An Ethno-Archaeological Perspective on Oil Palm Tree (*Elaeis guineensis Jacq*) in Old Nsukka Division of Enugu State

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ABSTRACT
Archaeological investigations have revealed that palm oil processing technology was practiced in the Nsukka cultural area of present day Enugu state of Nigeria during the late stone age period, as evidenced from fragments of palm kernels found in the area dating to 2555-130B.C. The oil palm tree therefore is as old as the Settlement of the area by humans. At the birth of every new baby an oil palm tree is dedicated to such a child which is locally known as “Nkwo-lee”. Oil palm tree seems to have been created to meet man’s need in the study area. For there is no tree which in itself has so many uses like the tree since every part is utilized and is of great value. These include the production of timber, palm wine, leaves, basket, soap, palm kernel, pomade, palm oil etc. The tender palm frond “omu” performs numerous functions in old Nsukka Division and Igboland in general. The oil palm tree is one of the major oil producing plants in the area of study and Igboland in general surpassing any other plant in the yielding of oil. The palm tree serves various purposes in the domestic life of the people. It is also a major source of income to a greater proportion of the rural farmers in the study area. Palm oil processing in Old Nsukka Division is an indigenous technology. Palm tree therefore is a blessing of inestimable value to the people of Old Nsukka Division because of its multifarious uses. This paper therefore is designed to bring into perspective the great socio-economic and cultural importance of oil palm tree (*Elaeis guineensis*) through an ethno-archaeological approach in the study area.

INTRODUCTION
The oil palm tree grows natively in Old Nsukka Division. They are seen everywhere in the delineated area. Every part of it is of great utility to the people. They cultivate and harvest palm fruits from oil palm tree. There are two varieties of oil palm trees in our study area. They are locally known as ‘Osukwu-Akwu’ and ‘Okpurukpu-Akwu’. ‘Osukwu-Akwu’ is characterized by higher yield of oil, but poseses soft kernel shells when compared with ‘Okpurukpu’. ‘Okpurukpu’ on the other hand has a very low oil yielding nuts but has very larger sized kernel with hard shells. Generally, the study area is a traditionally palm processing community.
The oil palm tree (*Elaeis guineensis jacq*) is a blessing of inestimable values to the people of the study area because of its multifarious uses. Every part of it is of great value to the people. It has remained a domestic plant supplying oil and vitamin “A” in the dietary life of the people.

It is generally agreed that the oil palm tree originated in the tropical rain forest region of West Africa. Processing palm produce; palm oil, palm kernel and palm wine has been practiced in Africa for thousands of years and the oil produced, redish coloured and flavoured is an essential ingredient in most of the food menus of the people. The traditional processing of oil is simple, but tedious. Due to its economic importance as a high-yielding source of edible and commercial oils and palm wine, the oil palm tree is now grown as a plantation crop in most countries with high rainfall (minimum 1600mm/yr) and in tropical climates within 10° of the equator.

The oil palm bears its fruits in bunches varying in weight from 10 to 40kg. The individual fruit, ranging from 8 to 20gm are made up of an outer skin (Eric, 2001) containing the palm oil in a fibrous matrix, a central nut consisting of a shell (endocarp), and the kernel which itself contains an oil, quite different from palm oil, resembling coconut oil. The oil palm fruit is harvested manually using locally made cord called “Apakiri” or “Ete” for climbing up the palm tree with matchet to cut the bunch down, after which it is shredded, picked, parboiled, mashed and pressed. This is the common processing method since the pre-colonial era in our study area. To many, the palm is prosesed for family onsumption. The method of extracting palm oil involves labourous, tedious and time consuming processes. Oil palm tree is the most important tree crop in the rural economy of the humid rainforest of West Africa. The oil is consumed as household food and used for industrial purposes in our study area.

**DEFINITION OF TERM(S):**

The key words in this topic are palm tree, sustainable and development.

**Palm Tree**: According to 7th Edition Oxford Advanced Learner’s Dictionary p. 1052, defines palm tree as a straight tree with a mass of long leaves at the top growing in tropical countries.

