Original Review Article

Homegardens in Nsit Ubium Local Government Area of Akwa Ibom State, Nigeria

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Received 31st May, 2018; Accepted 6th July, 2018

Abstract

Homegardens have been maintained as part of survival of rural dwellers over generations, with a complex vegetation structure harbouring diverse types of local plant species with multiple functions. They play crucial roles in the livelihoods of the people of Nsit Ubium Local Government Area of Akwa Ibom State, Nigeria. The rural people depend on homegardens for food, medicines, small poles and income generation. This paper highlights the extent of the availability of plant species that meet the socio-economic needs, plant species that are of socio-economic importance to the people of Nsit Ubium Local Government Area of Akwa Ibom State in the generation of income, food, medicine, fodder for animals, beautification of the environment and erosion control and also plant species, families, life forms (trees, shrubs, palms, climbers and herbs). The management of many plant species in single land units demands knowledge of how each plant species affects or interacts with other species. It is suggested that homegardens can be a storehouse for endangered biodiversity conservation in Africa as well as in Nsit Ubium Local Government Area of Akwa Ibom State. Therefore, there is need to train people on the best methods to manage homegardens in Akwa Ibom State so as to sustain their livelihood importance.

Keywords: Homegardens, Local plants, Livelihood, Agroforestry

Introduction

Agroforestry is defined as a dynamic, ecologically based, natural resources management system that integrates trees on farms and in agricultural landscapes, diversifies and sustains production for increased social, economic and environmental benefits for land users at all levels (ICRAF, 1997).

It is a farming system generally acknowledged as land-use formation consisting of a mixture of woody perennials, annual crops and often with animals.

A good agroforestry practice or variant must achieve mutual socio-cultural interaction as a condition for acceptability and sustainability. Homegarden is a variant of agroforestry which takes many forms, including the planting of trees round borders, shade trees, and the random mix of food, fodder and fuel trees with shrubs and staple crops. In addition, homegarden has great potentials for timber production, apart from food crop and animal production.

It is a truism that homegardens have essential roles in sustainable livelihood support, including contribution to improvement of family health. Livelihood comprises the capabilities, assets, and activities required for a means of living. Homegardens are a form of multiple cropping practices that are adopted globally for means of living, especially in developing countries where farmers seek maximum food production from small areas of land, or where farm size holdings per capita are low (Okigbo, 1990; Ssekabembe, 2003; Adedire, 2005; Udofia, 2007). Origin of homegarden is traced to the Holy Bible which revealed that God cultivated the first homegarden in the divine City of Eden where our first parents, Adam and Eve lived and fed from the resources of the garden until God removed them due to their disobedience. The tree of life and tree of knowledge of good and evil were some of the most valuable plants of the homegarden of Eden. Thus, there is a clear evidence that homegardening is a very old tradition which was originated by God during the time of divine creation, and continued from the ancient civilization up to modern times.

Homegardens are commonly found in southern and middle belt states of Nigeria as compound farms in which multiple or multipurpose farming system is practised. In addition to raising horticultural crops/species and fodder, livestock (e.g. ruminants, poultry and piggery) may also be integrated into the farming practice. Due to the rapid increase in human population, much pressure is mounted on the limited land resources, leading to the fragmentation of agricultural lands for road construction, shops, houses, schools, churches, etc. Hence, homegardens are generally regarded as traditional land-use practices that have in-built potentials to address the challenges of increasing food demands in limited land, as well as sustaining and conserving biodiversity resources and the general environment.

An attractive feature of homegardens is their resilience in nutrient advantage and environmental services, thereby creating a harmonious two-way link between providing more food and then presenting sustainable environmental conditions. Factors such as climate, soil and the availability of water have long been recognized as critical for the production of food in any given location. Wide ranges of farming strategies have been developed in response to the differing environmental conditions around the world. It should be noted that the production, processing and distribution of food have considerable impacts on the environment by altering biodiversity, supplies of freshwater and cycling of nitrogen, emitting greenhouse gases, and degrading soils and other natural resources through pollution and overexploitation (Anon, 2002). Thus, there is the need for the adoption of a broader concept of food provision in relation to biodiversity and environmental complexities rather than just food production. This will allow more thorough understanding to be developed of links between food provision and biodiversity and to see where technical and policy intervention might be most needed. According to Anon (2002), understanding vulnerabilities of food systems and developing response strategies represents substantial research.

