotho), *moemothatha* (South Sotho), *mosikanoka*, *mosikanokana* (South Sotho), *mutshulwa* (Venda)	A: **The leaves are boiled in water and the decoction is used as an enema** [ASS (1969)] **for kidney dysfunctions or taken orally as a headache treatment** [KM (1944)]. **Some people are known to eat the leaves as *morogo*** [LM (1964), WSM (1972), RSM (1944)]. Birds build their nests with the cotton found in the fruit [KM (1981), SMM (1953), TM (1984)]. **The plant is also believed to be used as treatment for epilepsy** [TS (1967), MN (1950's)]. The root is used to treat erectile dysfunction (Semenya et al., 2012b; Semenya et al., 2013b; Semenya and Potgieter, 2013b, 2014). B: Widely used in traditional medicines (Mabogo, 1990; Arnold et al., 2002; Moffett, 2010).
Grewia flava DC. (Malvaceae) [39b]	***mogwame*** (Sepedi), ***moretlwa*** (Sepedi), *morethwa* (Sepedi), *mohletlwa* (Sepedi), *nsihani* (Tsonga)	A: The small fruits (*digwame*) are edible [BG (2002), KM (1944), JM (1997), ASS (1969), KM (1981), JC (1961), KM (1990), MJM (1963), MP (1994), MDS (1965), MS (1948), MMS (1976), MTM (1997), RMM (1947), SMM (1953), TMS (1976), SM (1951), MBN (1982); Mongalo and Makhafola, 2018] and used to make beverages (Rampedi, 2012). **The branches are used to make whips (shamboks)** [MSS (1948)]; the root is used to treat diarrhoea (Rasethe et al., 2013; Semenya and Potgieter, 2014) and sexually transmitted diseases (Mongalo and Makhafola, 2018). B: Edible fruit and widely used in traditional medicines (Rankoana, 2000; Arnold et al., 2002; Rampedi, 2010; Mongalo and Makhafola, 2018).

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Table 1 (*continued*)

Species (family); [voucher specimen no. and/or photographic voucher no.]	Vernacular names	Bapedi plant use: A = Bapedi plant uses (as recorded during this survey or in the literature); B = uses recorded elsewhere in southern Africa and the rest of the world
Grewia sp. (Malvaceae) [39e]	***mogoto*** (Sepedi)	A: Edible fruit [KM (1944), RSM (1944)], **the bark is used by traditional healers to tie prescribed medication before handing it to the patient, when the bark dries up it can be placed in water to wet it again for wrapping** [KM (1944)]**.** B: Edible fruit and widely used in traditional medicines (Arnold et al., 2002; Rampedi, 2010).
Helichrysum caespititium (DC.) Harv. [13h] (Asteraceae)	***mokgata*** (Sepedi)	A: Plant is used for various respiratory conditions (cough, asthma), also used as an enema for constipation. [KM (1944)]. The whole pant (*H. caespititium*) can be used to treat diabetes mellitus, epilepsy, hypertension, blood purifier, measles gonorrhoea and diarrhoea (Semenya and Potgieter, 2014) and the root (*H. herbaceum*) is used to treat blood problems (Semenya and Potgieter, 2014). B: *Helichrysum* species have been recorded to be used as traditional medicines (Arnold et al., 2002).
Hypoxis obtusa Burch. ex Ker Gawl. (Hypoxidaceae) [MM43/33a]	*mmona wa maledu* (Sepedi) *titikwane* (Sepedi) *sesogadi* (Sepedi)	A: The tuber can be used as medication [MDS (1965), ASS (1969), MMS (1976), RMM (1947)] for high blood pressure [MJM (1963), TMS (1976), SM (1951), MN (1950's)], erectile dysfunction (Semenya et al., 2013a; Semenya and Potgieter, 2014; Lourens et al., 2015), female fertility (Semenya et al., 2013a), to treat wounds [KM (1944)] and as an aphrodisiac (Erasmus et al., 2015). B: Widely used in traditional medicines and the Sotho use other species of *Hypoxis* in their traditional medicines (Arnold et al., 2002; Moffett, 2010).
Indigofera cf. *heterotricha* (Fabaceae) [31d]	*morotelashotsi* (Sepedi), ***tsha ka lapa or cha ka lapa*** (Sepedi), *musapelo wa thaba* (South Sotho), *mmusapelo wa thaba* (South Sotho), *qoiqoi* (South Sotho); *mmusapelo wa mafika* (South Sotho), *musapelo wa mafika* (South Sotho); *muswiswa* (Tshivenda), *mualigatsib* (Tshivenda)	A: Dried plant material burn rapidly and is used as a fire starter [KM (1944), ASS (1969), MDS (1965), MMS (1976), RMM (1947), TMS (1976), SM (1951)] and has medicinal applications (Rasethe et al., 2013). B: *Indigofera* species are widely used in traditional medicines (Mabogo, 1990; Arnold et al., 2002; Moffett, 2010).
Ipomoea batatas (L.) Lam.*cv (Convolvulaceae) [24a]	*potata* (Sepedi), *patata* (South Sotho), *gapi* (tuber) (Tsonga); *ritiyi* (Tsonga)	A: Leaves used as *morogo* and starchy roots used as vegetable (All). B: Widely cultivated crop and has several traditional medicine uses (Liengme, 1981; Arnold et al., 2002; Moffett, 2010).
Ipomoea bathycolpos Hallier f. (Convolvulaceae) [24b]	***morara wa fase*** (Sepedi)**,** *maswi a pudi* (Sepedi)	A: Leaves used to rub on dissected cattle veins (the veins are tied together and then tied between rocks) to make a musical instrument (*kgwadi*) [KM (1944)]. The plant is edible (Quin, 1959). B: No known recorded uses elsewhere.
Jatropha zeyheri Sond. (Euphorbiaceae) [30g]	***sefapa badia or sefapa bodie*** (Sepedi) (also recorded by Mongalo and Makhafola, 2018).	A: **The bulb turns water red when cooked and is used in mixtures for blood ailments** [MJM (1963), JC (1961), JM (1997)], **the decoction is also used as an enema** [MS (1948)]. **The dried leaves are used to treat feet problems** (ailments) **and also to make tea** [MJM (1963), JC (1961)], **and induce vomiting** [KM (1944), ASS (1969)]. The root is used as treatment for gonorrhoea (Erasmus et al., 2012), eye infections and infections in cattle (Mongalo and Makhafola, 2018). B: Widely used in traditional medicines (Arnold et al., 2002).
Kalanchoe brachyloba Welw. EX Britten (Crassulaceae) [25c]	*moratana* (Sepedi), *tshinyanyu (*Tshivenda)	A: The leaves are crushed and the juices released are sniffed up, this induces sneezing to cure ailments [KM (1944), KM (1990), TKS (1963), MBN (1982)]. Leaves are dried and ground to powder, the powder is then used to wake up feinted patients [MJM (1963)]. The whole plant is used as an ornamental plant [MMS (1976), TM (1984)]. Shepherd boys play with the leaves like frisbees [SMM (1953), TS (1967)]. The plant is also used to treat aching feet, [MN (1950's)]. B: Widely used in traditional medicines (Arnold et al., 2002).
Kalanchoe thyrsiflora Harv. (Crassulaceae) [25d]	*moratana* (Sepedi), *seredi* (South Sotho), *seredile* (South Sotho)	A: The leaves are crushed and the juices released are sniffed up, this induces sneezing to cure ailments [KM (1944), KM (1990), TKS (1963), MBN (1982)]. Leaves are dried and ground to powder, the powder is then used to wake up feinted patients [MJM (1963)]. The whole plant is used as an ornamental plant [MMS (1976), TM (1984)]. Shepherd boys play with the leaves like frisbees [SMM (1953), TS (1967)]. The plant is also used to treat aching feet, [MN (1950's)]. B. Widely used in traditional medicines (Arnold et al., 2002).
***Kedrostis leloja* (J.F.Gmel.) C.Jeffrey** (Cucurbitaceae) [26d]	*makgonatšohle* (Sepedi)	A: **The plant can be used for anything depending on a person's desire i.e. medicine, witchcraft, good and bad luck** [MJM (1963), MDS (1965), MMS (1976), RMM (1947), TKS (1963), TMS (1976), SM (1951), MBN (1982)]. **Whole plant can be mixed with bathing water to treat aching body** [KM (1944), ASS (1969)]. B: No known uses but *Kedrostis* species are widely used in traditional medicines and craft (Arnold et al., 2002; Van Wyk, 2008; Moffett, 2010).

Table 1 (*continued*)

Species (family); [voucher specimen no. and/or photographic voucher no.]	Vernacular names	Bapedi plant use: A = Bapedi plant uses (as recorded during this survey or in the literature); B = uses recorded elsewhere in southern Africa and the rest of the world
Kirkia wilmsii Engl. (Kirkiaceae) [34a]	*mogaba* or *legaba* (Sepedi) *modumela* (Sepedi)	A: **Once collected the tuber is brought into the yard, it is left outside to dry and a chicken is sacrificed else it is believed that a member of the family shall pass away** [LM (1964), RSM (1944)]. The tuberous roots are edible [BG (2002), MJM (1963)] and are eaten as treatment for high blood pressure [ASS (1969), TKS (1963), MBN (1982), MDS (1965), KM (1944), KM (1981), KM (1990), TM (1984), MMS (1976), WSM (1972), RMM (1947), TMS (1976), TS (1967), SM (1951), MN (1950's), RSM (1944), Moeng, 2010)] and hypertension (Semenya et al., 2012a; Semenya and Potgieter, 2014). A piece of the branch or the tuber is chewed on to induce thirst during herding so the herder can drink maximum water to prevent dehydration [SMM (1953)), MDS (1965), MMS (1976), RMM (1947), MN (1950's), Moeng, 2010]. B: Used in traditional medicines (Rankoana, 2000; Arnold et al., 2002).
Lantana camara L.* (Verbenaceae) [60a]	*sebabane* (Sepedi), *motsholla* (Sepedi), *tshidzimbambule* (Tshvenda)	A: The berries are edible [MJM (1963), MS (1948), JM (1997), KM (1944), BG (2002), SM (1951), KM (1981), KM (1990), LM (1964), MP (1994), MDS (1965), MMS (1976), WSM (1972), RMM (1947), SMM (1953), TM (1984), TKS (1963), SM (1951), MBN (1982), RSM (1944)] and the root is used to treat hypertension (Semenya et al., 2012b; Semenya and Potgieter, 2014). B: Has various craft uses and widely used in traditional medicines (Arnold et al., 2002).
***Lantana rugosa* Thunb.** (Verbenaceae) [60b]	***mokokotwane*** (Sepedi), ***mopopotwane*** (children) (Sepedi), ***masepa a magotlo*** (Sepedi), *mabelemabutswapele* (South Sotho), *mabutswapele* (South Sotho), *modutwane* (South Sotho), *monokotshwai wa makgwaba matona* (South Sotho), *monokotswai wa makgwaba* (South Sotho), *tshidzimbambule* (Tshivenda)	A. Berries are edible [ASS (1969), MJM (1963), MS (1948), JM (1997), BG (2002), KM (1944), SM (1951), KM (1981), LM (1964), MP (1994), MDS (1965), MMS (1976), WSM (1972), RMM (1947), SMM (1953), TKS (1963), TMS (1976), SM (1951), MBN (1982), RSM (1944)]. B: Widely used in traditional medicines and the Sotho use it for cultivation (Arnold et al., 2002; Moffett, 2010).
***Ledebouria apertiflora* (Baker) Jessop** (Hyacinthaceae) [32a]	*sekanama* (Sepedi), ***sefulanyana*** (Sepedi), *sekunkuru* (Sepedi)	A: **The bulb is crushed and rubbed on painful areas of the body** or alternatively mixed with water and used as soap [KM (1981), MDS (1965), SM (1951), TKS (1963), TS (1967)]. **Crushed leaves are rubbed on limbs affected by *sefulanyane* (stroke)** [LM (1964), MMS (1976), WSM (1972), RSM (1944)], **or boiled in water and the concoction is applied to infections** [KM (1944)]. **Treat blisters** and *gala* (issues associated with the bile duct) [MS (1948), RMM (1947), MN (1950's)]. B: No known recorded uses.
Lippia rehmannii H.Pearson (Verbenaceae) [60c]	*mošukutšwana* (Sepedi), *mosunkwane* (Sepedi)	A: **Plant leaves may be boiled as tea** [KM (1944), ASS (1969), MDS (1965), MMS (1976), RMM (1947), SM (1951), MBN (1982), RSM (1944)]. **Leaves mixed with the blood of a slaughtered animal, cooked and eaten as soup** [TKS (1963), TMS (1976), SM (1951)] **or used to neutralize pork smell when cooking pork meat** [(MJM (1963), MDS (1965), MMS (1976), RMM (1947)]. Leaves also used to treat chest complains, tuberculosis (Semenya and Potgieter, 2014) and nose bleeds (Semenya and Potgieter, 2014). **The whole plant is hung from the roof, indoors, as a mosquito repellent** [KM (1944), MJM (1963), JM (1997), BG (2002)] and can be used as firewood [MMS (1976), RMM (1947)]. B: Widely used in traditional medicines (Arnold et al., 2002).
Lolium multiflorum Lam. (Poaceae) [48b]	*botsakatsaka* (Sepedi), ***korong*** (Sepedi)	A: Wild-harvested for bread making [All except TS (1955), MLS (1968), MM (1987), MP (1994)], Quin, 1959)]. The whole plant is used to treat kidney problems (Semenya, 2012b; Semenya and Potgieter, 2014). B: No known recorded uses elsewhere.
***Lopholaena coriifolia* (Sond.) E. Phillips & C.A.Sm.** (Asteraceae) [13i]	***morapeus*** (Sepedi), ***mokorokorwane*** (Sepedi), *moswikiri* (Sepedi)	A: **Invasive/bush encroachment plant species good for firewood** [MJM (1963), ASS (1969), MDS (1965), MMS (1976), RMM (1947), MBN (1982)]. **Dried branches are burned and the smoke is inhaled to treat headaches** [JC (1961), ASS (1969), MDS (1965), WSM (1972), RMM (1947) TKS (1963), TMS (1976), SM (1951), MN (1950's), RSM (1944)]. **The branch apices have an edible sugar substance/exudate (nectar)** [MM (1987)]. B: Various craft uses and used in traditional medicines (Rankoana, 2000; Arnold et al., 2002).
Mangifera indica L.*cv (Anacardiaceae) [7a]	*mango* (Sepedi), *mo-mago* (Sepedi), *umango* (Zulu)	A: Fruit is edible (nutrition) (All). Stem bark is used to treat infections and diarrhea (Mongalo and Makhafola, 2018). B: Used in traditional medicines and widely cultivated (Arnold et al., 2002).
Medicago sativa L.* (Fabaceae) [31e]	*luserene* (Sepedi), *lesere* (South Sotho)	A: Whole plant is used to treat heart problems [(MN (1950's); Semenya, 2012b; Semenya and Potgieter, 2014)]. B: Animal fodder (*lucerne*) and widely used in traditional medicines (Arnold et al., 2002; Moffett, 2010).

