



An Examination of the Changing Population Patterns, Plant Diversity and the Origins of Food Plants in Western Kenya since Pre-Colonial Times

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Abstract – This article aims at examining the link between the changes in diverse food and medicinal plants and the changing population patterns in Western Kenya region. The paper involved a comparative approach in a regional landscape (from Luhya, Luo and Gussi). The study employed desktop research approach, entailing careful study and analysis of published literature. Food and medicinal plants were identified by their origins, whether local or exotic. The paper has established a database of plants used as food and medicine by communities in Western Kenya, the Easter part of Great Lakes Region (GLR).

Keywords – Population, Plant Diversity, Food Plants, Indigenous, Vegetables.

I. INTRODUCTION

The last century has brought more change for the people of Kenya than perhaps any other before. Western culture and modern science and technology are encroaching on traditional practices and eroding local knowledge. Modern times have brought new food habits and even several new crops. The plants from which traditional foods were obtained are now suffering a double tragedy: genetic erosion and loss of traditional knowledge on how to grow and use them. Many traditional cultivars, which evolved with the cultures concerned as they were consciously selected to meet specific cultural roles, have disappeared within the lifespan of the present generation. In many areas, even outside towns and cities, diets are based on fewer and fewer plant species: one in particular-maize-is becoming an increasingly dominant and widespread staple to the detriment of the health of families and national food security. This, coupled with low incomes and a misguided preference for expensive exotic foods, has contributed significantly to poverty in the country as well as loss of traditional food plants. Traditional farming systems, which are associated with specific traditional crops, varieties and technologies, are being abandoned, also resulting in increasingly monotonous diets and the loss of food-plant resources and indigenous knowledge about them. Specialized habitats such as indigenous forests and wetlands are being destroyed, similarly endangering specific forms and varieties of plants and sometimes resulting in the loss of entire species.

II. MAIN OBJECTIVE

To develop a data collection list on both traditional and exotic food and medicinal plants, compiled using native and common/usual names. Included is information about cultural distinction between traditional ritual plants

(institutional, social or household practices) and modern crops without rituals practices of the Luo, Luhya and Gussi. It also includes development of information on Plants or food data collection (forgotten or residual): traditional, medicinal or food shortages plants of the Luo, Luhya and Gussi.

Specific Objectives

1. To determine which plants were used for food and medicinal purposes by people in Western Kenya from pre-colonial times upto present.
2. To determine changes in diversity of these plants in relation to human population changes.
3. To establish changing trends in status and use of indigenous and exotic food and medicinal plant species among Luo, Luhya and Gusii communities.

Research Questions

4. Which diversity of plants was used for food and medicinal purposes by the people in Western Kenya?
5. What was the state of plants and food before colonial period and relationship with human population changes?
6. Changing trends in plant population/diversity and use

Methodology

The work was done using a mixed approach system. However, it was intensively dependant on reviewing the published literature about these sites, students' work on the region. KII was used to corroborate findings from literature. The study also utilized available corpus of literature on ethno-botany and recipes for over 70 indigenous Leafy Vegetables (ILVs) used by the Luo [7-10]. NB// Refer to database of 34 edible & medicinal plant specimens deposited at the University of Nairobi and the Catholic University of Eastern Africa herbaria was also utilized.

Research Findings

Traditional knowledge on significance of indigenous plants for both medicinal and food value has been in existence from pre-colonial times. Wild plants have been used by communities in Western Kenya for various purposes. Collection of leaves, fruits and roots from the wild was and is still a common practice of these people, as food, or medicine. Knowledge of medicinal value of these plants cannot go unnoticed. The traditional practices in use of food and medicinal plants appear similar among the Western Kenya communities (Luos, Luhyas and Kisii/Gusii). As foods the plants have been used as vegetables, fruits, spices/supplements.

Food from the wide range of traditional food plants makes supplemental, seasonal and emergency contributions to household food supplies. Supplements to



the staple food add flavour, which enhances the appetite. Some foods increase the absorption of vitamins, e.g. gum arabic (from *Acacia senegal*), and may help maintain the normal intestinal flora. Plants have been used as food-main foods and snacks, supplements and medicines. The Luos ate *mapera* fruits, *ochuoga* etc. Finger millet was common in Gusii. Perhaps the most common use of food from the wild is as snacks. Traditionally, people ate fruit between meals while herding cattle or working in the fields. Snack foods are especially important for children since they need to eat more frequently than adults. In addition, these wild fruit may supply micronutrients that are very important for the healthy growth of children but may be deficient in the bulky cereal-based diet in the home. *Grewia* spp., for example, are a major nutritional resource for pastoralists in dry zones.