**Sustainable**: The B.B.C. English Dictionary p. 1183 defines “sustainable” (adj) as the use of natural resources when this use is kept at a steady level and is not likely to damage the environment. On the other hand, the Webster’s New Explorer Encyclopedic Dictionary p. 1860 defines the word sustainable (adj) as capable of being sustained of, relating to, or being a method of harvesting or using a resource so that the resource is not depleted or permanently damaged; of or relating to a lifestyle involving the use of sustainable methods.

**Development**: According to the Chambers 21st century Dictionary revised Edition p. 366 defines the word “development” (noun) as the act of developing or the process of being developed.

**OBJECTIVE OF THE STUDY:**

The objective of the study is to examine the cultural uses of oil palm tree. Apart from the above, the study also aims at showing the ways the people use oil palm trees in their cultural activities and the trees relevance for sustainable development.

**METHODOLOGY:**

The nature of this work which I have undertaken to do is such that a very careful methodology is inevitable. This is mainly because of the absence of any meaningful literature, on this aspect of the study area. Consequently, the methodology employed involves the collection of ethnographic data from some of the villages and towns within the study area. The collection of ethnographic data is for the purpose of giving us a tool for the interpretation of the data collected.
from the sites. The writer chose the people who will be most likely to know about the indigenous oil palm tree within the study area.

The ethnographic studies were carried out on the people’s palm oil processing techniques and procedures. Other areas of interest include the cultural festivals of the various villages that involves the use of parts of the tree, for instance the use of parts of the tree for dressing their masquerades and in the worship of deities. Also detailed studies on the crafts and industries of the people were carried in order to see how the people have over the years been able to survive through economic reliance on revenue realized from the traded parts or components of the oil palm tree thus assisting the people in their economic development.

THE ORIGIN OF OIL PALM TREE

It is generally agreed that the oil palm tree (*Elaeis guineensis jacq*) originated in the tropical rain forest region of West Africa. The main belt runs through the southern latitudes of Cameroon, Ghana, Liberia, Nigeria, Sierra Leone, Togo and into the equatorial region of Angola and the Congo (Cobezas et al, 1995). Processing of palm produce such as palm oil, palm kernel and palm wine have been practiced in Old Nsukka Division in particular and Igboland in general.

Archaeological investigations conducted within our area of study in particular and Igboland in general have revealed evidences of early domestication of oil palm tree in our study area. Hartle, (1966) at the University of Nigeria Nsukka Agricultural farm dating to 2555 + 130 BC, Ezike (1987) at Ogbodu Aba in Udenu L.G.A, Ezike (1988) at Aku in Igbo-Etiti L.G.A and Chikwendu (1975) at Ugwuagu Afikpo dated to 5000 – 2000 BC all yielded some palm kernel shells. The plant is as old as the occupation of the study area by the inhabitants. The oil palm tree is one of the most essential and indigenous plants in old Nsukka Division and all the parts are fully utilized.

Another proof of its antiquity is associated with the norms and importance attached to this plant. Such norms and traditions are emceed in the dedication of an oil palm tree to every new born baby. The umbilical cord of a child is buried at the foot of the oil palm tree and such palm tree is dedicated to the baby. This is literally called “Nkwo-Lee”. This serves as ethnographic evidence for establishing the antiquity of oil palm tree in our study area. Palm oil processing in this area is an aspect of their indigenous technology. These oil palm trees are not bought but acquired by inheritance from their fore-fathers and passed on from one generation to another.

CHARACTERISTICS OF OIL PALM TREE

Its common name among the family of woody flowering plants widespread in the tropics is oil palm tree. It is of great economic importance because of the food, fiber, and oil they provide, and because of their ornamental uses. The family is the only member of its order and contains about 2,600 species, making it the fourth largest among the monocots, after the grasses, lilies and orchids (See plate. I).

Plate 1: A grove of well tended and cultivated oil palm trees (*Elaeis guineensis*) in old Nsukka Division
Oil palm trees have a characteristic growth form. This is a single, unbranched trunk, topped with a tuft of fanlike or feather-like leaves. The flowers are borne in auxiliary clusters (inflorescence) and a large, interwoven mass of roots occurs at the trunk base. The trunks of oil palms, like those of other monocots, have no secondary growth thus; the diameter of the trunk does not increase with the age of the tree as in dicots. The growing tip of the trunk instead is built up into a large mass in the seedling stage, and maintains that broad width as the trunk matures. Bundles of vascular tissue are scattered throughout the trunks. The leaves of oil palms, often large, are formed a few at a time at the stem tips. They have large sheathing bases that may leave semicircular scars on the stems when they fall off. The leaf blades are folded in a distinctive fashion called plicate (See plate 2).