Ecosystem functions and services

A range of management practices are employed by farmers to manage biodiversity in the

agricultural landscapes. Homegardens are micro environments within the system that provide many goods and services of environmental, economic, social and cultural importance. These environmental goods and services also contribute to sustainable livelihoods in a number of ways. Akwa Ibom homegardens are integrated with a mixed farming system, and therefore livestock and fodder trees are important components. Hedgerows are common for boundary fencing, but their harvests are also used for indigenous green manures, mulch, pesticides, fuel wood, and fodder and also as supports for climber crops such as sponge gourds, chayote, and yams. Mixed, inter and relay cropping practices are used for efficient and effective maximization of solar energy, space (vertical as well as horizontal), soil nutrients and water resources. Farmers keep biodiversity of crops and varieties to ensure stable yields by managing pests and diseases, weather-related vulnerability, availability and market forces. This strategy is commonly seen in multiple layers of species in agro-forestry and homegarden systems. Biodiversity, especially that of the below ground part of the system, performs a variety of ecological services such as nutrient recycling, regulation of local hydrological processes, and detoxification of noxious chemicals. Farmers have a rich traditional knowledge on the complementarities of annual-perennial species composition and structure, and they use this traditional knowledge and genetic diversity for rich and healthy homegardens. Healthy homegardens not only increase the diversity of soil micro-organisms and predators of natural enemies, but also increase populations of pollinators, fruit setting and gene flow (Westernkamp and Gottsberger, 2000). His study shows that the closer coffee bushes are planted to patches of forest or homegardens, the higher the quality and quantity of beans they produced, due to greater pollination by wild bees (Shanahan, 2004).

Importance of Homegardens

Homegardens are age-long practices in various parts of the world. They play very important socio-economic and cultural roles in rural and urban societies. Homegardens also help to fulfill dietary and social needs for many cultures (Okeke and Akachuku, 2001). There are other numerous advantages inherent in the deliberate management of multi-species and multi-storeyed cropping systems such as homegardens. According to Udofia (2007), homegardens in Akwa Ibom State, Nigeria contribute reasonably to the production of timber for various uses. Okeke and Akachuku, (2001) stated that homegarden are a way of producing fresh vegetables, fruits and other crops, which are harvested when required and at very close proximity It is cheaper to grow one's own vegetables, fruits and other crops and even keep small livestock in homes. Homegardens are also a means of generating additional household income.

Advantages of homegardens

Okeke and Akachuku (2001), and and Okigbo (1990) stated the advantages of homegardens as shown below.

a. Proximity to homesteads makes it easy to protect them from vermins, to deposit in them household refuse, kitchen ash and animal manure, which augment soil fertility and, subsequently, enhance crop productivity of homegardens.

b. Homegardens are usually very productive, and provide a variety of household requirements including food, medicinal plants, fuel-wood and timber, some of which are put up for sale.

c. The diversity of plants provides insurance against drought, pests and economic risks and contributes to the diversity of food and income available to the farmer.

d. Often, there is good ground cover that reduces soil erosion, and enhances nutrient cycling which

makes the system quite sustainable. Organic matter addition improves some soil physical properties and moisture content.

e. Soil temperature may be moderated through solar radiation interception by plant and litter cover which also reduce soil moisture evaporation.

f. Farmers are able to harvest food and/or tree products almost throughout the year.

g. Homegardens have low labour requirements, although some homegardens can be improved with more labour input.

h. Provision of fuel-wood in homegardens may reduce encroachment into forests for fuel-wood collection.

i. Small homegardens are easy to manage intensively.

j. Economic returns to land and labour are higher in homegardens than in field/commercial agriculture.

