



**CA' FOSCARI UNIVERSITY OF VENICE**

Department of Environmental Sciences, Informatics and Statistics

**MASTER THESIS**

**Wild Food Plants in Kenya. A Review**

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## ABSTRACT

It is widely acknowledged that wild food plants (WFP) make an important contribution to the food basket and livelihoods of smallholder farmers, hunters and gatherer communities and subsistence farming groups in several areas of the Earth including sub-Saharan Africa. However, the current global changes especially climate warming affects the use of WFP are jeopardizing the use of WFP and the related knowledge. Therefore, documenting for protecting and promoting the sustainable use of WFP can strengthen household resilience during food shortages. There is a need to better understand how WFP contributes to rural livelihoods on a daily basis and serves as an emergency safety net in times of famine. To this end, we carried out a review on Scopus and Google Scholar by using the key words 'ethnobotany', 'food security', 'wild food plants', 'wild fruit', 'Kenya', 'wild food plants' and 'conservation'. We identified 15 articles containing 366 single plant species belonging to 79 families used as WFP in 11 regions in Kenya. The most represented family was Fabaceae with the highest number of species (33). Frequently reported species included *Carissa spinarum* (n = 6), *Solanum nigrum* L. (n = 6), *Ximenia americana* (n = 5), *Amaranthus graecizans* (n = 4) and *Grewia damine* (n = 4). Tharaka Nithi region had the highest number of articles identified (n = 3) while Northern Kenya had the highest number of WFP identified (n = 108). The fruits, leaves and roots respectively were reported to be the most commonly used parts of the plant. About 52% of WFP were used raw as a snack, 19% were cooked, 16% is processed, and 12% of a given plant species ready for use after certain processing and cooking steps. 180 WFP identified reported no uses with articles covering Northern Kenya, Siaya district, and Tharaka constituency reported the highest number of no use among WFP. 10 articles reported to use semi structured interviews and questionnaires and key informant interviews as methods of data collection. 8 articles reported to use interview-based approach while 2 articles used secondary literature and the other 2 used both interview based and

literature as sources of data. Articles from Northern Kenya reported the highest number of WFP (n = 108). WFPs play an important nutritional role most homesteads in Kenya however these WFP are not adequately documented and there is no clear linkage between WFPs and their potential to solving food insecurity. The knowledge of WFPs only persists among the older generation and therefore there is need to transfer this knowledge to the younger generation and to ensure that this knowledge is not lost. Anthropogenic factors such as changes in land use, excessive over grazing, development activities (street construction and urbanization), habitat destruction (wood harvesting, firewood series wildfires), famine, overharvesting, have endangered WFP.

Future studies should focus on Nyukani area to identify the WFP used and their uses since the research done only covered the policy and the legal frameworks. With most of the articles not clearly outlining the uses and preparation procedures of most of the WFP, it's a gap that future research can focus on the uses, preparation methods, tests, colour and smell as these are key factors in accepting and integrating the WFPs in diets. Further studies need to be conducted in different regions in Kenya in order to have an updated inventory before the knowledge of WFPs especially by the indigenous communities erodes. It is therefore important that the young generations are encouraged to develop interests in WFPs in order to preserve the existing species and the relevant institutions to encourage communities to adopt cultivation of some of the WFP species which could provide a backup for the times of food insecurity in Kenya.

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## INTRODUCTION

Wild food plants (WFP) are a major source of nutrient for most households in several areas of the world, including Kenya (Johns & Kokwaro, 1990). Indeed, the agricultural capacity is limited in the arid and semi-arid areas which cover about 80% of Kenya's land (Anthrop et al 2011). Therefore, the lives of humans living in the arid regions of Kenya are limited by frequent droughts and the communities in these areas highly depend on WFP for their nutritional benefits (Bussmann (2006). WFPs are important for the indigenous and local communities especially during famine where the communities have limited access to other kind of food (Lulekal et al., 2011).

Various foods consumed in Kenya are prepared from wild plants for instance the leaves of *Amaranthus albus* are used to prepare Managu meal (the leaves are boiled and fried, leaves are also boiled and used to prepare mashed food known as mukimo) and the leaves of *Asystasia mysorensis* are used to prepare mforfor (by mixing ash and water and sieved, the sieved mixture is boiled with the leaves of *Asystasia mysorensis* and then added added milk to soften), they are both served with ugali (maize meal). Various parts of WFP are eaten, such as the fruits, vegetables, grains, roots and tubers. The fruits and plant-derived foods, including nuts, offer the body more nutritional benefits compared to processed foods. Many fruits are also important sources of nutrients like vitamins A and C that could be lacking in an individual's diet. For instance, vitamin C, which is found in most fruits like *Psidium guajava*, is vital to protect body cells and improves the absorption of non-heme iron from plant foods (Cordeiro, 2012).

Kenya is diverse in terms of ethnic coverage and climatic composition which implies a rich background in WFP use. However, this knowledge has not been well documented.

Despite the number of ethnobotanical studies conducted in Kenya, there is no comprehensive review and this has been the main objective of this study: to provide current insight on the status of WFP in Kenya and their potential to combating food insecurity.

Considering that the knowledge of most WFPs only persists in the memory of the elderly Kenyan people, this review will contribute to document the knowledge of the WFPs in Kenya before it disappears.

The specific objectives of this review are:

- (i) To document the taxonomic diversity of WFPs and their family-wise distribution.
- (ii) To analyse the pattern of use of WFPs by edible parts.
- (iii) To identify the gaps in terms of use and preparation methods of the wild food plants.

In this review, the term Wild Food Plants (WFP) is used to refer to those plants that grow naturally on their own on uncultivated lands and farmlands (Devineau et al., 2008).

# MATERIALS AND METHODS

## 2.1 Materials

Kenya is a country located in the Eastern Africa with 580, 376 Km<sup>2</sup> of land. It has a population of 47.6 million people (Census 2019) with a diverse ethnic composition. The climatic conditions vary from arid and semi-arid in the Northern parts, tropical along the coastal region and temperate in the inland. This explains its diversity in terms of WFP use among the communities in the different regions in Kenya.

Kenya has 6,293 indigenous species from 225 families and 1,538 genera. This diversity is attributed to the wide geographical distribution, soil types and a diverse climatic composition (Zhou et al., 2017). According to (Census 2019), Kenya has 42 tribes and 120 ethnic groups.

## 2.2. Search Strategy

I have searched for literature in two engines (Scopus and Google Scholar) using the following combination of keywords: 'ethnobotany', 'food security', 'wild food plants', 'wild fruit', 'Kenya' and 'conservation'. I considered only research published in English with no limit in the year of publication.

Overall, these searches produced a total of 15 unique results. I excluded articles on nutrient composition, ancient and horticultural statistics, and pharmacology and toxicology of the wild plants were used since the focus was on local use of WFP. Articles on broader topics including wild food plant life and mushrooms have been classified as secondary literature to deliver a broader contextual placement of the food plant's native literature thus, not included in the review.

### 2.3. Data Extraction and processing

The data extracted from the articles included: The family name, Latin name, vernacular name, edible parts, uses (if indicated), method of preparation (if indicated), the ethnic group, region and the climate of the areas covered. If the part used or preparation was not indicated, the respective field was left empty. The plant names presented in the review follow Plants of The World (POWO 2021) and, if the plant was not present, in The Plant List, 2013; family assignments follow the Angiosperm Phylogeny Group (APG) IV (Stevens, 2017).

## RESULTS

In total 366 WFPs were recorded from 183 genera and 79 families. 11 articles were analysed, 9 reporting the storage of specimens in herbarium institutions. 10 articles reported to use semi structured interviews and questionnaires and key informant interviews as methods of data collection. 8 articles reported to use interview-based approach while 2 articles used secondary literature and the other 2 used both interview based and literature as sources of data. The study covered 11 regions in Kenya comprising of 13 ethnic communities. Of the total number of species reported, 59% are used as fruits, 24% leaves as vegetables and (14%) as roots.

This review has also revealed that 28 % of the reported WFP were from Northern Kenya, 17% from Siaya district, 16% from Tharaka Nithi and 14% from South Turkana. This was mainly because fruits recorded the highest number of WFP used and they were mainly consumed in the arid and semi-arid regions in the Northern Kenya.

The review has also reported that vegetables are mainly prepared through washing, boiling and frying in fat and then served along other accompaniments as ugali (maize meal) and meat (Johns & Kokwaro,1990). The fruits, seeds, nuts and roots are mainly eaten raw.

### 3.1 Attitudes to Wild Food Plants

73.3% of WFP are used as supplement foods, while others (26.7%) are used as foods in common diets (Kathambi et al., 2020). This means that most of society remember the WFP for a famine meal.

### 3.2 Distribution of and methodology used in the articles

Figure 1 shows the map distribution of the articles and the number of WFP identified in different regions in Kenya. Tharaka Nithi had the highest number of articles (n = 3) and the rest

having 1 article each. Northern Kenya reported the highest number of WFPs (n = 108). Other areas that reported a high number of WFPs use were Siaya district (n = 66), Tharaka Nithi (n = 67), Coastal region (n = 49), South Turkana (n = 32) and Mount Nyiru (n = 19).



The numbers represent the total WFP reported

*Figure 1 Articles reviewed from various locations in*

As regarding the methods employed for data collection ,11 articles reported to use semi structured interviews and questionnaires and key informant interviews as methods of data

collection. 8 articles reported to use interview-based approach while 2 articles used secondary literature and the other 2 used both interview based and literature as sources of data (table 1).

*Table 1: Detailed Information of reviewed articles*

Reference	Region covered	number of WFP mentioned	Voucher specimen (present/no)	Methods	Focus	Data Collection
Anthrop et al 2011	Northern Kenya	108	East African Herbarium	Semi structured questionnaires	To examine the plant use of the Dorobo people	Interview based
Bussmann et al., 2006	Sekenani Valley	8	University of Nairobi Herbarium. The specimens are numbered in the collection series "RBUGGG"	Questionnaires and oral interview (with members of 24 families)	To identify the plant use of the Maasai in the Sekenani Valley, North of the Maasai Mara National Reserve.	Interview based
Bussmann, 2006	Mt. Nyiru	19	East African Herbarium in Nairobi (EA), with duplicates at the Royal Botanic Gardens, Kew (K) and the National Botanic Garden of Belgium, Meise (BR).	Not mentioned	To examine the plant use of the Samburu of the Mt. Nyiru area in Northern Kenya.	Secondary literature
Johns & Kokwaro, 1990	Siaya District,	66	University of Nairobi, UC University of California, Berkeley or MTMG (McGill University).	Key informants Interview	To examine the plant use of the Luo in Nyanza	Interview based

Kathambi et al., 2020	Tharaka-Nithi County	9	National Museums of Kenya	semi-structured open-ended questionnaires and guided field collections with 48 informants.	To determine the knowledge and utilization of various plant species by the local communities.	Interview based
Marshall, 2001	Mau Escarpment	16	East African Herbarium	participant-observation and informal discussions with informants	To study the use of wild and weedy greens by Okiek of the Mau Escarpment, Kenya	Interview based
Morgan, 1981	South Turkana	32	East Africa (Kenya) (EA) Herbarium	Semi structured questionnaire and interviews	To understand how nomadic pastoral people make use of the plant species in their environment.	Interview based
Omire et al., 2020	Turkana, Tharaka Nithi, Kwale, Tana River	1	No	semi-structured Interviews (79 informants 38 (48.1%) women and 41(51.9%) men were interviewed, )	To determine domestication status, management practices, important use categories, plant part value, biotic and abiotic stresses of <i>H. compressa</i> .	Interview based
Pakia & Cooke, 2003	Coastal region of Kenya	49	No	Interview with 18 reputable persons in the community	To identify the traditional knowledge of plants among three Midzichenda tribes: Duruma, Giriama and Digo.	Interview based



Shiracko et al., 2016	Kakamega County	23	Catholic University of East Africa, Nairobi, Kenya.	Interview key informants	To evaluate ethnobotany of the Abawanga people, partly focusing on their traditional uses of various plant species	Interview based and secondary literature
Shumsky et al., 2014	Tharaka Constituency	58	East Africa Herbarium in Nairobi	Semi structured questionnaire	To investigate the various access regimes associated with the harvest of WEPs in two communities in semi-arid Kenya,	Interview based

All the articles reported that specimens were deposited at herbarium centers except 3 articles with the main herbarium center being the East African herbarium center.

