INDIGENOUS TREES INVENTORY AND THEIR MULTIPURPOSE USES IN DUTSIN-MA AREA KATSINA STATE

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Abstract

Indigenous trees are of high value among rural dwellers in Katsina State as indicated by many research findings. This research paper is aimed at assessing multi-purpose use of indigenous trees around Dutsin-ma area of Katsina State. An inventory of the trees is taken and multi-purpose use and access rights of the trees analyzed. The research identified seventy five (75) numbers of indigenous trees. It found that indigenous trees in the area play vital role on the socioeconomic development of the people and this has made it possible for the people to undergo various trading activities of some useful parts of the trees. The research recommends sustainable use of the resource through researches to explore more potential uses, and indiscriminate felling should be discouraged or stopped.

Keywords: Trees, Inventory, Multi-purpose, Access, Indigenous, Vegetation

Introduction

Trees are integral part of land resources that needs careful management and sustainability for utilization of future generation. This makes vegetation protection every body's business for a very long time, consequently vegetation protection and management becomes a global concern.

Vegetation as a resource provides some basic needs of life such as food, fuel wood conservation of land soil fertility and so on. Therefore it plays a vital role in human

development. It is believed that vegetation resources form the basis on which life of all organisms depends. Therefore, all living organisms solely depend on vegetation resources directly or indirectly due to which man cannot survive without vegetation resources. Plants as major suppliers of operate need for food, fuel, timber, shade etc, need proper protection and management for sustainable environment in addition to human development.

Though the area is not well vegetated due to its nature but there were a variety of plant species that has significant uses as food, fuel wood, timber, conservation of land and soil fertility, medicines and so on. So many trees, shrubs and grasses are of high economic importance in the area. This has made the people in the area to over use the resource to the extent that some tree species such as *Anogessus leicarpus,* which is important for medicine and wood are on the verge of extinction.

The people of Dutsin-ma area device so many ways of plants management, this is because of the benefits derived from the plants by the people. This consequently brings about high concern over ownership rights and usage. Plants are accessed through common, private or open access, for the fact that people of the area understand very well their environment and the importance of plants to their life. In the area there are moderate good management practices of vegetation resources, which consequently greatly minimize degradation of vegetation resources.

Statement Of The Problem

Dutsin-ma area is blessed with considerable vegetation resources, which is one of the factors that contributed to the development of fuel wood market in the area. Tree resources are making a positive impact on rural economic development of the area. In Ruma Kukar Jangarai Forest Reserve, fuel wood extraction provides employment to the people of the area but it is making serious negative impact on the tree diversity of the reserve and the management practices are in deteriorating condition (Maiwada 2000). Mohammed (1997) found out that plants (vegetation resources) were generally access in three ways; Private, Common and Open access this paved way for proper management and protection of the resource, consequently increasing concern over ownership rights and usage for the fact that people of the area understand very well their environment and the importance of plants to their life.

Most of the research work conducted in the area with vegetation resources were mainly on degradation problems and socioeconomic contribution to rural dwellers. Therefore, this research is interested in examining ownership rights of trees and shrubs, as well as uses and management practices involved.

Aim And Objectives

The primary aim of this study is to identify the indigenous trees found in Dutsin-ma area, as well to assess their multi-purpose uses. To achieve this aim the following specific objectives have been outlined.

1. To make an inventory of the indigenous trees found in the study area.
2. To examine various uses of the trees (general and specific uses).
3. To examine access rights to tree resources

The Study Area

Dutsin-ma is located in the Sudan savanna zone of the central part of Katsina state, relatively bounded by Safana and Dan-Musa local governments to the west, Kurfi and Charanchi local governments to the north, Kankia to the east, Matazu and Dan-Musa local governments in the south. In absolute terms, Dutsin-ma town is found within latitude $12^{o}27'$ 10"N and $12^{o}27'$ 16"N and longitude $07^{o}29'$ 56"E and $07^{o}30'$04"E it is also found in the basement complex area of Katsina State (Oguntoyimbo, 1983). The climate of the area is semi arid classified as tropical wet and dry climate (AW), as classified by W. Koppens. Maximum day temperature reaches about 38^{o}C in the month of March, April and May and minimum temperature is about 22^{o}C in December and January. (Udoh 1970)