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Table 1 (*continued*)

Species (family); [voucher specimen no. and/or photographic voucher no.]	Vernacular names	Bapedi plant use: A = Bapedi plant uses (as recorded during this survey or in the literature); B = uses recorded elsewhere in southern Africa and the rest of the world
***Melhania prostata* DC.** (Malvaceae) [39f]	***mamshwane*** (Sepedi)	A: **Used by traditional doctors for various ailments in combination with other plants as a strong potion (*mokeme*) for witchcraft**. The red roots are an indication that the plant can be ingested as medicine [MJM (1963)]. **Roots used to weave baskets** [KM (1944)]. B: Not recorded to be used elsewhere.
Melia azedarach L.* (Meliaceae) [40a]	*mobidi* (Sepedi), ***morombol*** (Sepedi), *mobidi* (Sepedi), *morombol* (Sepedi), *mosara* (Sepedi), *xifiringoma* (Tsonga)	A. The whole plant has ornamental value [TMS (1976)] **and seeds were used to play with, they were kept afloat just above the lips by gently blowing on them** [MMS (1976)] and the wood is used as firewood (Rasethe et al., 2013). Leaf decoctions are used topically to treat shingles and infections associated with HIV/AIDS (Mongalo and Makhafola, 2018). B: Fruits are eaten in other parts of Limpopo; timber is used in construction and the plant is widely used in traditional medicines and as an ornamental (Liengme, 1981; Mabogo, 1990; Rankoana, 2000; Arnold et al., 2002).
Merwilla plumbea (Lindl.) Speta. (Hyacinthaceae) [32b]	*setsusha* (Sepedi), *kgerere* (South Sotho)	A: **The bulb is mixed with bananas and taken orally to improve sexual performance in men** [LM (1964), WSM (1972), MN (1950's), RSM (1944)] and used in the same way to treat ***gala* (ailments related to heart burn and/or acid reflux).** The leaves are used to treat diabetes mellitus (Semenya and Potgieter, 2014). The bulb is used to treat tuberculosis (Semenya and Maroyi, 2013). The plant is also used to treat chest and respiratory problems, to induce vomiting (purifier) and as an aphrodisiac (Moeng, 2010). B: Used in traditional medicine by the Sotho (Moffett, 2010).
Mimusops zeyheri Sond. (Sapotaceae) [56b]	*mmupudu* (Sepedi), *mobupudu* (Sepedi), *mibubulu* (Tsonga), *mpfuxane* (Tsonga), *nhlantswa* (Tsonga), *mubulu* (Tshivenda)	A: It produces edible fruit [SMM (1953), KM (1944), JM (1997), BG (2002), ASS (1969), KM (1981), JC (1961), KM (1990), MJM (1963), MDS (1965), MMS (1976), RMM (1947), TM (1984), TKS (1963), TMS (1976), SM (1951), RSM (1944), Mongalo and Makhafola, 2018] which is also used to make beverages (Rampedi, 2010); the leaves are used to treat diabetes mellitus (Semenya and Potgieter, 2014; Semenya et al., 2012a) and the roots against syphilis, stomach ache and gynaecological infections (Mongalo and Makhafola, 2018). B: Used in traditional medicine and the fruit is edible (Liengme, 1981; Mabogo, 1990; Rankoana, 2000; Arnold et al., 2002).
Mirabilis jalapa* L. (Nyctaginaceae) [45a]		A: Ornamental [MLS (1968), MP (1994), MMS (1976), MTM (1997)]. B: Used in traditional medicine (Arnold et al., 2002).
Momordica balsamina L. (Cucurbitaceae) [26e]	***lebje*** (Sepedi), *masêgasêgane* (Sepedi), *mothwatwa* (sepedi), ***mokgapu wa noga*** (Sepedi), *tshibavhe* (Tshivenda), *without* (Afrikaans), *duwana* (Afrikaans)	A: The leaves are cooked and eaten with pap [MJM (1963), KM (1944), SMM (1953), TKS (1963), SM (1951), RSM (1944)]. The fruit is believed to be eaten by snakes [MJM (1963), MM (1987), MDS (1965), MMS (1976), RMM (1947), TMS (1976)] and is also used like steel wool to wash dishes [MS (1948)]. The root is used to treat high blood pressure [RMM (1947), TS (1967), MN (1950's)] and diabetes mellitus (Semenya et al., 2012a; Semenya and Potgieter, 2014). B: Used in traditional medicine (Mabogo, 1990; Arnold et al., 2002; Van Wyk, 2008).
Moringa oleifera Lam.*[cv] (Moringaceae) [42a]	*moringa* (Sepedi), *makgonatsohle* (Sepedi)	A: Leaves can be used to make tea [KM (1944), ASS (1969), MDS (1965), MMS (1976), RMM (1947), TKS (1963), SM (1951), MBN (1982)] for an energy boost. Medicinally any part of the plant is used to treat diabetes, high blood, improve nutrition (immune system) and treat burning urine [LM (1964), MDS (1965), WSM (1972), MN (1950's), RSM (1944)]. The seed and leaf are used to treat diabetes mellitus (Semenya et al., 2012a; Semenya and Potgieter, 2014; Chauke et al., 2015). B: Not recorded as traditional medicine in southern Africa but known to be widely used in many parts of Africa and Asia.
Mundulea sericea (Willd.) A.Chev. (Fabaceae) [31f]	*mosetla tlou* (Sepedi), *motlou* (Sepedi), *moshisane* (Sepedi), *mukundandou* (Tshivenda)	A: Locusts are known to feed on the flower, so it attracts lots of them making collection easier [MJM (1963), MDS (1965), TMS (1976)]. The dry bark is used as firewood [MJM (1963), MDS (1965), TMS (1976)]. **Used to treat epilepsy** [KM (1944)] and menstrual disorders (Semenya et al., 2013a). B: Widely used in traditional medicine (Mabogo, 1990; Arnold et al., 2002).

Table 1 (*continued*)

Species (family); [voucher specimen no. and/or photographic voucher no.]	Vernacular names	Bapedi plant use: A = Bapedi plant uses (as recorded during this survey or in the literature); B = uses recorded elsewhere in southern Africa and the rest of the world
Myrothamnus flabellifolius (Sond.) Welw. (Myrothamnaceae) [43a]	***mahlapaneng*** (Sepedi), *boka* (Sepedi), *fenya* (Sepedi), *makgonatsohle* (Sepedi), *tsoga* (Sepedi), ***moparafin*** (Sepedi), *pati ya tshwene* (Sepedi)	A: **When the leaves and/or flowers are dry the plant material is crushed and smoked or boiled (macerated) and the steam inhaled as a remedy for coughs and flu** [JC (1961), MP (1994), MDS (1965), MMS (1976), RMM (1947), SMM (1953), TM (1984), TKS (1963), TMS (1976), SM (1951), MBN (1982)]. The plant is also used to treat men's fertility and the **dry plant material is used as a fire fuel as it burns easily and fast** [KM (1944), JM (1997), JC (1961)]. The whole plant is used to treat erectile dysfunction (Semenya and Potgieter, 2013b; Semenya et al., 2013a; Erasmus et al., 2015; Lourens et al., 2015), tuberculosis (Semenya and Maroyi, 2013) and nose bleeding (Semenya and Potgieter, 2014). B: Widely used in traditional medicine (Mabogo, 1990; Arnold et al., 2002).
Nicotiana tabacum L.*cv (Solanaceae) [58d]	*mopolare* (Sepedi), *motsuku* (Sepedi), *kwane* (South Sotho), *tabak* (South Sotho)	A: **Leaves used to make *motshoko* (snuff) and as cattle feed** [All except MS (1948), MLS (1968), MTM (1997), ASS (1969), KM (1990)]. B: Widely used in traditional medicine (Arnold et al., 2002; Moffett, 2010).
Opuntia ficus-indica (L.) Mill.* (Cactaceae) [17a]	*mofeie* (Sepedi), *motloro* (Sepedi), *tôrôfeie* (Sepedi), ***foie e kubedu*** (Sepedi), *mudoro* (Tshivenda)	A: The fruit is eaten as a delicacy (All), used to make beverages [MLS (1968), MMS (1976); Rampedi, 2010)] and to treat sexually transmitted diseases (Semenya et al., 2012a, 2012b). **Women cannot eat the red fruit as it is believed to induce menstruation** [MS (1948)]. **The roots are used to treat people who have urinary ailments** [TS (1967), MN (1950's)], hypertension (Semenya and Potgieter, 2014), gonorrhoea (Rasethe et al., 2013), diabetes mellitus and drop (Erasmus et al., 2012; Chauke et al., 2015) and shingles associated with HIV/AIDS (Mongalo and Makhafola, 2018). B: Fruit is edible and is used in traditional medicines (Mabogo, 1990; Arnold et al., 2002; Moffett, 2010).
***Ornithoglossum vulgare* B.Nord.** (Colchicaceae) [22a]		A: Found one plant after a long walk; it is believed to be used by *ba go phahlalatsa matsogo* (traditional healers) **as a powerful potion** [SMM (1953)]. B: No known recorded uses elsewhere.
Ozoroa paniculosa (Sond.) R.Fern. & A. Fern. (Anacardiaceae) [MM22/7b]	*monoko* (Sepedi), *momoko* (Sepedi)	A: **The wood lasts long without the use of preservatives thus people use it to build kraals and sometimes use it as fencing posts** [All except TS (1955), MLS (1968), TM (1984), MTM (1997), MP (1994), MMS (1976)]. **A piece of the bark can be used to make sour milk (milk from a cow or goat is poured into a hollowed out calabash (or ostrich egg) and a piece of the wood is placed inside the container and left to ferment underground** [MJM (1963), MS (1948), KM (1944)]. **The bark can be ground to a fine powder which is used to treat stomach pains** [KM (1944), TKS (1963), SM (1951), MBN (1982), KM (1944)); wood used as firewood; the tree sap is edible (BG (2002), (MJM (1963)], **leaves used to make mountain tea**, [WSM (1972), RSM (1944)] and the bark and root are used to treat diarrhoea, measles (Semenya and Potgieter, 2013b, 2014), erectile dysfunction (Semenya and Potgieter, 2013b; Semenya and Potgieter, 2014 and Erasmus et al., 2015), impotence (Semenya et al., 2013a) and sexually transmitted diseases (Chauke et al., 2015). B: Used in traditional medicine (Arnold et al., 2002).
Pellaea calomelanos (Sw.) Link (Pteridaceae) [MM25/50a]	*patalewana* (Sepedi), *patalewana* for ferns in general (South Sotho)	A: **Crushed leaves are burned and the smoke inhaled for bronchial ailments** [TS (1967)], the plant is also used to treat tuberculosis (Semenya and Maroyi, 2013). B: Widely used in traditional medicines (Arnold et al., 2002; Moffett, 2010).
Peltophorum africanum Sond. (Fabaceae) [31g]	*mosehla* (Sepedi), *musese* (Venda)	A: **Bark is used to treat high blood pressure** [JC (1961), KM (1944)], **stomach pains** [KM (1981), KM (1990), LM (1964), JM (1963), MDS (1965), RMM (1947), TKS (1963), TMS (1976), RSM (1944)] HIV/AIDS, erectile dysfunction, as a postpartum medicine (Semenya et al., 2013a; Semenya and Potgieter, 2013b, 2014) and to treat female fertility (Semenya et al., 2013a). The dry wood makes good firewood [ASS (1969), BG (2002), LM (1964), MP (1994), MDS (1965), MS (1948), MMS (1976), WSM (1972), RMM (1947), TM (1984), TKS (1963), TMS (1976), SM (1951), MBN (1982), RSM (1944); Rasethe et al., 2013] **or make utensils used to crush *mabhele* (corn). When a baby has white spots on his face (*sefala*) a needle or razor is used to make short narrow cuts around the eyes and the leaves are rubbed on the baby's face** [TS (1967)]. **The leaves are also used to treat *sefeku*** (unidentified ailment) [MN (1950's)]. The plant is also used to

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Table 1 (*continued*)