Limitations of Homegardens

Ademako, (1995) reported the limitations of homegardens as stated below.

a. Although the manure and wastes reduce dependence on external inputs, continuous export of produce can lead to soil fertility deterioration. Therefore, exogenous inputs are often necessary.

b. The complex nature of homegardens makes their evaluation for improvement relatively difficult.

c. During tree harvesting, other plants are often damaged.

d. Proximity of trees to homesteads makes houses prone to damage from falling branches and extensive lateral roots from trees.

e. Light quality and quantity decrease towards the understorey and excessive shade in the understorey is often common.

f. Increased humidity may favour some pests and diseases.

g. Failure to prune upper storey trees can affect flowering and fruit development for species in the middle storey.

h. Some homegardens experience serious problems of soil moisture unavailability during dry seasons.

i. Without understorey components, tall trees can coalesce raindrops into erosive ones.

Features of Homegarden that enhance Sustainable Livelihood

Sustainable livelihoods provide a framework for examining the significant role homegardens play in living conditions of the poor. Livelihood comprises the capabilities, assets, and activities required for a means of living. A livelihood is sustainable when it can cope with and recover from stresses and shocks, and maintain or enhance its capabilities and assets both now and in the future, while not undermining the natural resource base (Carney, 1998). The concept focuses on the capabilities of people, and highlights interrelationships among people and the assets they develop

and on which they rely (Mitchell and Hanstad, 2004).

According to DFID (2001), sustainable livelihood consciously seeks to increase the sustainability of the lives of the poor by promoting the following three core objectives:

1. More secure access to natural resources which could further enhance their overall management**.**
2. A policy and institutional environment that supports multiple livelihood strategies and promote equitable access to competitive markets;
3. Better nutrition and health; improved access to high quality education, information, technologies and training;

Homegardens have been reputed to meet the above livelihood objectives. Ownership of homegardens implies access to land, which are natural assets through which other livelihood objectives, such as gender equality and sustainable use of resources, can be achieved. In addition, land can be a route through which a multitude of other assets become accessible to the household (Baumann, 2002). Homegardens enable households to produce foods for consumption or for the market, and the skills learned in production increase the family's human assets. Importantly, consumed foods improve the family's nutritional status and food security, while foods sold improve the family's financial status (Adedire, 2005). On the other hand, sharing markets, exchange of information and cooperation with other villages strengthens the family's relationships with others (Mitchell and Hanstad, 2004). Homegardens could become the major sources of household food and income during periods of stress and war, or natural disasters such as drought and erosion. Homegardens also contribute meaningfully to improvement of family health.

Socio-economic importance of plant species

Homegardens have continued to serve as an important agroforestry practice that supplies food resources and generate income for households. Okeke and Udofia (2009) found that homegardens in Akwa Ibom State, Nigeria generated monthly income of between N5,000.00 and N12,000.00 across the three agro-ecological zones of coastal, freshwater swamp and lowland rainforest. Udofia *et al.* (2012) reported that homegardens in Akwa Ibom State, Nigeria serve as dependable sources of vegetables, timber and food in addition to environmental services such as erosion control, carbon sequestration, and protection of houses from windstorm. Nsit Ubium LGA of Akwa Ibom State homegardens are rich in plant species of socio-economic importance (Tables 1, and 2), and these plant species were found to serve for food, medicine, timber, fuel-wood, beautification, fodder for animals, articles or produce for markets for income generation and environmental services, and as border and boundary plants as well as living fences (Tables 3a, 3b, 3c, 3d). Homegarden soils are stable and the protective effect of homegardens on soil erosion is derived from the multistory structure of their vegetation. Over 60% of the plant species found were medicinal plants which show the extent people rely on homegardens as sources of herbal medicine in Akwa Ibom State. Homegardens play crucial roles in the socio-economic lives of the people of Nsit Ubium Local Government Area of Akwa Ibom State, Nigeria. Their study also revealed that various products for local markets were harvested almost weekly, and that homegardens produced reasonable consumables for homes on daily basis, unlike other agroforestry practices.

Diversity and richness of plant species

Diversity refers to the number of equally-abundant types needed for the average proportional abundance of the types to equal that observed in the dataset of interest, as, in plants, while richness

simply quantifies how many different types the dataset of interest contains. Diversity and richness are important ecological tools that will enable one to understand biological productivity of an ecosystem or nature and how it can best serve mankind (Rana, 2007).