Leafy vegetables collected from the wild play an important role in traditional diets in rural areas. In some cultures such as the Luhya, Kisii, Luo and Mijikenda, traditional indigenous vegetables are a common food in the diet. While some may be collected from the wild, a sizeable number have now been cultivated, including *Cleome gynandra* (dek), and *Crotalaria*, *Solarium* (osuga), and *Amaranthus* (ododo) species.

In the pre-colonial times (before British colonization) the main staple crop (main crop grown) was finger millet, which was grown together with sorghum, beans, and sweet potatoes. The Gusii considered finger millet to be very nourishing (they also believed it strengthened a person's physical and mental power and increased a man's sexual prowess). Cultivated-plant food was complemented by meat and milk from livestock and by wild vegetables. At the end of the nineteenth century, the cultivation period was two years, with a fallow of three to six years. By the 1920s, maize (exotic) had overtaken finger millet as both a staple-food crop and a cash crop. Other important contemporary crops include cassava, pigeon peas, green grams, onions, bananas, potatoes, and tomatoes. Coffee was already being grown on a limited basis in the 1930s, and, by the 1950s, Gusiiland had become established as a producer of coffee and tea. Other traditional food crops include yams, pumpkins and some vegetables. All manner of fruits are grown in abundance, including exotic varieties such as apples and oranges. The reduced need for traditional herbal medicine, that has now been surpassed by modern hospitals and medical care, has led to loss of indigenous medicinal plant species.

Their staple meal is "rito" (cooked, flavoured bananas) and *ugali* (dish of maize flour, millet flour, or Sorghum flour cooked with water to a hardened dough-like consistency). It is often served with *rinogu*, *chinsaga*, *rikuneni*, *enderema*, *risosa*, *egesare* among other locally available green leaves consumed as vegetables. Dietary change taking place among both the rich and poor peoples as well as in urban and rural populations of the developing world has been documented [3, 4]. During the last millennium many African cuisines experienced dynamic changes induced by socioeconomic, colonial and political impacts. Many cultures conformed to or adopted dominant

modern cuisines. In recent times, increased global contact has made exotic foods readily available to Africans. In Kenya *Brassica oleracea* var. *acephala* otherwise known as "*Sukuma wiki*" has now become the main type of Leafy Vegetables in both rural and urban areas yet its value and symbolic meaning is lacking in indigenous folklore. Dietary changes among some African peoples have led to the neglect of the symbolic meaning of food and consequently broken the link between culture and cuisine (3).

Luo Speakers

In general, the Luo cultivate vegetables in home gardens called "*orundu*". They also gather wild edible plants from the diverse ecosystems of the Lake Victoria Basin for their nutritional as well as medicinal requirements. Among the Luo of Nyanza food has both biological and social value. The biological value hinges on the nutritional importance of food while the social value embodies a patterning of social status based on age and gender.

The Luo women who understand both the food and medicinal value of ILVs crave for the bitter tasting ILVs commonly referred to as "*alode makech*" or '*bitter herbs*'. Elderly women pride themselves on bitter herbs - a preference that has made them the leading conservators and producers of bitter cultigens including *Crotalaria* spp., *Solanum nigrum* and *Gynandropsis gynandra* which are highly ranked in the category of ILVs with bitter taste and in terms of preference. Indigenous leafy vegetables include: *osuga*, *dek*, *mitoo*, etc.

Several concoctions of ILV species are normally prepared for an array of textural and taste sensations. In general, *Corchorus* spp. and *Sesamum angustifolium* are preferred dish thickeners however, other seasonal substitutes like, *Portulaca* spp., *Basella alba*, *Asystasia schimperii* and *Commelina* spp. are also utilised. Consumption of food among the Luo is a ritual activity. It is patterned, repetitive and unchanging. Food is a medium of expression in that among the Luo, people converse and exchange views as they eat. Highly valued vegetables are prepared during ceremonial occasions. Expensive ingredients such as ghee and milk are added during the preparation of this category of vegetables. Some of the highly valued ILVs are nightshade *S. nigrum* and spider plant *G. gynandra*. The *S. nigrum* has a higher ritual value when consumed with millet cake than with maize meal.