Literature Review

The vegetation of Dutsin-ma region combines a characteristic feature of Guinea and Sudan Savanna vegetation zones of Northern Nigeria, because the area is found in the vegetation transition zone of the Savanna. Vegetation resource contributes to the environmental and economic development of such an area, for the fact that plants contribute large percentage on human development, environmental and human sustainability. Their importance (plants) has made man to use them in a multi-purpose way. The plants of the Nigerian Savanna have ample uses. The works of Mortimore, (1999) and Mohammed, (1997) purely showed that, the Savanna plants contributed immensely in almost every sector of rural economy especially in the extreme Northern parts of Nigeria.

Mohammed (1997) found out that, there were more than one hundred and twenty one (221) useful plants in the semi-arid Northeastern Nigeria. The most common plant species found in the area among others include *Acacia Spp., Euphorbia Spp., Hibiscus Spp., Ficus spp., Combretum spp., and Ziziphus Spp.* The plants have various uses to the villagers. Several parts of the trees such as backs, branches, pods, roots, wood, gum, seeds, leaves etc, were use for different uses, like medicinal, cultural, fodder, human food, timber, agricultural, fuelwood, shade, soil protection and improvement etc.

Multipurpose use of Some Indigenous trees

There is a large number of tree species in the savannah vegetation zone of Northern Nigeria that are of great importance to the inhabitant of the area. Because of the huge importance of savannah trees and grasses, many researchers studied them intensively. Harrison, (1987), Von maydell (1990) show that *Faidherbia albida* (Gawo in Hausa) is of good importance to African farmers, because, it provides fodder to livestock, keeps its leaves in dry season serves as browse for livestock when little or no other fodder is available. At the end of the dry season, it drops protein rich pods-up to five tones per hectre, which can be used as fodder. Soil around the trees is enriched by the trees nitrogen fixing roots nodules, by leaf fall, and by droppings of livestock that shelter them from the hot sun.

Faidherbia albida/*Acacia albida* is the most important forage tree of the Sahel, because the leaves, the pods, and the young shoots provide a high feed value and are browsed by livestock. The tree has an important role in terms of fuel wood and timber provision, likewise medicinal importance was recognized on the tree, various parts of the tree are used in the treatment of various diseases, such as the back, which is used in the treatment of cough.

Faidherbia albida/*Acacia albida* is among the typical multi-purpose trees of the savanna, because of its multiple uses; is appreciated and often actively protected by the population. Because of its huge importance, is sometimes called “miracle tree” of the Sahel. In some parts of Africa the tree (*F. albida*) play a very important role in tribal, customary and traditional laws (Von maydell, 1990).

The wood obtained from *F. albida* is important in various ways. It is largely used by the rural population in the manufacture of various tools and implements such as bowls and kitchen utensils, mortar, drums, boats, light carpentry, light structure works, furniture, joinery etc. Other uses include, wood ash used in the production of soap. The seed is eaten in times of famine; the thorny branches are used in fencing. Many medicinal uses have been discovered from various parts of the tree (*F. albida*). Diseases such as cough, pneumonia, kidney diseases, vomiting, and diarrhea are cured using the back of the tree, while the leaves and the gum are used in the treatment of hemorrhages, diarrhea, ophthalmia. Various parts such as the roots, flowers, pods and the seeds are used in the treatment of influenza, heart tonic, toothache and rheumatism