Table 1: Families of plant species of socio-economic importance conserved in homegardens of Nsit Ubium LGA of Akwa Ibom State, Nigeria

Family	No. of species	Family	No. of species
Verbenciceae	3	*Meliciceae*	1
Arecaceae	3	*Anacardiaceae*	3
Icacinaceae	1	*Musaceae*	2
Bromeliaceae	1	*Apocynaceae*	2
Moraceae	2	*Convolvulaceae*	1
Araceae	2	*Acanthaceae*	4
Sterculiaceae	1	*Amaranthaceae*	2
Gramineae	2	*Leguminosae*	2
Burseraceae	1	*Marantaceae*	1
Gnetaceae	1	*Costciceae*	1
Rutaceae	3	*Clusiaceae*	1
Rubiaceae	2	*Lauraceae*	1
Asteraceae	2	*Irvingiaceae*	1
Sapotaceae	2	*Solanaceae*	3
Caricaceae	1	*Gramineae (Poaceae)*	1
Annonaceae	4	*Crassulaceae*	1
Euphorbiaceae	3	*Combretaceae*	1
Malvaceae	2	*Zingiberaceae*	1
Dioscoreaceae	5	*Piperaceae*	1
Portulacaceae	2	*Asclepiadaceae*	1
Cucurbitaceae	2	*Liliaceae*	1
Lamiaceae	1	*Smilacaceae*	2
Myrtaceae	1	*Cyperaceae*	1

Table 2: Plant life-forms and number of species of socio-economic importance conserved in homegardens of Nsit Ubium LGA of Akwa Ibom State, Nigeria

Life form	No. of Species
Tree	23
Shrub	14
Herb	32
Climber	13
Palm	2

Homegarden is an important agroforestry practice that requires a clear understanding of the development of plants in terms of diversity and richness. This will guide scientists and conservationists to design appropriate management systems that will ensure sustainability of plant species in the ecosystem. Homegardens in Akwa Ibom State, Nigeria are found to be very relevant

Table 3a: Plant species of socio-economic importance found in homegardens of Nsit Ubium Local Government Area, of Akwa Ibom State, Nigeria

Plant Species	Family	Common Name	Ibibio Name	Life-form	Socio- economic importance	Density (ha^{-1})
Gmelina arbarea	Verbenaceae	Gmelina	Eto udaikan	Tree	-It is used as timber -It is an excellent fodder for goats & sheep	12
Elaeis guineensis	Arecaceae	Oil palm	Eyop	Tree	- Palm oil expressed from outside fibre of palm fruits. It is used in food preparation, soap, margarine and candle making - It is also used to make tinplate	8
Dacryodes edulis	Burse raceae	Native pear	Eben	Tree	- The roots are used as chewing-stick to treat recalcitrant	9
Lasienthera africanurn	Lcacinaceae		Editan	Shrub	- It is widely used in the enema form, to treat indigestion, stomach discomfort and internal hea	265
Ananas sativus	Bromeliaceae	Pineapple	Eyop-mbakara	Biennial herb	- It is used as flavouring in making soft drinks	60
Ficus exasperate.	Moraceae	Sand paper tree	Ukuok	Shrub	- It is used as a fodder for goats and elephants	8
Xanihosoma mafaffa	Araceae	Cocoyam	Atamkpon-mbakara	Herb	- The cormels are eaten roasted, boiled of cooked	487
Cola argentea	Sterculiaceae		Ndiya	Tree	- The fruits are brittle and edible. They .are delicious	14
Saccharwn officinarum	Gramineae	Sugarcane	Mbokko	Herb	Sugarcanes have been grown for chewing since ancient times. It is a satisfying sweet cooling drink.	14
Gnetum africanum	Gr.etaceac	African salad	Afiang	Climbing herb	- The leaves are eaten as salad	172
Citrus sinensis	Rutaceae	Sweet orange	Osokoro	Tree	- The fruit is edible and has high vitamin C content	23
Heinsia crinala	Rubiaceae	Bush apple	Atama	Shrub	- The leaf poultice is used to cure craw-craw and other skin infections	34
Vernonia amygdalina	Asteruceae	Bitter leaf	Etidot	Shrub	- The leaves are used as vegetable	16
Gambeya albidum	Sapoiaceae	African starapple	Udara	Tree	- The fruits are delicious.	5
Syn.Chysophyllum albidum					- It is used as timber	
Carica papaya	Caricaceae	Paw paw	Popo	Perennial herb	- Latex is used in the treatment of turmorus - Root ashes are used as a salt substitute. It is used medicinally in case of weak digestion	47
Treculia africuna	Moraceae	African breadfruit	Adian	Tree	- It is used a timber. The root decoction is drunk to kill intestinal worms (anthelmintics)	4
Annonu muricutu	Annonaceae	Sorp sop	Sawa-Sawa	Small tree	- The white juicy flesh of the fruit is edible and aromatic	8
Citrus awantifolia	Rutaceae	Lime	Nkpiri sokoro	Shrub	- The acid fruits are edible. Lime juice is used as an appetizer, for relief of cramps.	15