![Plate 2: Showing the leaves of oil palms that are often large and formed a few at the tips and also have large sheathing base.](image)

Flowers of oil palms are usually individually inconspicuous but are often borne in great masses, some containing as many as 250,000 flowers. Flower parts are in threes, with three sepals (outer floral whorls) and petals (inner floral whorls) and six stamens (male flower parts). The pistil (female flower part), which usually consists of three separate or fused carpels (egg-bearing structures), matures into a single seeded fruit that may be either a berry (a seed surrounded by a fleshy covering).

Oil palms are overwhelmingly tropical in distribution. They occur in habitats that range from lowland rain forests to high mountains, and from deserts to mangrove swamps. Their distribution in the tropical zones, however, is uneven. About 1,400 species occur in tropical Asia, whereas only about 120 occur in Africa. Another 130 species occur on Madagascar and other nearby islands in the Western Indian Ocean near Africa, and about 950 species occur in the American tropics.

Oil palms are important sources of foods as cooking oil. It is also a source of the vegetable oil used in making margarine and soap. Oil Palms are growing as ornamentals in tropical and subtropical regions. The trunk is straight and rough and grows to a height of up to 18m (up to 60ft) it bears a head of waxy-green, barbed leaves, about 3m (about 9ft) long and a number of branching spikes that, on the female tree, bear 200 to 1,000 dates each.

The scientific classification of oil palm is *Elaeis guineensis*. (*Microsoft® Encarta® 2009*).
THE IMPORTANCE OF OIL PALM TREE

Worldwide, oil palm trees have long secured their place in history, having been mentioned multiple times in both the Bible and the Koran. In the Christian faith, Jesus Christ was greeted with parts of fronds as he entered Jerusalem on what is now known as Palm Sunday. In that instance, the oil palm tree symbolized victory (Love Toknow, 2012). In Nsukka cultural Area, of course and Igboland in general, the oil palm tree leaves also symbolizes peace, fertility and victory.

Oil palm tree is one of the indigenous plants that serve various purposes in the domestic life of the people of our study area in particular and Igbo people in general. The oil palm tree (Elaeis guineensis Jacq) which is indigenous to the people of old Nsukka Division and Igbo people are blessings of inestimable values. Every part of the plant is very useful to the people of the study area. Oil palm tree (Elaeis guineensis Jacq) is a monocotyledons which belongs to the tribe ceroxylinae of the family of palmaceae (Arcaceae). The palm tree, (Elaeis guineensis Jacq) is one of the major oil producing plants of the people of old Nsukka Division and Igboland, surpassing any other crop or plant that yield oil and takes the second position in the Igbo market as a producer of vegetable oil (Faure, 1958). This oil is derived from the outer mesocarp of the fruit. Within the mesocarp lies the hard shelled nut containing the palm kernel which provides the palm kernel oil and also the livestock feed – the palm kernel cake. The palm oil is widely used for cooking, lightening and has been found to be rich in certain provitamins ‘A’.

The palm nuts “Aku” or “Aki” extracted from the fibre are cracked for numerous uses. The shelled kernel “Aku” or “Aki” is washed, poured into a pot and set over the fire. The heat from fire should be much as to seep out the oil from the kernel. The more the heat, the more the oil produced. As the oil is produced, it is being poured out at intervals, so as to avoid its drying up. The kernel will continue to produce oil until it ceases. The oil which is usually produced is black in colour and is locally called “Ude-Aku” or “Enu-Aku”. This oil “Ude-aku” or “Enu-Aku” is used to rub on the body and is also used for restoring back convulsing children, it is also used for soothing fever, cold and skin diseases. Thus, its therapeutic value is highly recognized.

Palm oil “Manu-Ekwu” another product from oil palm tree is used for pomade making which is locally called “Ude-Elele” this is done by frying the palm oil until the red colour is lost to a colourless oily liquid. A particular leaf known as “abanidiegwu” is added to the solution, for a good scent. The hot liquid is then poured into a bottle or small tin and allowed to cool and solidify. It is used in the treatment of boils and burns, any injury or mark caused by fire, or heat.

