

# Indigenous Practices in the Utilization of Medicinal Plant and Forest Resources in North East of Borno State

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**Abstract:-** This study focuses on indigenous practices in the utilization of medicinal plant of forest resources in the north-east of Borno state area. The approach has been to examine the indigenous practice of medicinal plant resources and to review some of the relevant literature on the utilization and also review some of the relevant literature on the subject. The method of the study were based on questionnaire administration using random sampling technique. From the research carried out most of the respondents indicated that they obtain resources such as herbs, vegetables, firewood, food, medicine, Arabic gum, and fodder from the forest with the use of simple farm tools. The findings also shows that the respondents still operate through the traditional system of forest management and there many types of medicinal plants that are no longer common. In other to have more resources for the indigenous people to utilize, the following recommendation were made: afforestation should be encouraged, laws to preserve, conserve and protect the medicinal plants should be enforced and another alternative source of energy for cooking should be provided.

**Keywords:-** Indigenous, Utilization, Herbs, Medicinal Plant, Forest, Resources, Borno.

## I. INTRODUCTION

A great deal of attention is currently being given in medicinal plant and forestry development. This term is used for any forest management situation which closely involves local people in the management of local forest and trees resources for which the people assume some part of the management responsibility and from which they drive a direct benefit, social forestry projects will take several forms in which local people have the primary responsibility for managing forest and medicinal plants resources at the level disease treatment, control, and of private households or individuals, communities or communal groups or state institutions. (Medugu et al., 2010, FORMEC 1997).

In the late 1970s, when the first generation of social forestry project were identified and designed, considerable attention was given top establishing village woodlots. This approach was taken because forest were considered a public property to be managed for the general good of the local

people. It was also expected that woodlots management by local people would allow an economy of scale in establishing and maintaining forest cover. Furthermore, the presence of what were referred to as “communal lands” seemed to offer a good starting point for community and other groups reforestation project especially for the medicinal plants (Irene et al., 2015, FDLR 1995).

Many of these early collective forestry projects met with little success and gradually development planners and donor agencies gave more attention to stimulating private tree growing in the farm, forestry project may have undesired social consequences and that they are no suitable under all land tenure conditions, Karin (1999).

The 1901 forest proclamation in Nigeria that a tree must be planted in place of any tree removed with greater emphasis on Medicinal plants, this was an attempt by the authorities of the time to regulate log exploitation and introduce forest resources management Omoluabi et al (1991).

Thus, man in an attempt to conquer the environment to ensure better living condition had to alter the same environment by exploiting and utilizing the resources at its disposal Mastaler, (2015).

Adaption process in the semi-arid region under traditional management systems have generally been ignored in developing project. The 20<sup>th</sup> century has unwillingly transformed the socio-economic environment of the inhabitants in the semi-arid environment (Milligan & Binns 2007). The entitlement of such marginalized people to a fair share of resources are concerned as a matter of principle in debates about neglect has been the intensification of regional inequality, peripheral dependency and of period food crises, resistance pathogen from synthesized agents. Therefore, a way must be found of supporting productive communities in such tight risk environments, Ayuba et al (2003).

The great attentions is currently being in medicinal plant of forest development, This term is used of any forest management situation which closely involves local people in the management of local forest and medicinal plant resources for which the people assume some part of the management responsibility and from which they drive a

direct benefit. Social forest project will take several form in which local people have the primary responsibility for managing the medicinal plant and forest resources at the level of private house hold or individuals, communities or communal groups or state institutions. Forest resources were considered a public property to be managed for the general good of local people (Swallow, 2006).

The aim of this research is to examine a various ways in which the indigenous people utilize their herbs and forest

resources in their communities, to access the various types of resources exploited in the forest and the uses of such resources. To examine the various method of harvesting such resources, to examine people perception of forest resources and to investigate the method of medicinal plant management and conservation employed in the study areas as well as to examine the changes in the forest setting over time.