Table 3b: Plant species of socio-economic importance found in homegardens of Nsit Ubium Local Government Area, of Akwa Ibom State, Nigeria

Plant Species	Family	Common Name	Ibibio Name	Life-form	Socio- economic importance	Density (ha^{-1})
Croton zambesicus	Euphorbiaccae		Eto oduma	Tree	- The leaf decoction is drunk to treat diarrhea	14
Abelmoschus esculentus	malvaccae	Okra	Etikke	Herb	- The leave, pods, seeds and flower are edible	
Dioscorea dumentorum	Oioscorea ceae	Sweet yam	Anom	Annual climber	- The tubers are edible	60
Talinum triagulare	I'ortulacaceac	Water leaf	Mmon-mmon ikon	Perennial herb	- It is used as vegetable	579
Dicscorea rotundata	Discorcaceae	White guinea yam	Eka edia	Climber	- The tubers are edible cooked as porridge	
Telfairia occidentalis	Cucurbitaceac	Fluted pumpkin	Ikon ubon	Annual climber	- The leaves and tender stem are edible. An edible oil is extracted from the seeds	61
Uciimint gratissinuun	Lamiaceae	Tea bush	Nton	Shrub	- The leases are edible. Leaf infusion of plant cures catarrh, fever, diarrhea, stomach, headache and cough	75
Manihot esculatus	Euphorbiaceae	Cassava	Iwa	Shrub	- Cassava is one of the most important food plants in the tropics. It is used as garri. It is used to prepare local gum	573
Cocos mtcifeju	Arecaceae	Coconut	Isibyop	Perennial palm	- It is a good substitute for oral rely rehydration therapy'	26
Crescendo cujele	Bignoniaceae	Calabash tree	Ikimeto	Tree	- The whole plant is used as ornamental tree	4
Rapkiu hookeri	Areacaceae	Wine palm	Ukod	Tree (palm)	- Wine palm yields palm wine, a popular refreshing sweet sugary drink especially when fresh. The drink is important in the social, cultural and economic nexus of the people. Bamboo (leaf midrib) is used as building material in thatched and temporary uses	18
Manifera indica	Anacardiaceae	Mango	Manko	Tree	- The fruits are edible. It is used as timber	15
Discorea cayenesis	Discoreaceae	Yellow guinea yam	Akpaana	Annual climber	- The tubers are edible	55
Musa sapientum	Musaceae	Banana	Mboro	Herb	- The leaves, fruit & peels of fruit are fodder for goat and sheep. Banana fruits are edible	191
Alstonia hoonei	Apocvnaceae	Pattern wood	Ukpo	Tree	- It is used as timber. The plant is hypertensive - Bark infusion is used to cure jaundice.	8
Musa sapietum var. paradisiaca	Musaceae	Plantain	Ukom	Herb	- The fruits are eaten (unripe or ripe) - Plantain are very digestive and are a valuable food for children, invalids and diabetics	304
Tpomoea boiatas	Con'volvulaceae	Sweet patato	Ediam	Perennial herb	-The tender leaves and the young shoots are eaten as vegetable -The tubers are eaten-boiled, roasted or fried. -Tubers are used to make starch	54