### 3.3 Wild Food Plants named in the articles

In total, 366 plant species were identified from 79 families and 183 genera (Table 2). Fabaceae had the highest number of species with a total of 33 species. Other dominant families included Amaranthaceae (18 species), Apocynaceae (22 species), Rubiaceae (18 species), Capparaceae (13 species), Cucurbitaceae (12 species), Malvaceae (30 species) and Solanaceae (12 species).

From Figure 3 below, 34% of the wild food plant species were named only by Anthrop et al 2011, 16% by Shmusky et al., 2014 and Pakia & Cooke, 2003.

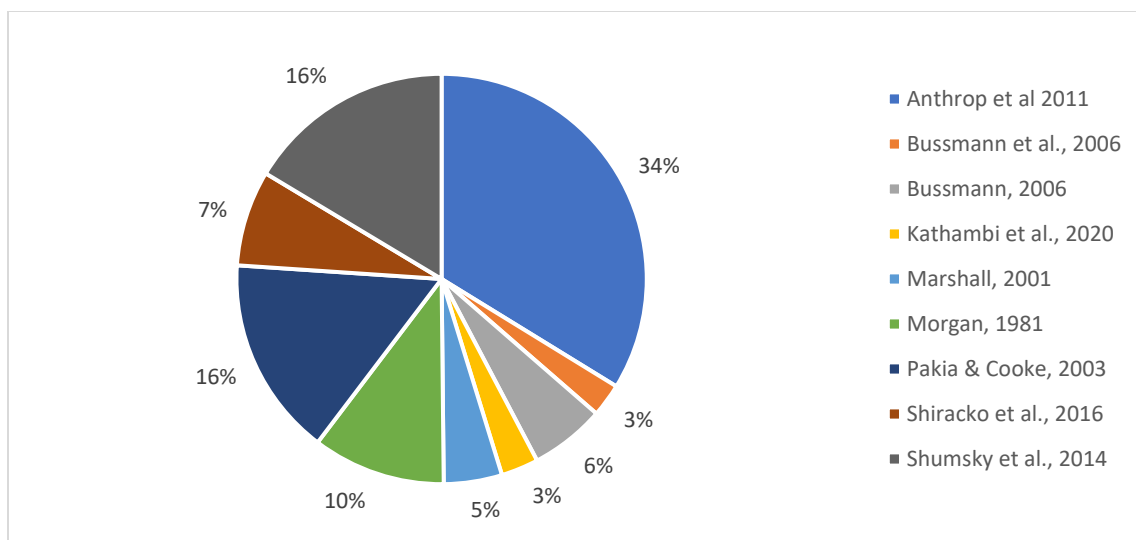


Figure 2 Percentage of species named only by one author.

Table 2: Detailed Information of Different wild food plants Identified

Family name	Species name	Vernacular	Edible part	Uses	Reference
<b>Acanthaceae</b>	<i>Asystasia gangetica</i> (L.) T.Anderson	Tsalakushe (Dur/Gir); Vongonya (Gir); Futswe (Dig) <sup>a</sup>	Leaves	Used as vegetables	Pakia & Cooke, 2003
	<i>Asystasia mysorensis</i> (Roth) T.Anderson	Atipa <sup>e</sup>	Leaves	Used as vegetables	Johns & Kokwaro, 1990
	<i>Crossandra mucronate</i> Lindau	Nkitadalet <sup>d</sup>	Flowers		Anthrop et al 2011
	<i>Justicia matammensis</i> (Schweinf.) Oliv.	Piupiu <sup>e</sup>	Leaves	Used as vegetables	Johns & Kokwaro, 1990
<b>Achariaceae</b>	<i>Rawsonia lucida</i> Harv.	Lokodate <sup>d</sup>	Fruits		Anthrop et al 2011
<b>Amaranthaceae</b>	<i>Amaranthus albus</i> L.	Ndelele <sup>d</sup>	Leaves		Anthrop et al 2011
	<i>Amaranthus blitum</i> (L.) Costea	Mporociik <sup>c</sup>	Leaves	Used as vegetables	Marshall, 2001
	<i>Amaranthus dubius</i> Mart. ex Thell.	Nterere, Muchicha <sup>g</sup>	Leaves	Used as vegetables	Shumsky et al., 2014
	<i>Amaranthus graecizans</i> (Vill.) Brenan	Keeliceek <sup>c</sup> ; Litoto <sup>b</sup> ; Rwoga <sup>g</sup>	Fruits		Morgan, 1981;
			Leaves	Used as vegetables	Marshall, 2001; Shiracko et al., 2016; Shumsky et al., 2014
	<i>Amaranthus hybridus</i> L.	Eeluant <sup>c</sup> ; Tsimboka <sup>b</sup>	Leaves	Used as vegetables	Marshall, 2001; Shiracko et al., 2016
	<i>Amaranthus sparganicephalus</i> Thell.	Louyong'orok <sup>f</sup>	Leaves	Used as vegetables	Morgan, 1981
<i>Amaranthus spinosus</i> L.	Epesper <sup>f</sup>	Leaves	Used as vegetables	Morgan, 1981	

	<i>Amaranthus polygamus</i> L.	Ododo, omboga <sup>e</sup>	Leaves	Used as vegetables	Johns & Kokwaro, 1990
	<i>Celosia schweinfurthiana</i> Schinz	Tunga <sup>e</sup>	Leaves	Used as vegetables	Johns & Kokwaro, 1990
	<i>Chenopodium opulifolium</i> ex W.D.J.Koch & Ziz	Ikornit <sup>d</sup> ; Tiga tiga <sup>e</sup>	Leaves	Used as vegetables	Anthrop et al 2011; Johns & Kokwaro, 1990
	<i>Salsola dendroides</i> Pall.	Ado'om <sup>d</sup>	Leaves		Anthrop et al 2011
<b>Amaryllidaceae</b>	<i>Allium cepa</i> L.		Roots		Marshall, 2001
<b>Anacardiaceae</b>	<i>Lannea rivae</i> (Chiov.) Sacleux	Ianberori <sup>d</sup> ; Ntherema <sup>g</sup>	Fruits		Anthrop et al 2011; Shumsky et al., 2014
	<i>Lundia triphylla</i> (L.) L.G.Lohmann	Lanberori <sup>d</sup>	Fruits		Anthrop et al 2011
	<i>Mangifera indica</i> L.	Liembe <sup>b</sup>	Leaves	Used as vegetables	Shiracko et al., 2016
	<i>Ozoroa reticulata</i> (Baker f.) J.B.Gillett	Lokunonoi <sup>d</sup>	Gum		Anthrop et al 2011
	<i>Sclerocarya birrea</i> (A.Rich.) Hochst	Imanguai <sup>d</sup> ; Mung'ongo (Dur); Mng'ongo (Dig) <sup>a</sup> ; Maura <sup>g</sup>	Fruits	Eaten raw	Anthrop et al 2011; Pakia & Cooke, 2003; Shumsky et al., 2014
	<i>Searsia natalensis</i> (Bernh. ex C.Krauss) F.A.Barkley	Sangala, Sangla <sup>e</sup>	Fruits	Eaten raw	Bussmann, 2006; Johns & Kokwaro, 1990
	<i>Searsia pyroides</i> (Burch.) Moffett	Awayo, Sanglamadongo <sup>e</sup>	Fruits		Johns & Kokwaro, 1990
<b>Annonaceae</b>	<i>Annona senegalensis</i> Pers.	Nyabolo, Obolo <sup>e</sup>	Fruits		Johns & Kokwaro, 1990
	<i>Uvaria lucida</i> Bojer ex Benth.	Mudzala-komba/Mudzalubomu/Dzala-bomu (Dur); Mudzala (Gir); Mngwenimlume/Mngwenimadevu/Mngwenimkulu (Dig) <sup>a</sup>	Fruits	Eaten raw	Pakia & Cooke, 2003
	<i>Uvaria schefflera</i> Diels	Ikemojik <sup>d</sup> ; Makuru <sup>g</sup>	Fruits		Anthrop et al 2011; Shumsky et al., 2014
<b>Apiaceae</b>	<i>Afrologisticum linderi</i> (C.Norman) P.J.D.Winter	Lewachi <sup>d</sup>	Roots		Anthrop et al 2011
	<i>Heteromorpha trifoliata</i> (H.L. Wendl.) Eckl. & Zeyh.		Leaves	Used as vegetables	Bussmann, 2006
	<i>Pappea capensis</i> Eckl. & Zeyh.	Okworo <sup>e</sup>	Fruits		Johns & Kokwaro, 1990
<b>Apocynaceae</b>	<i>Ancylobothrys petersiana</i> (Klotzsch) Pierre	Muhonga/Muhonga-udide (Dur); Mutongazi/Mutongazi (Gir); Mbohoya (Dig) <sup>a</sup>	Fruits	Eaten raw	Pakia & Cooke, 2003

	<i>Baseonema gregorii</i> Schltr. & Rendle	Ngaisiko <sup>d</sup>	Roots		Anthrop et al 2011
	<i>Caralluma socotrana</i> (Balf.f.) N.E.Br.	Mbachache <sup>d</sup>	Stem		Anthrop et al 2011
	<i>Carissa spinarum</i> L.	Lamriai <sup>d</sup> ; Ochuoga <sup>e</sup> ;Magutuni <sup>h</sup> ; Nkawa ; Nkagwa <sup>g</sup>	Fruits	Eaten raw	Anthrop et al 2011; Bussmann et al., 2006 Bussmann, 2006; Johns & Kokwaro, 1990; Kathambi et al., 2020; Shumsky et al., 2014
	<i>Carissa tetramera</i> (Sacleux) Stapf	Muloe (Dur); Mtandamboo/Nvuj e-ya-tsi (Gir) <sup>a</sup>	Fruits	Eaten raw	Pakia & Cooke, 2003
	<i>Ceropegia stenoloba</i> Hochst. ex Chiov.	Njibilongi <sup>d</sup>	Roots		Anthrop et al 2011
	<i>Cynanchum hastifolium</i> K.Schum.	Langarboi <sup>d</sup> ;Lokorokori <sup>f</sup>	Fruits		Anthrop et al 2011; Morgan, 1981
	<i>Landolphia kirkii</i> Dyer	Muhonga-ulume (Dur); Mpira (Dig) <sup>a</sup>	Fruits	Eaten raw	Pakia & Cooke, 2003
	<i>Mondia whitei</i> (Hook.f.) Skeels	Omukombera <sup>b</sup> Muombo, Ogombo <sup>e</sup>	Flowers Fruits	Used as appetizer	Shiracko et al., 2016; Johns & Kokwaro, 1990
	<i>Pentarrhinum insipidum</i> E.Mey.	Langarboi <sup>d</sup>	Fruits		Anthrop et al 2011
	<i>Saba comorensis</i> (Bojer ex A.DC.) Pichon	Ikolkolai <sup>d</sup> ; Muhonga (Dur); ;Muungo (Dig) <sup>a</sup> ;Maongo <sup>g</sup> ; Abool <sup>e</sup>	Fruits	Eaten raw	Anthrop et al 2011; Pakia & Cooke, 2003; Shumsky et al., 2014; Johns & Kokwaro, 1990
<b>Araceae</b>	<i>Gonatopus boivinii</i> (Decne.) Engl.		Roots	Human food	Pakia & Cooke, 2003
<b>Areaceae</b>	<i>Hyphaene compressa</i> H.Wendl.	Turkana -eng'ol, Tana river- Mkoma;Tharaka Nithi- muruguju <sup>i</sup> ; Mukoma/Mulala (Dur/Dig) <sup>a</sup> ; Nduguyu, Ncomo <sup>g</sup>	Fruits	Eaten raw	Omire et al., 2020; Pakia & Cooke, 2003; Shumsky et al., 2014
<b>Asparagaceae</b>	<i>Asparagus acutifolius</i> L.	Loibo'oloi <sup>d</sup>	Roots		Anthrop et al 2011
<b>Asteraceae</b>	<i>Bidens pilosa</i> L.	Myanyiek-mon <sup>e</sup> ; Todza (Dur/Dig) <sup>a</sup>	Leaves	Used as vegetables	Johns & Kokwaro, 1990; Pakia & Cooke, 2003
	<i>Felicia rosulata</i> Yeo	Seepei <sup>d</sup>	Fruits		Anthrop et al 2011
	<i>Kleinia odora</i> (Forssk.) DC.		Roots	Roots eaten raw	Bussmann, 2006