The intricate and arduous manner in which *S. nigrum* and *G. gynandra* are prepared makes them very significant in the Luo food system, family roles, family tradition and ethnic identity. In general, cultural constructs influence the blending of vegetable foods, however, a functionalist analytical approach can shade light on therapeutic and nutritional value of the blends. The ILVs are either grown or gathered in the wild. Some women grow them for commercial purposes while others maintain home gardens wherein they grow ILVs for household use. The emergence of money economy has tended to give financial value to certain activities and commodities which in turn receive high ranking and social value. This is the reason for diminishing diversity of traditional vegetables and a more common exotic species like cabbage.



Negative attitudes towards some ILVs have also come from an interpretation of Hebrew and Christian teachings by syncretic African religions. For example adherents of the Legio Maria sect are forbidden from eating vegetables that have been gathered from "gunda", abandoned homesteads and from "liete", gravesites because they are likely to be possessed. Cowpea leaves *Vigna unguiculata*, are among the Leafy Vegetables derided by the Legio Maria sect because of the belief that it resembles the vine that the dishonored Adam and Eve used to cover themselves with when exiting paradise and also because of the creeping stem of this vegetable is specifically used for tying the umbilical cord of a newborn child. However, proverbs such as, "atipa kaitedo seyo kuon dala mar jolejo donjo e tek" means "atipa" (*Asystasia schimperi*) is so delicious with cornmeal, being a devout Legio Christian is a miserable fix, have been developed to defy the Legio Maria beliefs about certain sources of Leafy Vegetables. Regardless of the hint of obscenity constructed by the Legio Maria adherents, Cowpea leaves remain popular among other members of the Luo community.

The consumption of Indigenous Leafy Plants among the Luo of Nyanza has social, mental, economic, gender, and moral considerations. The ILVs define ceremonies in a special ways, they appear to bring distinctions in the social structure, they promote social order and enhance societal synergy. By virtue of their significance, ILVs enhance human capabilities and widen human nutrition, cultural rituals, environmental adoption and socializing choices. The barriers to eating ILVs include taste, social cues, religious and cultural symbolism of certain foods. In general the Luo have a body of wisdom that sustains the consumption of ILVs despite the increasing tendency to like exotic foods. Food plants are also used because of their known medicinal value eg *mapera* leaves for or control of diabetes; *Awayo* as vegetables and for treatment of boil/bur; pumpkin as an antioxidant.

According to NMK (6) about 200 indigenous plant species are used as leafy vegetables in Kenya. Only a few (4) have been fully domesticated, more (15) are semi-domesticated while the majority is wild. The species used and the wealth of indigenous knowledge vary with the culture, economic pursuits, species availability and level of influence by modernization. The variety of species used as a vegetable, the diversity within the species and the knowledge about their utilization is currently on the decline among many communities. The use of plant parts for medicine and fruit, tubers, seeds, leaves, etc. for food is an important old practice among pastoral and non-pastoral groups. Among traditional pastoral systems, an important use of plant parts is in soups and milk for flavor and good health. In such cases there would not be a clear distinction between food and medicine. Cooking of leafy vegetables is, however, of more significance among agricultural communities and hunter-gatherers.

About 200 species growing naturally in Kenya are used as leafy vegetables. About 10 more exotic species introduced during the pre-colonial period have been integrated into the traditions of various communities and can therefore be regarded as traditional vegetables.

Vegetable consumption among traditional African societies has undergone big changes since the pre-colonial days, these being brought about mainly by interaction with other cultures. Ethno-otanical studies have shown that during the pre-colonial days: Leafy vegetable consumption in many African cultures was not as important a practice as it is today. The practice was and is still lacking among some pastoral groups; Plant species used were generally few; Use of fruits as vegetables was uncommon. Wild fruit consumption was a more common practice.

Interaction with other communities has over the years passed on the use of certain species of cultivated or wild vegetables to others. The use of species such as *Amaranthus* spp., *Gynandropsis gynandra*, *Basella alba* and *Corchorus* spp. for food might have been introduced to many communities this way (contact with Asian and Arabian traders). The use of Latin American species such as pumpkin, cassava, sweet potato and Asian cocoyam (*Colacasia antiquorum*) as leafy vegetables was passed on during these early days.

Trade between communities and interactions due to proximity with one another also brought about cultural and species exchanges. Local names of the species can give us clues. For example, *G. gynandra* is used by the Luhya, Kisii, Kipsigis, Luo and Giriama. It is eaten as a vegetable in southern Africa and in South Asia. Its important role in the local traditions of the Nilotic groups suggests a long use. Similarities in the local names for the plant among the western Bantu and highland Nilotes suggest a common origin. Among the Kisii, where the plant is known as *chinsaga*, it is an important vegetable for mothers after delivery (Table 8).