The palm oil is also used for soap making locally called – “Ncha Ekete”. The oil palm spikelets or bunches are collected and burnt into ashes “ntu” the ash is gathered and dissolved in water, cloth material is used to filter out the solid materials and the clean filtrate is called Eyo, or Iye (ngu) or Nyo, (Usoro, 1974). The ‘Iye’ is then boiled in the pot until all the water is gone, leaving only the soft ashy material on the bottom of the pot. The ashy material is scraped together and a quantity of palm oil is added. This depends on the quantity of ash available. Care must be taken while adding the palm oil so that it will not be too much. The material is then poured into a bowl and allowed to cool to some extent, before it is moulded into a round shape. The soap thus produced serve multiple purposes such as bathing, washing house hold utensils and it is also good for curing skin diseases such as measles, chickenpox, craw-craw, scabies etc.

The people of our study area tap wine from the palm tree “nkwu”. The type of wine tapped from the standing oil palm tree is usually referred to as the up-wine “NKwu-Enu” and is much cherished in contrast to the wine from a felled palm tree. Tapping is not done until the tree matures and is about producing its fruits. In this case, the tapper “Di-Ochi” must be watchful as to know when the tree is about fruiting “Igba-mmannya”. The tapper “Di-Ochi” climbs with his
calabash, folded leaf or reed locally called “Ami” which acts as a funnel and a sharp stick or chisel. This palm tree “Nkwu” is tapped by driving in a sharp chisel to the sap. Beneath the hole, thus pierced, a calabash is hung. The liquid wine “Nkwu-Enu” flows into the calabash through the funnel – like leaf or reed. The sap continues to produce wine “Nkwu-Enu” for about three weeks while the tapper “Di-Ochi” visits his trees twice or trice a day to freshen the cut on the sap as this cut ensures the continued flow of the liquid or wine from the standing or felled palm tree. He collects the wine with another calabash when the quantity on the tree is reasonable and retaps as he considers advisable (Basden, 1983). The palm wine “Nkwu-Enu” can be quite intoxicating and the people drink it most during festivals like new yam festival “Iri-jji-ohu”, traditional marriages “Igba-Nkwu”, burial ceremonies “Ikwa-Onwu”, land purchasing, settlement of disputes, masquerade festivals “Iri-Mmanwu” etc. The palm wine “Nkwu-Enu” is also used to pour libation and for sacrifices to the spirit of their ancestors. The palm wine “Nkwu-Enu” is a valuable source of yeast to the people (See Plate 3 showing palm wine sellers and buyers in a typical wine market).

Plate 3: White palm wine locally called Nkwu-Enu” is also tapped from the palm tree. It is an alcoholic beverage provided from the extracted sap of the palm tree. The palm wine tapper locally called “Di-ochi” is the person that engages in the business of extracting this sap. However, it is only a male dominated occupation here in Nsukka Area. This palm wine “Nkwu-Enu” is naturally rich in yeast. Here buying and selling of the palm wine “Nkwu-Enu” is going on in one of the markets in our study area.

The oil palm leaves serve as food for sheep and goat locally called “Nri-Ewu” is kept to dry and then threshed. The leaf blade is scrapped, all round (making sure it is smooth) with a very sharp small knife. A great quantity of scrapped mid-ribs makes up the broom which the people locally call “Aziza”. The people of old Nsukka Division used this broom “Aziza” for sweeping their houses and compounds and cobwebbing the homes. The palm leaves also serve or are used in fencing homes. The centre “bone or stem is known as “Akpa” and is used for plucking fruits and also used in constructing thatched houses locally called “Ulo-Avurivu” (see Plate 4).
The ‘Akpa’ as mentioned above are used for ceiling a house. They are also used for the construction of local bed called “Okpukpo”. This locally made bed from oil palm tree called “okpukpo” may also be used as casket for traditional burial. In the traditional burial, at the time of burial, the corpse is placed in a local coffin ‘Okpukpo” and tied up with palm-frond, used only for men, indicating that they are expected to revisit the world in form of masquerade. Clothes are used to tie up deceased women. The palm frond used for deceased men is therefore believed to make them transform into masquerades and come home in such a disguised form during the masquerade festival. The “okpukpo” here highlights the socio-cultural life and the Agro-activities of the deceased. Again, these centre bone or stem called “Akpa” are also used traditionally for the construction of locally made palm trays called “Ebede” or “Opepe” or “Opee” which the people use for drying their coco yam “Achicha Ede” during the harmattan season/period – “Ugulu” (See plate 5).