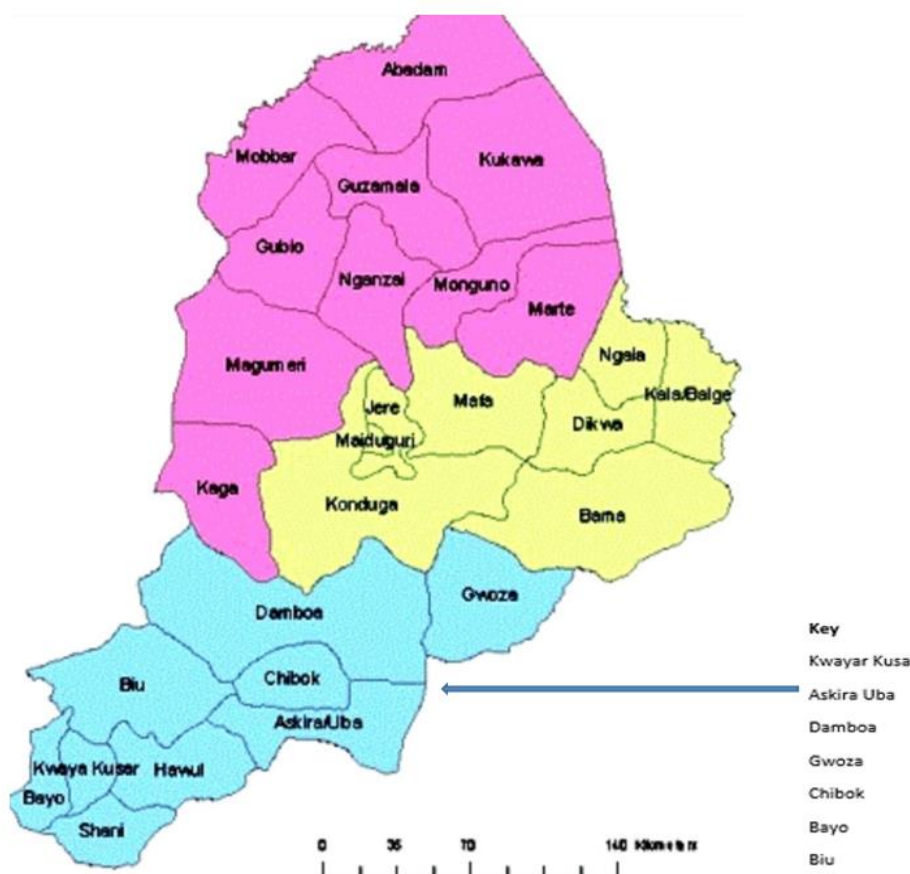


Fig 1:- Map of Borno State showing selected local government study area in green color.

## II. MATERIALS AND METHODS

Both primary and secondary source of data will be used. The secondary data will be source from the consultation of relevant books, published and unpublished materials, internet, journals, magazines and articles to support this studies.

The primary data was selected through the use of questionnaires and interview schedule in this study, seven local government where selected which are Kwayar Kusa, Askira Uba, Damboa, Gwoza, Chibok, Bayo and Biu were selected.

Questionnaires were administered to 210, 000 respondent which were selected randomly. 30, 000 respondent were randomly selected from each local government. The questionnaires will consist of 14 questions, which were administered to the residents

between the age of 20-50 and above. This was done, by recording all the answers by the respondents to each question as provided in the questionnaire. This was by meeting them in their homes, farms and business places.

In the data analysis, the method employed was simple calculation of percentages. The method of data presentation were in tabular form and the analysis of findings and results were purely descriptive.

### ➤ Climate

The climate of the study area is tropical characterized by high temperature with a definite wet season and marked dry season in responds to the pressure pattern resulting in the seasonal shift of the pressure belts in association with the apparent movement of the overhead sun. Rain is brought by the south-west monsoon which often last for five months (May-September). The annual rainfall is about

510 mm, rainfall is both erratic and scanty in variability and distribution over time and space. Mustapha (1967).

The study area is influenced by the tropical continental air mass (CT) this originates from Eurasia-Arabia or Sahara high pressure belt and is known as the north-east trade winds or harmattan, during the months of November to March, the dry harmattan winds blow off the desert and the relative humidity falls to 20 % or less during the hottest part of the day. Day temperature during this period are 29-35 °C 88-95 °F and under completely

cloudless skies. The nights can be cold, temperature can be between 4 -10 °C (40-50 °F).

Because their latitudinal location, these local governments has relatively high temperature throughout the year. It is very hot and dry for the greater part of the year. The hottest months being March and April with temperature between 39 °C and 40 °C (102.2 °F and 104 °F) minimum temperature are recorded in December and January with mean monthly temperature of 32.8 °C the mean maximum temperature is about 8.6 hours. Ministry of Finance and Economic Planning, Borno State (1983).