Table 8: Varieties of foods

Cereal	Maize
Pulse	Cowpea, lablab bean, pigeon pea
Vegetable	Pumpkin leaves, kahurura (<i>Cucumis</i> sp.), cowpea leaves, stinging nettle (<i>Urtica massaica</i>)
Starchy food	Pumpkin, English potato.

Fruit Vegetables

Citrullus lanatus (watermelon), now used all over the world, has its origin in Africa. The gourd (*Lagenaria siceraria*) used in most of Africa as a container also has forms with edible fruit *Corchorus* species and especially *C. trilobularis* and *C. olitorius* are also typical vegetable species of the western regions, being mainly used by the Luhya (*murere*), Luo (*apoth*). Its use is, however, spreading with the Luhya name as the trade name. It is also broadcast in home gardens and often preserved when found in cropland. *Solanum nigrum* (black nightshade) is among the most widely used leafy vegetable, being used by both Nilotic and Bantu speakers. It is a cosmopolitan weed.

In recent years this knowledge has, however, been threatened. The following trends have been noticed. Little



knowledge is being passed from the knowledgeable to the less knowledgeable, species or their forms/cultivars are locally disappearing and consumption of traditional species is despised by modern people.

The result of this is loss of knowledge (of names, uses, etc.), genetic erosion and in some instances loss of species. From the early 1980s, however, there has been a deliberate move by both government and non-governmental organizations to increase the growing of indigenous and traditional vegetables. Awareness of their nutritional value and importance in alleviating malnutrition also has been on the increase. Rapid loss of genetic diversity in vegetables calls for a concerted conservation effort.

1. Leafy vegetables

A. Exotic

Cassava	<i>Manihot esculenta</i>	widespread
Pumpkin	<i>Cucumis maxima</i>	widespread
Sukuma wiki	<i>Brassica oleracea</i> var. <i>acephala</i>	Widespread
Moringa	<i>Moringa oleifera</i>	Widespread now as medicine
Cabbage	<i>Brassica oleracea</i>	Luo, Luh
Sweet potato	<i>Ipomoea batatas</i>	*

B. Indigenous

Cooked

<i>Amaranthus hybridus</i>	Widespread
<i>Amaranthus lividus</i>	Luo, Luh
<i>Amaranthus graecizans</i>	Widespread
<i>Amaranthus spinosus</i>	Widespread (mainly Coast and Western)
<i>Asystasia mysorensis</i>	Luo, Luh
<i>Asystasia gangetica</i>	*
<i>Basella alba</i>	Luo, Luh,
<i>Brassica carinata</i>	Luo, Luh
<i>Cleome hirta</i>	Luo, Luh,
<i>Cleome monophylla</i>	Luo, Luh,
<i>Coccinia grandis</i>	Luo
<i>Commelina benghalensis</i>	Widespread
<i>Commelina africana</i>	Widespread
<i>Corchorus olitorius</i>	Luo, Luh
<i>Corchorus tridens</i>	Luo, Luh
<i>Corchorus trilocularis</i>	Luo, Luh
<i>Crotalaria ochroleuca</i>	Luo, Luh
<i>Crotalaria brevidens</i>	Luo, Luh
<i>Gynandropsis gynandra</i>	Luo, Luh,
<i>Kedrostis gijef</i>	*

<i>Lagenaria siceraria</i>	*
Mushrooms	Widespread
<i>Oxygonum sinuatum</i>	Luo,
<i>Portulaca quadrifida</i>	*
<i>Sesamum angustifolium</i>	Luo, Luh
<i>Solarium nigrum</i>	Widespread
<i>Vigna unguiculata</i>	Widespread

2. Fruit vegetables (cooked)

Citrullus lanatus Widespread

Cultivated traditional fruit vegetables

Indigenous	Exotic
Watermelon (eaten fresh): <i>Citrullus lanatus</i>	Pumpkin
Gourd (cooked): <i>Lagenaria siceraria</i>	

Cultivated leafy vegetables

Indigenous	Exotic
Cowpea	Cassava
Lablab bean	Sweet potato
	Pumpkin
	Kahurura
	Cocoyam

Semi-cultivated

This group includes species picked from the wild but occasionally planted on a small scale, especially in home gardens.