Plate 4: The leaves are used for thatching and fencing of the compound. Here it is used for fencing or thatching the yam barn – “oba-ji”.

Plate 5: This is locally made slab called Ebede or “Opepe” or “Opee” of which the people of our study area use for drying some many things.
The people of our study area also use the ventral skin of the palm leave for basket making – “Aria or Nkata”. Basket making is done by intertwining of the fibrous materials derived from the palm branches. The fibrous tread is got from the palm branches and kept for two or three days so as to enhance its elasticity. The fibre from the dorsal surface which is thick, is used for farming while the light ventral surface is used on the intertwining process – “Ikpa – Aria” or “Nkata” (See Plate 6a, b and c).

Plate 6a: Different types of basket made from palm tree ribs. This type of basket is locally called “Ngiga” “Nkwuchi”. They are use in carrying different things in Old Nsukka Division.

Plate 6b: Another types of basket made from the palm tree ribs. This type of basket is locally called “Ukpa”. (They are use in

Plate 6c: Another types of basket of which the part of palm tree ribs were used to produce them. They are also locally called “Ngiga-Okuka”. As the names imply, they are mainly use for carrying fowls. Here on top of the “Ngiga” are fowls being displayed for sale.
When the determined size is got, the excess-fibrous is cut and a thick fibre is used in finishing the lip of the baskets – “Aria” or “Nkata”. Other type of basket in our study area is the Abo - a rectangular shaped basket used for carrying items. Nkata are used for carrying different things like maize, yam, etc. Nyo basket seizer used for sieving things, Ngiga basket used for keeping dried fish, meat, Ogiri, (Flavour) etc. the leaf-ribs of palm tree are also used in building and the leaves in thatching the fibre in rope making – “Eriri” or “Udo”, or “Ete” etc. (Okigbo, 1980). The people of our study area engaged in traditional textile weaving technology. Cloth-weaving is as old as the history of the people. All the primary raw materials for this industry were locally produced. The weaving tradition here is very strong and has continued to survive with a measure of its earlier vitality in spite of the serious erosion of its base by colonial impact. Most of these accessories material instruments came from the oil palm tree (See plate 7).

Culturally, in old Nsukka Division, the oil palm tree (Elaeis guineensis) is useful for its religious and socio-economic purposes. The tender palm frond “Omu” performs numerous functions. It is often used to decorate shrines or cult or grooves of oracles. In doing this, it signifies no entrance into the area except the priest or ‘Onyishi’ or ‘Atama’ of the deity or cult. Inside the shrine “Omu” is also used in hedging around sacred objects as a sign of warning on trespassing.

Again “Omu” is also widely used in old Nsukka Division by the masquerades. The “Maa” masquerades in Igbo-Odo area of Old Nsukka Division are decorated throughout with the fibrous tread which is got from the palm tree branches and omu in particular. The other ‘maa’ masquerades such as ‘omabe’, ‘oriokpa’ and ‘akatakpa’ also use it or tie “omu” on their waist or neck/head as a mark of sacredness. ‘Igbo-odo’ here refers to those communities in Nsukka cultural area that practice odo masquerade while Igbo-omabe also refers to those communities that practice omabe-masquerade. The people of our study area regard “Maa” masquerades as the “mystic emanation of the spirit”, the spirit of the dead come back from the land of the dead to the world of the living. Because they are no longer living and are therefore different from living people, they appear in masked forms (hence the term “masquerade”) which are symbolic of their supernatural powers and other worldliness, for they are believed to have some mystic powers that distinguishes them from ordinary humans. Some of these masquerades being decorated with “Omu” perform the ritualistic blessings of the community. Some exorcise the evil spirits from all nooks and corners, some go through the village with large crowds of people following and attentively listening to their moral instruction in a variety of poetic forms. Through masquerades
a constant communication is maintained with the dead in Old Nsukka Division (Okoli, 1995:29) (see plate 8).