Adansonia digitata (Baobab tree) is an important tree of the savanna; many uses were discovered from it. More than thirty different uses were found from the tree (Von maydell, 1990). The plant has numerous medicinal and non-medicinal applications in Africa; every part of the baobab tree is reported to be useful (Owen, 1970) in (Gebauer, 2002). The leaves are

used in the preparation of soup. The flower is eaten raw, the seeds also provide flour, which is very rich in vitamin B and protein, and it is used as baby food. In addition, the seeds are roasted and grounded, used to flavor soup in substitute of groundnut. The fruit pulp obtained from the seed provides a refreshing drink when dissolve in water or milk. The spongy and soft nature of the tree makes it to store water, often chewed by human and animals during the extreme scarcity of water. The back of the young baobab tree is used in making fishing nets, baskets, mats and clothes (Von maydell, (1990), Mohammed, (1997) and Gebauer et.al, (2002)

The leaves of the baobab tree are a staple food source for rural population in many parts of Africa especially the central part of the continent (Gebauer, et.al. 2002). Young leaves are widely used, cooked as spinach, and frequently dried, often powdered and used for sources over porridges, thick gruels of grains or boiled rice.

Several research findings show that a dried baobab leaves contains 13-15% protein, 60-70% carbohydrate, 4-10% fats, around 11% fibre, and 16 % ash. The energy value varies from 1180-1900kj/100g of which 80% are metabolisable energy (Gebauer et.al. 2002). The fruit pulp of *A. digitata* has very high vitamin C content; almost ten times that of oranges. In addition, the pulp is used in preparing cool and hot drinks in rural areas and has recently become a popular ingredient in ice products in urban areas (Sidibe et. al. 1998) in (Gebauer et. al. 2002). In addition, the pulp serves as a fermenting agent in local brewing or as a substitute for tartar in baking. The energy value is almost the same as that of baobab leaves (Becker, 1983). The seed kernels are widely used; they are eaten fresh, dried or ground and used in cooking. The kernel has an energy value of 1803kj/100g approximately 50% higher than the leaves.

The baobab (*A. digitata*) tree, is not the only important tree in the Sahel, but is among the most useful trees. This is more so, because of the protection and consideration it receives from villagers. This has made people to call the tree “mother of the sahel” (Von maydell, 1990)

The spongy and very soft wood has limited uses. It is used in the manufacture of light canoes, trays and floats for fishing nets. The husk of the fruit is used in making dishes, vessels also as fuel. The roots also provide a very important ingredient for dyes, the ash obtained from burning the tree is used in soap making, and as fertilizer. When burning the fruit pulp the smoke produced serve as an insect repellent. Hollow trees of *A. digitata* provide reservoirs of fresh water, which are used by nomads, particularly in the western part of Sudan. Water

storage capacities, range from 1000- 9000litres per tree (Eraic, 1991) in (Gebauer et. al. 2002).

Various medicinal uses were discovered from the Baobab tree. The back of the tree is used in the treatment of fever; infections; wound disinfections; toothache etc. The leaves also are used in the treatment of guinea worm sores, insect's bites, kidney and bladder disorders, diarrhea, ulcers, fatigue, cough, asthma etc. The fruit pulp also provide good medicine for malaria, small fox, dysentery and general fatigue for children while the seeds are use in curing diseases like dental disorders. The roots of the tree (*A. digitata*) are used in the treatment of malaria as well (Von maydell, 1990).

In the savanna vegetation zones, especially Sudan and Sahel Savnna, *Balanites aegyptiaca* (Aduwa, in Hausa) was among the most important trees in the region. Various uses have been discovered from the various parts of the tree. Von maydell, (1990), describes *balanite aegyptiaca* as an extremely useful tree, which has been utilized for over thousands of years. The tree is highly resistant to insects, this makes it to be used widely for many purposes such as wooden handle on tools, wooden bowls, mortars and many household utensils. The thorny branches are used for fencing. People, livestock, eat the leaves, flowers and fruits, and other wild animals eat fresh leaves.

Research methodology

The methodology adopted in collecting the data include, formal interview with the indigenous people to obtain data on plant uses, management and access. Samples of the trees were collected from the field (Kagara, Gago and Ruwan Dorawa Forests Reserves, cattle tracks and farmlands around settlements) and identified in the laboratory (Herbarium). Leaves, flowers, roots, stem, seed, fruits, backs and nuts of the trees were collected and used as samples for the research. Five (5) settlements were selected for the research they include Kagara, Darawa, Gago, Ruwan Dorawa and Gizawa, in each of the villages ten (10) respondents were selected given a total of fifty (50) respondents for the research. Samples (respondents) were drawn purposively due to the fact that few particularly the aged ones know of the trees well.