Years.ʹ	Kwayar kusa		Askira uba		Damboa		Gwoza		Chibok		Bayo		Biu	
	Rainfall	°C	Rainfall	°C	Rainfall	°C	Rainfall	°C	Rainfall	°C	Rainfall	°C	Rainfall	°C
2010	643	41	743	49	733	51	631	49	542	43	483	43	627	49
2011	501	42	534	47	612	49	556	46	551	44	531	46	731	51
2012	473	40	544	44	588	42	553	40	553	43	492	42	486	43
2013	738	37	658	40	678	47	643	41	651	46	741	53	532	41
2014	471	39	571	48	587	49	573	47	588	47	533	40	485	39
2015	614	40	632	49	655	51	636	45	635	46	479	39	617	48
2016	745	41	765	43	786	58	745	50	755	51	685	49	748	54
2017	643	41	688	44	723	52	692	43	693	44	643	47	651	56
2018	511	42	716	45	714	49	710	49	714	52	478	40	514	42
2019	475	40	655	43	657	46	658	47	649	47	492	41	735	53

Table 1:- The table below shows the mean annual rainfall and temperature of Kwayar Kusa, Askira Uba, Damboa, Gwoza, Chibok, Bayo and Biu from 2000-2019.

#### ➤ Relief

The topography of these local government had been predominantly under the influence of climatic fluctuations which resulted into repeated regression of the Lake Chad. The vast flat plains of the landscape stretch for several kilometers without interruptions. This extensive plain land contains no prominent hills apart from a few dunes dating from river era, and same nearby ridges which constitute a fossil shoreline from when the lake was much larger. The land is generally a gently undulating plain rising from 240 m to 300 m above sea level for the lands towards the Lake Chad in the extreme north east corner of the region (Majuk et al., 2015, Ileoje, 1972).

#### ➤ Drainage

The drainage of the local government area possess some characteristics which the geography imposes on the land due to the little amount of precipitation received in the areas, there are only two main seasonal rivers draining the region, the river Magda and river Yedzeram. They have their source from southern Borno highlands and end their course towards the neighboring state. There are also few lakes like Lake Alau and Lake Yare and other small ones and ponds which dry up during the dry season Ologe (2000).

#### ➤ Soil

The soil of the study area is developed on young sedimentary rock of the Chad formation which consist of mainly clay in some part of the region like Damboa with some sand horizon and good Agricultural farm soil in parts like Askira Uba, Gwoza, Chibok, Bayo and Biu. The soil is

very fertile, and suitable for production of rice, groundnut, beans, Bambara nut, maize, sorghum, millet, onion, tomatoes and pepper which are cultivated during the rainy season around May. In the dry season some part of Damboa, the soil dries up and the swamps give way to hard and brittle surface with numerous cracks. Water is scarce at this time except in isolated spots which are still close to the surface Ologe (2000).

#### ➤ Vegetation

The vegetation is described as Sudan Savanna. Trees in the study area normally stunted and twisted in appearance with hard corky bark to reduce the rate of evaporation. Some medicinal plants found in the study area are; *Acacia nolitica*, *Adansonia digitata*, *Anona Senegalesis*, *Balanites aegyptiaca*, *Acacia albida*, *Guiera Senegalesis* *Parka biglobosa*, *Tamarindus indica*, *Pihostigma reticulate*, *Acacia Senegal B. parkaii* and *Ficuss* Spp, Bush fires often clears the vegetation in places like Damboa, Chibok and part of Gwoza to shed their leaves during the dry season but regeneration occurs often towards the commencement of the rainy season. Beak & Geometric (1998):

#### ➤ Population and Tribe

The population of these local government as given by 2016 projection are Kwayar Kusa 79,700, Askira Uba 201,300, Damboa 372,600, Gwoza 388,600, Chibok 93,200, Bayo 111,100 and Biu 246,900 people. In the study area, the prominent tribes are; Marghi, Chibok, Kanuri, Bura, Shuwa and immigrant Fulani, Gamergu, Malgwai,

Wula and Badauwi, Bulakarima. (Ajani et al, 2008, Federal Republic of Nigeria (2017)

#### ➤ *Occupation*

The main economic activities in the study area is farming and animal husbandry based on the traditional peasant technologies. Animals reared included; sheep's, goat's horses, donkeys, camels, cows and chickens. Marghi, Bura and other tribes practice irrigation farming or market gardening. Example carrots and Bambara nuts. Most of the farmers in the study area plant cereals and legume crops. The cereal crops are, millets, maize, sorghum/guinea corn, and rice. The legume crops include: groundnuts and beans. There are also other secondary occupations in which the local people engage themselves. Such occupation are craft making leather work, blacksmith, wood work and other forms of traders like, kolanut selling, fruit lemon, carrot and also groundnut selling Ijere, & Daura (1993).