<i>Amaranthus hybridus</i>	<i>Crotalaria brevidens</i>
<i>Amaranthus lividus</i>	<i>Crotalaria ochroleuca</i>
<i>Amaranthus dubius</i>	<i>Kedrostis pseudogijef</i>
<i>Basella alba</i>	<i>Gynandropsis gynandra</i>
<i>Corchorus olitorius</i>	<i>Sesamum angustifolium</i>
<i>Corchorus trilocularis</i>	<i>Solanum nigrum</i>

Marketed species

Most of the species are marketed in specific areas and seasons. The buyers may belong to only specific communities.

Leafy vegetables	Area commonly sold
<i>Amaranthus hybridus</i>	countrywide
<i>Amaranthus dubius</i>	countrywide
<i>Amaranthus lividus</i>	Kisii, Nyanza, Western



Leafy vegetables	Area commonly sold
<i>Amaranthus spinosus</i>	Nyanza, countrywide
<i>Asystasia mysorensis</i>	Western, Nyanza
<i>Asystasia gangetica</i>	Nyanza, Western
<i>Basella alba</i>	Western, Nyanza
<i>Brassica carinata</i>	Nyanza, Western
<i>Corchorus trilocularis</i>	Western, Nyanza, countrywide
<i>Corchorus olitorius</i>	Western, Nyanza, countrywide
<i>Crotalaria ochroleuca</i>	Western, Nyanza,
<i>Crotalaria brevicens</i>	Western, Nyanza,

Gynandropsis gynandra Countrywide

Mushrooms (edible Nyanza, Western, fungi)

Sesamum angustifolium Nyanza, Western

Solanum nigrum Countrywide

Vigna unguiculata Countrywide

III. MEDICINAL PLANTS

(4)The most widely used medicinal plants in Siaya are *Albizia coriaria*, *Aphania senegalensis*, *Harrisonia abyssinica*, *Lannea stuhlmanii*, *Ocimum* spp., and *Zanthoxylum chalybeum*. Although these are used for a range of diseases, some of the uses of each are among the confirmed remedies. They are as follows: *Cassia* spp gastrointestinal; *Aphania sengalensis* gastrointestinal; *Schkuhria pinnata* gastrointestinal; *Ageratum conyzoides* dermatological (wounds); *Ocimum* spp. Gastrointestinal; *Harrisonia abyssinica* gastrointestinal; *Phyllanthus fischeri* "chira"; *Lantana* spp respiratory; *Abrus precatorius* respiratory; *Albizia coriara* dermatological. In Suba of Luo Nyanza in In addition to common vegetables and fruits that can serve medicinal purposes, *Azadirachta indica* A. Juss. (Meliaceae), *Carissa edulis* (Forssk.) Vahl (Apocynaceae), and *Ximenia americana* L. (Olacaceae) were the most frequently cited medicinal plants used by persons living with HIV/AIDS (5).

The most commonly used vegetables with medicinal value included *Allium* sp. (n = 59) and *Gynandropsis gynandra* (L.) Briq. (n = 52), while the most commonly used fruits with medicinal value included *Citrus aurantium* (n = 54), *Carica papaya* L. (n = 48), and *Citrus limon* (L.) Burm.f. (n = 45). Leaves of *Allium* sp. are chewed unprepared or pounded for use in colds, the flu, or cleaning the mouth. Leaves of *Gynandropsis gynandra* (L.) Briq. are used in a decoction and then drunk for stomach aches. Leaves of *Citrus aurantium* are used in a decoction drunk as replacement milk for nursing mothers, or fruits are chewed unprepared for colds and the flu. The leaves, root, and sap of *Carica papaya* L. are used in a decoction drunk often with other plants for use in malaria,

gonorrhoea, or children's cough. Leaves of *Citrus limon* (L.) Burm.f. are used in a decoction and then drunk for malaria or stomach aches, while fruits are chewed unprepared for colds and the flu.

The most commonly used plant for purely medicinal purposes was *Azadirachta indica* A. Juss. (n = 27), which corresponded to 40.3% of the sample. Nearly a quarter of the sample reported using *Allium sativum* (n = 16), the only plant in the list that has documented detrimental interactions with some ART regimens. *Azadirachta indica* A. Juss. is believed to be able to heal 40 different illnesses, and therefore has several different uses. Leaves can be used in a decoction drunk for malaria, or used in a steam bath for washing on skin for *chira* or HIV/AIDS and related skin complications. In addition, the bark can be rubbed on teeth or gums for mouth sores and general oral health. *Allium sativum* roots are crushed or chewed unprepared for use in malaria or HIV/AIDS (Table 10).