Result Findings And Discussion

Multipurpose Use of the Inventoried Indigenous Trees

Uses of plant vary among communities, regions and at world levels. This depends on technological, scientific and social advancement of the communities or nations. The inventoried trees were categorized into two groups, the first being general trees inventory and second categorization deals with the identification of various uses of the parts of the trees.

Appendix I present the available indigenous trees in the study area, and has given the botanical and local names (Hausa and Fulani) equivalents of the seventy five (75) indigenous trees found in the area. The research found out that majority of the trees was *Acacia spp, Ziziphus spp, Cassia spp, Ficus spp and Combretum spp,* which occur in considerable quantity. The study identified five (5) major land uses in the area, where more than 23% of the inventoried trees are on farmlands. This ensures their protection and good management by individual owners. Most the identified trees were of high economic value like *Adansonia digitata, Butyrospermum pradoxum, Diospyros mespiliformis, etc* which are privately owned, though grazing lands, cattle tracks and fallow lands presented a meaningful percentage of plants specie composition, their protection is not ensured as in the case of farmlands. Therefore, this lack of good care and protection on these land uses had made them to suffer degradation that led to the disappearance of some tree and shrub species as mentioned above.

The following table presents a number of tree species and their percentages according to the land use found.

Table 1: Percentage of Trees According to Land use in the Study Area.

Land use	**Number of Tree Species found**	**Percentage**
Farmland	75	81
Fallow land	67	72
Grazing land	74	79
Settlement	46	49
Cattle track	68	73

Source: Data Analysis 2013

Generally, the above table indicated that there is an overlap of trees among land uses this further clarify that almost every tree could be found on any land use. The majority of the trees is found on farmlands signify their importance and protection strategies. The table above indicated that farmlands carry the highest composition of tree species (81%). Large parts of the trees studied are on farmlands and privately owned lands. Most of the trees provide human food or animal fodder. The parts used include leaves, fruits, pods or seeds.

Grazing land carries about 79% of the total trees and shrubs species in the study area, most of which are trees with few shrubs. Large numbers of trees such as *Acacia seyel, Acacia senegal, Anona senegalensis, Ziziphus mauritiana* are of great importance for animal grazing.

Cattle tracks and fallow lands carry 73% and 72% respectively. Thus, the use of cattle track and fallow lands cannot be over emphasized in the study area. Most trees and shrubs found in these places are used for animal grazing. However, some of these trees and shrubs are also on other land uses such as farmlands and grazing lands.

The trees in the study area have ample uses to the people of the area, as the research found seven different uses of the trees and shrubs in the study area. Some trees and shrubs have multiple uses ranging from medicinal, cultural, agricultural, human food, animal feed, construction and fuelwood uses. Various parts such as leaves, roots, backs, gum, flower, fruits, pods, seeds etc., of the trees are of so many uses. The table below gives us the general summary of multipurpose uses of the inventoried plants in the study.

Table 2: Percentage of Trees according to Management Practices (uses) in the Study Area

Management practices	**Total number of trees used**	**Percentage of the total number of trees**
Medicinal	75	100
Cultural	41	44
Agricultural	21	23
Human food	39	42
Animal feed	59	63
Construction	40	43
Fuelwood	75	100

Source: Data Analysis 2013

Appendix II clearly presents the inventoried trees with their various uses and the parts used. Fuel wood and medicinal uses were the key important uses of trees in the area shown above from the summary table. Analysis of the data collected indicated that all the trees found in the area are useful medicinally and fuel wood wise, which indicated that, the two were equally important. Depending on trees for fuel wood could be attributed to the reasons that, majority of the people in the area is rural dwellers. They do not recognize alternatives to fuel wood such as kerosene, electric stoves and coal.