Species (family); [voucher specimen no. and/or photographic voucher no.]	Vernacular names	Bapedi plant use: A = Bapedi plant uses (as recorded during this survey or in the literature); B = uses recorded elsewhere in southern Africa and the rest of the world
		treat chest and respiratory problems and external wounds (Moeng, 2010). Leaves are used against infections in cattle, while root or stem bark is used to treat sexually transmitted infections as well as infections of the skin and stomach (Mongalo and Makhafola, 2018). B: Widely used in traditional medicine (Rankoana, 2000; Arnold et al., 2002; Steenkamp, 2003; Moffett, 2010).
Pennisetum glaucum (L.) R.Br.[cv] (Poaceae) [48c]	*leotša* (Sepedi), *nyalothe* (South Sotho)	A: Grains used as chicken feed and making *bogobe* (porridge) [All except (BG (2002), MTM (1997) MM (1987), MLS (1968); (Quin, 1959)]. B: The species is used in traditional medicine and the Sotho uses it in ethnoveterinary medicine and to make alcoholic beverage (Arnold et al., 2002; Moffett, 2010).
Pentarrhinum insipidum E.Mey. (Apocynaceae) [9d]	*morogo wa lebje* (Sepedi), ***leshwe*** (Sepedi), *lefotosane* (Sepedi)	A: The leaves are cooked and eaten with a starch supplement [MDS (1965), LM (1964), MLS (1968), MM (1987), MTM (1997), ASS (1969), KM (1981), JC (1961), KM (1990), MJM (1963), MP (1994), MM (1987), MS (1948), MMS (1976), WSM (1972), RMM (1947), TM (1984), TMS (1976), TS (1967); Quin, 1959]. **The roots are used in treatments for heart attack and high blood pressure** [KM (1944), SM (1951)]. B: A popular traditional vegetable (e.g. Van Wyk and Van Wyk and Gericke, 2000, 2018).
Pergularia daemia* (Forssk.) Chiov. subsp. *daemia (Apocynaceae) [9e]	*mogwapa* (Sepedi), *lebje* (Sepedi), *nkusega* (Sepedi)	A: **Roots used for high blood pressure;** the leaves are cooked and eaten with a starch supplement [MJM (1963), BG (2002), KM (1944), ASS (1969), KM (1981)), KM (1990), MDS (1965), MS (1948), MMS (1976), RMM (1947), TM (1984), TMS (1976), TS (1967), SM (1951), MN (1950's), RSM (1944)]. B: Widely used in traditional medicine (Arnold et al., 2002).
Persea americana Mill.*[cv] (Lauraceae) [36a]	*moafokhathe* (Sepedi)	A: Edible fruit (all) and the roots are used to treat diabetes mellitus (Semenya et al., 2012a). B: Edible fruit crop (Rampedi, 2010).
Physalis peruviana* L. (Solanaceae) [58e]	*mmomodi* (Sepedi), *murungudane* (Tshivenda), *kusebere* (South Sotho), *makusebere* (South Sotho), *mokusbere* (South Sotho)	A: **The fruit is edible and is used to make jam** [MSS, KM (1944), ASS (1969), KM (1981), JC (1961), MS (1948), MMS (1976), TM (1984), TKS (1963), TS (1967), SM (1951), MBN (1982), RSM (1944)]. B: Edible wild fruit that is also widely used in traditional medicine (Mabogo, 1990; Arnold et al., 2002; Rampedi, 2010).
***Plectranthus neochilus* Schltr.** (Lamiaceae) [35a]	*lephelephele* (South Sotho)	A: Believed to ward off snakes. B: Widely used in traditional medicine and to wash sheepskins (Arnold et al., 2002; Moffett, 2010).
***Plectranthus venteri* Van Jaarsv. & Hankey** [35b] (Lamiaceae)	***mošikidipela*** (Sepedi)	A: **Crushed stems are boiled and the steam is inhaled to treat flu/blocked nose** [TM (1984), KM (1981), TKS (1963)], **and high blood pressure** [SMM (1953)]. B: Widely used in traditional medicine (Arnold et al., 2002).
Plumeria alba* L. (Apocynaceae) [9f]	frangipani (English)	A: Ornamental [BG (2002), JM (1997), MLS (1968), KM (1990), MJM (1963), MP (1994), MM (1987), MMS (1976), TMS (1976)]. B: No known other uses elsewhere.
Populus x canescens* (Aiton) Sm. (Salicaceae) [MM25/55b]	*poplier* (Sepedi), ***papalere*** (Sepedi), *papaliri* (South Sotho), *popeliri* (South Sotho), *popolere* (South Sotho), *popoliri* (South Sotho)	A: **Strong wood used as fencing posts and for roofing** [RMM (1947), KM (1944), BG (2002), JM (1997), JC (1961), SM (1951), MJM (1963), MDS (1965), MMS (1976)] and firewood [ASS (1969), MDS (1965), KM (1981), KM (1990), MP (1994), MMS (1976), RMM (1947), TM (1984), TKS (1963), TMS (1976), MBN (1982)]. **Unlike *monoko* (*Ozoroa* sp.) it does not get damaged by the soil over time also** used for husbandry [MS (1948), RSM (1944)]. B: Used in traditional medicine and for firewood (Arnold et al., 2002; Moffett, 2010).
***Protea caffra* Meisn. subsp. *falcata* (Beard) M.Lötter** (Proteaceae) [49a]	*modometa* (Sepedi), *dzungu* (Tshivenda), *tshidzungu* (Tshivenda), *sekila* (South Sotho), *sekile* (South Sotho)	A: **Used during rain making rituals** [MMS (1976), RMM (1947), TKS (1963), TMS (1976), SM (1951)] and the wood is used as firewood [(LM (1964), MDS (1965), WSM (1972), RSM (1944)]. B: Used in traditional medicine and as firewood (Arnold et al., 2002).
Prunus persica (L.) Batsch* [cv] (Rosaceae) [52b]	*moperekisi* (Sepedi, South Sotho)	A: Edible fruit [All except RSM (1944), TS (1955), JC (1961)], **when a child is vomiting the outer skin of the fruit is boiled and the extract is fed to the child using a spoon** [TS (1967)]; the root is used to treat erectile dysfunction (Semenya et al., 2012b; Semenya and Potgieter, 2013b; Semenya et al., 2013a and Semenya and Potgieter, 2014; Lourens et al., 2015). B: Edible fruit and used in some traditional medicine (Arnold et al., 2002; Moffett, 2010).

Table 1 (*continued*)

Species (family); [voucher specimen no. and/or photographic voucher no.]	Vernacular names	Bapedi plant use: A = Bapedi plant uses (as recorded during this survey or in the literature); B = uses recorded elsewhere in southern Africa and the rest of the world
***Psiadia punctulata* (DC.) Oliv. & Hiern ex Vatke** (Asteraceae) [13j]	***monotosane*** (Sepedi)	A: **Young children (especially herder boys) use dried plant material to teach themselves how to smoke** [SMM, (1953)]; used against flu [MMS (1976), RMM (1947), SMM (1953), TM (1984), TKS (1963)]. **Plant is used to rinse painful eyes** [KM (1990), MJM (1963), WSM (1972), RSM (1944)] **and to cast a spell that will invite people to your household during ceremonies** [WSM (1972), KM (1944)]. Also has ornamental value [MS (1948)]. B: No known recorded uses elsewhere.
Psidium guajava L.*[cv] (Myrtaceae) [44b]	*moguava* (Sepedi), *mokwaba* (Sepedi), *mugwavha* (Tshivenda)	A: Edible fruit [All except TS (1955)]. **The leaves are chewed on to treat poisoning** [RSM (1944)]. The plant is used to treat stomach ache and diarrhoea (Semenya and Potgieter, 2014; Mongalo and Makhafola, 2018) and the roots are used to treat hypertension (Semenya et al., 2012a). B: Used in some traditional medicine (Mabogo, 1990; Arnold et al., 2002).
Punica granatum L.*[cv] (Lythraceae) [38a]	*garenate* (Sepedi, South Sotho), *Mmokgarenate* (Sepedi)	A: The seeds of the fruit are edible and eaten when red (All). **The roots of the tree are used to treat diarrhoea** and the skin of the fruit is used to treat stomach pains [KM (1944), LM (1964), RSM (1944); Semenya and Potgieter, 2014; Mongalo and Makhafola, 2018] **or boiled and the decoction is spoon fed to a vomiting child** [MN (1950's)]. Also, the plant is used to treat diabetes (Semenya et al., 2012b). B: Fruit is edible and it is much used in traditional medicine (Arnold et al., 2002; De Beer and Van Wyk, 2011).
***Rhoicissus sekhukhuniensis* Retief, Siebert & A.E.van Wyk** (Vitaceae) [61a]	***moapara*** (Sepedi)	A: **Edible fruit** [SMM (1953), KM (1944), ASS (1969), KM (1981), KM (1990), MDS (1965), MMS (1976), RMM (1947), TM (1984), TKS (1963), TMS (1976), SM (1951), MN (1950's)]. B: No known recorded uses elsewhere.
Ricinus communis L.* (Euphorbiaceae) [MM33/30h]	*mokura* (Sepedi), *makura* (Sepedi), *mothoba* (Sepedi), *mobabo* (Sepedi), *sebetsa* (Sepedi), ***mokura wa kgomo*** (Sepedi), *mohlafotha* (South Sotho), *mupfure* (Tshivenda)	A: Plant is poisonous and if ingested one can have a mental breakdown [MM (1987), MMS (1976), RMM (1947), SMM (1953), TM (1984), TKS (1963), TMS (1976), MN (1950's)] which is also an ornamental plant [MP (1994)]. **Leaves are used as bandages** [SMM (1953), SM (1951, KM (1944)], the whole plant is also used to treat a swelled up leg (sore) (Semenya and Potgieter, 2014; Semenya et al., 2012b). B: Used in traditional medicine (Liengme, 1981; Mabogo, 1990; Rankoana, 2000; Arnold et al., 2002; Moffett, 2010; De Beer and Van Wyk, 2011).
Saccharum officinarum L.*[cv] (Poaceae) [48d]	*momoba* (Sepedi), *mohlafotha* (South Sotho), *mova* (Tsonga)	A: Edible stems (All). The company, Sellati, uses the plant to make sugar [MMS (1976)]. The leaves are used to treat diarrhoea (Semenya and Potgieter, 2014). B: Cultivated (Liengme, 1981).
Sansevieria trifasciata Prain (Dracaenaceae) [28a]	*segopha* (Sepedi), *mokgosi* (Sepedi), *makgotse* (Sepedi), ***sehlare sa meetsi*** (Sepedi)	A: It's an ornamental plant [MN (1950's)]. **When a pregnant woman cannot give birth the plant is boiled and the concoction is administered to the woman orally** [KM (1944), ASS (1969)]. The leaves used in treatments for diarrhoea (Semenya and Potgieter, 2014). The roots used to treat HIV/AIDS and the root is used for crafting (Rasethe et al., 2013). B: Widely used in traditional medicine and also a few craft uses (Arnold et al., 2002).
Schkuhria pinnata (Lam.) Kuntze ex Thell.* (Asteraceae) [13k]	*sebabane* (Sepedi), *shatume* (Sepedi)	A: Decorative [ASS (1969), MMS (1976), RMM (1947), SMM (1953), TKS (1963)]. **Dry plant material is burned and the smoke released is used as eye medication or to ward away mosquitos** [BG (2002), JM (1997)], **plant cooked for livestock as medication** [MS (1948)] and the whole plant is used for hypertension as a blood purifier (Semenya et al., 2012b and Semenya and Potgieter, 2014). B: Widely used in traditional medicine (Arnold et al., 2002).
***Schotia brachypetala* Sond.** (Fabaceae) [31h]	*molope* (Sepedi), *mulubi* (Tshivenda), *mununzwu* (Tshivenda), *chochela mandleni* (Tsonga)	A: **Used as firewood** [MDS (1965), RMM (1947), MBN (1982), SM (1951), MMS (1976), SMM (1953), TKS (1963), SM (1951)]. **The bark is cooked and ingested to treat high blood pressure** [KM (1944)] and colds and flu (Moeng, 2010), as well as diarrhoea (Mongalo and Makhafola, 2018). The flower produces sweet edible nectar [SM (1951), MMS (1976), SMM (1953), TKS (1963), SM (1951), SMM (1953), MBN (1982)]. B: Used for food, firewood and in traditional medicine (Mabogo, 1990; Rankoana, 2000; Arnold et al., 2002; Rampedi, 2010).
Sclerocarya birrea (A.Rich.) Hochst. subsp. *caffra* (Sond.) Kokwaro (Anacardiaceae) [7c]	*morula* (English/Sepedi), *mufula* (Venda), *nkanye* (Tsonga)	A: The fleshy fruit is edible and it can be used to make morula beer (All, Rasethe et al., 2013; Rampedi, 2010; Semenya and Potgieter, 2014; Mongalo and Makhafola, 2018); the seed (*koko ya morula*) is edible, it is split open by striking it with a rock/stone and the white nut inside is eaten as a delicacy [MMS (1976), KM (1981),