	<i>Launaea cornuta</i> (Hochst. ex Oliv. & Hiern) C.Jeffrey	Muthunka <sup>g</sup>	Leaves	Used as vegetables	Pakia & Cooke, 2003; Shumsky et al., 2014
	<i>Scorzonera villosa</i> Scop.	Ipopoi <sup>d</sup>	Fruits		Anthrop et al 2011
	<i>Sonchus schweinfurthii</i> Oliv. & Hiern	Achak <sup>e</sup>	Leaves	Used as vegetables	Johns & Kokwaro, 1990
	<i>Vernonia amygdalina</i> Delile	Omululusia <sup>b</sup>	Leaves	Used as vegetables	Shiracko et al., 2016
<b>Basellaceae</b>	<i>Basella alba</i> L.	Ndemra <sup>e</sup> ; Nderemeek <sup>c</sup> ; Inderema <sup>b</sup>	Leaves	Used as vegetables	Johns & Kokwaro, 1990; Marshall, 2001; Shiracko et al., 2016
<b>Bignoniaceae</b>	<i>Kigelia africana</i> (Lam.) Benth.	Yago <sup>e</sup> ; Erdot <sup>f</sup> ; Mithigu <sup>g</sup>	Fruits		Johns & Kokwaro, 1990; Morgan, 1981; Shumsky et al., 2014
<b>Boraginaceae</b>	<i>Cordia Africana</i> Lam.	Ibolinga <sup>d</sup>	Fruits		Anthrop et al 2011
	<i>Cordia crenata</i> Warfa	Ebit-osin <sup>f</sup>	Fruits		Morgan, 1981
	<i>Cordia monoica</i> Roxb.	Se'eki <sup>d</sup>	Fruits		Anthrop et al 2011
	<i>Cordia sinensis</i> Lam.	Silapani <sup>d</sup> ; Edome <sup>f</sup>	Fruits		Anthrop et al 2011; Morgan, 1981
<b>Brassicaceae</b>	<i>Brassica oleracea</i> L.	Serot <sup>c</sup>	Leaves	Used as vegetables	Marshall, 2001
	<i>Iberis linifolia</i> L.	Njuria <sup>g</sup>	Fruits		Shumsky et al., 2014
<b>Burseraceae</b>	<i>Boswellia hildebrandtii</i> Engl.	Silalei <sup>d</sup>	Gum		Anthrop et al 2011
	<i>Boswellia neglecta</i> S.Moore	Ekinyate <sup>f</sup>	Gum	Chewed	Morgan, 1981
	<i>Commiphora Africana</i> (A.Rich.) Endl.	Loishimi <sup>d</sup>	Shoot		Anthrop et al 2011
	<i>Commiphora baluensis</i> Engl.	Laireval <sup>d</sup>	Fruits		Anthrop et al 2011
	<i>Commiphora edulis</i> (Engl.) J.B.Gillett	Laiyama <sup>i</sup> <sup>d</sup>	Fruits		Anthrop et al 2011
	<i>Commiphora mollis</i> (Oliv.) Engl.	Lamanera <sup>d</sup>	Fruits		Anthrop et al 2011
	<i>Commiphora schimperi</i> (O.Bergman) Engl.	Lekola <sup>d</sup>	Shoot		Anthrop et al 2011
	<i>Commiphora erythraea</i> (Ehrenb.) Engl.	Ipeisharr <sup>d</sup>	Fruits		Anthrop et al 2011
<b>Cactaceae</b>	<i>Opuntia ficus</i> (L.) Mill.	Mwatsa (Dur) <sup>a</sup> ; Ntugia <sup>g</sup>	Fruits	Eaten raw	Pakia & Cooke, 2003; Shumsky et al., 2014
<b>Campanulaceae</b>	<i>Cyphia glandulifera</i> Hochst. ex A.Rich.	Ikurjij <sup>d</sup>	Roots		Anthrop et al 2011
<b>Cannabaceae</b>	<i>Celtis Africana</i> Burm.f.	Loisiteti <sup>d</sup>	Fruits		Anthrop et al 2011
<b>Capparaceae</b>	<i>Boscia coriacea</i> Graells	Edea <sup>f</sup>	Fruits	Boiled	Morgan, 1981
	<i>Capparis aegyptia</i> Lam.	Lang'o <sup>e</sup>	Fruits		Johns & Kokwaro, 1990
	<i>Capparis erythrocarpos</i> L.	Ong'ono <sup>e</sup>	Fruits		Johns & Kokwaro, 1990
	<i>Capparis tomentosa</i> Lam.		Fruits	Eaten raw	Bussmann, 2006

	<i>Macladium kirkii</i> (Harv.) S.Ortiz	Lokorkor <sup>d</sup>	Fruits		Anthrop et al 2011
	<i>Maerua decumbens</i> (Brongn.) DeWolf	Nthana <sup>g</sup>	Fruits		Shumsky et al., 2014
	<i>Maerua denhardtiorum</i> Gilg	Idaaloma <sup>d</sup>	Fruits		Anthrop et al 2011
	<i>Maerua edulis</i> (Gilg & Gilg-Ben.) DeWolf	Lamuegi <sup>d</sup> ; Amoyo <sup>e</sup>	Fruits		Anthrop et al 2011; Johns & Kokwaro, 1990
	<i>Maerua subcordata</i> (Gilg) DeWolf	Erut <sup>f</sup>	Fruits	Boiled	Morgan, 1981
	<i>Quadrella cynophallophora</i> Hutch.	Rabuor <sup>e</sup>	Fruits		Johns & Kokwaro, 1990
	<i>Thilachium africanum</i> Lour.	Sakarantei <sup>d</sup>	Fruits Roots	Human food	Anthrop et al 2011; Pakia & Cooke, 2003
<b>Caricaceae</b>	<i>Carica papaya</i> L.	Lipaipai <sup>b</sup>	Roots	Human food	Shiracko et al., 2016
<b>Caryophyllaceae</b>	<i>Pollichia campestris</i> Aiton	Nkayakuj <sup>d</sup>	Fruits		Anthrop et al 2011
<b>Celastraceae</b>	<i>Cassine aethiopica</i> Thunb.	Achond-rateng <sup>ie</sup>	Fruits		Johns & Kokwaro, 1990
<b>Cleomaceae</b>	<i>Cleome gynandra</i> L.	Akeyo, alot dek <sup>e</sup> ; Isaakeek <sup>c</sup> ; Tsisaka <sup>b</sup>	Leaves	Used as vegetables	Johns & Kokwaro, 1990 Marshall, 2001 Shiracko et al., 2016
<b>Clusiaceae</b>	<i>Garcinia livingstonei</i> T.Anderson	Mfidzofidzo (Dur/Dig); Mufodzohi (Gir) <sup>a</sup>	Fruits	Eaten raw	Pakia & Cooke, 2003
<b>Combretaceae</b>	<i>Combretum aculeatum</i> Vent.	Nthigora <sup>g</sup>	Fruits		Shumsky et al., 2014
	<i>Terminalia spinosa</i> Engl.	Epetait <sup>f</sup>	Stem	Used to make tea	Morgan, 1981
<b>Commelinaceae</b>	<i>Commelina africana</i> L.	Odielo <sup>e</sup>	Leaves	Used as vegetables	Johns & Kokwaro, 1990
	<i>Commelina benghalensis</i> L.	Odielo <sup>e</sup> ; Nkengejia <sup>g</sup>	Leaves	Used as vegetables	Johns & Kokwaro, 1990; Shumsky et al., 2014
	<i>Commelina tricolor</i> E.Barnes	Apoth <sup>e</sup>	Leaves	Used as vegetables	Johns & Kokwaro, 1990
<b>Convolvulaceae</b>	<i>Cucurbita pepo</i> L.		Leaves	Used as vegetables	Marshall, 2001
	<i>Ipomoea batatas</i> (L.) Lam.	Amapwoni <sup>b</sup>	Fruits Leaves	Eaten ripe Used as vegetables	Kathambi et al., 2020; Shiracko et al., 2016
	<i>Ipomoea mombassana</i> Vatke	Maturankunu(rutur ankuru, kukurankunu) <sup>g</sup>	Leaves	Used as vegetables	Shumsky et al., 2014
	<i>Ipomoea oenotherae</i> Hallier f.	Leropij <sup>d</sup> ; Ongeny <sup>e</sup>	Roots Fruits		Anthrop et al 2011; Johns & Kokwaro, 1990
<b>Cucurbitaceae</b>	<i>Odonellia eriocephala</i> (Moric.) K.R. Robertson	Nayopowal <sup>d</sup>	Roots		Anthrop et al 2011
	<i>Coccinia adoensis</i> (Hochst. ex A. Rich.) Cogn.	Mutkuru <sup>e</sup>	Leaves	Used as vegetables	Johns & Kokwaro, 1990