### III. THE USE OF FOREST RESOURCES IN OTHER PRODUCTION SECTORS

Forest products such as the medicinal plants are, used in numerous ways, supporting production sectors such as agricultural and fishing. Forest resource are utilized to fabricate the tools needed in agricultural, fishing, hunting and livestock production. They also support many small scale processing enterprises by supplying the main energy input (primary fuel wood) which eventually endanger the medicinal plants (Ibrahim, & Muhammad, (2015).

#### ➤ *Support for Agricultural Production*

The role forest and Medicinal plant play in improving agricultural resource has long been recognized. Forest help to maintain and restore soil fertility and they help protect water suppliers. But forest and farm trees also supply important materials to support crop. (Example baskets) crops, processing equipment example yam, storage stakes and crop marketing equipment, (example baskets and sack) forest production can also be instrumental in protecting crops (example fencing and plant based insecticide) and food stores (example wood ash, place storage bins, medicinal plant parts like leaves). While these production may be rudimentary by modern agricultural standards. They are generally the only resource available to the majority of farmers Odu & Dun, (1999).

#### ➤ *Support for Fishing and Hunting Activities*

Throughout the West African region, fish, supply the greatest quality of annual protein to the diet of both urban and rural populations. Mostly locally consumed fish are still caught by artificial as opposed to commercial (industrial) fishermen, Forest resources support fishing activities in many ways as raw materials to poison *Barringtonia asiatica* used to catch fish (Umaru et al., 2018).and for preservation. (Ukeje, 2004).

Medicinal plants and the forest at large supply the materials for hunting, equipment, for traps, snares, arrows, poisons, guns have replaces traditional hunting gear in

some regions in Nigeria, but many rural dwellers still rely on their traditional equipment Rattan, Rophia and other palm products are commonly used for making traps that sometimes serve the dual function of pest control and provision of bush meat Akume, (2014).

#### ➤ *Support for Livestock Production*

Medicinal plants and the forest is important source of fodder in the west common source of livestock fodder. Animals are generally free ranging though "cut and carry" fodder systems do exist in southern Nigeria. Mostly browse is gathered from forest bush areas. One study in south-western Nigeria found that fallow medicinal trees were widely used for livestock browse by farmers. Commonly harvested medicinal plants species are ficus thinning, *F.exasperata* and *microdesmic* Sp.

These plants are also widely used as livestock medicines. Certain drowse species were fed to livestock (goats) for particular illnesses. For example, *maniphyton fulvum* is used for treating diarrhea, *microseism puberula* relives stomach aches and *spondias mombin* is used as an abortive and aid in the expulsion of the placenta after birth.

### IV. SOCIO-ECONOMIC SITUATION IN NIGERIA

Nigeria, with a population of over 200 million and population growth rate of approximately 15.8 percent (Federal Republic of Nigeria, 2019) is an ethnically heterogeneous nation with significant regional variations in cultural religious, social, literacy structures and language. The high level of poverty of people in the rural communities has amplified the dependence of rural communities on forest resources.

#### ➤ *Forest Situation in North East of Borno State.*

North east of Borno forest provide significant medicinal plant species, economic, social and ecological benefits for the citizenry. The forest play an important role in protecting the soil, ameliorating the environment and protecting the water resources. There are numerous forest products and services not necessary accounting for in the country GDP but are very important in the daily lives of the majority of community. Perhaps the most important of these products is medicinal product, fuel wood on which about 80 percent of the region households depends for the bulk of their domestic energy. Forest contributes about 2.5 percent of the nation's GDP. Forest covers about 36 million ha (36.6 percent of the total land area of Nigeria). Forest plantations total about 216,072 ha and are made up of medicinal and economical plants (Faleyimu, 2013).

#### ➤ *Importance of Medicinal Plants*

Medicinal plants provides numerous uses to the environment as well as the nation and world at large which is made up of mainly diseases treatment, food and cosmetics. Wood plant are of great importance such as ecological, biological, cultural and economic importance.

Medicinal plant in these forest as well as the forest as whole, hold considerable production potentials for wood and non-wood forest production and provide numerous environmental function including climate modification, soil protection, biodiversity conservation and amenity.