Table 3c: Plant species of socio-economic importance found in homegardens of Nsit Ubium Local Government Area, of Akwa Ibom State, Nigeria

Plant Species	Family	Common Name	Ibibio Name	Life-form	Socio- economic importance	Density (ha^{-1})
Dioscorea alata	Dioscoroeeae	Water yam	Ebige	Annual climber	- The tubers are edible. It is popular ingredient, (in the form of fritters,) in ritual sacrifice, especially that involving release of people from the world of witchcraft	42
Dioscorea huibifcra	Dioscoroaceac	Aerial yam	Hdomo	Annual climber	- The bulbs are edible and popularly roasted	39
Justida schimperi	Acantbaceae	Hunter's weed	Mmeme	Herb	- The leaves are used to treat chest and heart problems. The leaves are edible	608
Citrus reticulata	Rutaceae	Tangerine	Sokoro mbakara	Tree	- The fruit pulp is edible- tangerine juice is canned	16
Eremonxaslax	Acanthaceae	African blood tonic plant	Ndana edem	Herb	- The root extract is taken as enema to treat spleen problems	67
Amaranlhtis cuuclatus	Amaranthaceae	African spinach	Inyang afia	Annual herb	- The whole plant is used as enema to treat pile	22
Psidium guajava	Myrtaceae	Guava	Woba	Shrub	- The ripe fruits are sweet and eaten fresh	16
Azadirachta indica	Meliaceae	Neem	Dogonyaro	Tree	- It is used as timber, timber is hard, red, durable, attractive and used for joinery and high class furniture	11
Tetrapleura lelraptera	Leguminosae	Aidan tree	Uyayak	Tree	- The fruit are aromatic and popular as soup	5
Carcinia kola	Clusiaceae	Bitter kola	Efiad	Tree	- The seeds are chewed alone, with alligator paper and/or cola nuts to treat cough	12
Emilia snnchifolia	Asteraceae	Shaving brush	Utimense	Herb	- The leaf is used to rub lavishly all over a baby with high fever to bring down the temperature	68
Marantochoa cuspidata	Marantaceae	Yourbasoftcane	Aya	Forest herb	- The leaves are popularly used for wrapping	107
Cosltis afer	Costaceae	Bush cane	Mbritem	Forest herb	-The boiled leaves are used as soothing fermentation for rheumatic pains	217
Persea americana	Lauraceae	Avocado pear	Eben mbakara	Tree	- The fruits are edible. Adecoction of the dry leaves controls hypertension.	7
Irvingia gabonertsis	Irvingiaceae	African mango	Uyo	Tree	- The fruits pulp is edible. Sweet and refreshing to the taste.	7
Cymbopogon citratus	Gramineae (Poac	Lemon grass	Ebana	Herb	- It is popularly used in the treatment of malaria.	13
Maesobotiya barteri	Euphorbiaceae	Squirrel cherry	Nyanyated	Shrub	- Twigs and small branches are used as chewing sticks	.3
Capsicum frutescens	Solanaceae	Sweet pepper	Ntuen okpo	Shrub	- Sweet peppers are external ; stimulant and counter irritant •	53
Xvlopiu aethiapica	Annonaceae	African pepper	Ata	Tree	- The fruits are spice, flavour and condiment.	8

Table 3d: Plant species of socio-economic importance found in homegardens of Nsit Ubium Local Government Area, of Akwa