	<i>Coccinia grandiflora</i> Cogn. ex Engl.	Sanate <sup>d</sup>	Roots		Anthrop et al 2011
	<i>Cucumella</i> sp.	Nkalaiyoi <sup>d</sup>	Fruits		Anthrop et al 2011
	<i>Cucumis</i> sp.	Laiseraruai <sup>d</sup>	Fruits		Anthrop et al 2011
	<i>Cucumis dipsaceus</i> Ehrenb. ex Spach	Ekaleruk <sup>f</sup>	Seeds	Eaten raw	Morgan, 1981
	<i>Cucurbita maxima</i> L.	Lisebebe <sup>b</sup>	Stem	Used as vegetables	Shiracko et al., 2016
	<i>Kedrostis foetidissima</i> (Jacq.) Cogn.	Likunietse <sup>b</sup>	Leaves	Used as vegetables	Shiracko et al., 2016
	<i>Momordica trifoliolata</i> Hook. f.	Eriko <sup>f</sup>	Fruits		Morgan, 1981
	<i>Peponium vogelii</i> (Hook.f.) Engl.	Ikurshaeti <sup>d</sup>	Fruits		Anthrop et al 2011
	<i>Pseudosicydium acariianthum</i> Harms	Mucungurira <sup>g</sup>	Leaves	Used as vegetables	Shumsky et al., 2014
	<i>Zehneria anomala</i> C. Jeffrey	Imelapale <sup>d</sup>	Fruits		Anthrop et al 2011
<b>Cyperaceae</b>	<i>Kyllinga alba</i> Nees	Ikurt-neput <sup>d</sup>	Roots		Anthrop et al 2011
	<i>Kyllinga comosipes</i> (Mattf. & Kük.) Napper	Neput <sup>d</sup>	Roots		Anthrop et al 2011
	<i>Vincetoxicum tuberculatum</i> L.		Fruits	Eaten raw	Bussmann, 2006
<b>Dichapetalaceae</b>	<i>Dichapetalum zenkeri</i> Engl.	Mtundukula (Dur); Mtsonga-nyomba (Dig) <sup>a</sup>	Fruits	Eaten raw	Pakia & Cooke, 2003
<b>Dioscoreaceae</b>	<i>Dioscorea cayennensis</i> Lam.		Fruits	Eaten ripe	Kathambi et al., 2020
	<i>Dioscorea dumetorum</i> (Kunth) Pax		Roots	Human food	Pakia & Cooke, 2003
<b>Ebenaceae</b>	<i>Diospyros bussei</i> Gürke	Mukulu (Dur/Gir); Mkulu (Dig) <sup>a</sup>	Fruits	Eaten raw	Pakia & Cooke, 2003
	<i>Diospyros mespiliformis</i> Hochst. ex A.DC.	Makoro <sup>g</sup>	Fruits		Shumsky et al., 2014
	<i>Diospyros natalensis</i> (Harv.) Brenan	Katsungwi-ka- tsakani/Mutsungwi (Gir) <sup>a</sup>	Fruits	Eaten raw	Pakia & Cooke, 2003
	<i>Diospyros squarrosa</i> Klotzsch	Mdzungu-muho (Dur); Mupweke (Dur/Gir); Mpweke (Dig) <sup>a</sup>	Fruits	Eaten raw	Pakia & Cooke, 2003
	<i>Euclea divinorum</i> Hiern		Fruits	Eaten raw	Bussmann et al., 2006
<b>Euphorbiaceae</b>	<i>Acalypha indica</i> L.	Louyongorok <sup>f</sup>	Leaves		Morgan, 1981
	<i>Acalypha volkensii</i> Pax	Dindi <sup>e</sup>	Leaves	Used as vegetables	Johns & Kokwaro, 1990
	<i>Croton pseudopulchellus</i> Pax		Stem	Used to flavour to milk	Pakia & Cooke, 2003
	<i>Erythrococca bongensis</i> Pax	Hariadho <sup>e</sup>	Fruits Leaves	Eaten raw Used as vegetables	Bussmann et al., 2006 Johns & Kokwaro, 1990
	<i>Tragia impedita</i> Prain	Ntugia <sup>g</sup>	Fruits		Shumsky et al., 2014

**Fabaceae**

<i>Acacia drepanolobium</i> Sjostedt	Luai <sup>d</sup>	Roots		Anthrop et al 2011
<i>Acacia horrida</i> (Chiov.) Hillc. & Brenan	Imarti <sup>d</sup>	Roots		Anthrop et al 2011
<i>Acacia reficiens</i> (Vatke) Brenan	Nchorai <sup>d</sup>	Stem		Anthrop et al 2011
<i>Acacia Senegal</i> (L.) Willd.	Iderikesi <sup>d</sup> ; Irumu <sup>g</sup>	Gum Fruits		Anthrop et al 2011; Shumsky et al., 2014
<i>Acacia tortilis</i> (Forssk.) Hayne	Itepes <sup>d</sup> ; Ewoi <sup>f</sup>	Seeds Nuts	Nuts eaten	Anthrop et al 2011; Morgan, 1981
<i>Bauhinia thonningii</i> Schum.	Makuura <sup>g</sup>	Fruits		Shumsky et al., 2014
<i>Clitoria ternatea</i> L.	Mparia <sup>g</sup>	Leaves	Used as vegetables	Shumsky et al., 2014
<i>Craibia laurentii</i> (De Wild.) De Wild.	Mamvaatei <sup>d</sup>	Nuts	Eaten	Anthrop et al 2011
<i>Crotalaria brevidens</i> Benth.	Emiroo <sup>b</sup>	Leaves	Used as vegetables	Shiracko et al., 2016
<i>Dialium orientale</i> Baker f.		Fruits	Eaten raw	Pakia & Cooke, 2003
<i>Indigofera lupatana</i> Baker f.	Rugoya <sup>g</sup>	Leaves	Used as vegetables	Shumsky et al., 2014
<i>Lablab purpureus</i> (L.) Sweet	Ihranda <sup>b</sup> ; Lalandei <sup>d</sup>	Leaves Seeds	Used as vegetables	Shiracko et al., 2016; Anthrop et al 2011
<i>Mucuna gigantea</i> (Baker) Verdc.	Lairraachi <sup>d</sup>	Seeds		Anthrop et al 2011
<i>Searsia ruspolii</i> (Engl.) Moffett		Fruits	Eaten raw	Bussmann, 2006
<i>Senna bicapsularis</i> (L.) Roxb.	Angor angor <sup>e</sup>	Leaves	Used as vegetables	Johns & Kokwaro, 1990
<i>Senna didymobotrya</i> (Fresen.) H.S.Irwin & Barneby	Magendenakuru <sup>g</sup>	Leaves	Used as vegetables	Shumsky et al., 2014
<i>Senna occidentalis</i> (L.) Link	Nyayado, Ohingla- thiany <sup>e</sup>	Leaves	Used as vegetables	Johns & Kokwaro, 1990
<i>Tamarindus indica</i> L.	Mukwaju (Dur/Gir); Mkwadzu (Dig) <sup>a</sup> ; Uthithi <sup>g</sup>	Fruits Leaves	Used as vegetables	Pakia & Cooke, 2003; Shumsky et al., 2014
<i>Tephrosia holstii</i> Taub.		Fruits	Eaten raw	Bussmann, 2006
<i>Tephrosia pumila</i> (Lam.) Pers.	Nyangor <sup>e</sup>	Leaves	Used as vegetables	Johns & Kokwaro, 1990
<i>Vatovaea pseudolablab</i> (Harms) J.B.Gillett	Njiasi <sup>d</sup> ; Egilai <sup>f</sup>	Roots	Cooked	Anthrop et al 2011; Morgan, 1981
<i>Vigna frutescens</i> A.Rich.	Nannyoi <sup>d</sup>	Roots		Anthrop et al 2011
<i>Vigna membranacea</i> A.Rich.	Lisoiya <sup>d</sup> ; Mathorokwe <sup>g</sup>	Leaves Roots	Used as vegetables	Anthrop et al 2011; Shumsky et al., 2014
<i>Vigna praecox</i> Verdc.	Ngapanga <sup>d</sup>	Roots		Anthrop et al 2011
<i>Vigna schimperi</i> Baker		Roots	Eaten raw	Bussmann, 2006



	<i>Vigna subterranean</i> (L.) Verdc.	Tsimbande <sup>b</sup>	Leaves	Food and nutritional supplement	Shiracko et al., 2016
	<i>Vigna unguiculata</i> (L.) Walp.	Likhubi <sup>b</sup>	Leaves	Used as vegetables	Shiracko et al., 2016
<b>Geraniaceae</b>	<i>Pelargonium quinquelobatum</i> Hochst. ex Rich.	Naseisho <sup>d</sup>	Leaves		Anthrop et al 2011
<b>Hydnoraceae</b>	<i>Hydnora abyssinica</i> A.Br.	Oyusu, Osuyo <sup>e</sup>	Fruits		Johns & Kokwaro, 1990
<b>Hypericaceae</b>	<i>Harungana madagascariensis</i> Lam. ex Poir.		Fruits	Eaten ripe	Kathambi et al., 2020
<b>Icacinaceae</b>	<i>Pyrenacantha kaurabassana</i> Baill.	Mathuma-mbiti <sup>g</sup>	Leaves	Used as vegetables	Shumsky et al., 2014
<b>Lamiaceae</b>	<i>Hoslundia opposita</i> Vahl	Njode <sup>d</sup> ; Ofwong'o N'gwewny <sup>e</sup> ; Mjongolo (Dur); Mutserere (Gir); Mtserere (Dig) <sup>a</sup>	Fruits	Eaten raw	Anthrop et al 2011; Johns & Kokwaro, 1990; Pakia & Cooke, 2003
	<i>Premna resinosa</i> (Hochst.) Schauer	Lomonera <sup>d</sup>	Fruits		Anthrop et al 2011
	<i>Vitex mombassae</i> Vatke	Mufudu-madzi (Dur/Gir); Mfudu-madzi (Dig) <sup>a</sup>	Fruits	Eaten raw	Pakia & Cooke, 2003
	<i>Vitex payos</i> (Lour.) Merr.	Mufudu (Dur); Mufudu-unga (Dur/Gir); Mfudu/Mfudu-unga (Dig) <sup>a</sup> Mpuuru <sup>g</sup>	Fruits	Eaten raw	Pakia & Cooke, 2003; Shumsky et al., 2014
<b>Lauraceae</b>	<i>Persea americana</i> Mill.	Mukado <sup>b</sup>	Fruits	Human food	Shiracko et al., 2016
<b>Loganiaceae</b>	<i>Strychnos madagascariensis</i> Poir.	Nkumangao <sup>g</sup>	Fruits		Shumsky et al., 2014
<b>Malvaceae</b>	<i>Adansonia digitata</i> L.	Kathangacini <sup>h</sup> ; Muuyu (Dur/Gir/Dig); Mkulu-kazingwa (Dig) <sup>a</sup> ; Uramba <sup>g</sup>	Fruits	Eaten ripe	Kathambi et al., 2020; Pakia & Cooke, 2003; Shumsky et al., 2014;
	<i>Azanza garckeana</i> (F.Hoffm.) Exell & Hillc.	Matoo <sup>g</sup>	Fruits		Shumsky et al., 2014
	<i>Corchorus olitorius</i> L.	Chikosho (Dur) <sup>a</sup> ; Omerere <sup>b</sup>	Leaves	Used as vegetables	Pakia & Cooke, 2003; Shiracko et al., 2016
	<i>Grewia damine</i> Gaertn.	Siteti <sup>d</sup> ; Ekali/Epat <sup>f</sup> ; Ndagwa, Ndawa <sup>g</sup>	Fruits	Eaten raw	Anthrop et al 2011; Bussmann et al., 2006; Morgan, 1981; Shumsky et al., 2014
	<i>Grewia lilacina</i> K.Schum.	Ikalukaloi <sup>d</sup>	Fruits		Anthrop et al 2011
	<i>Grewia similis</i> K.Schum.	Irri <sup>d</sup> ; Aroya, Aroyo <sup>e</sup> ; Ndura <sup>g</sup>	Fruits		Anthrop et al 2011; Johns & Kokwaro, 1990; Shumsky et al., 2014