The plants were instrumental in the development and support of civilizations. The plants form important links in the earth's geological chemical and hydrological cycles by taking in carbon dioxide and releasing oxygen, plants mode of respiration aids the process of photosynthesis the oxygen release by plants is taken in by human being in respiration.

Releasing carbon and mineral element such as nitrogen and phosphorus (important minerals) is plant growth) as they decay. The decay of leaves result to humus which acids plant growth. Absorbing moisture for growth and releasing it as vapor through transpiration. Water from trees is released into the atmosphere through the process of transpiration and this is important in the process of the hydrological cycle.

Preventing erosion by reducing the force of rain fall at the soil surface and by intercepting and absorbing water rather than allowing it to run off directly. Acting as wind breaks. Trees reduce the effect of the wind on both the soil and land surface. It reduces effect of wind on soil by minimizing rate of soil erosion, lack of trees in the desert resulting to the increase of soil erosion, transportation and deposition.

Harboring a diversity of wild life it provides forage, medicine, and habitat for wild life. Shade and beauty on a largely agricultural and urban landscape.

#### V. USES OF MEDICINAL PLANT AND FOREST RESOURCES BY INDIGENOUS PEOPLE

- **Agricultural activities:** Rural people use forest for agricultural activities because forest help to maintain and restore soil fertility and they project water supplies forest is important source of fodder for livestock.
- **Hunting of wild animals:** These include wild animals caught from their natural habitat. It is that "all flesh is grass" this is saying that wild animals are product of the forest and serve as the main sources of protein especially to the bulk of our local population. Adeyoju (1972). Bush meat is highly regarded in rural areas and can be found in markets and roads stand. These animals include: African giant rat, cane rat, rabbit and antelope (Fasoyiro, & Taiwo 2012).
- **Gum Arabic production:** - This is produced by acacia, Senegal. The gum is obtained by tapping the tree. It is as local gum and medicine by local people.
- **Medicines:** Forest reservoir for medical plant. For example, Neem tree (*Azadiracta Indica*) is use for

treatment malaria. This is in addition in insecticide property of its leaf. Plants are also widely used as livestock medicines. For example, manniphyton fulcrum is used for treating diarrhea, micro desmicpuberula relives stomach aches.

- **Wood Carving:** These include furniture and joinery works wooden house for rural schools, doors and windows production of small wooden items example, turnings, axe and tools handles, brushes, lamp holders, toys and packing cases.
- **Charcoal Production:** Which is used in cooking, charcoal iron and room heating in harmattan.
- **Others include:** Basket making, ropes use in carrying cultivated products to the markets, fence from tall grasses in the forest and also roofing houses (Gill & Alayalapati 1990, Adeyoju (1972).

#### VI. METHODS INVOLVE IN MEDICINAL PLANTS MANAGEMENT

Some of the methods involved in medicinal plants and forest management through the establishment forest reserve, this involves the selection of an area in which exploitation is prohibited. Re-afforestation as well as selective-logging which include the cutting down of mature trees, or some selected species especially medicinal plant for commercial purposes.

Legislative laws are made to prohibit or restrict cutting of medicinal plants, economic trees and enforce lumber men to replant the number of trees felled. Planned tree cutting as well as weeding of undesirable seedlings. Preventing careless and accident fires. Educating the public on the value of forest, the medicinal plants and the significance of conservation, this can be achieved through tree planting campaign. Reforestation through the planting of new plants in areas already destroyed by fire, diseases or drought. (Eguavoen, 2007, Karim et al., 1999).

##### ➤ *The Methods Used to Manage Forest Resources by Local People*

Efforts of promoting reforestation and afforestation have had little impact among rural people. Adaptation by rural communities in Borno state have involved diversification and intensification of resources use. These include various forms of agroforestry, the promotion of natural regeneration of local trees and shrubs n the cropping fields, the use of cooking stoves by families with relatively higher income. The pastoralists have either chosen to lop tree branches rather than fell the entire tree, Ayuba et al (2003). The various people in Borno have developed over the centuries some traditional conservation beliefs and practices, these include the setting aside of land for serve as community forest estates protected spiritual or social needs of the people. Ayuba, et al (2003).