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Species (family); [voucher specimen no. and/or photographic voucher no.]	Vernacular names	Bapedi plant use: A = Bapedi plant uses (as recorded during this survey or in the literature); B = uses recorded elsewhere in southern Africa and the rest of the world
		ASS (1969), JM (1997), MJM (1963), BG (2002), JC (1961), WSM (1972), RMM (1947)], the fleshy fruit can also be used to make lotion (dawn) [BG (2002), JM (1997), MJM (1963)], the bark from the male plant is boiled and the water is drank as medication for elderly women [KM (1944)], the bark is used to treat diarrhoea, female infertility (Semenya et al., 2013a) and blood clotting (Semenya and Potgieter, 2014). The plant is used to treat colds and flu and to determine the gender of a baby (Moeng, 2010). Stem bark is used as general tonic and to treat sexually transmitted infections (and infections in cattle) (Mongalo and Makhafola, 2018). B: Multipurpose plant (Liengme, 1981; Mabogo, 1990; Rankoana, 2000; Arnold et al., 2002; Steenkamp, 2003).
***Searsia pyroides* (Burch.) Moffett** (Anacardiaceae) [MM9/7d]	*mogodiri* (Sepedi), *mohlwehlwe* (Sepedi), *koditshana* (South Sotho), *koditshane* (South Sotho), *lerwana* (South Sotho), *lerwane*, *moodiri* (South Sotho)	A: **Fruit are likened to corn seeds and are edible** [KM (1990), MP (1994), KM (1944), ASS (1969), KM (1981), KM (1990), MDS (1965), MMS (1976), RMM (1947), MN (1950's)]. B: Widely used in traditional medicine.
Senecio barbertonicus Klatt (Asteraceae) [MM30/13l]	*mma pholo* (Sepedi), *sehlare sa sejetso* (Sepedi)	A: Live fencing and **as a cleanser (an enema or induce vomiting)** [MJM (1963), JM (1997), MP (1994), JC (1961), SMM (1953)] **in patients struck by lightning** [KM (1944)], **ear infections** [ASS (1969), TKS (1963), SM (1951)] and has ornamental value [MP (1994)] leaf is used to treat sepsis (Semenya and Potgieter, 2014). B: Has magical properties (Rankoana, 2000).
Senna didymobotrya (Fresen.) H.S. Irwin & Barneby* (Fabaceae) [31i]	*mothekele* (Sepedi), ***motokomane*** (Sepedi)	A: **Used as firewood** [ASS (1969), KM (1981), LM (1964), MDS (1965), WSM (1972), RMM (1947), TM (1984), TKS (1963), SM (1951), MBN (1982), RSM (1944)]. **The roots are boiled and the extract drank as treatment for a painful body** [TS (1967), MN (1950's)] and as treatment for blood clotting (Semenya et al., 2012a and Semenya and Potgieter, 2014). B: No known recorded uses.
***Solanum aculeastrum* Dunal** (Solanaceae) [58f]	***thola e golo*** (Sepedi), *morola* (Sepedi), *mushulwa* (Tshivenda)	A: **The liquid from the fruit is used to heal *ditlapedi* (a facial skin condition), rubbed on goats noses and when inhaled kills worms that infect their brain and used as cattle medication** [ASS (1969), MDS (1965), MS (1948), RMM (1947), TKS (1963), SM (1951), MN (1950's), MBN (1982)]. **The fruit is also rubbed on chicken eggs to stop dogs from eating the eggs** [JC (1961)]. **The entire tree is burnt and the radiated heat is believed to heal babies** [KM (1944)], a decoction of boiled roots is gurgled to treat toothaches [LM (1964), WSM (1972), RSM (1944) and stomach pain (Mongalo and Makhafola, 2018)]. Plant is generally used as medicine [TMS (1976)]. B: Used in traditional medicine (Mabogo, 1990; Arnold et al., 2002).
Solanum panduriforme E. May. (Solanaceae) [MM26/58g]	*thola boreledi* (Sepedi), *thola ye serolwane* (Sepedi), *morolana* (Sepedi), *morolwane* (Sepedi), *tholana* (South Sotho), *ndulwane* (Tsonga), *ndzhulwane* (Tsonga) *nthuma* (Tsonga) *rirhulwane* (Tsonga)	A: **Juice from the seed is rubbed on chicken eggs to stop dogs from eating the eggs** [KM (1944), MJM (1963), JC (1961), KM (1981), MDS (1965), TKS (1963), SM (1951)]. **The poisonous seeds are used to treat cows** [MS (1948)]. A decoction of ground roots is gurgled to treat toothaches [LM (1964), RMM (1947), TMS (1976), RSM (1944), KM (1944), MJM (1963), JC (1961), KM (1981), MDS (1965), TKS (1963), SM (1951), ASS (1969), MN (1950's), MBN (1982)]. The fruit is used to treat gonorrhoea and drop (Erasmus et al., 2012; Semenya et al., 2013b and Semenya and Potgieter, 2014); the roots are used to treat stomach pain (Mongalo and Makhafola, 2018). B: Widely used in traditional medicine (Liengme, 1981; Mabogo; Rankoana, 2000; Arnold et al., 2002; Moffett, 2010).
Sonchus oleraceus L.* (Asteraceae) [13m]	*leše̋šê* (Sepedi), ***lekgakga*** (Sepedi), *bono so lekgwaba* (South Soth), *leshabe* (*South* Sotho), *leshahane* (South Sotho), *leshwabe* (South Sotho), *molomo wa lekgwaba* (South Soth), *tlhaku ya kgomo* (South Soth) *shashe* (Venda)	A: Leaves are eaten as *morogo* [KM (1981), MP (1994), MDS (1965), MMS (1976), WSM (1972), RMM (1947), SMM (1953), TM (1984), TKS (1963), SM (1951), MN (1950's), MBN (1982), RSM (1944); Quin, 1959]. B: Used as a pot herb and widely used in traditional medicine (Mabogo, 1990; Arnold et al., 2002; Moffett, 2010).
Sorghum bicolor (L.) Moench* (sweet-stemmed cultivar) (Poaceae) [48e]	*nyoba* (Sepedi), *mabele* (Sepedi), *ntso* (Sepedi), *mabêlêthôrô* (Sepedi)	A: Edible stem (All; Quin, 1959) **Roots sometimes used in conjunction with other plants to make cures** [MLS (1968)]. B: Used in traditional medicine (Arnold et al., 2002).
***Tapinanthus* cf. *oleifolius* (J.C. Wendl.) Danser** (Loranthaceae) [37a]	*bolepa* (Sepedi)	A: **Hunters use the sticky flower seed to trap birds** [RMM (1947), SMM (1953), TKS (1963), SM (1951), MBN (1982)]. Birds will eat the seed and deposit their bird droppings on to other trees where the plant will grow [SMM (1953), KM (1944)]. **The leaves used to make tea** [KM (1944)]. B: Used in traditional medicine (Arnold et al., 2002).
Terminalia sericea Burch. ex DC.	*mogonono* (Sepedi), *monakanakane* (Sepedi), *mususu* (Tshivenda),	A: Firewood [ASS (1969), MJM (1963), MDS (1965), MS (1948),

Table 1 (*continued*)

Species (family); [voucher specimen no. and/or photographic voucher no.]	Vernacular names	Bapedi plant use: A = Bapedi plant uses (as recorded during this survey or in the literature); B = uses recorded elsewhere in southern Africa and the rest of the world
(Combretaceae) [23c]	*mugosi* (Tsonga), *nkonolo* (Tsonga), *nkonola* (Tsonga), *nkohono* (Tsonga), *konono* (Tsonga)	MMS (1976), RMM (1947), MBN (1982)], **believed to have the power to stop people from becoming suspicious of your intentions or behaviour (*gonono* means to think or grow suspicious)** [KM (1944)]; the leaves are used to treat measles (Semenya and Potgieter, 2014); roots are used in mixtures to treat all types of sexually transmitted diseases (Chauke et al., 2015) and skin infections (Mongalo and Makhafola, 2018). B: Used in traditional medicine, construction and as firewood (Mabogo, 1990; Arnold et al., 2002; Steenkamp, 2003; Luseba and Van der Merwe, 2006).
Tribulus terrestris L. (Zygophyllaceae) [62a]	*tsêhlô* (Sepedi), *mosehlo* (Sepedi), *tsetlwa* (Sepedi), *hletswana* (Sepedi), *tsetwana* (Tshivenda)	A: Leaves eaten as *morogo* [KM (1944), JM (1997), ASS (1969), KM (1981), KM (1990), MP (1994), MDS (1965), MMS (1976), RMM (1947), SMM (1953), TM (1984), TKS (1963), TMS (1976), TS (1967), SM (1951), MBN (1982); Quin, 1959]. **When cows have calving complications a decoction of the plant can be administered to the expectant cow to promote successful calving** [MJM (1963)] The whole is used to treat *khutlega* (chlamydia) (Semenya et al., 2013b and Semenya and Potgieter, 2014). B: Used as a pot herb and widely used in traditional medicine (Mabogo, 1990; Rankoana, 2000; Arnold et al., 2002).
***Tulbaghia violacea* Harv.**[c] (Alliaceae) [4c]	*Konofolo* (Sepedi)	A: The leaves are used as spring onions for cooking (flavour) [ASS (1969), MBN (1982), BG (2002), MJM (1963), MDS (1965), MS (1948), MMS (1976), RMM (1947), TKS (1963), TMS (1976), SM (1951), MN (1950's)]. **Bulb is boiled as medicine for blood ailments, flu/colds and the leaves are crushed and placed in warm water which is used as an enema** [KM (1944)], also believed to ward away snakes [KM (1981), (LM (1964), MP (1994), WSM (1972), RSM (1944)]. B: Widely used in traditional medicine in southern Africa (Van Wyk et al., 1997, 2009).
Turraea obtusifolia Hochst. (Meliaceae) [40b]	***motapuri*** (Sepedi), *mbhovane* (Tsonga)	A: Plant used to treat high blood pressure [WSM (1972), RSM (1944)] and as a blood purifier (Semenya et al., 2013a; Semenya and Potgieter, 2014). B: Widely used in traditional medicine (Liengme, 1981; Arnold et al., 2002).
***Vachellia nilotica* (L.) P.J.H.Hurter & Mabb.** (Fabaceae) [31j]	*motolwane* (Sepedi) *moselesele* (Sepedi) *mmôka* (Sepedi) *moshwane* (Sepedi) *mohlwahlwa* (Sepedi)	A: Used as firewood [All except MP (1994)]; goats feed on fallen leaves [MS (1948)]. B: Used for firewood and widely used in traditional medicine (Arnold et al., 2002).
Vangueria infausta Burch. (Rubiaceae) [53b]	*mmilô* (fruit is known as *mabilô*) (Sepedi), *muzwilu* (Tshivenda), *mpfilwa* (Tsonga), *ntswila* (Tsonga)	A: Edible fruit [All except JC (1961) and MLS (1968); Quin, 1959; Rasethe et al., 2013; Mongalo and Makhafola, 2018], also used to make beverages (Rampedi, 2010). **Traditional doctors are known to harvest the roots for medicine, the fruit can be mixed with milk to make yoghurt and the seeds have a laxative property** [KM (1944)]. B: Widely used in traditional medicine and the fruit is edible (Liengme, 1981; Mabogo, 1990; Rankoana, 2000; Arnold et al., 2002).
Vernonia fastigiata Oliv. & Hiern (Asteraceae) [13n]	*lehlanya* (Sepedi)	A: Leaves used as m*orogo* (Quin, 1959). B: Edible leaves (Rankoana, 2000).
Vigna unguiculata (L.) Walp. (Fabaceae) [31k]	*monawa* (Sepedi), *dihlodi* (Sepedi), *poontjies* (Sepedi), *dinawa tsa sesotho* (South Sotho), *munawa* (Tshivenda)	A: Edible fruit [All except JC (1961), MM (1987), MP (1994), RSM (1944); Quin, 1959] and the leaves used to treat diarrhoea (Semenya and Potgieter, 2014). B: Cultivated crop and widely used in traditional medicines (Arnold et al., 2002).
Vitis vinifera L.*[cv] (Vitaceae) [61b]	*didruiwe* (Sepedi), *moterebe* (Sepedi)	A: Edible fruit (All). Roots are used against high blood pressure (Mongalo and Makhafola, 2018). B: Widely cultivated as a crop plant.
Xerophyta retinervis Baker (Velloziaceae) [59a]	*thutsê* (Sepedi), *efirwane* (South Sotho), *lethepu* (South Sotho), *mafirwane* (South Sotho), *tshikundandadzi* (Tshivenda)	A: Historically the leaves were used to make a sling shot known as *sefalanyana* and the dried stem were used as a torch [JM (1997), MJM 1963, SM (1951)]. The stem of the plant can be used as a splint and the inner fibres of the stem and leaves can be used to make rope for roofing [MJM (1963), JC (1961), KM (1944), ASS (1969), MDS (1965), MMS (1976), RMM (1947), TKS (1963), SM (1951), RSM (1944)]. The stem is also used to make a broom for cleaning *lwala* (grinding stones) [ASS (1969), KM (1990), MDS (1965), MMS (1976), WSM (1972), RMM (1947), TMS (1976), TS (1967), MN (1950's), MBN (1982); Quin, (1959)]. Dry plants are used to cover *meta* (clay pot used for storage) which is burned to harden [KM (1944), MJM (1963)]. B: Used for craft purposes and in traditional medicine (Liengme, 1981; Mabogo, 1990; Arnold et al., 2002; Moffett, 2010).

(*continued on next page*)

Table 1 (*continued*)

Species (family); [voucher specimen no. and/or photographic voucher no.]	Vernacular names	Bapedi plant use: A = Bapedi plant uses (as recorded during this survey or in the literature); B = uses recorded elsewhere in southern Africa and the rest of the world
Ximenia caffra Sond. (Olacaceae) [46a]	*ditšidi* (Sepedi), *ikgolotsane* (Sepedi), *motshidikgomo* (Sepedi), *ntsengele* (Tsonga), *mutshili* (Tshivenda), *muthanzwa* (Tshivenda)	A: Edible fruit (All; Quin, 1959) which is also used to make beverages (Rampedi, 2010). **The seed pulp is used to treat dry lips** [LM (1964), JC (1961), SMM (1953), ASS (1969), MMS (1976), TS (1967), MN (1950's), RSM (1944)] **and to treat cattle hide** [KM (1944), LM (1964), JC (1961), SMM (1953), ASS (1969), MMS (1976), TS (1967), MN (1950's), RSM (1944)]. Recently the dry wood is being used as **firewood**. The dry fruit is submerged in water and the water is used to make *pap* and the **roots are boiled and the decoction is ingested to treat tonsils, burnt seeds are used to fix *moeta*** [ASS (1969), MDS (1965), MMS (1976), SM (1951), MBN (1982)]. [*moeta* is described as a traditional barrel used to store food and alcoholic beverages]. Roots are used to treat sexually transmitted diseases (Chauke et al., 2015; Mongalo and Makhafola, 2018). B: Fruit is edible and the species is also used in traditional medicine and various craft uses (Liengme, 1981; Mabogo, 1990; Rankoana, 2000; Arnold et al., 2002).
Zanthoxylum capense (Thunb.) Harv. (Rutaceae) [54b]	*monokwane* (Sepedi), *senokomaropa* (Sepedi, *khinungumorupa* (Tsonga), *manhungwane* (Tsonga), *nugani* (Tsonga), *xirhombehleta* (Tsonga)	A: **Leaves and roots ground and used to treat flu** [WSM (1972), RSM (1944)] or crushed to treat TB [KM (1981)], (Semenya and Maroyi, 2013), edible fruit [MS (1948)]. Plant is used to treat nose bleeding (Semenya and Potgieter, 2014) and erectile dysfunction (Lourens et al., 2015). B: The species is used in traditional medicine (Liengme, 1981; Arnold et al., 2002; Steenkamp, 2003).
Zea mays L.*cv (Poaceae) [48f]	*lefela* (Sepedi), *leheya* (Sepedi), *mabele* (Sepedi), *Poone* (South Sotho)	A: The cob is boiled in water and eaten as is, or the seeds (grains) are dried and ground into a fine powder on a grinding stone and turned for cooking soft porridge (All; Quin, 1959). The whole plant is also used to treat malaria (Semenya et al., 2012a; Semenya et al., 2012b; Semenya and Potgieter, 2014). B: Cultivated crop (Liengme, 1981; Moffett, 2010).
Ziziphus mucronata Willd. (Rhamnaceae) [51a]	***motalo*** (Sepedi), *mokgalo* (Sepedi), ***mokonaona*** (Sepedi), *makhalu* (Tshivenda), *nceseni* (Tsonga)	A: Edible fruit [BG (2002), KM (1944), KM (1981), KM (1990), LM (1964), WSM (1972), RMM (1947), SMM (1953), TM (1984), TKS (1963), TMS (1976), SM (1951), RSM (1944), Mongalo and Makhafola, 2018] which is also used to make beverages (Rampedi, 2010). The root is used to treat chlamydia (Rasethe et al., 2013 and Semenya and Potgieter, 2014), gonorrhoea (Erasmus et al., 2012), diabetes (Chauke et al., 2015), stomach infections and to manage HIV/AIDS (Mongalo and Makhafola, 2018). Chewed leaves are applied to burns and are chewed to treat tonsils (Mongalo and Makhafola, 2018). B: Fruit is edible and the species is used in traditional medicine (Liengme, 1981; Mabogo, 1990; Rankoana, 2000; Arnold et al., 2002; Rampedi, 2010).
Total number of species in survey	152	

The final phase in the matrix method is the feedback phase, an important ethical consideration without which participants may easily get the impression that they have been exploited. Although continuous feedback was already provided during the study, the main results will be summarized and shared with the participants in the form of copies of posters and publications [and the relevant MSc dissertation (Mogale, 2018), which will be donated to the local libraries].