Mwarubaine (*Azadirachta indica* A. Juss.) was the most frequently cited plant for purely medicinal purposes, used by over 40% of patients in the sample. Many people in Suba District believe it can cure 40 illnesses, including *chira*, malaria, digestive symptoms, and even HIV/AIDS. As *mwarubaine* is commonly used throughout Kenya as a medicinal plant, we recommend that future research should examine the potential therapeutic value and herb-antiretroviral drug interactions of *Azadirachta indica* A. Juss. One study demonstrated that morphine, a plant-based medicine, altered endothelial cell responses to HIV and may prevent viral replication of HIV (Cadet et al., 2001). Garlic (*Allium sativum*) is used by nearly a quarter of persons living with HIV/AIDS on Mfangano Island

Table 10. Local names of vegetables

Local name (Luhya)	English name	Botanical name
Lidodo	amaranth	<i>Amaranthus</i> sp.
Likhubi	cowpeas	<i>Vigna</i> sp.
Lisebebe	pumpkin leaves	<i>Cucurbita</i> sp.
Lisutsa	black nightshade	<i>Solanum nigrum</i>
Miro	sunhemp	<i>Crotalaria brevicens</i>
Murere	jute plant	<i>Corchorus olitorius</i>
Tsimboka	pig weed	<i>Amaranthus</i> sp.
Tsisaka	spider plant	<i>Gynandropsis gynandra</i>

Such plants are used in Kenyan villages as a stew to go with *ugali* (maize meal) or rice or as an ingredient in *githeri* (*irio*), where they are mashed with maize and beans or peas. Indigenous vegetables are also commercialized as fresh leaves, in dried or powdered form and as enriched food flavours (e.g. weaning flour). There is some trade in these species in both rural and urban areas in Kenya, but this is very limited (Table 11).



Table 11. Commonly used cultivated food species and their origins

Species	Common name	Probable origin
<i>Abelmoschus esculentus</i> *	Okra, lady's fingers	Tropics of Old World, eastern Africa
<i>Allium ampeloprasum</i>	Leek	North Africa, Eurasia
<i>Allium cepa</i>	Onion	Mediterranean region
<i>Allium sativum</i>	Garlic	Asia
<i>Amaranthus blitum</i> (<i>A. lividus</i>)*	Amaranth	Southern Europe, northern tropical Africa
<i>Amaranthus cruentus</i> **	Amaranth	Tropical America
<i>Amaranthus dubius</i> **	Amaranth	Tropical America
<i>Amaranthus hybridus</i> **	Amaranth	Central America
<i>Anacardium occidentale</i> **	Cashew nut	South America
<i>Ananas comosa</i> **	Pineapple	Northern South America
<i>Anethum graveolens</i>	Dill	Western Asia
<i>Annona cherimola</i>	Custard apple, cherimoya	Western tropical South America
<i>Annona squamosa</i>	Custard apple	Tropical America
<i>Arachis hypogaea</i>	Groundnut, peanut	Brazil
<i>Asparagus officinalis</i>	Garden asparagus	North Africa to southern Europe
<i>Basella alba</i> *	Vine spinach, Ceylon spinach	Africa, South Asia
<i>Brassica carinata</i> **	Kandhira, Ethiopian cabbage, tessel greens	Ethiopia, north-eastern Africa
<i>Brassica oleracea</i> var. <i>acephala</i>	Sukuma, kale	Western Europe
<i>Brassica oleracea</i> var. <i>capitata</i>	Cabbage	Western Europe
<i>Brassica oleracea</i> var. <i>botrytis</i>	Cauliflower, broccoli	Western Europe
<i>Cajanus cajan</i>	Pigeon pea	? Africa, Asia
<i>Camellia sinensis</i>	Tea	Southern China, South Asia
<i>Capsicum annuum</i>	Pepper	Tropical America
<i>Carica papaya</i>	Pawpaw, papaya	Tropical America, West Indies
<i>Catha edulis</i> *	Khat, Abyssinian tea	Africa
<i>Cinnamomum zeylanicum</i>	Cinnamon	Sri Lanka, South India
<i>Citrullus lanatus</i>	Water melon	Africa
<i>Citrus aurantiifolia</i>	Lime	? India
<i>Citrus aurantium</i>	Sour orange	S.E. Asia
<i>Citrus limon</i>	Lemon	Asia
<i>Citrus reticulata</i>	Tangerine, mandarin	Far East
<i>Citrus sinensis</i>	Sweet orange	China
<i>Citrus x paradisi</i>	Grapefruit	? West Indies
<i>Cleome (Gynandropsis) gynandra</i> *	Spider herb, cat's whiskers	Tropical Africa and Asia
<i>Coccinia grandis</i> *	Ivy gourd	Tropics of the Old World
<i>Cocos nucifera</i> **	Coconut	South Asia
<i>Coffea arabica</i> *	Coffee	Ethiopia, northern Kenya
<i>Colocasia esculenta</i>	Cocoyam, taro	Tropical Asia
<i>Corchorus olitorius</i> *	Jute, Jew's mallow	Africa, tropical Asia (India)
<i>Corchorus tridens</i> (<i>C. trilocularis</i>)*	Mrere	Africa
<i>Cordeauxia edulis</i>	Yeheb, yeheb nut	Somalia, eastern Ethiopia
<i>Coriandrum sativum</i>	Coriander	West Mediterranean
<i>Crotalaria brevidens</i> *	Mito	Tropical Africa
<i>Crotalaria ochroleuca</i> *	Mito	Tropical Africa