➤ *Problems of Forest Utilization by Local People*

According to Ayuba et al (2003). Since this involve local government and the community, therefore, the traditional mechanisms for resources utilization, conservation and management are collapsing. The collapse of some of the existing systems is due to a number of extrinsic forces, which punch rural people to exploit their environment in certain ways. Rural settlements are no longer spared the pressures of globalization and the free market. The implication of this greater stress is put on development, individual's decision-making strategies rather than on establishing socially sustainable institutions. As a result, rural people are not always able to cope with growing imbalance between the use of resources to generate income and preserve the potentials for regeneration of the resources themselves. This imbalance can be explained by a number of factors (Folarin, 2010)

A rapid increase in the pressure on and without sufficient incentives for intensification

- Colonial and postcolonial government (example, creation of forest reserve near rural settlement, viewing centers, boreholes and other aspects of rural development
- Increased enrolment in western type; schools
- Urbanization through the gradual fragmentation of rural societies for example, the creation of local government areas.
- Contractions between modern regulations put in place by government and traditional and tenure systems
- Increase demand on fuel wood and fodder resources
- Increase attack and killing by the insurgence should be stopped by the government
- Population pressure, traditional natural resources management systems can no longer cope with the intensive exploitation of firewood, increased intensification of agriculture, overgrazing, and urbanization,

According to Karim (1999) also the following are the problems of forest utilization by local people. They includes:

- The prevalence of poverty in the rural areas forcing rural dwellers to depend entirely on forest resources and harvesting them without effective control
- Lack of reliable alternative sources of energy forcing about 80 percent of the rural population to depend on fuel wood.
- Low forest production prices leading to insatiable search for forest resources resulting in large destruction of the resources.

This research seek to examine indigenous practices in the utilization of forest resources in north east of Borno local government.

➤ *Types of Resources Obtained from the Medicinal Plants, the Forest and their Ranking*

Many respondents selected more than one option in the list of the type of resource obtained from the forest. Therefore every option in the list is based on 100%.

In Kwayar kusa 96% of the respondents indicated that they obtain firewood from the forest. These are mostly used for domestic cooking in the study area, and are also sold. 81% of the respondents indicated that they obtain food materials from the forest inform of fruits and leaves. 58% of the respondents indicated that they obtain roots leaves and barks of some trees which are used for medicinal purposes. 64% of the respondents indicated that they obtain food supply to their livestock. 21% of the respondents indicated that they obtain gum Arabic from the forest.

In Askira uba, 93% of the respondents indicated that they obtain food materials from the forest inform of fruits and leaves, 88% of the respondents indicated that they obtained roots, leaves and barks of some trees which are used for medicinal purposes. 84% of the respondents indicated that they obtain firewood from the forest. These are mostly use for domestic cooking. 36% of the respondents indicated that they obtain forage for the animals from the forest and gum Arabic 5%.

In Damboa 94% of the respondents indicated that they obtain firewood from the forest for domestic cooking and. 80% of the respondents indicated that they obtain food materials from the forest such as fruits, nuts and leaves. 60% of the respondents indicated that they obtain roots leaves and barks of some trees which are used for medicinal purposes. 60% of the respondents indicated that they obtain food supply to their livestock. 26% of the respondents indicated that they obtain gum Arabic from the forest.

In Gwoza local government 90% of the respondents indicated that they obtain firewood from the forest. These are mostly used for domestic cooking in the study area, and are also sold. 86% of the respondents indicated that they obtain some of their food materials from the forest. 52% of the respondents indicated that they obtain the plant parts (roots, leaves and barks) for medicinal purposes. 66% of the respondents indicated that they obtain food supply to their livestock. 30% of the respondents indicated that they obtain gum Arabic from the forest.

In Chibok 96% of the respondents indicated that they obtain food materials from the forest inform of fruits and leaves, 86% of the respondents indicated that they obtained roots, leaves and barks of some trees which are used for medicinal purposes. 86% of the respondents indicated that they obtain firewood from the forest. These are mostly use for domestic cooking. 66% of the respondents indicated that they obtain food for their animals from the forest. The respondents indicated Gum Arabic 45%

However, it is interesting to note that in Bayo local government 98% of the respondents indicated that they obtain firewood from the forest for domestic cooking and 82% of the respondents indicated that they obtain food materials from the forest such as fruits, nuts and leaves. 60% of the respondents indicated that they obtain roots leaves and barks of some trees which are used for medicinal purposes. 62% of the does responded to the questioners indicated that they obtain food supply to their livestock. 40% of the respondents indicated that they obtain gum Arabic from the forest.