2.3. Data analysis

All the detailed information gathered from literature studies, herbarium specimens and formal and informal interviews are summarized in Table 1. The contribution of each participant is explicitly acknowledged by an abbreviation of his or her name after each of the use-records.

The data in Tables 1 and 2 were subjected to simple descriptive statistics, as shown in the result section. The quantitative data of the matrix (Table 2) were analyzed using the Species Popularity Index (SPI) and the Ethnobotanical Knowledge Index (EKI) of De Beer and Van Wyk (2011). The SPI value range from 0 to 1 and is calculated by adding up all the scores of each species and dividing the total by the maximum possible score. SPI = sum of all individual scores for the species across all participants (say 300)/maximum possible score (6 × 100) = 300/600 = 0.5.

The EKI quantifies the level of ethnobotanical knowledge of each partipant by adding up all the scores across all the species and dividing the total by the maximum possible score. EKI = sum of all individual scores for all species for the particular participant (say 300/maximum possible score (6 × 100) = 300/600 = 0.5. The aim is not to subject participants to a test, but to quantify the level of consensus within and between villages. Different people have different types of knowledge and it was made clear to participants that even a few use-records are useful for the success of the study. With the same or similar numbers of participants, it is possible to compare the levels of indigenous knowledge between villages and cultures (provided that the matrix method has been used). This approach will be especially useful in the future, to generate comparative data to explore the perceived notion that indigenous knowledge is diminishing over time due to the adoption of modern lifestyles and other cultural changes.

Table 2
Matrix of 150 useful plants of Central Sekhukhuneland, with calculated Species Popularity Index (SPI) values of the plants and the calculated Ethnobotanical Knowledge Index (EKI) values of the 27 participants. Two species included in the flip-file but not recognized by any of the participants were excluded. Only the total values for each of the plants and participants are given, namely 1 = 1001, 3 = 1203, 4 = 1034 and 6 = 1236 (see Section 2). The abbreviations of the names of participants are given in the caption of Table 1.

Species	Senior citizens (age 55 +)								Adults (age 30–54)												Young adults (age 19–29)				Children and teenagers (age 10–18)			
	KM (1944)	RMM (1947)	SM (1951)	RSM (1944)	JC (1961)	MS (1948)	MN (1950's)	SMM (1953)	LM (1964)	ASS (1969)	MMS (1976)	MLS (1968)	MDS (1965)	TKS (1963)	WSM (1972)	MBN (1982)	KM (1981)	MJM (1963)	TS (1967)	TMS (1976)	TM (1984)	MM (1987)	MP (1994)	KM (1990)	MTM (1997)	JM (1997)	BG (2002)	SPI
Agapanthus inapertus	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.02
Agave americana	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	3	6	6	3	6	6	6	6	6	6	6	6	0.96
Alepidea setifera	0	0	0	4	0	0	1	0	4	0	0	0	0	0	4	0	4	0	1	0	1	0	0	0	0	0	0	0.12
Allium cepa	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	1
Allium schoenoprasum	6	0	0	6	0	6	0	6	6	0	0	0	0	6	6	6	6	0	0	0	6	0	0	6	0	0	0	0.41
Aloe arborescens	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	3	6	6	6	6	6	6	6	6	6	6	0.98
Aloe castanea	6	6	6	6	0	6	6	3	6	6	6	6	6	6	6	6	6	6	6	6	3	3	6	6	6	6	6	0.91
Aloe davyana/ A. transvaalensis (spotted aloes)	6	6	0	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	3	0	6	6	0.89
Aloe marlothii	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	3	3	6	6	6	6	6	0.96
Alternanthera pungens	6	0	0	6	3	0	0	3	1	0	0	0	6	0	0	0	3	4	0	0	3	3	0	3	0	0	0	0.25
Amaranthus spinosus	6	6	6	6	0	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	4	6	6	0.95
Anredera cordifolia	0	4	0	0	0	0	1	0	1	0	4	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.09
Arachis hypogea	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	0	0	6	0	0	6	0.85
Argemone mexicana	6	3	3	3	0	1	3	3	3	3	3	0	3	3	3	3	3	1	1	3	3	3	3	3	1	1	1	0.41
Aristida diffusa	6	6	6	6	6	6	6	4	6	6	6	4	6	6	3	6	6	6	6	6	6	0	6	6	6	6	6	0.92
Artemisia afra	6	6	6	6	0	6	6	6	6	6	6	0	6	6	6	6	6	6	6	6	6	6	0	6	0	6	6	0.85
Asparagus laricinus	6	6	6	6	6	6	6	6	0	6	6	0	6	6	0	6	6	6	6	6	6	6	6	3	0	6	3	0.78
Athrixia phylicoides	6	0	6	0	0	4	0	0	0	6	6	0	6	6	0	6	0	6	0	6	0	0	0	0	0	0	0	0.36
Bidens pilosa	6	6	6	6	0	0	6	3	6	6	6	0	6	6	6	6	6	6	0	6	6	0	0	6	0	0	1	0.65
Boophane disticha	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	0	6	6	0	1	6	1	1	1	0.8
Boscia albitrunca	6	0	4	6	0	6	0	3	6	3	6	0	3	3	6	0	3	0	0	0	3	0	0	3	0	0	0	0.38
Brassica olecera	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	1
Brassica oleracea var. *capitata*	6	6	6	6	6	0	6	6	6	6	6	6	6	6	6	6	6	6	1	6	6	6	0	6	0	0	0	0.71
Caesalpinia decapetala	0	0	0	1	0	0	0	3	1	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	1	0	0	0.06
Callilepis laureola	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0.04
Cannabis sativa	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	1
Capsicum annuum	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	1
Capsicum frutescens	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	1
Carica papaya	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	1
Carpobrotus edulis	6	0	0	6	0	1	0	4	1	0	4	1	4	1	4	0	4	1	0	0	4	6	1	0	4	0	0	0.32
Catharanthus	0	4	0	4	0	0	1	4	4	4	4	0	4	0	4	0	4	0	0	4	4	1	6	6	4	4	4	0.43

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Table 2 (*continued*)

Species	Senior citizens (age 55 +)								Adults (age 30–54)													Young adults (age 19–29)				Children and teenagers (age 10–18)			
	KM (1944)	RMM (1947)	SM (1951)	RSM (1944)	JC (1961)	MS (1948)	MN (1950's)	SMM (1953)	LM (1964)	ASS (1969)	MMS (1976)	MLS (1968)	MDS (1965)	TKS (1963)	WSM (1972)	MBN (1982)	KM (1981)	MJM (1963)	TS (1967)	TMS (1976)	TM (1984)	MM (1987)	MP (1994)	KM (1990)	MTM (1997)	JM (1997)	BG (2002)	SPI
roseus																											
Ceiba speciosa	0	0	0	0	0	4	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	1	1	1	0.06
Chenopodium murale	0	6	6	6	0	0	6	6	6	0	6	0	6	6	6	0	3	0	0	0	0	0	0	0	0	0	0	0.39
Citrullus lanatus	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	1
Citrus limon	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	1
Cladium mariscus subsp. *jamaicense*	6	0	4	6	0	0	0	0	3	0	6	0	0	0	3	0	0	0	1	6	0	0	0	0	0	0	6	0.25
Cleome gynandra	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	1
Combretum apiculatum	6	6	6	0	0	0	0	6	1	6	0	0	6	0	0	0	6	0	0	6	6	0	6	6	0	0	0	0.41
Combretum molle	6	6	0	6	0	0	0	0	1	6	6	0	6	0	0	4	6	6	0	0	6	6	0	6	0	6	6	0.51
Commiphora africana	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.04
Corchorus tridens	6	6	6	6	0	1	6	0	6	6	6	0	6	6	6	6	0	0	0	6	6	0	0	6	0	0	0	0.56
Cotyledon orbiculata	6	3	3	6	1	1	6	6	6	3	3	3	3	6	6	6	3	6	6	4	6	1	0	6	0	0	1	0.65
Crassula sarcocaulis subsp.*sarcocaulis*	6	1	3	1	1	0	6	0	1	1	0	0	3	0	1	1	0	6	6	0	0	0	0	0	0	0	0	0.23
Cryptolepis cryptolepidioides	6	0	0	6	0	1	0	0	6	0	0	0	0	0	6	0	3	1	0	0	3	0	0	3	0	0	0	0.2
Cucumis zeyheri	6	6	6	6	6	6	6	0	6	6	6	0	6	0	6	6	6	6	6	6	6	4	0	6	0	0	6	0.77
Cucurbita moschata	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	1
Cussonia paniculata	6	6	6	6	6	6	6	6	0	6	6	1	6	6	4	6	6	6	3	6	6	6	6	6	0	6	3	0.85
Cyperus austro-africanus	6	6	6	6	0	6	6	6	6	6	6	0	6	6	6	6	6	6	6	6	6	0	6	6	0	0	6	0.81
Cyperus sexangularis	6	6	6	6	0	4	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	0	0	6	6	0	6	0.84
Datura stramonium	6	6	6	6	3	6	6	6	6	6	4	0	6	6	6	6	6	6	3	3	6	1	0	6	1	3	3	0.74
Dodonaea viscosa	6	6	6	6	0	0	3	3	0	6	6	0	6	3	0	3	3	6	6	6	6	0	6	3	1	3	4	0.6
Dombeya rotundifolia	6	1	1	6	0	0	1	6	6	0	0	0	1	1	6	1	6	6	0	0	6	0	6	6	1	0	0	0.41
Dovyalis caffra	4	4	0	0	0	0	0	0	0	3	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.07
Elephantorrhiza praetermissa	6	6	6	3	6	6	6	6	1	6	6	0	6	3	1	0	4	6	6	3	4	0	0	0	1	1	1	0.58
Englerophytum magalismontanum	6	6	6	6	6	6	0	0	0	6	6	0	6	0	0	0	6	6	0	6	6	6	6	6	6	6	6	0.7
Eriobotrya japonica	6	6	6	0	0	0	6	0	0	6	6	0	6	6	0	6	6	0	0	6	6	6	6	6	6	6	6	0.67
Eucalyptus camaldulensis	6	6	6	6	6	6	0	0	6	6	6	0	6	6	6	6	3	6	0	6	3	6	6	6	6	6	6	0.81
Euclea crispa subsp. *crispa*	0	0	6	0	0	0	0	0	6	6	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0.15
Eucomis pallidiflora subsp. *pole-evansii*	0	0	0	0	0	4	6	0	0	0	0	0	0	0	0	3	0	0	0	0	3	0	0	3	0	0	0	0.12
Euphorbia excelsa	6	6	6	6	0	0	6	6	6	0	6	6	6	3	6	0	6	0	6	6	3	1	1	6	1	6	6	0.69
Euphorbia ingens	6	6	6	6	0	6	0	6	6	6	6	0	6	3	6	6	6	6	6	6	3	1	1	6	1	0	6	0.72
Euphorbia maleolens	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.04
Euphorbia milii	4	4	4	0	0	4	0	1	1	4	4	4	4	0	0	4	1	4	0	3	1	4	1	0	1	1	1	0.34
Euphorbia tirucalli	0	6	6	3	0	3	0	3	3	6	6	0	3	3	3	6	3	0	0	3	3	3	0	3	1	0	1	0.42
Euphorbia tithymaloides	6	6	6	0	0	0	0	3	1	6	3	4	6	3	0	6	1	0	0	6	1	3	4	0	1	1	0	0.4
Ficus abutilifolia	6	6	6	0	0	0	6	6	0	6	6	0	6	6	0	6	6	0	0	6	6	0	0	6	0	0	0	0.52
Ficus carica	6	6	6	6	6	6	6	3	6	6	6	6	6	6	6	6	6	6	6	6	6	0	6	6	4	6	6	0.93