Species	Common name	Probable origin
<i>Cucumis melo</i>	Sweet melon	? West Africa
<i>Cucumis metuliferus*</i>	Spiny cucumber, horned melon)	Africa
<i>Cucumis sativus</i>	Cucumber	Himalayas, western China
<i>Cucurbita ficifolia</i>	Malabar gourd	Central America, Mexico
<i>Cucurbita maxima</i>	Pumpkin	South America
<i>Cucurbita moschata</i>	Pumpkin	Tropical America
<i>Cymbopogon citratus</i>	Lemon grass	South India, Sri Lanka
<i>Cyphomandra crassicaulis</i>	Tree tomato	South America
<i>Daucus carota</i>	Carrot	Mediterranean region
<i>Dioscorea bulbifera</i>	Aerial yam, air potato	Africa, Asia
<i>Dioscorea minutiflora</i>	Kikuyu yam	Africa
<i>Dovyalis caffra</i>	Kei apple	Southern Africa
<i>Elaeis guineensis*</i>	Oil palm, Guinea oil palm	West to East Africa
<i>Eleusine coracana</i>	Finger millet	N.E. Africa
<i>Ensete ventricosum*</i>	False banana	N.E. and East Africa
<i>Eragrostis tef</i>	Teff	Ethiopia
<i>Eriobotrya japonica**</i>	Loquat	China, Japan
<i>Foeniculum vulgare</i>	Fennel	Mediterranean region
<i>Fragaria spp.</i>	Strawberry	?
Species	Common name	Probable origin
<i>Hordeum vulgare</i>	Barley	N.E. Africa to southern Europe
<i>Ipomoea aquatica*</i>	Water spinach	Tropics of the Old World
<i>Ipomoea batatas</i>	Sweet potato	Central America
<i>Kedrostis pseudogijef*</i>	Mukauwu	East Africa
<i>Lablab purpureus*</i>	Hyacinth bean	Tropical Africa
<i>Lagenaria siceraria</i>	Gourd, calabash gourd	Africa
<i>Lantana camara**</i>	Curse of India	Tropical America
<i>Lycopersicon esculentum</i>	Tomato	The Andes
<i>Macadamia integrifolia</i>	Macadamia nut	Australia (Queensland)
<i>Mangifera indica**</i>	Mango	India, southern Asia
<i>Manihot esculenta</i>	Cassava, manioc, tapioca	Brazil
<i>Momordica charantia</i>	Balsam pear, bitter cucumber	? Tropical Africa, ? Tropical Asia
<i>Moringa oleifera</i>	Ben tree, horseradish tree	N.W. India
<i>Morus alba</i>	White mulberry	China
<i>Morus nigra</i>	Black mulberry	Western Asia
<i>Musa spp.</i>	Banana	Tropical Asia
<i>Musa x paradisiaca</i>	Plantain	Tropical Asia
<i>Ocimum basilicum</i>	Basil, sweet basil	Tropics
<i>Opuntia ficus-indica**</i>	Prickly pear	Mexico
<i>Oryza saliva</i>	Rice	Tropical Asia, ? Africa
<i>Passiflora edulis</i>	Passion fruit, purple granadilla	South America
<i>Passiflora mollissima**</i>	Banana passion fruit	Tropical America
<i>Pennisetum glaucum</i>	Pearl millet, bulrush millet	The Sahel
<i>Persea americana</i>	Avocado pear	Tropical America
<i>Petroselinum crispum</i>	Parsley, garden parsley	Europe, western Asia
<i>Phaseolus aureus</i>	Green gram	Asia