Socially, the “Omu” signifies peace and sorrow. “Omu” is hedged around the house where death occurred so that a passer-by seeing it will know that something happened there. The dancers performing on the house of the deceased also tied this “Omu” on their body or waists, showing that they are not in a happy mood.

Economically, all the palm products are sold in the market and money got from it can be used in buying other necessary items. The oil palm tree is a money making tree in our area of study. There is no part of the oil palm tree that is not useful for consumption and also as a means of providing for the family. No part of the palm tree is wasted (Esther, 2012). Many families are engaged in the processing of palm tree in one way or the other thereby being self-employed. Children and even disabled ones are not left out as they are responsible for broom making and basketry (see Plate 9).
Nature so made it that all aspects of the palm tree is useful and economically viable as it serves as both food and cash crop to the people of our study area. There is no doubt that this is God given tree to the people. Trees create an environment, the environment favours given trees.

Again one of the richest art forms on the people of our study area is music and dance. Music is the art of making pleasing combination of sounds in rhythm and harmony. Music is made not only with the voice but also with an infinite variety of instruments. Igbo musical instruments such as idiophones includes those instruments which sound by their own vibration without resort to any blown column of air stretched string from oil palm tree or other materials such as the “Ngedelegwu” (Xylophone) (see plate 10).

The xylophone is usually made of strips of oil palm tree or Okwe (Ricinodendron heudelottii), which is mounted on two pieces or logs of banana stems, or stems of other trees or on the rims of a large clay pot or similar vessel. The strips of wood act as keys of a piano when truck with drum sticks made from petioles of oil palm tree or other material.

Another Igbo chordophones instruments in which vibrating strings produce the sound such as the “Une” (lute) and the “Ubo-akwara” (harp) all are produced from the oil palm tree materials.

A percussion or rattle instrument called “Oyo” or “Osha” (basket rattle) is made of a small conical basket mounted on a circular ground. The “Oyo” or “Osha” (basket rattle) may be single or paired. The basket has a curved handle and is filled with gravel or granular material which when shaken produce characteristic sounds varying according to the pattern of shaking. All these musical instruments of various types are made from oil palm tree (see plate11).
NEW DEVELOPMENTS IN THE USES OF OIL PALM

Today as technology develops in our fast-paced worlds, and the need for healthy diets, arise, new uses of palm oil develop too in old Nsukka Division. (FAO, 2005). Palm oil is part of our world in many more ways than we imagine here. Presently, people at home, work places, in restaurants and even cars rely on the countless uses of palm oil. Palm oil is rich in carotene from which it derives its bright, tropical red colour. In fact, the carotene content of palm oil is 16 times higher than the levels found in a carrot with the same mass and weight. This makes palm oil one of the main and richest sources of carotene and as such is important in combating vitamin ‘A’ deficiency common in many developing countries.

To copherols and tocotrienol (vitamin E fractions) are other important nutrients found in palm oil. Carotene, tocopherols and tocotrienol act as antioxidant agents and can reduce cell damage caused by toxic substances and environmental pollution, which are both known to speed up the development of certain diseases. In addition, palm oil is an excellent source of tocotrienols which are powerful anticarcengic substances and help against thrombosis (FAO, 2005) in Osuala, (2007:24).

Edward (2003) in Osuala et al noted that “due to its (palm oil) physical characteristics, palm oil can be used and prepared in a number of processes without the need to hydrogenise it. This has advantages as hydrogenation can produce undesirable trans-fatty acids which may lead to diseases, including cardiovascular problems and diabetes. The composition of palm oil, together with its natural consistency, appearance, pleasant smell and its resistant nature makes it an ideal ingredient in the development and production of a variety of edible oils, in particular margarines and fats. Palm oil is also ideal when making the following products like dry cake mix used for baking biscuits, cakes and sponge cakes, soaps, sauces, fat substitutes used when making condensed milk, powdered milk, non lacteous cream used in coffee and ice-cream.

Palm oil is also considered one of the best oils for frying such as plantain, potatoes, eggs, etc. This is because, it can resist high temperatures and does not produce unpleasant smells. It is as such used in restaurants and during the mass production of fried potatoes, French fries, puffy hor’dourves, pies, ring-shaped pastries and doughnuts (Osuala, 2007:25).