Plant Species	Family	Common Name	Ibibio Name	Life-form	Socio- economic importance	Density (ha^{-1})
Bryophyllum pinnatum	Crassuluccao	Ail plant	Ndodob	Perennial	- T he leaf-juice is used as styptic and vulnerary	36
Asyslasia gangetica	Acanthaceac		Mkpah - uton nlok eyin	Perennial herb	The leaves are edible; they are cooked in palm fruit, filtrated and fed to babies	176
Achyranthes aspera	Amaranthaceae	Devil's whip	Udok mbiod	Herb	- It is used to soften cough, and increase urine	4 1
Anacardium occidentale	Anacardiaceae	Cashew	Kasiu	Evergreen tree	- The fruits (nuts) is edible and highly nutritional but must be roasted before eating	13
Terminalia catappa	Combretaceae	Indian almond	Mbansan mbakara	Tree	It is planted as a shade tree, windbreak and ornamental plant	8
Baphia nitida	Leguminosae	Camwood	Afuo	Shrub	- Twigs and small branches are popularly used as chewing stick	25
Aframomum meleguata	Zingiberaceae	Alligator pepper	Ntue ibok	Perennial herb	- The seeds are revulsive and carminative	9
Piper guineense	Piperaceae	Guinea black pepper	Odusa	Climber	- The leaves are aromatic and used as vegetable, spice, spinach or flavouring. It is a	37
Zea mays	Grmaineae	Maize	Akakpa	Herb	- The grains are edible. Fresh maize is roasted or boiled	41
Acanthus montanus	Acanthaceae	Leopard's tongue	Mbara-ekpe	Herb	-Leave decoction is drunk to cure cough and whooping cough	41
Dennettia tripetala	Annonaceae	Pepper fruit	Nkarika	Shrub	The mature green or ripe fruits are eaten for their beautiful aroma and pepper/spicy	1 2
Spondias mombin	Anacardiaceae	Hogplurn	Nsukakara	Tree	- Fruits are edible especially by children: The leaves are fed to goats with delayed release of the placenta to accelerate its release - It is used to make live fences, yam barns, etc.	3
Caladium bicolor	Araceae	Ornamental cocoyam	Ikpo ekpo	Perennial herb	- The rhizomes are fed to pigs after boiling	62
Uvaria charnae	Annonaceae	Finger root	Nkarika ikqt	Woody climber	- The root is regarded as a purgative and antipyretic while the root/bark is used to treat	13
Strophanihas sannentosus	Apocynaceae	Arrow poison	Ibok idan	Woody climber	-Enema from the pounded bark is used in the treatment of gonorrhea	17
Gongronema latifolium	Asclepiadaceae		Utasi	Woody climber	-It is used as a vegetable. In soups, it impacts it beautiful and agreeable bitter taste to the food.	47
Hibiscus surattensis	Malvaceae	Prickly hibiscus	Afat iban	Climber	- The herb is decorative and could be used in amenity planting along pations.	2 2

in the livelihood of the people. Different plant species that could be used for various purposes such as food, medicine, income generation and environmental services are available in the homegarden and can contribute positively to human livelihood.A total number of 84 plant species were enumerated in homegardens of Nsit Ubium Local Government Area of Akwa Ibom state and all of them are used for two or more purposes for human benefit (Tables 3a – 3e). A study by Udofia, (2007) showed that plant species in homegardens of Akwa Ibom State ranged between 53 and 102 from coastal to the lowland rainforest agro-ecological zones of the State.

Table 3e: Plant species of socio-economic importance found in homegardens of Nsit Ubium Local Government Area, of Akwa Ibom State, Nigeria

Plant Species	Family	Common Name	Ibibio Name	Life-form	Socio- economic importance	Density (ha^{-1})
Aloe vera-	IJIiaccae	Barbados aloe	Akokalid	Herb	- Aloe juice is used to treat skin infectious - eczema, ringworm, athlete's foot, acne, psoriasis,	14
Diodia scandals	Rubiaeeue	Turtle's shell	Hdem ikid	Herb	-The leaf juice is used to stop bleeding -The leaf extract is used to treat bruises and minor	13
Smilax ancepx	Smilacaccae	West Africa sarsaparilla	Obufaf	Climber	-It is an excellent antidote after taking a deadly poison.	7
Synsepulutn dulcijicum	Sapotaceae	Magic-plant	Npanlun	Shrub	- The pulp is locally used to sweeten palm wine	15
Datura stramonium	Solanaceae	Jimson weed	Nnya-ekpo	Annual herb	- The pulverized leaves are used as analgesic sedative, anti-jussive and anti-asthmatic.	26
L vcopersicum esculentum	.Solanaceae	Tomato	Tomato	Climber	-The fruits are eaten raw, per se and in salads - They are served as cooked vegetables, used as flavouring in sauce, stews, soups and pickled	17
Stach vtarpheta	Vcrbcnaceae	Bustard	Adian-umon	Herb	- Our local fowl feed on it	17
Glvphaeu brevis	Tiliaceae		Ndodido	Shrub	- It is popular chewing stick with a sweet silky	45
Tectnrta grandis	Verbcnaeeae	Teak	Tiik	Tree	- It is used as timber. The whole plant is a popular avenue tree. Used in treatment malaria.	5
Layenuria breviflora	Cueurbitaccae	Wild	Ndise ikot	Herb	- The fruit is used as a cathartic- cleansing and	8
Cyperus esculentus	Cyperaceae	Earth nut	Isib ison	herb	- The nuts are chewed and swallowed to cure	17
Portutacu oleracea	Portulacaceae	Pigweed	Uton-ekpu	Herb	- The whole plant is used as fodder for poultry, pigs and ostriches.	142
Gorchorus olitonus	Tiliaceae	Bush okra	Etinvon	Annual herb	-Tender shoots and leases are edible -The whole plant forms hedges.	51