Ficus ingens	6	6	6	6	0	6	6	3	6	6	6	0	6	6	6	6	6	6	6	6	6	3	0	6	0	3	0	0.76
Gardenia volkensii	6	1	1	1	0	4	0	0	1	1	1	0	1	1	1	1	1	6	0	0	3	0	0	3	0	4	0	0.23
Gazania krebsiana	6	6	6	0	0	0	0	0	0	6	6	0	6	6	0	6	0	6	0	0	0	0	0	0	0	0	0	0.33
Gerbera jamesonii	0	6	6	1	0	0	0	6	0	6	6	0	4	3	1	3	0	0	0	0	0	0	0	0	0	0	0	0.26
Gomphocarpus fruticosus	6	0	0	6	0	0	6	4	6	6	1	1	0	3	6	0	6	0	4	0	3	1	1	3	1	1	1	0.41
Grewia flava	6	6	6	0	6	6	0	6	0	6	6	0	6	6	0	6	6	6	0	6	6	0	6	6	6	6	6	0.74
Grewia retinervis	6	6	6	6	0	0	6	0	0	6	6	0	6	6	6	6	3	0	0	6	6	0	0	6	0	0	4	0.56
Helichrysum caespititium	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0.03
Medicago sativa	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.04
Hypoxis obtusa	6	6	6	0	0	0	6	1	0	6	6	0	6	0	0	0	0	6	0	6	0	0	0	0	0	0	0	0.34
Indigofera cf. *heterotricha*	6	4	6	0	0	0	0	0	0	4	4	0	4	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0.2
Ipomoea batatas	6	6	6	6	6	6	6	6	6	6	6	0	6	6	6	6	6	6	6	6	6	0	0	6	6	6	6	0.89
Ipomoea bathycolpos	6	1	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.06
Jatropha zeyheri	6	3	1	1	6	6	0	0	0	4	3	0	3	0	3	0	0	6	0	0	0	0	0	0	0	6	0	0.3
Kalanchoe brachyloba	6	3	3	1	0	1	6	6	1	3	6	4	6	6	1	6	3	6	6	3	6	0	0	6	0	0	0	0.55
Kalanchoe thyrsiflora	6	3	3	1	0	1	6	6	1	3	6	4	6	6	1	6	3	6	6	3	6	0	0	6	0	0	0	0.55
Kedrostis leloja	6	6	6	0	0	1	0	0	0	6	6	0	6	6	0	6	0	6	0	6	0	0	1	0	0	0	0	0.38
Kirkia wilmsii	6	6	6	6	0	0	6	6	6	6	6	0	6	6	6	6	6	6	6	6	6	0	0	6	0	3	6	0.76
Lantana camara	6	4	4	6	0	0	0	4	4	0	6	0	4	4	4	6	4	6	0	0	4	0	6	4	0	6	0	0.51
Lantana rugosa	6	6	6	6	0	0	0	4	4	6	6	0	6	6	4	6	4	6	0	6	4	0	6	4	0	6	6	0.67
Ledebouria apertiflora	6	6	6	6	0	6	6	3	6	0	6	0	6	6	6	0	6	0	4	0	6	1	1	6	1	0	0	0.58
Lippia rehmannii	6	6	6	6	0	0	0	1	0	6	6	0	6	6	0	6	0	6	0	6	0	0	0	0	0	4	3	0.46
Lolium multiflorum	6	6	6	6	6	6	6	6	6	6	6	0	6	6	6	6	6	6	0	6	6	0	0	6	1	6	6	0.82
Lopholaena coriifolia	6	6	6	6	6	0	6	0	4	6	6	0	6	6	4	6	3	3	0	6	3	6	6	3	0	3	3	0.68
Mangifera indica	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	1
Pentarrhinum insipidum	6	6	6	6	6	6	6	3	0	6	6	1	6	6	4	6	6	6	6	6	6	1	4	6	1	4	4	0.8
Melhania prostata	6	3	3	0	0	0	0	0	0	0	1	0	0	0	0	3	0	6	0	0	0	0	0	0	0	0	0	0.14
Melia azedarach	0	3	3	6	0	0	0	3	3	3	6	0	3	3	3	3	3	0	6	0	3	0	0	3	0	0	0	0.33
Merwilla plumbea	0	0	0	6	0	0	6	0	6	0	3	0	0	0	6	0	0	1	0	0	0	0	0	0	1	1	0	0.19
Mimusops zeyheri	6	136	6	6	6	0	6	0	0	6	6	0	6	6	1	6	6	6	0	6	6	0	6	6	1	6	6	0.72
Mirabilis jalapa	1	1	4	0	0	0	0	1	0	0	4	4	0	0	0	0	1	0	0	0	1	0	6	0	1	0	0	0.15
Momordica balsamina	6	6	6	6	0	6	6	6	3	0	6	3	6	6	3	0	1	3	6	6	3	1	4	3	0	0	3	0.61
Moringa oleifera	6	6	6	6	0	0	6	0	4	6	6	0	6	6	0	6	0	0	0	6	0	0	0	0	0	0	0	0.43
Mundulea sericea	6	3	0	1	0	0	0	0	0	3	6	0	6	0	0	0	0	6	0	6	0	0	0	0	0	0	0	0.21
Myrothamnus flabellifolius	6	6	6	1	6	0	0	6	0	0	6	0	6	6	0	6	3	0	0	6	4	0	6	0	3	6	0	0.51
Nicotiana tabacum	6	6	6	6	6	0	6	6	6	6	6	0	6	6	6	6	6	6	6	6	6	6	6	6	1	6	6	0.9
Opuntia ficus-indica	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	1
Ornithoglossum vulgare	0	0	1	0	0	0	0	1	1	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0.03
Ozoroa paniculosa	6	6	6	6	6	6	6	6	4	6	6	1	6	6	6	6	6	6	0	6	3	6	6	6	1	6	6	0.87
Pellaea calomelanos	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	4	0	3	0	0	3	0	0	0	0.08
Peltophorum africanum	6	6	6	6	6	6	6	6	6	6	6	0	6	6	6	6	6	6	6	6	6	0	6	6	1	3	6	0.88
Pennisetum glaucum	3	6	6	6	6	6	6	6	6	6	6	0	6	6	6	6	6	6	0	6	6	0	4	6	1	6	0	0.79
Pergularia daemia subsp. *daemia*	6	6	6	6	0	6	6	3	0	6	6	1	6	6	0	6	6	6	6	6	6	0	4	6	1	4	4	0.73
Persea americana	4	6	6	6	6	6	6	6	6	6	6	0	6	6	1	6	6	6	6	6	6	0	6	3	0	0	6	0.79
Physalis peruviana	6	4	4	6	6	6	4	4	4	4	6	0	4	4	4	4	6	0	6	0	6	4	6	6	0	0	0	0.64

(continued on next page)

Table 2 (*continued*)

Species	Senior citizens (age 55 +)								Adults (age 30–54)													Young adults (age 19–29)				Children and teenagers (age 10–18)			
	KM (1944)	RMM (1947)	SM (1951)	RSM (1944)	JC (1961)	MS (1948)	MN (1950's)	SMM (1953)	LM (1964)	ASS (1969)	MMS (1976)	MLS (1968)	MDS (1965)	TKS (1963)	WSM (1972)	MBN (1982)	KM (1981)	MJM (1963)	TS (1967)	TMS (1976)	TM (1984)	MM (1987)	MP (1994)	KM (1990)	MTM (1997)	JM (1997)	BG (2002)	SPI
Plectranthus neochilus	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	0	0.04
Plectranthus venteri	0	0	0	0	0	0	0	6	0	0	0	0	0	6	0	0	4	0	0	0	4	0	0	1	1	0	0	0.13
Plumeria alba	0	0	0	0	0	0	0	6	0	1	4	0	0	6	0	4	6	4	0	4	1	6	6	4	4	6	4	0.41
Populus xcanescens	6	6	6	6	6	0	0	6	0	6	6	0	6	6	0	6	6	6	0	6	6	0	6	6	0	6	6	0.7
Protea caffra subsp. *falcata*	0	6	6	6	0	0	0	0	6	0	6	0	6	6	6	0	0	0	0	6	0	0	0	0	3	3	0	0.37
Prunus persica	6	6	6	0	0	6	6	6	6	6	6	6	6	6	6	6	6	6	0	6	6	6	6	6	6	6	6	0.89
Psiadia punctulata	6	6	0	4	0	4	6	6	4	6	6	0	0	6	4	3	6	3	0	0	6	0	0	6	0	0	0	0.51
Psidium guajava	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	0	6	6	6	6	6	6	6	6	0.96
Punica granatum	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	1
Rhoicissus tridentata	6	6	6	0	0	0	6	6	0	6	6	0	6	6	0	6	6	1	6	6	6	0	0	6	0	1	1	0.57
Ricinus communis	6	3	6	3	0	0	6	6	3	6	3	1	3	3	3	6	3	0	3	6	3	6	6	6	1	0	0	0.57
Saccharum officinarum	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	1
Sansevieria trifasciata	6	3	3	0	0	0	6	3	1	6	1	0	3	4	0	1	1	3	3	3	1	0	0	0	0	3	1	0.32
Schkuhria pinnata	0	3	1	3	0	6	0	4	0	4	6	0	1	6	3	3	0	6	0	1	3	0	0	3	0	6	6	0.4
Schotia brachypetala	6	6	4	0	0	1	0	6	3	6	6	1	6	6	0	6	4	1	0	4	3	0	0	3	0	0	0	0.44
Sclerocarya birrea subsp. *caffra*	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	0	6	6	6	6	6	6	6	6	0.96
Searsia pyroides	6	6	0	0	0	0	6	0	0	6	6	0	6	0	0	0	6	0	0	6	6	0	0	6	0	0	0	0.37
Senecio barbertonicus	6	3	4	0	6	4	0	6	3	6	6	0	3	6	3	3	3	6	0	3	3	0	0	3	0	6	3	0.53
Senna didymobotrya	0	4	6	6	0	1	6	4	6	4	0	0	4	4	6	4	4	0	6	0	4	0	0	1	1	0	0	0.44
Solanum aculeastrum	6	6	6	6	6	6	6	3	6	6	3	0	6	6	6	6	3	3	1	6	3	3	0	3	0	3	3	0.69
Solanum panduriforme	6	6	6	0	6	6	6	3	6	6	3	0	6	6	6	6	6	6	1	6	3	3	3	3	1	3	3	0.72
Sonchus oleraceus	0	6	6	6	0	0	6	6	6	0	6	0	6	6	6	6	6	1	6	0	6	0	6	6	0	1	0	0.6
Sorghum bicolor	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	1
Tapinanthus cf. oleifolius	6	6	6	0	0	0	0	6	0	0	0	0	4	6	0	6	0	0	0	0	1	0	0	0	0	0	0	0.25
Terminalia sericea	6	6	0	0	0	6	0	0	1	6	6	0	6	0	0	4	0	6	0	0	0	0	0	0	0	0	4	0.31
Tribulus terrestris	6	6	6	0	0	0	6	6	0	6	6	6	6	6	0	6	6	0	6	6	6	0	0	6	1	6	1	0.64
Tulbaghia violacea	6	6	6	6	0	6	6	3	6	6	6	0	6	6	6	6	6	6	0	6	3	0	0	6	1	6	6	0.75
Turraea obtusifolia	0	3	3	6	0	0	6	0	6	0	3	0	1	3	6	3	0	0	0	0	0	0	0	0	0	0	0	0.25
Vachellia nilotica	6	6	6	4	6	6	6	6	3	6	6	6	6	6	4	6	6	6	6	6	6	4	0	6	4	6	6	0.9
Vangueria infausta	6	6	6	6	0	6	6	6	6	6	6	0	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	0.93
Vernonia fastigiata	0	0	0	1	0	6	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0.06
Vigna unguiculata	6	6	6	6	0	1	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	0	0	6	6	6	6	0.86
Vitis vinifera	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	1
Xerophyta retinervis	6	6	6	6	6	0	6	0	0	6	6	0	6	6	6	6	3	6	6	6	3	0	0	3	0	6	3	0.67
Ximenia caffra	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	1
Zanthoxylum capense	0	0	0	6	0	6	0	0	6	0	0	0	0	0	6	0	6	0	0	0	6	0	0	6	0	0	0	0.26
Zea mays	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	3	6	6	1
Ziziphus mucronata	6	6	6	6	0	0	6	6	6	6	6	0	6	6	6	6	6	0	6	6	6	0	0	6	0	6	6	0.74
EKI	0.75	0.69	0.68	0.63	0.41	0.47	0.58	0.58	0.54	0.66	0.71	0.27	0.7	0.65	0.54	0.61	0.6	0.57	0.36	0.62	0.62	0.3	0.4	0.6	0.29	0.44	0.44	
Average EKI for age group:	0.60								0.57												0.48				0.39			

3. Results and discussion

3.1. Useful plants and plant uses in Central Sekhukhuneland

A total of 152 plant species was identified as having one or more uses in Central Sekhukhuneland (Table 1). These species belong to 62 families, of which the Asteraceae makes the biggest contribution (14 species), followed by the Fabaceae (11 species), Euphorbiaceae (8 species), Solanaceae (7 species), the Apocynaceae, Malvaceae and Poaceae each with 6 species, the Cucurbitaceae with 5 species and the Anacardiaceae, Asphodelaceae and Crassulaceae all with 4 species each. New species records and new use-records are indicated in bold in Table 1 and the numbers are summarized in Fig. 2. The results show that there is still a rich knowledge of useful plants in the three communities. Of particular interest is the difference in use by the local people when compared to the uses reported in the literature. *Agave americana* for example, was documented by Semenya et al. (2012a, 2012b) and Semenya and Potgieter (2014) as a treatment for hypertension, whereas the community members do not use the plant for high blood pressure but simply in construction (for fencing posts) and for weaving baskets and ropes. Another example is *Aloe arborescens,* reported to be used in the treatment of HIV/AIDS (Semenya and Potgieter, 2014) while participants of our study reported its use as a nutritional supplement mixed with porridge, as well as ethnoveterinary uses and as a recreational smoke for the elders. One culturally important species, *Ozoroa paniculosa*, has been recorded as an effective treatment for diarrhea and measles (Semenya and Potgieter, 2013b, 2014), erectile dysfunction (Semenya and Potgieter, 2013b, 2014; Erasmus et al., 2015) and impotence (Semenya et al., 2013a) while the participants regarded it as an ideal (strong and long-lasting) material for building cattle kraals. Such contrasts are found throughout the listed plants in this study. These marked differences in use probably reflects the fact that Semenya and co-workers focused on the knowledge of traditional healers, while our study dealt with the knowledge of ordinary rural people who use the plants on a regular basis.

3.2. Food plants

Quin's (1959) thesis entitled *Foods and feeding habits of the Bapedi* was one of the first documentations of Bapedi plant use and remains an important historical document. His observations on agricultural practices agree closely with the data recorded in this study. *Sonchus oleraceus*, for example, was recorded as an edible *morogo* (vegetable), and is still enjoyed today; two different cultivars of *Sorghum bicolor* are still used for making porridge (grain cultivar) or for the edible stem (sweet-stemmed cultivar), eaten like sugar cane. Even though fruits are freely available at shops today, wild edible fruits are still harvested at times, e.g. *Ximenia caffra*. Quin (1959) also noted this species and it is still regarded as a delicacy by all the participants in this study. The same applies for *Vangueria infausta,* which has also been recorded as a wild edible plant of other cultures (Quin, 1959; Liengme, 1981; Mabogo, 1990; Arnold et al., 2002).