Medicinally, as seen above, the trees in the area play a very important role in traditional medicine practice. Inventoried trees like *Acacia seyel,Acacia senegal, Acacia nilotica, Acacia albida, Albizia chevalieri, Bosewellia dalzielli,Lannea barteri, Cassia saberiana, Commiphora africana Combretum glutinosum, Combretum molle, Euphorbia kamarunica, Ficus syscomorus, Ficus glumosa, Guiera senegalensis, Maerua angolensis, Parkia biglobosa, Prosopis africana, Securidaca longepedunculata, etc,* are significant in traditional medicine practice in the area. Fuelwood and traditional medicine demand led to serious destruction of forest resources which consequently resulted in the disappearance of some tree species such as *Euphorbia balsamifera, Pterocarpus ernaceus and Ecurinega virosa* due to medicinal importance attached to them.

Moreover, 63% of the inventoried trees are used as animal fodder, more importantly during dry season when there is a shortage of grasses for livestock to graze. Trees like *Acacia albida, Aacia Senegal, Acacia seyel, Acacia nilotica, Azadirachta indica, Anogeissus leocarpus, Annona senegalensis, Lannea barteri, Parkia biglobosa, ziziphus mauritiana,*

Ziziphus spina-christi, Prosopis africana etc, their leaves, flowers, pods and seeds are important feed for livestock, because, they contain considerable amount of nutrients (Von maydell, 1990).

A few trees were important for use as human food, cultural and construction uses. These carry 42%, 44% and 43% of the total inventoried trees and shrubs respectively. Trees like *Anogeissus leocarpus, Borassus aethiopum (big), Isoberlinia doka, Hyphaene thabaica (big), Prosopis africana,etc* are important providers of timber traditional medicine in the area. This is because of their resistance to termites and strength to carry heavy loads. There are certain trees in the area such as *Parkia biglobosa, Ziziphus mauritiana, Ziziphus spinachristi, Butyrospermum paradoxum, Diospyros mespiliformis, etc.*, that are important for use as human food either their leaves, seeds or fruits are as wild food to the people of the area.

The least importance or use of trees was agricultural which carry only 23% of the total inventoried trees and shrubs. Farmland fencing and improvement of soil fertility were the only major uses identified. Trees like *Acacia seyel, Acacia Senegal, Acacia nilotica, Balanites aegyptiaca, Ziziphus mauritiana, Ziziphus mucronata, ziziphus spina-christi*, are mostly fencing, while *Acacia albida* is for soil fertility improvement.

Access to Tree Resources in the Area

Access to vegetation resource has been defined by Mohammed (1997) as the habit, power or right of an individual to get near or been exposed to vegetation resources. Access to indigenous trees and shrubs in the area is classified into three main groups (i.e Private, Common and Open access). This is based on the type and availability of the resource. Privately accessed tree is basically owned by an individual who control the ownership right of the tree and getting any kind of access is by permission of the owner. Trees found on common access category belongs to community members only, while those tree resources found under open/free access are free for use to everyone.

Table 3: Percentage of Inventoried Trees and Shrubs According to their Access Groups in Relation to Land Use.

Land Use Type	**Access group in %**			
	Private Access	**Common Access**	**Open/free Access**	**Total**
Settlement	80.0	10.0	10.0	**100**
Farming	52.68	35.50	11.82	**100**
Fallow	42.0	37.7	20.3	**100**
Grazing land	-	58.0	42.0	**100**
Cattle track	-	46.0	54.0	**100**

Source: Data Analysis 2013

Table 3 above indicated that most trees (80%) found on settlement are privately owned like *Anogeisus leocarpus, Diospyros mespiliformis, Prosopis africana, Adansonia digitata,*

Feidherbia albida, Albizia chvalieri, Acaci nilotica, Combretum glutinosum. Deuterium microcarpum, Ficus syscomorus, Strychnos spinosa, Ziziphus spina Christi etc. which is largely economic trees. The trees found on all other land use show some level of intolerance of human interferences especially those found on common and open/free accesses.