Palm kernel meal, a by-product of palm oil, is used in the production of concentrated foods and as a supplement in animal feed. Palm kernel oil is also used in cream made from sugar, condensed milk and doughnut fillings. It is also found in biscuits and cakes giving them a softer texture and sweeter taste which lingers in the mouth. Palm kernel oil is also used to make special kinds of margarines and is found in ingredients used when baking cakes, croissants and bread, giving these products added volume, a soft texture and making them last longer. Palm kernel oil is also favoured when making sweets, cream for coffees and peanut butter.

Palm oil gotten from the people of our study area in particular and West Africa in general have non-edible uses which are of great socio-economic value. It can be used as a substitute for petroleum. Palm oil and palm kernel oil are used in the production of Oleochemical products such as fatty acids, fatty esters and fatty alcohols which all contain glycerol and fatty nitrogen. Recently, palm oil and palm kernel oils have been increasingly used as biodiesel fuel. In 1900, Rudolf Diesel used vegetable oil as fuel for his car, from which the motor engine subsequently took its name (Osuala,2007:27). Years later, palm oil was successfully developed as a biofuel for cars. Using palm oil as a biofuel is more environmentally friendly and it is more advantageous than other combustible fuels such as petrodiesel and standard petrol.

Other non-edible uses of palm oil include:

- Making of soaps and detergents,
- Making of Candles
- Cos-metics like lip sticks
Lubricating greases for machinery used in the production of edible foods.
Grease for bread molds and bread making equipment.
Grease used to protect tanks, pipelines and similar instrument which remain uncovered and in the open air.
Drilling mud for the petroleum industry.
Expoxidated palm oil used to plastify and sterilize products in the plastics industry, in particular during the production of PVC.
Glue
Printing inks
Biodiesel
Metallic soaps for the manufacture of lubricating grease and metallic dryers.
Steel cold rolling process
Tinplate rolling
Acids to lubricate fibers in the textile industry.

Finally, in addition to oil extracted from the palm oil fruit, other parts of the palm tree can be used in industry. For example, lead fibers and empty fruit bunches are used to produce chipboard and plywood. After plantations are cleared out, the trunks of oil palms can be used to make furniture (Osuala, 2007:27).

TRADITIONAL METHODS OF PALM OIL PROCESSING

During palm oil processing, various procedures are required and must be done in harmoniously. Palm oil processing starts with the harvesting of the oil palm fruits – “Igbuta-Akwu”. The oil palm fruit is harvested manually with a matchet using a locally made rope called “Apakiri or Ete to climb up. After harvesting which is normally done only by men, the head is debauched. It is an abomination Nso-ala/aru for women to climb palm tree in our study area. The ripe bunches are carried home by the women with the help of men and children for further processing. The ripped bunches are dissected to loosen the ripped fruits from the spikelets – Igbu-Akwu. The first method of fruit removal is with the use of a matchet, (ogbuadana), and axe (Anyu-Ike). The second method of detaching the bunch is through the use of a small metal axe – “Anyi-Ike” especially the one that could be carried with one hand. The dissection could be done by the men, women or children (See plate 12).

Plate 12: Showing the detaching and dissection of the ripped bunches to loosen the ripped fruits from the spikelets locally called “Igbo-Akwu”.
At home, the bunch are debunked into spikelets and covered with green leaves or sack bags or baskets for three or four days to ferment and loosen out of the spikelets. The green leaves or sack bags will generate some heat, which will help in loosening the fruit from the spikelets. In this way, the fermentation however, will help to release fatty acids which will be added to the quantity and quality of the oil (Usoro, 1974:3 in Nweze, 2007:57)

At this stage, the fruit now loosen on the spikelets will be handpicked or plucked out of the spikelets “Inwo-Akwu” with ease processing into a suitable vessel, especially a basket, which is mainly done by women and children prior to the cooking.

The picked fruits are poured into aluminum pot ‘ite-igwe’ already positioned on the fire for cooking. The quantity of the fruits always determines the size of the pot to be used – ‘ite-akwu’. Water is poured inside the pot so as to cover the palm fruits inside the pot and large quantity of fire wood is supplied. Then heat is applied to the pot. The boiling fruits are inspected from time to time. The duration of the cooking depends on the intensity of the firing and can last for four to five hours or more than. The firing of the fruits stop when the fruits have reached to the requirement in boiling.