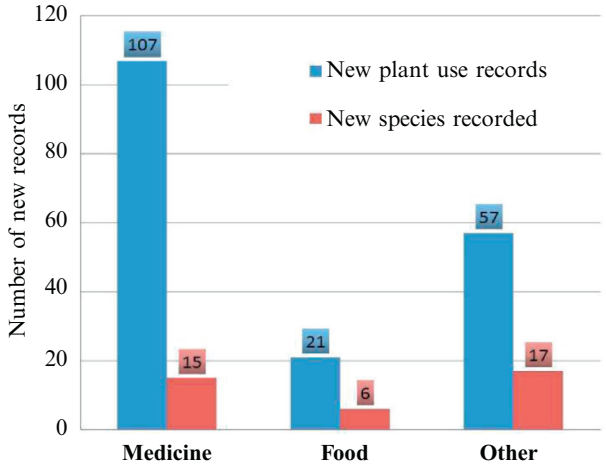

Fig. 2. New useful species records and new plant use records for Central Sekhukhuneland, arranged according to the main plant use categories: Medicine, Food and Other (which includes crafts and miscellaneous uses).

The three plant use categories in this study were Food, Medicine and Other (miscellaneous uses). The data on these three categories are summarized in Tables 3, 4 and 5, respectively. Out of the 152 listed plant species, 66 (44%) have been identified as having one or more food uses (Table 3). From the identified food plants, 24 (36%) are cultivated crops, 40 (61%) are wild-harvested and 2 (3%) species are both cultivated and wild-harvested plants (Table 3). The number of wild-harvested plants is very high, a fact that was also observed by Quin (1959). He documented 18 wild-harvested edible plants and 11 crop plants cultivated by the Bapedi. These people therefore seem to still rely on foraging and wild-harvesting of food items to meet their daily needs. The number of crops is relatively low because the Bapedi only opted to cultivate those plants which displayed desired traits e.g. drought-resistance and high yields (Monnig, 1967). There, are 29 (43%) edible fruits identified in this study, of which 10 are cultivated, and 19 wild-harvested. The majority of these plants are wild-harvested as they usually serve as sustenance during long journeys and/or herding trips. A total of 13 (19%) plant species were identified as vegetables (seven are cultivated, four are wild-harvested and two are both cultivated and wild-harvested). Although the number of vegetables may seem low when compared to fruits, the majority are cultivated and are important components of the daily diet, used together with a starch staple food. Species such as *Amaranthus spinosus* (SPI value 0.95), *Brassica oleracea* (SPI value 1), *Carica papaya* (SPI value 1) and *Cucurbita moschata* (SPI value 1) are sometimes eaten on their own and can be dried and stored for later consumption. Nine (three cultivated and six wild-harvested) (14%) plants have been identified as pot herbs. They are merely used to add flavor to food and for making relishes to be used with starch foods. There are five (8%) cereals plants identified in this study (three cultivated, two wild-harvested). Although these numbers may be small, the cereals are a very important food group as they serve as the main nutrition of almost every meal, from soft porridge in the morning for breakfast to pap (*bogobe*) for supper. The remaining three food groups are edible nectar with five species (9%) (all wild-harvested); roots, bulbs and tubers, with three species (5%) (two cultivated, one wild-harvested) and tea, with four species (6%), all of which are wild-harvested. From the recorded food plant species, 17 (25%) have an SPI value of 1 (14 are cultivated, 2 wild-harvested and 1 is both cultivated and wild harvested).

The fact that the most popular plants of the Bapedi are cultivated crops should be indicative of the importance agriculture still plays in the culture. Furthermore, 55 (82%) of the plants with food uses have an SPI value above 0.5. A comparison with the detailed study of Quin (1959) shows that the choice of food plant species and their uses have remained virtually unchanged but these results probably only apply to rural communities.

3.3. Medicinal plants

There are 71 (46%) plants identified in this study which have medicinal uses (Table 4). The participants mostly mentioned treatments for common ailments, typically problems which elders can prescribe treatment for without the need to consult a health care professional or traditional healer. The use of these home remedies is sometimes due to the inaccessibility of professional healers or financial constraints. The most common treatments mentioned were for pains, injuries, sores, infections and wounds (18 species) followed by blood-related ailments (15

Table 3
The most popular plant species in Central Sekhukhuneland identified as having food use(s), arranged according to their Species Popularity Index (SPI) values; C = cultivated crops and W = wild-harvested (X indicates the main categories of use). See Table 1 for details of the uses.

Species	SPI	C/W	Vegetable	Fruit	Pot herb	Cereal	Nectar	Root, bulb or tuber	Tea
Allium cepa	1	C			X			X	
Brassica olecera var. *capitata*	1	C	X						
Capsicum annuum	1	C			X				
Capsicum frutescens	1	C			X				
Carica papaya	1	C	X						
Citrullus lanatus	1	C		X					
Citrus limon	1	C		X					
Cleome gynandra	1	C/W	X						
Cucurbita moschata	1	C	X						
Mangifera indica	1	C		X					
Opuntia ficus-indica	1	W		X					
Punica granatum	1	C		X					
Saccharum officinarum	1	C		X					
Sorghum bicolor	1	C				X			
Vitis vinifera	1	C		X					
Ximenia caffra	1	W		X					
Zea mays	1	C				X			
Aloe arborescens	0.98	W					X		
Aloe castanea	0.91	W					X		
Aloe marlothii	0.96	W					X		
Psidium guajava	0.96	C		X					
Sclerocarya birrea subsp. *caffra*	0.96	W		X					
Amaranthus spinosus	0.95	W	X						
Ficus carica	0.93	C		X					
Vangueria infausta	0.93	W		X					
Ipomoea batatas	0.89	C	X					X	
Prunus persica	0.89	C		X					
Ozoroa paniculosa	0.87	W							X
Vigna unguiculata	0.86	C	X						
Arachis hypogea	0.85	C	X						
Lolium multiflorum	0.82	W				X			
Pentarrhinum insipidum	0.80	W			X				
Pennisetum glaucum	0.79	C				X			
Persea americana	0.79	C		X					
Cucumis zeyheri	0.77	C	X						
Ficus ingens	0.76	W		X					
Tulbaghia violacea	0.75	C						X	
Grewia flava	0.74	W		X					
Ziziphus mucronata	0.74	W		X					
Mimusops zeyheri	0.72	W		X					
Brassica oleracea	0.71	W	X						
Englerophytum magalismontanum	0.70	W		X					
Lopholaena coriifolia	0.68	W					X		
Eriobotrya japonica	0.67	W		X					
Lantana rugosa	0.67	W		X					
Bidens pilosa	0.65	W			X				
Physalis peruviana	0.64	W		X					
Momordica balsamina	0.61	W			X				
Sonchus oleraceus	0.6	W			X				
Rhoicissus tridentata	0.57	W		X					
Corchorus tridens	0.56	C/W	X						
Grewia sp.	0.56	W		X					
Ficus abutilifolia	0.52	W		X					
Lantana camara	0.51	W		X					
Lippia rehmannii	0.46	W			X				X
Schotia brachypetala	0.44	W					X		
Allium schoenoprasum	0.41	W						X	
Gomphocarpus fruticosus	0.41	W							X
Chenopodium murale	0.39	W	X						
Boscia albitrunca	0.38	W				X			
Searsia pyroides	0.37	W		X					
Athrixia phylicoides	0.36	W							X
Tapinanthus cf. *oleifolius*	0.25	W			X				
Euclea crispa subsp. *crispa*	0.15	W		X					
Dovyalis caffra	0.07	W		X					
Vernonia fastigiata	0.06	W	X						

species) and bronchial-related ailments (12 species). Several plants stand out as having multiple medicinal uses: *Cannabis sativa*, for example, is used for bronchial ailments and for mental complications, *Opuntia ficus-indica* is used for fertility complications and other ailments, *Punica granatum* is used for pains, injuries, sores, infections, wounds and diarrhoea. Note that all these plants have an SPI value of 1 (*O. ficus-indica* and *P. granatum* also have food uses). Another edible plant with multiple medicinal uses and a high SPI value (0.93) is *Vangueria infausta,*

Table 4
The most popular plant species in Central Sekhukhuneland identified as having medicinal use(s), arranged according to their Species Popularity Index (SPI) values (X indicates the main categories of use). See Table 1 for details of the uses.

Species	SPI	Coughs, flu, bronchial ailments	Blood-related ailments	Enema (body cleaner)	Fertility complications	Mental complications	Pains, injuries, sores, infections, wounds	Other
Cannabis sativa	1	X				X		
Citrus limon	1	X						
Opuntia ficus-indica	1				X			X
Punica granatum	1						X	X (diarrhoea)
Sorghum bicolor	1							X
Ximenia caffra	1	X						
Aloe castanea	0.98		X					X (ethno-veterinary)
Aloe arborescens	0.98	X	X					X (ethno-veterinary)
Agave americana	0.96		X					X (ethno-veterinary)
Aloe marlothii	0.96		X					X (poison, diabetes)
Psidium guajava	0.96							X (poison)
Sclerocarya birrea subsp. *caffra*	0.96							X
Vangueria infausta	0.93			X				X
Prunus persica	0.89							X (stop vomiting)
Aloe davyana, *A. transvaalensis*	0.89						X	X (growths)
Peltophorum africanum	0.88		X				X	X (*sefeku*)
Ozoroa paniculosa	0.87						X	
Artemisia afra	0.85	X						
Cussonia paniculata	0.85							X
Eucalyptus camaldulensis	0.81		X					
Boophone disticha	0.80						X	
Pentarrhinum insipidum	0.80		X					
Kirkia wilmsii	0.76		X					
Tulbaghia violacea	0.75		X					
Datura stramonium	0.74							X
Pergularia daemia subsp. *daemia*	0.73		X					
Euphorbia ingens	0.72			X				
Solanum panduriforme	0.72							X (ethno-veterinary, toothache)
Solanum aculeastrum	0.69						X	X
Euphorbia excelsa	0.69		X					
Lopholaena coriifolia	0.68					X		
Xerophyta retinervis	0.67							X (splint)
Bidens pilosa	0.65		X					
Cotyledon orbiculata	0.65					X		X
Momordica balsamina	0.61		X					
Elephantorrhiza praetermissa	0.58		X				X	
Ledebouria apertiflora	0.58						X	X (infections)
Ricinus communis	0.57							X (bandages)
Kalanchoe brachyloba	0.55							X (feinted people)
Kalanchoe thyrsiflora	0.55							X (feinted people)
Senecio barbertonicus	0.53			X			X	X (lightning strike)
Combretum molle	0.51						X	
Myrothamnus flabellifolius	0.51	X			X			
Psiadia punctulata	0.51						X	
Schotia brachypetala	0.44		X					
Catharanthus roseus	0.43							X (toothache)
Moringa oleifera	0.43		X					X (energy boost, STD)
Dombeya rotundifolia	0.41							X (ethno-veterinary)
Argemone mexicana	0.41							X (growths)
Gomphocarpus fruticosus	0.41			X		X		
Schkuhria pinnata	0.40						X	X (ethno-veterinary)
Euphorbia tithymaloides	0.40							X (bladder)
Kedrostis leloja	0.38						X	
Euphorbia milii	0.34					X		X (bladder)
Hypoxis obtusa	0.34		X		X		X	
Carpobrotus edulis	0.32	X					X	X (toothache)
Sansevieria trifasciata	0.32				X			
Jatropha zeyheri	0.30		X	X			X	
Zanthoxylum capense	0.26	X						
Alternanthera pungens	0.25			X	X			
Turraea obtusifolia	0.25		X					
Crassula sarcocaulis subsp. *sarcocaulis*	0.23	X		X	X			
Gardenia volkensii	0.23							X

(continued on next page)

Table 4 (*continued*)

Species	SPI	Coughs, flu, bronchial ailments	Blood-related ailments	Enema (body cleaner)	Fertility complications	Mental complications	Pains, injuries, sores, infections, wounds	Other
Mundulea sericea	0.21						X	
Merwilla plumbea	0.19					X		
Melhania prostata	0.14							X
Plectranthus venteri	0.13	X	X					
Alepidea setifera	0.12	X						X (toothache)
Eucomis pallidiflora subsp. *pole-evansii*	0.12		X					
Pellaea calomelanos	0.08	X						
Helichrysum caespititium	0.03	X						

which is not only used as an enema but also have other medicinal applications.

3.4. Other plants (miscellaneous uses)

The Bapedi are skilful craftsmen. With 62 (40%) plant species identified as having craft uses (and other miscellaneous uses), their creative ability to build structures from natural resources is evident (Table 5). Livestock is an important commodity to the Bapedi because it symbolizes wealth, and the more animals a man owns, the greater their symbolic value for indicating his ability to take care of his family (Monnig, 1967). Thus keeping livestock safe is important, making the construction of strong kraals a much-needed skill (the senior author participated in this activity during one of his visits to the study area). Other crafts such as carving wooden spoons and weaving mats not only serve as a means for acquiring useful household items but they may provide extra income when sold to others. Firewood is also an important aspect of local plant use, with 16 (26%) of the identified miscellaneous plants used for firewood. Although electricity is nowadays commonly available, fire is still the preferred method for cooking and for boiling water for bathing.