	<i>Grewia tembensis</i> Fresen.	Irrid <sup>d</sup> ; Egomo/Emalokere <sup>f</sup>	Fruits	Eaten raw	Anthrop et al 2011; Bussmann et al., 2006; Morgan, 1981
	<i>Grewia tenax</i> (Forssk.) Fiori	Laitevai <sup>d</sup> ; Egomo/Emalokere <sup>f</sup>	Fruits	Eaten raw	Anthrop et al 2011; Morgan, 1981
	<i>Grewia trichocarpa</i> Hochst. ex A.Rich.	Ipalanema <sup>d</sup>	Fruits		Anthrop et al 2011
	<i>Grewia villosa</i> Willd.	Mbuu <sup>g</sup> ; Epokoo/Epongae <sup>f</sup>	Fruits	Eaten raw	Shumsky et al., 2014; Morgan, 1981
	<i>Hibiscus greenwayi</i> Baker f.	Erigen-majoi <sup>d</sup>	Stem		Anthrop et al 2011
	<i>Sida acuta</i> Burm.f.	Adongo nyar yuoro <sup>e</sup>	Leaves	Used as vegetables	Johns & Kokwaro, 1990
	<i>Sterculia rhynchocarpa</i> K.Schum.	Etete <sup>f</sup>	Fruits		Morgan, 1981
	<i>Sterculia stenocarpa</i> H.J.P. Winkl.	Ikaraasia <sup>d</sup>	Fruits		Anthrop et al 2011
	<i>Thespesia danis</i> Oliv.	Muhowe (Dur/Gir/Dig); Muhohe (Gir) <sup>a</sup>	Fruits	Eaten raw	Pakia & Cooke, 2003
<b>Meliaceae</b>	<i>Turraea abyssinica</i> Hochst.		Fruits	Eaten raw	Bussmann, 2006
<b>Menispermaceae</b>	<i>Chasmanthera dependens</i> Hochst.	Lobito <sup>d</sup>	Stem		Anthrop et al 2011
	<i>Tinospora caffra</i> (Miers) Troupin	Imungrit <sup>d</sup>	Stem		Anthrop et al 2011
<b>Moraceae</b>	<i>Dorstenia turbinata</i> Engl.	Imangarit <sup>d</sup>	Roots		Anthrop et al 2011
	<i>Ficus glumosa</i> Delile	Eletan <sup>d</sup>	Fruits		Anthrop et al 2011
	<i>Ficus sur</i> Forssk.	Ideasan <sup>d</sup> ; Ng'owo <sup>e</sup> ; Makuyu <sup>g</sup>	Fruits		Anthrop et al 2011; Johns & Kokwaro, 1990; Shumsky et al., 2014
	<i>Ficus sycomorus</i> L.	Ingaboli <sup>d</sup>	Fruits		Anthrop et al 2011
<b>Musaceae</b>	<i>Musa paradisiaca</i> L.	Liramwa <sup>b</sup>	Stem	Human food	Shiracko et al., 2016
<b>Myrtaceae</b>	<i>Psidium guajava</i> L.	Mapera <sup>e</sup> ; Lipera <sup>b</sup>	Fruits	Human food	Johns & Kokwaro, 1990; Shiracko et al., 2016
	<i>Syzygium cumini</i> Skeels	Zambarau <sup>b</sup>	Fruits	Human food	Shiracko et al., 2016
	<i>Syzygium guineense</i> (Willd.) DC.		Fruits	Eaten raw	Pakia & Cooke, 2003
<b>Nepenthaceae</b>	<i>Nepenthes × trichocarpa</i> Miq.	Powo <sup>e</sup>	Fruits		Johns & Kokwaro, 1990
<b>Nymphaeaceae</b>	<i>Nymphaea lotus</i> L.	Gurum <sup>f</sup>	Roots	Eaten fresh or boiled	Morgan, 1981
<b>Ochnaceae</b>	<i>Ochna mossambicensis</i> Klotzsch	Mucherere (Gir); Mtsometsome (Dig) <sup>a</sup>	Fruits	Eaten raw	Pakia & Cooke, 2003

<b>Olacaceae</b>	<i>Ximenia americana</i> L.	Laamai <sup>d</sup> ; Olemo <sup>e</sup> ; Mutundukula (Dur/Gir); Mdhoto (Gir); Mtundukula (Dig) <sup>a</sup> ; Nkunduthi <sup>g</sup>	Fruits	Eaten raw	Anthrop et al 2011; Bussmann et al., 2006; Johns & Kokwaro, 1990; Pakia & Cooke, 2003; Shumsky et al., 2014
	<i>Ximenia caffra</i> Sond.	Imunguchi <sup>d</sup>	Fruits		Anthrop et al 2011
<b>Onagraceae</b>	<i>Ludwigia adscendens</i> (Forssk.) P.H.Raven	Nyasigumba <sup>e</sup>	Leaves	Used as vegetables	Johns & Kokwaro, 1990
<b>Opiliaceae</b>	<i>Opilia campestris</i> Engl.	Ipokeni <sup>d</sup>	Fruits		Anthrop et al 2011
<b>Passifloraceae</b>	<i>Adenia volkensii</i> Harms	Loarakimak <sup>f</sup>	Fruits	Cooked	Morgan, 1981
<b>Pedaliaceae</b>	<i>Sesamum calycinum</i> (Oliv.) Ihlenf. & Seidenst.	Onyulo <sup>e</sup>	Leaves	Used as vegetables	Johns & Kokwaro, 1990
<b>Phyllanthaceae</b>	<i>Bridelia cathartica</i> Bertol.	Mkalakala (Dur/Gir); Musimbiji (Gir); Mwambeberu (Dig) <sup>a</sup>	Fruits	Eaten raw	Pakia & Cooke, 2003
	<i>Bridelia micrantha</i> (Hochst.) Baill.	Athuno <sup>e</sup>	Fruits		Johns & Kokwaro, 1990
	<i>Bridelia taitensis</i> Vatke & Pax ex Pax	Njee <sup>g</sup>	Fruits		Shumsky et al., 2014
	<i>Flueggea virosa</i> (Roxb. ex Willd.) Royle	Ikelebuki <sup>d</sup> ; Kagena <sup>e</sup> ; Makururu <sup>g</sup>	Fruits	Human food	Anthrop et al 2011; Johns & Kokwaro, 1990; Shumsky et al., 2014
<b>Poaceae</b>	<i>Eleusine coracana</i> (L.) Gaertn.	Obulee <sup>b</sup>	Leaves		Shiracko et al., 2016
	<i>Hyparrhenia cymbaria</i> (L.) Stapf	Abool <sup>e</sup>	Leaves	Used as vegetables	Johns & Kokwaro, 1990
	<i>Poa tennantiana</i> Petrie	Ntuunka <sup>g</sup>	Fruits		Shumsky et al., 2014
	<i>Sorghum bicolor</i> (L.) Moench	Amabelee <sup>b</sup>	Stem	Human food	Shiracko et al., 2016
<b>Polygonaceae</b>	<i>Oxygonum sinuatum</i> (Hochst. & Steud ex Meisn.) Dammer	Nchonge <sup>d</sup> ; Nyatiend-gweno; okuro <sup>e</sup> ; Ngonko <sup>g</sup>	Leaves	Used as vegetables	Anthrop et al 2011; Johns & Kokwaro, 1990; Shumsky et al., 2014
	<i>Rumex nepalensis</i> Spreng.	kapsereyuek <sup>c</sup>	Leaves	Used as vegetables	Marshall, 2001
	<i>Rumex usambarensis</i> (Dammer) Dammer	Mintonnik <sup>c</sup>	Leaves	Used as vegetables	Marshall, 2001
<b>Portulacaceae</b>	<i>Portulaca quadrifolia</i> L.	Obwanda <sup>e</sup>	Leaves	Used as vegetables	Johns & Kokwaro, 1990
<b>Putranjivaceae</b>	<i>Drypetes gerrardii</i> Hutch.	Itulelei <sup>d</sup>	Fruits		Anthrop et al 2011
<b>Rhamnaceae</b>	<i>Berchemia discolor</i> (Klotzsch) Hemsl.	Santaiti <sup>d</sup> ; Nthwana <sup>g</sup> ; Kiagu <sup>h</sup>	Fruits	Eaten ripe	Anthrop et al 2011; Shumsky et al., 2014; Kathambi et al., 2020
	<i>Scutia myrtina</i> (Burm.f.) Kurz	Migodha <sup>e</sup>	Fruits		Johns & Kokwaro, 1990
	<i>Ziziphus mucronate</i> Willd.	Loilalei (Idelendei) <sup>d</sup> ; Buyu <sup>g</sup>	Fruits		Anthrop et al 2011; Shumsky et al., 2014

<b>Rosaceae</b>	<i>Ziziphus pubescens</i> Oliv.	Mugogodera (Dur) <sup>a</sup>	Fruits	Eaten raw	Pakia & Cooke, 2003
	<i>Potentilla inclinata</i> Vill.	Lomonera <sup>d</sup>	Fruits		Anthrop et al 2011
	<i>Rubus apetalus</i> Poir.		Fruits	Eaten raw	Bussmann, 2006
	<i>Rubus rigidus</i> Sm.	Nkaakut <sup>d</sup>	Fruits		Anthrop et al 2011
<b>Rubiaceae</b>	<i>Rubus apetalus</i> Poir.		Fruits	Eaten raw	Bussmann, 2006
	<i>Vangueria madagascariensis</i> J.F. Gmel.	Mbiru <sup>g</sup>	Fruits		Shumsky et al., 2014
	<i>Bullockia setiflora</i> (Hiern) Razafim., Lantz & B.Bremer	Imejoi <sup>d</sup>	Fruits		Anthrop et al 2011
	<i>Heinsia crinite</i> (Afzel.) G. Taylor	Mfyefye (Dur); Mulanza (Gir); Mfyofyo (Dig) <sup>a</sup>	Fruits	Eaten raw	Pakia & Cooke, 2003
	<i>Ixora macrantha</i> (Steud.) Bremek.	Loiswashi <sup>d</sup>	Roots		Anthrop et al 2011
	<i>Keetia gueinzii</i> (Sond.) Bridson	Achokra, Anyuka <sup>e</sup>	Fruits		Johns & Kokwaro, 1990
	<i>Lamprothamnus zanguebaricus</i> Hiern	Mutsome (Dur); Munyukufu (Gir); Mtsome (Dig) <sup>a</sup>	Fruits	Eaten raw	Pakia & Cooke, 2003
	<i>Meyna tetraphylla</i> (Schweinf. ex Hiern) Robyns	Nkurungu <sup>e</sup>	Fruits	Eaten ripe	Kathambi et al., 2020; Shumsky et al., 2014
	<i>Pavetta gardeniifolia</i> Hochst. ex A. Rich.	Lokodatei <sup>d</sup>	Fruits		Anthrop et al 2011
	<i>Polysphaeria parvifolia</i> Hiern	Mmangitovu/Mma ngomango (Dur); Mumangwi (Gir); Mtsonganyomba (Dig) <sup>a</sup>	Fruits	Eaten raw	Pakia & Cooke, 2003
	<i>Uncaria Africana</i> G.Don	Loilailei <sup>d</sup>	Fruits		Anthrop et al 2011
	<i>Vangueria apiculate</i> K.Schum.		Fruits	Eaten raw	Bussmann, 2006
	<i>Vangueria infausta</i> Burch.	Muviru (Dur/Dig) <sup>a</sup>	Fruits	Eaten raw	Bussmann et al., 2006; Pakia & Cooke, 2003
	<b>Rutaceae</b>	<i>Vangueria loranthifolia</i> K.Schum.	Imurgusiyaet (Imejoi) <sup>d</sup>	Fruits	
<i>Vangueria madagascariensis</i> J.F. Gmel.		Lormosiyoi <sup>d</sup>	Fruits	Eaten raw	Anthrop et al 2011; Bussmann, 2006
<i>Citrus sinensis</i> (L.) Osbeck			Fruits	Eaten ripe	Kathambi et al., 2020
<i>Zanthoxylum chalybeum</i> Engl.		Mudungu (Dur/Gir); Mdungu/Mjafari (Dig) <sup>a</sup>	Leaves	Used as vegetables	Pakia & Cooke, 2003
<b>Salicaceae</b>	<i>Dovyalis abyssinica</i> (A.Rich.) Warb.	Imolo <sup>d</sup> ; Akudho, Songola <sup>e</sup>	Fruits	Eaten raw	Anthrop et al 2011; Bussmann, 2006; Johns & Kokwaro, 1990
	<i>Flacourtia indica</i> (Burm.f.) Merr.	Munyondoya (Dig) <sup>a</sup>	Fruits	Eaten raw	Pakia & Cooke, 2003
<b>Salvadoraceae</b>	<i>Dobera glabra</i>	Edapal <sup>f</sup>	Fruits	Boiled	Morgan, 1981