About 80% of the plant species per hectare indicate a good availability of such plant species in ecological studies. The favourable diversity and richness rating of plant species of socio-economic importance in Akwa Ibom State, Nigeria, calls for proper conservation management in order to ensure sustainability of the rich biodiversity status.

Homegardens in nutrition and family health

Another feature accredited to homegardens is ready supply of plants and animals for the enhancement of family nutrition. When God established the first homegarden in the City of Eden at the inception of divine creation (Holy Bible, Genesis 2: 8-9), the Omniscient God planted myriad of food crops that were meant to provide adequate nourishment, i.e. vitamins, proteins, etc., to ensure that the first parents on earth had balanced diets at all time for excellent health and perfect functioning of the entire body system. Since then, homegardens have continued to play the basic roles of providing households with all the desired food and nutritional supplements within or very close to homesteads as designed by the Almighty God.

Homegardens have equally contributed enormously to the nutritional value of the household foods in Nsit Ubium Local Government Area of Akwa Ibom State (Udofia, 2007). He stated that these

vital needs of humans are satisfactorily met because wild plants which were formally gathered to supplement the food sources of households are often moved and conserved inside the compound farms when their normal ecosystem is no longer accessible or destroyed. About 102 useful plant species have been identified and enumerated in the homegardens of Nsit Ubium Local Government Area of Akwa Ibom State (Udofia, 2007). Some of the important plant species in homegardens in Akwa Ibom State help by fulfilling the essential objective in improving nutrition; homegardens serve to cushion the effects of malnutrition. It has been established that moderate and mild energy malnutrition contributes to reduction of child mortality; and micronutrient deficiencies are associated with increased risk of child and maternal mortality (Kiess *et al.*, 2001). Estimates worldwide indicate that 53% of the approximately 10 million child deaths every year can be traceable to malnutrition (Black *et al.*, 2003). This is because vitamin A deficiency is the leading cause of preventable childhood blindness and is associated with an increased risk of mortality coupled with increased severity of infectious diseases (Bloem *et al*., 1996). Homegardens, therefore, are strategic for addressing malnutrition and micronutrient deficiency by virtue of the constant supply of animal products, vegetables and fruits that are relatively available to poor households even at close proximity (Reddy, 1995; Bloem *et al*., 1998; Talukder *et al*., 2000).

Conclusion

Continued increase in population in Nsit Ubium Local Government Area of Akwa Ibom State results in corresponding increase in fragmentation of land that would have been used for agricultural and forestry practices. Conversion of land for building of houses, shops, offices, construction of roads, Oil industries, air airport and other infrastructures has increased the pressure on homegardens for the production of food, fruits, and vegetables. Homegardens may, therefore, become a major source of food, medicinal plants, storehouse for endangered biodiversity resources, and also agents of sustainable livelihood and biodiversity conservation in Africa as well as Akwa Ibom State if properly harnessed. Therefore there is need to train people on the best methods to manage homegardens in Nsit Ubium Local Government Area Akwa Ibom State so as to sustain their livelihood importance.

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