Species	Common name	Probable origin
<i>Phaseolus coccineus</i>	Scarlet runner bean	Central America
<i>Phaseolus vulgaris</i>	Kidney bean, French bean	Tropical America
<i>Phoenix dactylifera</i>	Date palm	North Africa, western Asia
<i>Physalis minima</i> **		Tropical America
<i>Physalis peruviana</i> **	Cape gooseberry	Tropical South America
<i>Pisum sativum</i>	Garden pea	East Mediterranean to Iran
<i>Portulaca oleracea</i> *	Purslane	Africa, Europe, Asia
<i>Psidium guajava</i> **	Guava	Tropical America
<i>Punica granatum</i>	Pomegranate	S.E. Europe, western Asia
<i>Rosemarinus officinalis</i>	Rosemary	Mediterranean region
<i>Rubus niveus</i> **	Ceylon raspberry	India, western China
<i>Saccharum officinarum</i>	Sugarcane	S.E. Asia
<i>Sclerocarya birrea</i> *	Morula plum, morula nut	Tropical Africa
<i>Sesamum calycinum</i> *	Onyulo	Africa
<i>Sesamum orientale</i> *	Sesame, simsim, sesamum	Africa, northern Kenya
<i>Setaria italica</i>	Foxtail millet, Italian millet	East Asia
<i>Solanum macrocarpon</i>	African egg plant	Central to West Africa
<i>Solanum melongena</i>	Egg plant	India, East Indies
<i>Solanum nigrum</i> *	Black nightshade	Tropics and sub-tropics
<i>Solanum scabrum</i> *	Black nightshade, sunberry, wonderberry	Tropics and sub-tropics
<i>Solanum tuberosum</i>	English/Irish potato, potato	Chile, western Argentina
<i>Solarium villosum</i> *	Wonderberry, sunberry	Old World
<i>Sonchus oleraceus</i> **	Sow thistle	Mediterranean region, Eurasia
<i>Sorghum bicolor</i>	Sorghum	The Sahel
<i>Spinacia oleracea</i>	Spinach	? S.W. Asia
<i>Syzygium aromaticum</i>	Clove	Moluccas (S.E. Asia)
<i>Syzygium cumini</i> **	Java plum, jambolan	India, southern Asia
<i>Tamarindus indica</i> *	Tamarind	Tropical Africa and Asia
<i>Triticum aestivum</i>	Bread wheat	Middle East
<i>Vicia faba</i>	Broad bean	Tropics of the Old World
<i>Vigna subterranea</i>	Bambara groundnut	Central to West Africa
<i>Vigna unguiculata</i> *	Cowpea	Tropical Africa and Asia
<i>Zea mays</i>	Maize, com	Mexico
<i>Zingiber officinale</i>	Ginger	India, southern Asia
<i>Ziziphus mauritiana</i> *	Jujube	North Africa, Asia

* Indigenous to Kenya;

** = Introduced but now naturalized in parts of Kenya;

? = Origin uncertain or disputed

IV. CONCLUSIONS

From studied literature, it is not clear how populations could have been attracted to areas with food & medicinal plants and the impact on plant diversity and vice versa. Thus what is the link between plant species use and settlement patterns/power/movements and population changes? Traditional food plants, both domesticated and non-domesticated, have been neglected throughout the world. Kenya is no exception. Instead of concentrating on commercial food crops, extension efforts should now be

aimed at maintaining, popularizing and improving the accessibility of a wide range of species as this can do much to improve nutrition and food security. A rich flora providing a variety of snack foods located near or in school compounds, for example, would improve the health of school children. Even as individual citizens we have a responsibility to maintain the maximum possible diversity in our food plants and use them for everyone's well-being. To achieve this we need to: Make sure we and our families eat more traditional foods; Discard the false and unwarranted notion that traditional foods are inferior; Take



the initiative to grow those species that we can grow ourselves and to manage others in the wild while preserving their habitats and ecosystems, even in our own back yards; Promote and keep alive indigenous knowledge about edible plants, methods of preparation, local names, etc., pass this knowledge on to our children and, where possible, document it. There is need for a comprehensive examination of diversity of food and medicinal plants through observational survey, ecological/botanical studies (in pristine habitats-undisturbed), and oral interviews with key informants (KII & FGDs). Analysis and synthesis of plant diversity and uses through review of secondary data (archives, unpublished students' work & published research); palynological/archeological studies is required.

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