	(Forssk.) Juss. ex Poir.				
	<i>Dobera loranthifolia</i> (Warb.) Harms		Fruits	Boiled	Morgan, 1981
	<i>Salvadora persica</i> L.	Sykotei <sup>d</sup> ; Esekon <sup>f</sup>	Fruits	Eaten raw	Anthrop et al 2011; Morgan, 1981
<b>Santalaceae</b>	<i>Viscum triflorum</i> DC.		Fruits	Eaten raw	Bussmann, 2006
<b>Sapindaceae</b>	<i>Allophylus triphyllus</i> (Burm.f.) Merr.	Masanabat <sup>d</sup>	Fruits		Anthrop et al 2011
	<i>Deinbollia borbonica</i> Scheff.	Mupalamwaka (Dur); Mdala- mwaka/Musukari; Mwenda-kuzimu (Gir); Mpwapwaka (Dig) <sup>a</sup>	Fruits	Eaten raw	Pakia & Cooke, 2003
	<i>Deinbollia kilimandscharica</i> Taub.	Ncuura <sup>g</sup>	Fruits		Shumsky et al., 2014
	<i>Haplocoelum foliolosum</i> (Hiern) Bullock	Imurguti <sup>d</sup>	Fruits		Anthrop et al 2011
	<i>Lecaniodiscus fraxinifolius</i> (Chiov.) Friis	Munyanyakanda (Dur); Mkwalino/Mbeleng a (Gir); Mremero (Dig) <sup>a</sup>	Fruits	Eaten raw	Pakia & Cooke, 2003
	<i>Lepisanthes senegalensis</i> (Poir.) Leenh.	Ochol <sup>e</sup>	Fruits		Johns & Kokwaro, 1990
<b>Sapotaceae</b>	<i>Manilkara discolor</i> (Sond.) J.H. Hemsl.	Regisi <sup>d</sup>	Fruits		Anthrop et al 2011
	<i>Manilkara mochisia</i> (Baker) Dubard	Munago (Dur/Gir); Mnago (Dig) <sup>a</sup>	Fruits	Eaten raw	Pakia & Cooke, 2003
	<i>Mimusops kummel</i> Bruce ex A.DC.	Nyabondo <sup>e</sup>	Fruits		Johns & Kokwaro, 1990
	<i>Mimusops obtusifolia</i> Lam.	Mugama-muho (Dur) <sup>a</sup>	Fruits	Eaten raw	Pakia & Cooke, 2003
	<i>Mimusops somalensis</i> Chiov.	Mugama (Dur); Mgama (Dig) <sup>a</sup>	Fruits	Eaten raw	Pakia & Cooke, 2003
<b>Solanaceae</b>	<i>Clitoria ternatea</i> L.	Nkunda, Nkuuda <sup>g</sup>	Leaves	Used as vegetables	Shumsky et al., 2014
	<i>Nicandra physalodes</i> Gaertn.	Osuga <sup>e</sup>	Leaves	Used as vegetables	Johns & Kokwaro, 1990
	<i>Physalis peruviana</i> L.	Nyatonglo-ojuo <sup>e</sup>	Fruits		Johns & Kokwaro, 1990
	<i>Solanum abancayense</i> Ochoa	nkerioi <sup>d</sup>	Roots		Anthrop et al 2011
	<i>Solanum coagulans</i> Forssk.	Esikele <sup>f</sup>	Seeds	Used to coagulate milk	Morgan, 1981
	<i>Solanum nigrum</i> L.		Fruits		Anthrop et al 2011

		Imoato <sup>d</sup> ; Osuga <sup>e</sup> ; Isooyiik <sup>c</sup> ; Munavu (Dur/ Dig) <sup>a</sup> ; Lisutsa <sup>b</sup>	Leaves	Used as vegetables	Johns & Kokwaro, 1990; Marshall n.d. 2001; Morgan, 1981; Pakia & Cooke, 2003; Shiracko et al., 2016
<b>Talinaceae</b>	<i>Talinum caffrum</i> (Thunb.) Eckl. & Zeyh.	Komba (Dur/Gir) <sup>a</sup>	Leaves	Used as vegetables	Pakia & Cooke, 2003
	<i>Talinum portulacifolium</i> (Forssk.) Asch. ex Schweinf.	Leshursin <sup>d</sup> ; Amondi <sup>e</sup>	Leaves	Used as vegetables	Anthrop et al 2011; Johns & Kokwaro, 1990; Pakia & Cooke, 2003
<b>Urticaceae</b>	<i>Pilea johnstonii</i> Oliv.	Toopiteek <sup>c</sup>	Leaves	Used as vegetables	Marshall, 2001
	<i>Urtica massaica</i> Mildbr.	Siweek <sup>c</sup>	Leaves	Used as vegetables	Marshall, 2001
<b>Verbenaceae</b>	<i>Forsskaolea viridis</i> Ehrenb. ex Desf.		Leaves	Used as vegetables	Morgan, 1981
	<i>Lantana camara</i> L.	Magwagwa, Tek-tagwari <sup>e</sup> ; Mushomoro (Dur/Gir); Mshomoro/Mjasasa (Dig) <sup>a</sup> ; Macimoro <sup>g</sup>	Fruits	Eaten raw	Johns & Kokwaro, 1990; Pakia & Cooke, 2003; Shumsky et al., 2014
<b>Vitaceae</b>	<i>Lantana trifolia</i> L.	Nkenia <sup>g</sup>	Fruits		Shumsky et al., 2014
	<i>Cissus rotundifolia</i> Vahl	Munyu <sup>e</sup>	Fruits		Johns & Kokwaro, 1990
	<i>Cyphostemma adenocaula</i> (Steud. ex A.Rich.) Desc. ex Wild & R.B.Drumm.	Batamukundo <sup>g</sup>	Fruits		Shumsky et al., 2014
	<i>Cyphostemma bambuseti</i> (Steud. ex A.Rich.) Desc. ex Wild & R.B.Drumm.		Leaves	Used as vegetables	Bussmann, 2006
	<i>Cyphostemma cyphopetalum</i> (Fresen.) Desc. ex Wild & R.B.Drumm.	Erodo <sup>f</sup>	Leaves	Used as vegetables	Morgan, 1981
	<i>Cyphostemma kilimandscharicum</i> (Gilg) Desc. ex Wild & R.B.Drumm.		Leaves	Used as vegetables	Bussmann, 2006
	<i>Cyphostemma serpens</i> (Hochst. ex A.Rich.) Desc.	Lorrpo <sup>d</sup> ; Alango, Obwombwe <sup>e</sup>	Fruits Leaves	Eaten raw Used as vegetables	Bussmann et al., 2006; Anthrop et al 2011; Johns & Kokwaro, 1990
<b>Zingiberaceae</b>	<i>Aframomum mala</i> (K.Schum. ex Engl.) K.Schum.	Osaye <sup>e</sup>	Fruits		Johns & Kokwaro, 1990
	<i>Balanites aegyptiaca</i> (L.) Delile	Othoo <sup>e</sup> ; Mbobua <sup>g</sup>	Fruits	Eaten ripe	Johns & Kokwaro, 1990; Kathambi et al., 2020; Shumsky et al., 2014
	<i>Balanites pedicellaris</i> Mildbr. & Schltr.		Fruits	Boiled	Morgan, 1981
	<i>Balanites rotundifolia</i> (Tiegh.) Blatt.	Salai <sup>d</sup> ; Ebeif <sup>f</sup>	Fruits	Boiled	Anthrop et al 2011; Morgan, 1981

Coast Region of Kenya<sup>a</sup>, Kakamega County<sup>b</sup>, Mau escarpment<sup>c</sup>, Northern Kenya<sup>d</sup>, Siaya district<sup>e</sup>, South Turkana<sup>f</sup>, Tharaka constituency<sup>g</sup>, Tharaka Nithi County<sup>h</sup>, Turkana<sup>i</sup>

### 3.4 Supplementary role of wild Food plants

Shumsky et al., (2014) reported the role of WFPs in solving food insecurity among the poor households in the arid and semi-arid areas and the correlation between household reliance on WFPs and their coping strategies during food shortages.

Study conducted by Bussman (2006) in the Samburu region of Mt. Nyiru, South Turkana, Kenya, shows that WFP are mainly consumed to supplement stocks (about 72%) and to fill food gaps (drought and famine, about 33%). Ordinary people consume the most mistletoe fruits (*Viscum triflorum*) as snack supplements or snacks. Bussman (2006) showed that the largest number of Samburu natives of Turkana sometimes remembered WFP as food from famine or starvation.

Kathambi et al., (2020) suggested that out of 31 specified WFP, 11 (49%) suitable for eating are tree and shrub species, 15 (32%) were used to supplement the general food supply. In general, the literature shows that wild ones suitable for food plants are usually used to supplement food. Study conducted by Shumskya (2013) have shown that the flower-eating safe wild mainly functions as a supplement in Kenya.

### 3.5 Regional differences

Reviewed articles report a wide variety of WFP; many WFP are used only through famine and are not consumed at regular intervals (Bussmann, 2006). The list of plants varies from region to region and may depend on climatic zone, cultural practices and the methods of preparation. 81% of the vegetables used were from the temperate climate zone mainly because

most vegetables are abundant during the wet seasons, 11% from the tropical climatic zones and 8% from the arid and the semi-arid areas. The communities that live in the arid and semi-arid regions are mainly hunters and gatherers (Marshall, 2001) and from the reviewed articles, they consumed 59% of the reported fruits which was mainly used by the young boys while in the field to look after cattle. Being hunters and gatherers, communities from the arid and semi-arid areas mainly depend on meat from their cattle's and only use vegetables as supplement or during drought and famine hence a lower dependency on wild vegetables as a source of food. However, the communities in the arid and semi-arid areas have an extensive use of gum unlike the other areas. For instance, *Ozoroa reticulata*, *Boswellia hildebrandtii*, *Acacia senegal* and *Boswellia neglecta* are a source of gum only among the Turkana and the Dorobo communities (Anthrop et al 2011).

Plants also have different eating conditions and times. With some wild plants dying continuously, even if they have significant food inventories, others are most likely to be consumed in severe food shortages and scarcity situations (Guinand & Lemessa, 2001). Plants that can be eaten daily are of considerable value during periods of food shortages at all levels. Wild plants best suited for human consumption documented in the Samburu region and Ngong region of Kenya are consumed regularly, respectively, and at a stage in which there is a shortage of food (Bussmann, 2006).

Assessments indicated that *Hyphaene compressa*, *Amaranthus dubtus*, *Cucubirtaceae spp.*, *Carissa edulis* and *Lannea floccosa* are some of the commonly used WFP in different parts of the country (Anthrop et al 2011).

*Harungana madagacariensis*, *Balanites aegyptica*, *Dioscorea cayennensis subsp. Rotundata*, *Ipomoea batatas*, *Meyna tetraphylla*, *Rubus pinnatus*, *Syzygium guineense* and



*Ziziphus mucronata* were the most commonly used nutritional supplements and food plants reported with the help of local residents in Kenya in the Tharaka Nithi region (Kathambi et al., 2020).