3.5. New plant use records

At the completion of this study, a total of 185 plant uses and 98 vernacular names were documented for the first time for the Bapedi (indicated in bold in Table 1). It should be noted that at least two other studies of Bapedi ethnobotany are currently in press or under review (Mongalo and Makhafola, 2018; Semenya and Maroyi, 2018). The statistics on new records as given here reflect only the outcome of the Central Sekhukhuneland survey up to the end of 2017 (Mogale, 2018). There were several new records for medicinal uses, and about 15 medicinal plant species recorded for the first time for the Bapedi (Fig. 1). The new records included some unusual uses. *Asparagus laricinus,* e.g. is used in treatments for men who are believed to have been poisoned by eating food made or provided by a pregnant woman; *Cotyledon orbiculata* is used to treat people suffering from mental ailments; laxatives are made from the poisonous latex of *Euphorbia* species. There were 6 newly recorded edible plants and 21 (11%) newly recorded food plant uses. Seventeen species were recorded for the first time in the "Other" category of plant use (including crafts, construction, firewood, etc.), with 57 (31%) newly recorded uses. Examples are the use of seeds from *Datura stramonium* to make floor polish and *Lippia rehmannii* used as a mosquito repellent. Also, there were 21 (11%) newly recorded edible plants such as *Physalis peruviana* and *Searsia pyroides*. Lastly there were also 38 plant species (25%) recorded to be used by the Bapedi for the first time (Mogale, 2018; Fig. 1). A few of these species have subsequently been reported by Mongalo and Makhafola (2018) and Semenya and Maroyi (2018). These include *Gardenia volkensii* K.Schum., *Solanum aculeastrum* Donal, *Lantana rugosa* Thunb. and *Tulbaghia violacea* Harv. A few published use-records may also have been overlooked by Mogale (2018). The main point is not the exact numbers of new records in Fig. 1 but the fact that Bapedi indigenous plant knowledge was clearly not yet comprehensively recorded for future generations. Only 23 of the 152 useful species of Central Sekhukhuneland also appear in the detailed ethnobotanical survey of lay people in the Blouberg area by Mongalo and Makhafola (2018). This pronounced lack of uniformity further emphasizes the needs for a better geographical coverage of survey work to account for regional differences.

3.6. Species popularity index

The SPI value of 18 plant species were recorded as 1.0 (*Allium cepa, Brassica oleracea, Cannabis sativa, Capsicum annuum, Capsicum frutescens, Carica papaya, Citrullus lanatus, Citrus limon, Cleome gynandra, Cucurbita moschata, Mangifera indica, Opuntia ficus-indica, Punica granatum, Saccharum officinarum, Sorghum bicolor, Vitis vinifera, Ximenia caffra* and *Zea mays*), meaning all participants were well acquainted with these plants. All the plants with an SPI value of 1, whether cultivated or harvested from the wild, have a food-related plant use. Two of the plant species presented in the flip-file (*Acanthus montanus* and *Conyza scabrida*) were not recognized by any of the participants (hence their exclusion from the data matrix in Table 2).

If the same instrument (flip-file) is used by future researchers, it will be possible to quantify the degree to which some species have become more popular and others less popular. The quantitative results presented here therefore provide the necessary baseline data for comparing possible changes in plant use patterns over time.

3.7. Ethnobotanical knowledge index

The expected outcome from this study was that elders would have a much higher EKI value than the youth. The matrix data have confirmed this, with the youth having the lowest average EKI value (0.39), followed by young adults (EKI value of 0.48), adults (0.57) and then the elders, with the highest average EKI value of 0.6. The participant with the highest EKI value is KM (1944), Kgoputso Mampuru, at 0.75. However, the low average EKI value of the youth cannot be interpreted as an indication that no knowledge is being transferred to them. Such an interpretation would only be justified had there been a steep drop in EKI value from senior citizens to adults or from adults to children and teenagers. However, the EKI values recorded in this study prove that there is still considerable extant indigenous knowledge within the communities. Children and teenagers are in a process of learning about plant uses and with time, their EKI values will increase. The data in Tables 1 and 2 will allow future researchers to explore and quantify the perceived loss of indigenous knowledge if the same methodology, as well as the same or a similar visual instrument (flip-file), is used.

3.8. Comparison of the Bapedi with other cultures

Bapedi traditional plant use knowledge as recorded here can be subjected to comparisons with other Limpopo cultural groups living within relatively close proximity, namely the VhaVenda (Mabogo, 1990;

Table 5
The most popular plant species in Central Sekhukhuneland identified as having value as craft plants and for miscellaneous other use(s), arranged according to their Species Popularity Index (SPI) values (X indicates the main categories of use). See Table 1 for details of the uses.

Species	SPI	Crafts (other)	Weaving (basketry, mats etc.)	Firewood	Construction	Ornamental	Recreational	Utensils
Vitis vinifera	1	X						
Ximenia caffra	1	X						
Aloe castanea	0.98						X	
Agave americana	0.96		X		X			
Aloe marlothii	0.96						X	
Sclerocarya birrea subsp. *caffra*	0.96	X						
Aristida diffusa	0.92				X			
Vachellia nilotica subsp. *kraussiana*	0.90			X				
Nicotiana tabacum	0.90						X	
Peltophorum africanum	0.88			X				X
Ozoroa paniculosa	0.87			X	X			
Cussonia paniculata	0.85						X	
Cyperus sexangularis	0.84		X					
Cyperus austro-africanus	0.81		X					
Eucalyptus camaldulensis	0.81				X			
Boophone disticha	0.80	X						
Asparagus laricinus	0.78		X					
Datura stramonium	0.74	X						
Grewia flava	0.74							X
Englerophytum magalismontanum	0.70							X
Populus x *canescens*	0.70			X	X			
Lopholaena coriifolia	0.68			X				
Xerophyta retinervis	0.67	X	X					
Cotyledon orbiculata	0.65						X	X
Momordica balsamina	0.61							X
Elephantorrhiza praetermissa	0.58			X				
Ricinus communis	0.57					X		
Grewia sp.	0.56	X						
Kalanchoe brachyloba	0.55						X	
Kalanchoe thyrsiflora	0.55						X	
Senecio barbertonicus	0.53					X		
Myrothamnus flabellifolius	0.51			X				
Psiadia punctulata	0.51						X	
Lippia rehmannii	0.46	X		X				
Schotia brachypetala	0.44			X				
Senna didymobotrya	0.44			X				
Catharanthus roseus	0.43					X		
Combretum apiculatum	0.41			X				X
Dombeya rotundifolia	0.41			X				
Allium schoenoprasum	0.41	X						
Plumeria alba	0.41					X		
Schkuhria pinnata	0.4					X		
Euphorbia tithymaloides	0.4					X		
Protea caffra subsp. *falcata*	0.37			X				X
Athrixia phylicoides	0.36		X					
Euphorbia milii	0.34				X			
Gazania krebsiana	0.33		X					
Melia azedarach	0.33					X	X	
Sansevieria trifasciata	0.32					X		
Terminalia sericea	0.31			X				X
Gerbera jamesonii	0.26					X		
Cladium mariscus subsp. *jamaicense*	0.25		X					
Tapinanthus cf. *oleifolius*	0.25							X
Cryptolepis cryptolepidioides	0.20					X		
Indigofera cf. *heterotricha*	0.20			X				
Mirabilis jalapa	0.15					X		
Melhania prostata	0.14		X					
Eucomis pallidiflora subsp. *pole-evansii*	0.12					X		
Ceiba speciosa	0.06			X			X	
Ipomoea bathycolpos	0.06							X
Plectranthus neochilus	0.04					X		X
Commiphora africana	0.04	X						

Musafa et al., 2016; Magwede et al., this issue), the Ndebele (Musafa et al., 2016) and the Tsonga (Liengme, 1981). However, the Bapedi branched from a much bigger clan, the Sotho (Monnig, 1967) and the availability of an inventory for the Sotho group (Moffett, 2010) makes it possible to compare the similarities and differences between the species that are used (Fig. 3). Since the Bapedi and Southern Sotho have common ancestors tracing back thousands of years (Quin, 1959; Moteetee and Van Wyk, 2011), it is not surprising for the two cultures to share several plant species (65) and plant uses (57), as shown in Fig. 3. Another point to keep in mind is the difference in geographical areas that the two cultures occupy, so that some species used would be different (16) due to species distribution patterns. Nonetheless, there are similar species which are used for similar plant uses (13). Indigenous plant use is dynamic and adaptive, as shown by the same

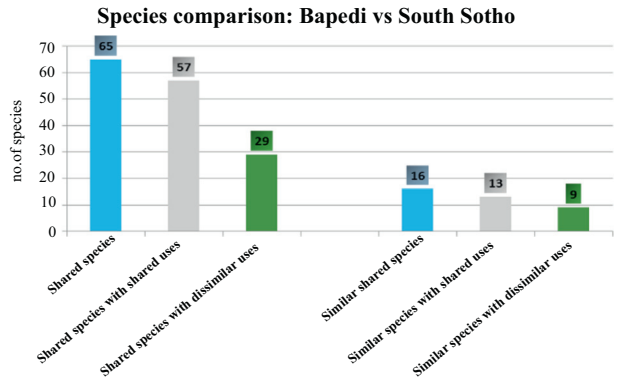

Fig. 3. Number of useful plant species shared between the Bapedi of Central Sekhukhuneland and the Southern Sotho, based on the results obtained in this study and the data of Moffett (2010).

plant species being used differently (29) and also similar species used differently (9).

Quantitative studies allow for studying the flow and quality of indigenous knowledge that resides within different age groups within a community (Reyes-Garcia et al., 2007). Comparisons are also possible between different ethnobotanical surveys, provided that the same methodology is used, and that the same or a similar number of participants took part in the survey. As an example, a comparison is made here between this study and recently published studies of people of Khoi and San descent in the Cape region of South Africa(Fig. 4). The the EKI values of Central Sekhukhuneland are compared with those of the Agter-Hantam (De Beer and Van Wyk, 2011) and the Kamiesberg (Nortje and Van Wyk, 2015). As shown in Fig. 4, the EKI values for the different age groups are remarkably similar. It is interesting that senior participants in the Agter-Hantam and Central Sekhukhuneland have the same average EKI value of 0.6. The sudden decrease in EKI value between adults and seniors in Agter-Hantam may be linked with memory loss due to old age (some elders scored exceptionally low) whereas in Central Sekhukhuneland the elders were almost invariably above average in terms of the level of their indigenous knowledge. Nortje and Van Wyk (2015) reported only on the medicinal plants of the Kamiesberg, so that the non-medicinal plants and plant uses of the Sekhukhuneland study had to be omitted and the EKI values re-calculated for each participant. There is again a close similarity in the trend between the EKI values of Sekhukhuneland (SKL) and Kamiesberg (KB) age groups.

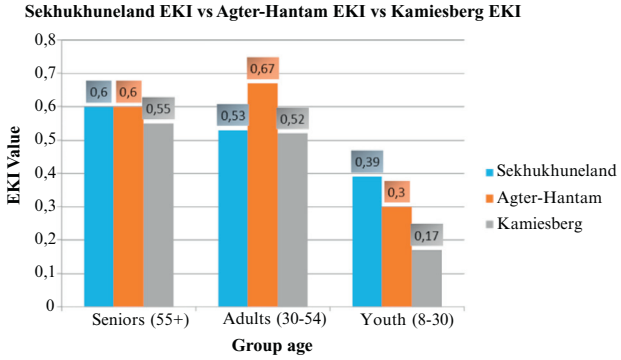

Fig. 4. Comparisons of the average Ethnobotanical Knowledge Index (EKI) values of the participants in Sekhukhuneland, Agter-Hantam and Kamiesberg, based on the results obtained from utilising the Matrix Method in all three studies. The numbers of participants were 37 for Sekhukhuneland, 16 for the Kamiesberg and 16 for the Agter-Hantam.

Quantitative studies allow for studying the flow and quality of indigenous knowledge that resides within different age groups within a community (Reyes-Garcia et al., 2007). Comparisons are also possible between different ethnobotanical surveys, provided that the same methodology is used, and that the same or a similar number of participants took part in the survey. As an example, a comparison is made here between this study and recently published studies of people of Khoi and San descent in the Cape region of South Africa(Fig. 4). The the EKI values of Central Sekhukhuneland are compared with those of the Agter-Hantam (De Beer and Van Wyk, 2011) and the Kamiesberg (Nortje and Van Wyk, 2015). As shown in Fig. 4, the EKI values for the different age groups are remarkably similar. It is interesting that senior participants in the Agter-Hantam and Central Sekhukhuneland have the same average EKI value of 0.6. The sudden decrease in EKI value between adults and seniors in Agter-Hantam may be linked with memory loss due to old age (some elders scored exceptionally low) whereas in Central Sekhukhuneland the elders were almost invariably above average in terms of the level of their indigenous knowledge. Nortje and Van Wyk (2015) reported only on the medicinal plants of the Kamiesberg, so that the non-medicinal plants and plant uses of the Sekhukhuneland study had to be omitted and the EKI values re-calculated for each participant. There is again a close similarity in the trend between the EKI values of Sekhukhuneland (SKL) and Kamiesberg (KB) age groups.

At species level, similar comparisons can be made. *Artemisia afra*, e.g. has an SPI value of 0.85 in Sekhukhuneland and 0.68 in the Kamiesberg (where it is cultivated in home gardens for medicinal use). *Carpobrotus edulis* is shared between the two cultures but the SPI values are different (0.32 and 0.88, respectively). *Cotyledon orbiculata* (0.65 SKL and 0.61 KB), *Gomphocarpus fruticosa* (0.41 SKL and 0.67 KB), *Ricinus communis* (0.57 SKL and 0.80 KB) and *Datura stramonium* (0.74 SKL and 0.26 KB) are further examples of shared species although the way in which they are used may differ.

4. Conclusions

The matrix method has proven to be an easy yet effective tool in providing basic quantitative data that can be used in future studies. Not only is it useful to record large amounts of data in short time periods in a consistent and rigorous way, but it is also useful when comparing the level of indigenous knowledge (EKI) and the relative popularity of plants (SPI) between studies that have used the same methodology. This study was only conducted in three villages in Central Sekhukhuneland but gives an indication of the rich extant indigenous knowledge that still resides in Sekhukhuneland, which is in urgent need of documentation. The study has revealed several new records of useful species and new records of various plant uses. It also revealed that published information focused on medicinal ethnobotany mostly represents specialized knowledge of traditional healers and that it is not representative of home remedies and everyday plant uses that are still practiced in rural areas. Plants used for food, crafts and various other practical purposes have remained very poorly documented. In general, the quantitative data of this survey are similar to the results published for other cultural groups. Given rapid cultural changes, there is an urgent need for more studies in other parts of Sekhukhuneland (covering the full spectrum of plant use) in an attempt to produce a complete synthesis of Sekhukhuneland (Bapedi) ethnobotany.

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