



**An Introduction to  
AFRICAN CULTURE &  
TECHNOLOGY DEVELOPMENT**

edited by:

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## CHAPTER NINE

### INDIGENOUS TECHNOLOGY AND PALM OIL PROCESSING IN SOUTHERN NIGERIA

Dr. Winifred E. Akoda.

#### INTRODUCTION

From pre-colonial times, the people of Southern Nigeria were very dynamic and creative in harnessing their natural resources through the use of locally made machines. This modest stratagem which reflects their enthusiasm for self-development has come to be described as "indigenous technology". Although some scholars have come to perceive indigenous technology as a non-sophisticated technique or what could be regarded as 'old school' method, yet the technology of palm oil production is not only tasking but a reflection of the innovation and ingenuity of the people of Southern Nigeria.

The people of Southern Nigeria constitute the Igbo, Yoruba and riverine people like the Ijo, Efik, Ibibio, Ikwere, yet our emphasis is on the South-Eastern Nigeria (Igboland) and South-Southern Nigeria (Efik, Ibibio, Ijo, Bini, Ukwuani and Urhobo ethnic groups amongst others. There is no doubt that the people occupying the South-East and South-South of Nigeria are richly endowed with abundant mineral and natural resources. Some of these include timber, crude oil, limestone, rubber and palm trees from which the palm-oil is obtained. Of all these, the palm tree, (*elaeis guineensis*) occupies a pride of place in the economic life of

the people and has been in use from the pre-colonial era. Its uses cut across medicare, body/skin care and nutrition. Production is largely done by farmers using non-sophisticated indigenous techniques (Forde, 1956.). The oil palm tree which grows naturally in the forest and coastal region of tropical Africa produces two types of oil namely the palm oil and the kernel oil. Although of different varieties, three major types of palm trees can be found in Southern Nigeria namely, *Dura*, *Tenera* and *Pisifera* (Michael, 1976).

Before the Trans-Atlantic slave trade era, palm oil was processed for local consumption by households and gradually began to assume a commercial status during the era of the slave trade. P.A. Talbot maintains that as early as 1522, European slave merchants bought tons of palm oil to feed slaves on the middle passage (Talbot, 1969). The Calabar Seaport, located on Africa's West Coast was the major channel through which European influences and trade goods entered the West African region while slaves left through this same route. Indeed, Antera Dukes Diary acknowledges that Captain Fairweather and Tom Cooper, two European slave merchants bought two and four tons of palm oil from the local people to feed their slaves in the year 1785 and 1786 respectively (Aye, 2000). Similarly AJH Latham maintains that 361 tons of palm oil was exported to Europe in 1806 (Latham, 1973). These figures accelerated after the abolition of the slave trade and the transition to palm oil and other products from 1807. Other goods such as ivory, beeswax, animal skins accompanied palm oil that was sold to the Europeans as its demand was further boosted by the industrial revolution.

The uses of palm oil for the manufacture of soaps, margarine, lubricant, grease, and candles by European industries in the 19<sup>th</sup> also gave fillip to the expansion and commercialization of the palm oil in Southern Nigeria and West Africa in general. European traders competed amongst themselves in the palm oil trade and former slave merchants, transited to the new trade (Aye, 2000). Efik traders monopolized this trade as they were located in the middleman position between the hinterland (where the palm oil was produced) and the coast where they had access to European buyers.

The sources of palm oil in Southern Nigeria were many. From Akpabuyo through Ediba, Ikom, Uruan, Ikpa, Uyo, Biakpan, Itu, Ikot Offiong, Umon and Ikun in present Cross River and Akwa Ibom States to the Igbo speaking areas of Arochuku, Uratta, Azumini, Ohafia, Ohambele and Ngwa, all were involved in palm oil production and processing for commercial purposes. Although there may be slight variations in the local processing techniques yet these attempts laid the foundation upon which future economic development was built. In subsequent sub themes, we will bring to the fore, the local techniques in the processing of palm oil, its significance and economic value to the people of Southern Nigeria, and conclusion.

#### Palm Oil Processing

The indigenous technology associated with palm oil production lacked some form of modern sophistication. Three main types of harvesting techniques were practiced. Before harvesting however, the fruits were allowed to ripen and mature.



When they are ripe they usually change from yellow to bright red colour while the tips remain black.

The initial and archaic method of harvesting through the felling of palm trees was the first method and this held sway up to the first quarter of the twentieth century. This method involved the total pulling down of the palm tree before harvesting its fruits. The method was destructive rather than economical as felled trees destroyed the surrounding areas and the palm tree itself. Owing to the fact that it takes several years for palm trees to mature, it becomes very difficult to replace the fallen ones (Ikime, 1987). Although this method is outdated, it served as the spring board for indigenous palm oil processing technology.