In the study area private access to tree resources is largely enhanced due to the economic (food, fodder, fuel wood) and social (shade, fencing) benefits. The table above indicates no tree on private access in either cattle tracks or grazing lands. This is because, all trees found on these land uses are generally on open/free or common access as such most economic trees were not found. In-depth investigation revealed that most economic trees that had existed on such land use (cattle tracks and grazing lands) were misused leading to destruction and consequently disappearance from the area (field observation 2013). Appendix III clearly categorized each tree on access and land use.

Summary, Conclusion And Recommendations

Summary

Verily, vegetation resources play a very significant role in environmental and human sustainability. That is why it is receiving attention from all angles of human endeavors. This necessitates this work, to find out what contribution the people of the area give towards its improvement.

Seventy five (75) species of trees were found and were presented in botanical names and their Hausa and Fulani equivalents. Different uses such as medicinal, fuel wood, cultural, construction, agricultural, animal fodder and human food were the major ones identified. The most important uses among all are fuel wood, animal fodder and medicinal. This is attributed to their high demand.

Various parts of the inventoried plants were of different uses, like fruits, flowers, seeds and leaves eaten by human as in the case of *Butyrospermum paradoxum* which is a very important tree in the area. Animals eat trees like *Acacia albida* and *Acacia seyel.* On the part of medicinal uses of plants available in the area, it was found out that parts like back, roots and leaves were the major ones used, in the treatment of various diseases such as malaria, diarrhea, dysentery, headache and other bacterial and fungal related diseases.

The trees in the area present significant importance almost in all human endeavors. For the fact that a large percentage of the trees in the area have the medicinal advantage which made them of great use and advantage to the people of the area. Almost every tree or shrub has one or more uses that attract people’s attention to put proper care on such plants.

Conclusion

Conclusively, the area is blessed with ample vegetation resources that support the life of the people. This means the inventoried trees are providing the most basic needs of vegetation resources such as fuel wood, fodder, medicine and timber which make it possible for rural people to enjoy their living in the area.

Recommendations

Based on the general contributions made by indigenous trees in Dutsin-ma area the study recommends thus;

- There is the need to control fuelwood extraction, therefore, Government and the affected communities should embark on massive campaign against felling of trees without replacement.
- Trees and shrubs that have medicinal potentials should be put into intensive research, to explore their potentials.
- Grazing reserves like Sabuwar Gona, Runka forest Reserve, Ruwan Dorowa Forest Reserve and existing cattle tracks should be improved and put to maximum use by livestock farmers. This will help in reducing the pressure on fodder providing trees and shrubs as well reduce the risk of extinction.
- Governmental and non-governmental organizations should come together with the community people to mount a program on the sustenance and conservation of indigenous trees and shrubs. Emphasis should be placed by the government in conserving those trees and shrubs like *Anogeissus leocarpus, Deuterium microcarpum, Entada africana,Ficus glmosa, Pericopsis lexiflora, Prosopis africa, Bosewellia dalzielii, Bombax costatum, Cassia sieberiana, Combretum glutinosum,* etc, that are on the verge of extinction in the study area.
- Different parts of this country (Nigeria) were identified with different trees and different uses were identified with each tree, therefore, there is the need for transfer of managerial knowledge among Nigerian communities in order to achieve sustainable development of the trees.

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Appendices

Appendix I: Inventoried Trees with their Botanical and Local Names (Hausa and Fulani)