In Biu, 75% of the respondents indicated that they obtain food materials from the forest inform of fruits and

leaves, 80% of the respondents indicated that they obtained roots, leaves and barks of some trees which are used for medicinal purposes. 74% of the respondents indicated that they obtain firewood from the forest. These are mostly use for domestic cooking. 40% of the respondents indicated that they obtain forage for the animals from the forest and gum Arabic 33%.

Based on the findings, the age groups 20-29, 30-39 and 40-49 obtained more varieties of resources from the forest.

Ranking	Kwayar kusa		Askira uba		Damboa		Gwoza		Chibok		Bayo		Biu	
	7		5		4		3		1		2		6	
Resource	Respondent	%	Respondent	%	Respondent	%	Respondent	%	Respondent	%	Respondent	%	Respondent	%
Food	28800	96	27900	93	28200	94	27000	90	28800	96	29400	98	22500	75
Medicinal	27000	81	26400	88	24000	80	25800	86	25800	86	27000	90	24000	80
Gum Arabic	17400	58	25200	84	18000	60	15600	52	25800	86	18000	60	22200	74
Fodder	1920	64	10800	36	18000	60	19800	66	19800	66	18000	60	12000	40
Firewood	6300	21	1500	5	7500	25	9000	30	13500	45	12000	40	9900	33

Table 2:- Community response on resource and ranking of northeast of Borno state forest

S/N	Scientific name	Uses	Common Names
1.	<i>Tramandus idica</i>	Firewood, beverage, laxative, medicine	Baushe
2.	<i>Acacia nilotica</i>	Firewood, fodder, food, medicine	Bagaruwa
3.	<i>Adonsonia digitata</i>	Firewood, fodder, gum, medicine	Kuka
4.	<i>Ficus platyphylla</i>	Food, fodder, medicine	Gamji
5.	<i>Mangifera indica</i>	Food, foffer, medicine	Mangwaro
6.	<i>Citrullus lanatus</i>	Food, fodder, medicine	Gunar daji
7.	<i>Anacardium occidentale</i>	Food, medicine	Kakara
8.	<i>Ficusgnaphalocarpa</i>	Firewood, medicine, fodder	Baure
9.	<i>Moringa oliefera</i>	Food, medicine, fodder	zogali
10.	<i>Prosopis africana</i>	Firewood, medicine	Kiryia
11.	<i>Barasosus aethiopicum</i>	Food, fodder, medicine	Kabaginia
12.	<i>Parkia biglobosa</i>	Firewood, fodder, food, medicine	Dorawa
13.	<i>Piliostigma reticulatum</i>	Firewood, dyes, fodder, medicine	Kalgo
14.	<i>Acacia Senegal</i>	Gum, fodder, medicine	Dakwara
15.	<i>Guiera senegalensis</i>	Firewood medicine	Sabara
16.	<i>Azadirachta indica</i>	Firewood, fodder, medicine, food	Dogo yaro
17.	<i>Ziziphus spina-christi</i>	Firewood, fodder, medicine	Kurna
18.	<i>Ziziphus mauritiana</i>	Firewood, beverage, medicine, food	Mgaria
19.	<i>Guiera senegalensis</i>	Firewood, fodder, medicine	Sabara
20.	<i>Combretun glutinosum</i>	Firewood, fodder, medicine	Taramniya
21.	<i>Piliostigma reticulatum</i>	Firewood, medicine	Kalgo
22.	<i>Detarium microcarpum</i>	Food, fodder, medicine	Taura
23.	<i>Apzelia Africana</i>	Firewood, fodder, food	Kawo
24.	<i>Acacia seyal</i>	Firewood, dyes, fodder, fumigant	Farar kaya
25.	<i>Albizia cheralieri</i>	Gum, fodder, medicine	Katsari
26.	<i>Khaya senegalensis</i>	Firewood medicine	Madachi
27.	<i>Diospyroa mespilyomis</i>	Firewood, fodder, medicine, food	Kanyan Kaiwa

28	Borassus aethiopum	Firewood, fodder, medicine	Giginya
29	Anogeissus leiocarpus	Firewood, beverage, medicine, food	Merike
30	Sterunlia setigera	Firewood, fodder	Kukuki
31	Ceiba pentandra	Firewood, fodder, medicine	Rimi
32	Balanites aegyptiaca	Firewood, medicine	Aduwa
33	Phoenix dactylifera	Food, medicine	Dabino

Table 3:- Medicinal plants obtained in the northeast of Borno state forest resource and their uses

➤ *Method Used in Obtaining Resources*

These resources are extracted by the use of hand and simple tools such as axes, cutlasses and hoes. Most of these resources are obtain by the use of hand because it is mostly for domestic consumption, for example the plucking of fruits and leaves, and fallen trees branches were pick for firewood. Presently as a result of commercialization and increase in population which lead to more demand on the forest resources. Simple tools are used in obtaining these resources. However, hand is still use to harvest these resources especially by women.