### 3.6 Edible parts of the Wild Food Plants.

Fruits, leaves and roots were the most widely used parts respectively. *Psidium guajava* is the most widely used fit (79.31) for fruits, including tubers and apical (3.45%), young shoots (6.90%), young shoots and fruits (3.45%), roots (3.45%) and gums 3.45%).

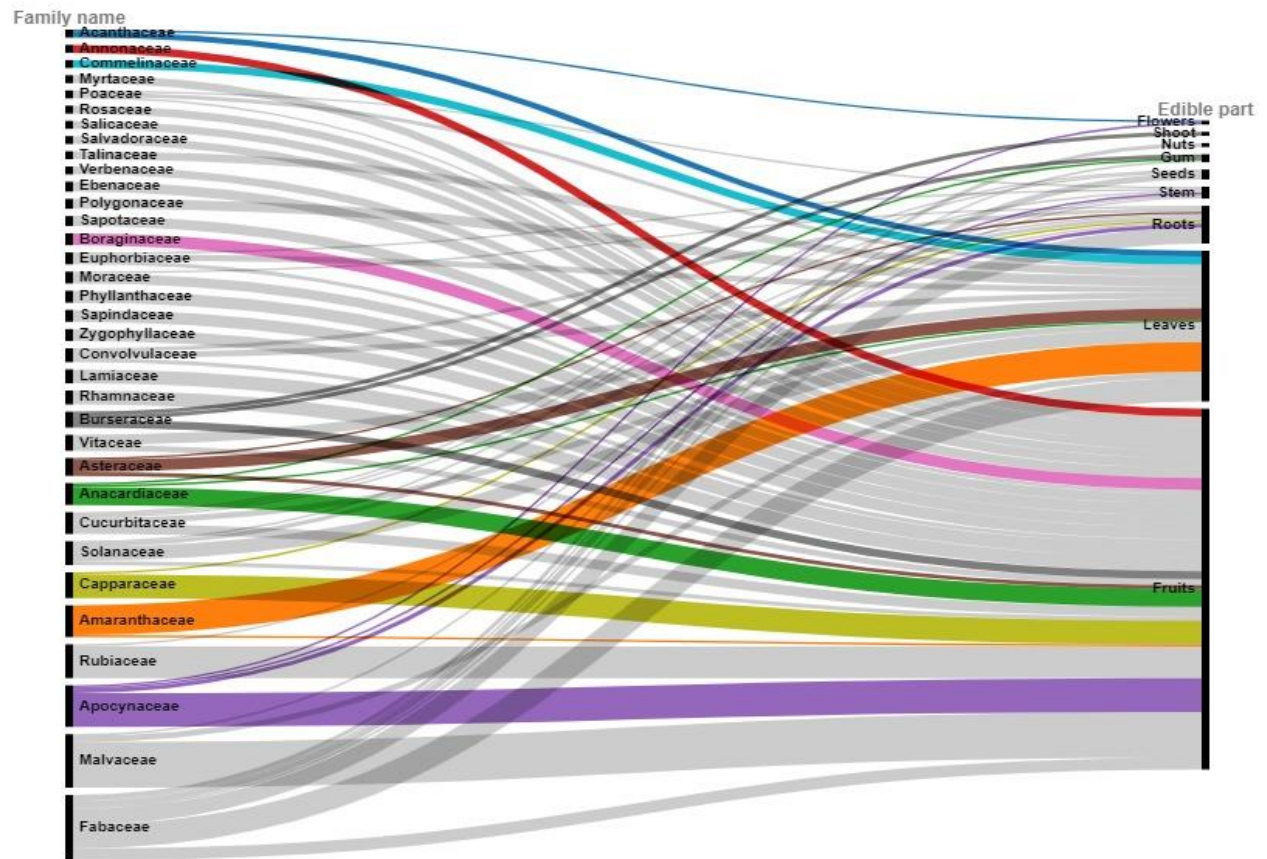


Figure 3. Plant parts eaten

### 3.7 Used as Vegetables

*Solanum nigrum* reported the highest number of species used as vegetable, cited in four articles. The preparation procedure of the leaves was similar in all the regions mainly through boiling to dryness, addition of Magadi soda, a sodium sesquicarbonate salt to soften the leaves and then frying (Johns & Kokwaro, 1990).

Other species that were mostly cited were *Amaranthus graecizans* (3), *Basella alba* (3) and *Cleome gynandra* (3) which were all boiled and fried and served with other accompaniments like meat, eggs and ugali (maize meal). *Asystasia mysorensis*, *Commelina africana*, *Oxygonum sinuatum* and *Portulaca quadrifolia* were mostly available in the humid tropical zones during the rainy seasons.

As shown in Figure 4, Amaranthaceae (23 %) had the highest number of species that cited WFPs used as vegetable. Other families that reported a greater number of species were Fabaceae (21%), Solanaceae (12 %) and Asteraceae (12 %).

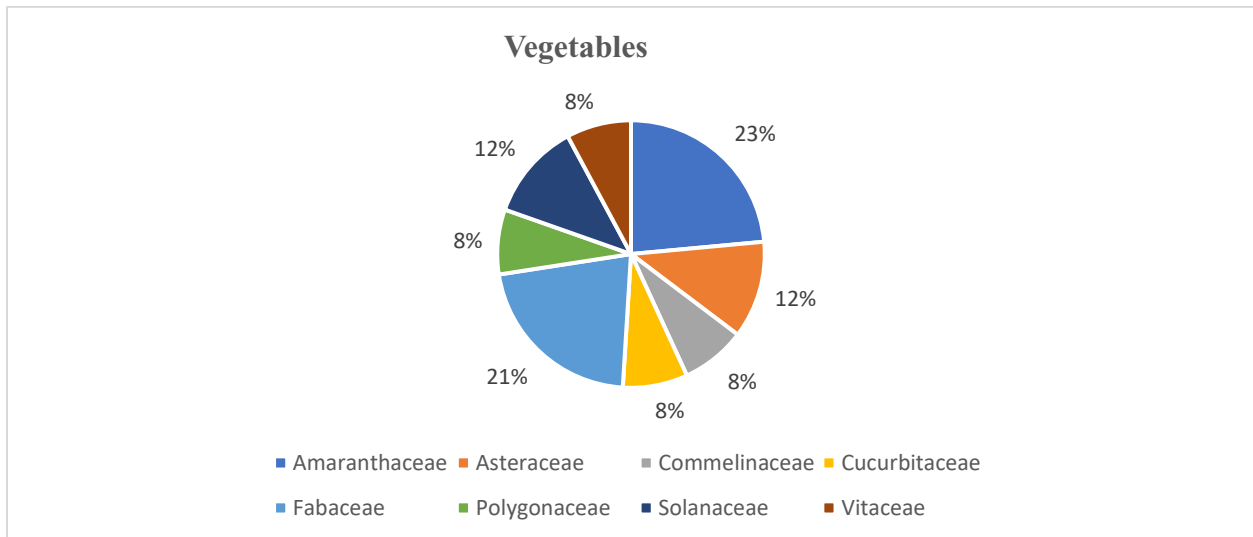


Figure 4. Families with greater number of species used as vegetables

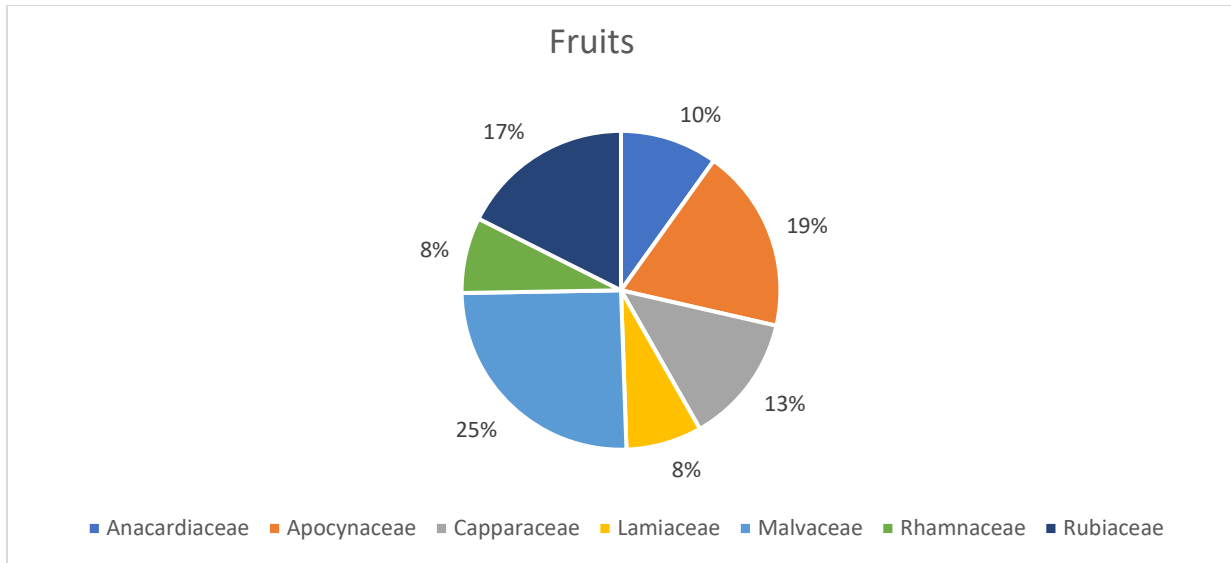
### 3.8 Wild Fruits

From the reviewed articles, the most common wild fruit was *Carissa spinarum*, cited in five articles. It is mainly eaten raw and was reported mainly in the arid and semi-arid regions of Kenya. Species of *Adenia volkensii*, *Balanites pedicellaris*, *Balanites rotundifolia*, *Boscia coriacea*, *Dobera glabra*, *Dobera loranthifolia* and *Maerua subcordata* were mainly boiled and re boiled several times before use.

The nuts of *Craibia laurentii* were used only after boiling several times with ashes, to remove the toxic substances they contain then eaten. Fruits of *Hyphaene compressa* was reported to be consumed by humans by crushing and eating the flesh or drinking the water inside to quench thirst during drought. The fruit was also ground into powder and used as a food additive.

*Persea americana*, *Psidium guajava* and *Syzygium cumini* were reported as human food in one article in Kakamega County. 59% of the fruits reported consumed was from the arid and semi-arid climatic zones, 18% from tropical climatic zones and 17% from the temperate zones.

As shown in Figure 5 below, Malvaceae (25%) had the highest number of species that cited WFPs used as fruits. Anacardiaceae (10%), Apocynaceae reported (19%), Capparaceae (13%) and Rubiaceae (17%).



*Figure 5. Families with greater number of species cited for use as fruits*

### 3.9 Roots

Northern Kenya reported the highest number of root consumption mainly eaten raw. 67% of the roots were consumed by the Dorobo community. The Luo and Abawanga communities did not appear to frequently use wild roots and tubers as a source of food.

As shown in figure 6, 50% of the roots cited were from Fabaceae family, Apocynaceae (12%), Convolvulaceae (12), Cyperaceae (13%) and Solanaceae (13%).