S/NO	Botanical names	Local names	
		Hausa	**Fulani**
1	Acacia Senegal	Dakwara	Dibbehi
2	Acacia seyel	Farar kaya	Bulbi
3	Acacia nilotica	Bagaruwa	Gawari
4	Acacia albida / F. albida	Gawo	Gawari
5	Acacia tortilis	Kandili	Shilliki
6	Acacia goumaensis	Kakaya	Kakaya
7	Acacia seyel	Dushe	Duse
8	Acacia macrostachya	Gardaye	-
9	Adansonia digitata	Kuka	Bokki
10	Albizia chevalieri	Katsari	Fadawanduhi
11	Anogeissus leiocarpus	Marke	Kojoli
12	Annona senegalensis	Gwandar daji	Dukkuhi
13	Anthocleista djanlonensis	Kandare	Kandare
14	Bauhinia rufescens	Tsattsagi	Namman
15	Balanites aegyptiaca	Aduwa	Adduwahi
16	Bombax costatum	Kurya	Kurya
17	Bosewellia dalzielii / Steganotaenia araliacea	Hano	Barkallaji
18	Boscia salicifolia	Zure	Zurehi
19	Bombax costatum	Gurjiya	Burjihi
20	Bridella farruginea / Lannea barteri	Faru	Kibbi
22	Bridella farruginea / B. scleronuera	Kizni	Kiznihi

23	Breonadia salicina	Kadanyar Rafi	Leggel
24	Butyrospermum parkii / B. paradoxum	Kadanya	Karehi
25	Butyrospermum parkii	Bagai	Bagayi
26	Cassia singuena	Runhu	Runfuwo
27	Cassia sieberiana / Cassia arereh	Malga	Dawohi
28	Ceiba pentandra	Rimi	Bokko
29	Commiphora africana	Dashi	Dasihi
30	Combretum micranthum	Geza	Gumumi
31	Combretum collinum	Farar Geza	Gumumi daneju
32	Combretum glutinosum	Kantakara	Doki
33	Combretum glutinosum	Taramniya	Golombi
34	Combretum molle	Gogen damo	Gogen damo
35	Cordia africana	Alulluba	Alullubahi
36	Crateva adansonii	Gude	Guddere
37	Crateva adansonii	Ungududu	Ungududu
38	Daniellia oliveri	Maje	Kahi
39	Deuterium microcarpum	Taura	Konkege
40	Dichrotachya cinerea	Dundu	Dunduhe
41	Diospyros mespiliformis	Kanya	Nilbe
42	Euphorbia poisonii	Tinya	Burohi
43	Euphorbia kamarunica	Kerana	Gurdunguwa
44	Entada africana	Tawatsa	Tawatsahi
45	Ficus syscomorus	Baure	Ibbi
46	Ficus glumosa / F. ingens	Kawari	Kawarihi
47	Ficus vallis-choudae	Dullu	Dullube
48	Ficus thonnongii	Shiriya	Shediyahi
49	Gardenia erubescens	Gaude	Gaude
50	Guiera senegalensis	Sabara / Barbatta	Giloki
51	Hyphaene thabaica (big)	Goruba	Gellowul
52	Isoberlinia doka	Doka	Doka
53	Maerua crassifolia	Jiga	Jariyahi
54	Maerua angolensis	Cicciwa	Leggil bali
55	Mimosa pigra	Kartaji	Kartaji
56	Mitragyna inermis	Giyayya	Giyayya
57	Neocarya macrocarpum	Gawasa	Gawasa
58	Parkia biglo bosa	Dorowa	Dunduhi
59	Pericopsis laxiflora	Makarho	Makarhahi
60	Piliostigma recticulatum / F. thonnongii	Kalgo	Barkallaji
61	Prosopis Africana	Kirya	Kohi
62	Stylosanthes errecta	Kamborin shaho	Jirehi
63	Securidaca longepedunculata	Sanya	Alali
64	Stereospermum kunthianum	Sansami	Golombi
65	Sterculia setigera	Kukkuki	Bobbari
66	Strychnos spinosa	Kokiya	Kokiya
67	Sclerocarya birrea	Danya	Edi
68	Syzygium guineinse	Malmo	Malmo
69	Tamarindus indica	Tsamiya	Jahmi
70	Terminalia avicenioides	Baushe	Bausihi
71	Vitex doniana	Dinya	Bummehi
72	Xmenia Americana	Tsada	Chabbulli
73	Ziziphus mauritiana	Magarya	Jabe
74	Ziziphus mucronata	Magaryar Kura	
75	Ziziphus spinachristi	Kurna	Kurnahe

Source: fieldwork 2013