➤ *Change In Forest Density and Types of Trees/Shrubs No Longer Common*

From Table 4 54% of the respondents from Kwayar kusa, 74.5% from Askira uba, 63.2% from Damboa, 75.7% from Gwoza, Chibok 80.4%, Bayo 92,5% and 82% from Biu respondents believed that there is changes in forest density, Tree/shrubs no longer common and Changes in distance of the access to this forest products. They observed that there is reduction in the tree density and species as a result of excessive exploitation for domestic and commercial purposes, that there are types of tree/shrubs that are no longer common and those available takes them a long distance to obtain the forest products. They move for an average of 6km to 10km to obtain these resources.

Change in	Kwayar kusa		Askira uba		Damboa		Gwoza		Chibok		Bayo		Biu	
	yes	no	yes	no	yes	no	yes	no	yes	no	yes	no	yes	no
Forest density	11800	18123	22500	7500	26233	3767	24550	5450	26770	3230	27445	2555	23600	6400
Tree/shrubs	17400	12578	21400	8600	26000	4000	25672	4328	24850	5150	27400	2600	25500	4500
Distance	19400	10597	23144	6856	28000	2000	17880	12120	20770	9230	28000	2000	24700	5300
% Responds	54	46	74.5	25.5	63.2	36.8	75.7	24.3	80.4	19.6	92.5	7.5	82	18

Table 4:- Change in Forest density, distance and Tree/shrubs no longer common in the northeast of Borno state

➤ *The Indigenous Management Of Forest*

The study revealed that the people in the study area still operate through traditional forest management system. This is done by avoiding the cutting down of medicinal plant, economic trees. The pastoralist were advice to lop tree branches rather than fell the entire tree. However, the indigenous people are also engage in afforestation, those trees that are of medicinal and economical values.

➤ *The Economic Important of Forest*

Best on the information received from the respondent, the forest in the area that provide them with materials such as food, beverages, laxative, medicine, gum and fire wood. They also obtain those materials for sale for income generation. For example, most bakeries in towns' uses firewood to bake and also as a result of the high cost of kerosene and gas many house hold in urban centers turn to the use of the use of the firewood for cooking. The forest serve as a sources of revenue to the people in the sense that the commercial wood sellers pay revenue to the local government authority. The forest provide hunting, trapping of mammals and birds which often become an important food source or income for many rural people. The forest serves as a grazing site for livestock.

## VII. CONCLUSION

The study and research revealed that common medicinal plant and the forest should be preserved as a source of lively within the communities for the villages and the less privileged in the local government. Simple local tools such as axe, cutlasses, hoes, and knife are used in obtaining these resources. It also revealed that the people in the study area still operate through traditional forest management systems.

The study also revealed that majority of the people in the study area depends on the forest for their domestic firewood supply, food materials such as fruits, leaves, nuts and seeds are obtain from the forest. Medicinal materials such as herbs, roots leaves, barks, seeds nuts among others are obtain from the forest. These are used for curing illness such as malaria, diabetes, hypertension, typhoid etc. Fodder for livestock feed are also obtain from the forest. However, some of the indigenous people obtain these forest resources and sell them to generate income.

The study also indicated that, the atrocities of Boko haram and Fulani herds men have severe implications directly and indirectly on the medicinal plant, health, economy and social lives of the people of the north east of Borno state where the activities of the sect is concentrated.



## RECOMMENDATION

The under listed recommendation are aimed at solving the problems of indigenous practices in the utilization of medicinal plants in the forest in the north east of Borno state local government area.

- Individuals, communities and government are required to put more efforts in encouraging afforestation of these plants.
- New laws should be promulgated and enforced to preserve, conserve and protect Medicinal plants most especially those that are facing extinction.
- Another alternative source of energy for cooking such as cow dunes, maize cobs and other agricultural by-products could be use of substitute for firewood.

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### ➤ Conflict of Interest

The authors declare no competing of interest.

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