The cooked fruits are then spread on the ground to cool for about one or two hours and then are poured inside the long mortar locally called “ikwe-Akwu” and then marched with legs until the kernels – ‘Aki’ have been stripped off its fleshy covering. The mortar used in the processing of palm oil is of two types – the long and rectangular types used for marching, and the round types used for pounding. They are gotten or made from the wood of oil bean tree – Pentaclethra macrophylla - “Ukpaka”, “Achi” – Brachystegia spp. “Ugba” – Tetracarpedium conophorum. The measurement or size of the mortar depends on choice of the individual (see Plate 13 and 14).

The marching of the cooked fruits is mainly the job of women, but men and children can render help where and when occasion demands. In this satiation, women are very much involved in the real traditional palm oil processing than the men. It is a taboo for men to squeeze the chaff in palm oil processing (see plate 15).
After marching the fruits with legs or pounding them in a mortar, enough cold water is added and mixed up thoroughly (See Plate 16).

Then the kernels are removed and latter, the chaffs. At the end, oil is separated from the grog locally called ‘oguru-akwu’.

Finally, the palm oil – mmanu-Ekwu” being collected will be poured into a pot for cooking the second time. Cooking of the oil takes continuous process until the whole water evaporates remaining only congiled grog and the oil in the pot. The oil is allowed to cool for about one hour and then sieved and stored inside drums or gallons or jerry-cans, tins, cans etc for immediate and subsequent usage (see plate 17).
This is the common processing method practiced in our study area prior to the colonial era.

MARKETING OF THE PALM OIL

Marketing means different things to different people, to the economic theorists marketing is seen as that part of economic change which deals with the creation of time, place, form and possession utility. Some agricultural products are required to undergo changes in order to meet the tastes and demands of the consumers. Therefore, marketing of palm oil in our study area undergoes certain procedures. The products which the farmers grow and sell must be harvested, processed, stored and finally transported to the market where the end consumer purchases them in the appropriate time.

The product has its already established and functional markets like Eke-Aku, Nkwo Ogbede, Ogige Nsukka, Nkwo Ibagwa, Orie Orba, Afor Opi, Eke Eha-Amufu, Eke Ozzi, Eke Nimbo, Adani, Opanda, Afor Ukpata, Afor Obollo, Nkwo Okutu, Orie Okpuje, Eke-Ogurogu, Orie Nrobu, to mention but a few. Buying and selling of palm oil are done also at individual homes. The sale of palm oil forms a major source of income to rural farmers. The local sales of palm oil and other oil palm products give the tree a very prominent position in the socio-economic life of the people. This is because, the buying and selling from the same market was not restricted to the circulation of goods but also promotes intergroup relations among the various towns and villages. In the market, the people shared and borrowed ideas.

There are some hindrances encountered in marketing of palm oil. Some of them are inadequate transportation facilities, and inefficient communication. In a place where the products are consumed locally, market forces should be allowed to determine price and when fixing product price, cost of production should be taken into consideration seriously (Ejemba, 1984:138).

Finally, inadequate transport services, partly due to poor access roads lead to food wastages and discourage farmers in the area of study. This is because the very few transporters who operate in this area charge exorbitant fares for the services.
CONCLUSION

Oil palm tree – *Elaeis guineensis jacq* serves various purposes in the domestic life of the people of old Nsukka Division in particular and Igbo land in general. It almost seems to have been created to meet man’s needs in the study area. Oil palm has greatly aided in the industrialization of the study area in particular and Igboland in general.

The palm tree therefore is one of the greatest economic assets the people of old Nsukka Division have since it’s importance is realized and its potentials fully harnessed. To them, oil palm tree is nothing but money tree - for there is no tree which in itself has so many uses than the tree since every part of it is of value – timber, leaves, soap, and fruits etc.

Finally, Oil palm tree processing can be seen as an acquired skill which will promote our economy if it is well promoted. The Government, private organizations and the entire public at large should work hand in hand to see that this plant species of great economic importance is harnessed and the traditional processes involved in utilizing its values protected and passed on from one generation to another. The idea of cutting down oil palm trees under the guise of clearing areas for developmental purposes should be checkmated and if possible stopped. This should make way for sustainable development of our study area through the revenue accruing from the tree.
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