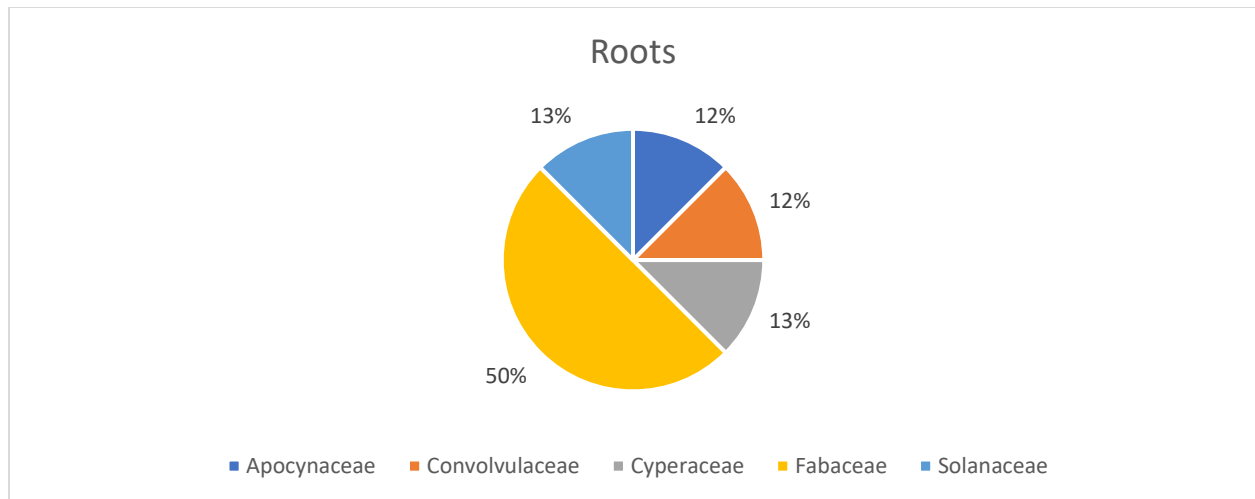


Figure 6. Families with greater number of species cited for use as roots

#### 4.0 Other plant parts

The flowers of *Mondia whitei* were mainly used by the Abawanga community as an appetizer.

The Mijikenda reported to use young shoots of *Croton pseudopulchellus* to flavour to milk. Species of *Ozoroa reticulata*, *Boswellia hildebrandtii*, *Boswellia neglecta* and *Acacia senegal* were reported to be used as a source of gum chewed mainly by the Dorobo community. The seeds of *Solanum coagulans* was used by the Turkana community mainly to coagulate milk.

As a result of the review, it is said that about 49 species (92%) are known to be eaten in American cuisine, while 4 species (8%) are cooked or processed and consumed. 52% is used raw as a snack, 19% is cooked, 16% is processed, and 12% of a given plant species is ready for use after certain processing and cooking steps.

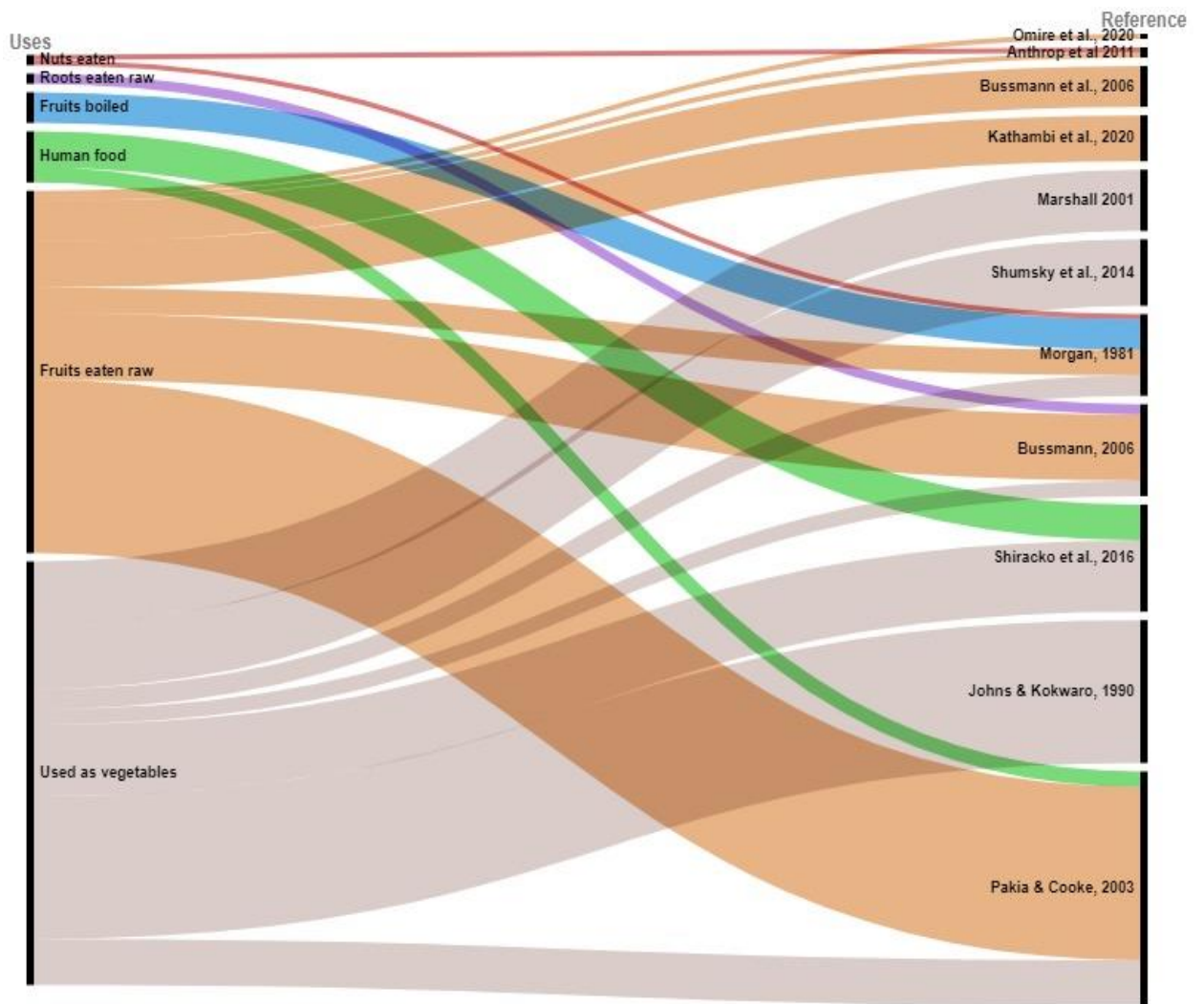


Figure 7. A graph showing sources that cited one specific

## DISCUSSION

The practice of eating WFP has been widely spread through communities living in rural and semi-urban Kenyan environments.

From the review, it has been observed that Fabaceae, Apocynaceae and Malvaceae are the commonly used families which could be attributed to the families having a high number of species therefore the probability of usage by the communities is high due to the wide variety of WFP they represent especially vegetables and the diverse variety of uses they can be put to (Lulekal et al., 2011).

Berkes et al., (2000) emphasized the role of lifestyle in shaping the types of WFP use. For instance, the farmer community and hunter and gatherer communities have different wild food plant use (Lulekal et al., 2011), including the widespread use of leafy vegetables popular in East and South Kenya due to the favourable climatic conditions for the growth of leafy vegetables in these regions. Preference for leafy vegetables is a common comment in all East Kenyan counties, and often referred to as herbs to refer to people's taste for leafy vegetables. Wild green vegetables are rarely used in Northern Kenya or in the arid region (Shumsky et al., 2013) because these areas do not receive adequate rainfall that favour the growth of wild green vegetables (Bvenura & Afolayan 2015).

The young shoots of *Asparagus acutifolius* are widely spread in Spain and are often served in omelettes however in Kenya, its roots are used only by one community in the arid regions of Kenya. Bvenura & Afolayan (2015) in South Africa has shown that Kenya and South Africa share most of the WFP species used as vegetables for instance the leaves of: *Asystasia gangetica*, *Amaranthus blitum*, *Amaranthus cruentus*, *Amaranthus dubius*, *Amaranthus*

*graecizans*, *Amaranthus hybridus*, *Amaranthus tricolor*, *Cleome gynandra* are mainly used as vegetables.

According to Tugume & Nyakoojo (2020), Solanaceae, Amaranthaceae and Rutaceae are the families that recorded the highest number of WFP in Uganda. *Amaranthus dubius*, *Basella alba*, *Tamarindus indica*, *Solanum nigrum*, *Psidium guajava* and *Mangifera indica* were reported to be extensively used in Both Kenya and Uganda. The preparation methods of most leaves used as vegetables were similar in Kenya through boiling and frying.

Research done in Ethiopia (Lulekal et al., 2011), indicated that Fabaceae was the family with the highest number of WFP used. The study also reported that 51% of the WFP were used as fruits, 23% as vegetables and 10 % as seeds. 413 WFP species were recorded from 77 families and 224 genera, showing that Ethiopia is diverse in terms of wild food plant use. This has shown that Kenya and Ethiopia have similarities in terms of WFP used. Integrating fruit bearing WFP to agricultural landscape has been reported in Uganda, Cameroon and Nigeria (Degrande et al., 2006; Agea et al., 2007). Kenya can also encourage the integration of WFP to agricultural landscapes as this can be a remedy to the issue of food insecurity.

The use of wild mushroom species in Kenya remains unexplored despite their extensive use. However, research from different countries for instance a study by (Tuno, 2001) in Ethiopia reported a wide use of wild edible mushroom by the Majanjir tribe.

#### 4.1 Threats and Challenges for Using Wild Food Plants

WFP are endangered by anthropogenic factors, including land use changes (farming land expansion), development activities (street construction and urbanization), habitat destruction (wood harvesting, firewood series wildfires), famine, overharvesting, and excessive grazing.



These are some of the important factors that diminish the diversity and density of WFPs. Adger and Vincent (2005) findings showed that agricultural activity and drought are important threats observed in addition to over-grazing and urbanization. Furthermore, Delang (2006) found that deforestation and human intrusion were assessed as first and second primary factors, respectively.

Regardless of accessibility and availability, the use of WFP has experienced difficulties with the help of many factors, Kiringe (2005) the main requirements were difficulty in collection, belief in choice, cultural lack of expertise, and lack of knowledge about the nutritional value of the WFPs.

#### 4.2 Including Wild Food Plants in National Food Security Policy

While assimilating WFP into food security plans is far more significant in the phrase environmental sustainability, the sector suffers from a crisis of climate change and dietary instability which can reduce the footprint of agriculture and allow movement, in addition towards a sustainable food security system (Brokensha & Riley, 2001). Malnutrition is the largest health burden in developing countries, and the popularity of ceremonial protection and biodiversity is linked to support the use of WFP.

The Kenyan diet is less diverse, high and low vegetable production, seasonality and irregularity prevent Kenyans from enjoying the consumption benefits they can get by consuming fruits and vegetables on a regular basis (Anthrop et al 2011). WFP can be eaten throughout the year and grow in drought-sensitive and water-pressure-sensitive environments, as well as cheaper and more nutritious fruit and vegetable. WFPs may substantially improve people's diet. Devineau et al. (2008) suggested that due to the variety of WFP, conservation and management techniques are needed to protect the diet using forest area resources. In general, assessments have

confirmed that dietary security and agriculture's guidelines should recognize the contribution of edible WFPs as one pillar to food security and full compliance.

## CONCLUSIONS

This study has identified 366 WFP reported from 11 different regions in Kenya representing a diverse ethnic community including: Abawanga, Ameru, Luo, Maasai, Mijikenda, Okiek, Samburu, Dorobo and Turkana. A total of 79 families and 183 genera were identified.

Despite the high use of WFP in Kenya, the documented information regarding the WFPs is limited and only covers a section of the country ethnic and climatic composition. This review has documented 366 WFP that were reported in the articles however this number can be increased if future studies cover all the regions and ethnic communities.

The review also identified a gap that some studies only focused on the names of the WFP and did not clearly outline the uses and the preparation methods of most WFP identified and therefore its recommended in the future studies to document the uses, taste, smell and colour as they play an important role in people accepting and integrating them into their diet. Future studies also need to document domestication of WFPs and their nutritional analysis in order to understand the potential of WFPs in combating food insecurity in Kenya.

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