The second pattern of harvesting palm fruits involved the use of professional climbers known as "Di Nkwu" among the Igbos (Mba Vincent Anya, interview, 5/2/2013). In this case, it required the use of a rope measuring about twenty inches in length. The climber uses the rope to encircle himself, and the tree trunk, ties it tightly to avoid any accident, carries his matchet along in his cloth and then leans his weight on the tightly fitted rope and walks up the top of the tree. On getting to the top, he clears the surrounding palm fronds and using his matchet, cuts down bunches of the palm nuts (Okon B. Asuquo, interview, 5/2/2013). Unlike the former method, nothing is destroyed. The third method, harvesting with chisel, involved the use of a long curved knife attached to a hook and pole, in the case of a tall palm tree. The long curved knife, chisel, is usually fixed to the end of a bamboo, which in most cases, is just about the height of

the palm tree. The harvester then stands at a suitable position and uses his strength to cut bunches off the tree (Jones, 1963).

The harvesting of palm tree was carried out specifically by the male folk as it was forbidden for women to climb palm trees. The processing technique was, however done by women. The traditional method of processing involved plucking off the fruits from the palm tree bunches and boiling them in a big pot or drum. After boiling, the fruits were transferred into a big dug out hole, well cemented with stones called 'Ikwe Akwu' by the Igbo, where they were continually stamped with the feet for two to three hours until the nuts were separated from the husks. A brief description of the palm process among the women of Akwa Ibom is as follows:

*Once the kernels have been picked and brought home, women take over the palm oil production. They pour the hot kernels into a hollowed out log, placed in a shady spot. A woman steps into the trough and walks up and down its length as they add more water, the husks begin to fall away from the nut, releasing the fatty yellow juice (In pictures: Nigerian palm oil" by Andrew Walker. See [http://news.bbc.co.uk/2/shared/spi/hi/picture\\_gallery/08/Africa\\_nigerian\\_palm\\_oil/html/1stm](http://news.bbc.co.uk/2/shared/spi/hi/picture_gallery/08/Africa_nigerian_palm_oil/html/1stm)).*

In some areas, a big mortar and pestle is used in pounding the fruits, more often than not, in colony. The pulp was then hand squeezed to extract its oil. The nuts, after pounding were washed and the water constantly stirred to produce oil which usually floats on the surface. The floated oil was gently sieved off and boiled together with the palm oil earlier extracted.

Writing on the significance of the boiling process, Ofonagoro states that it aided the separation of oil and water even into the tiniest drop that may have been contained therein (Ofonagoro 1979). The above method of processing palm oil has given way to a more modern one as detailed below:

The commonly used modern method of extracting palm oil was introduced in the 1940's when the Eastern Nigeria Development Cooperation imported hand pressers also known as the screw press. These machines were distributed to Calabar and Owerri provinces between 1945 and 1947 (Nigeria Report on Agric Development, Lagos); they became more popularly used in the 60's. The use of hand pressers facilitated the work done by the women as the boiled palm fruits were poured into a pounder, a machine that pounds the fruits, from where it was transferred to the presser and the contents boiled after the extraction of the sludge (Atim Silas Ene, interview, 5/2/2013). The produced oil was then reheated to eliminate any trace of water content in the oil. This method eliminates the cumbersome use of mortar/pestle for pounding, the tedious tredding on foot for hours, or the stressful squeezing of the fruits. Another advantage of this method is that much more oil is produced as the machine extracts all the oil from the palm fruit (Atim Silas Ene, interview, 5/2/2013). Over the years, various kinds of presses have been introduced to the palm oil processing industry. They include:

- (a) Manual vertical screw press.
- (b) Stork hydraulic hand press.
- (c) Motor jack press.
- (d) Motor jack/ cantilever press.
- (e) NIFOR hydraulic hand press.
- (f) Combined screw/ hydraulic hand press.

The most popular of these presses include the manual vertical screw press, the stock hydraulic press and NIFOR hydraulic hand press ([www.fao.org/.../y4355e05html](http://www.fao.org/.../y4355e05html)). The introduction of the mechanical method of processing oil led to an improvement in the quality and quantity of oil and made labour less intensive.

#### The Significance and Economic Value of Palm Oil to the People of Southern Nigeria

The palm fruit from which palm oil is processed was and still is of immense value to the people of Southern Nigeria. Its importance best fits the saying that "man throws no part of the oil palm away". Its pulp, endocarp, pericarp, mesocarp and the kernel all have their various uses in spite of the different species (Hopkins, 1973). Aside palm oil which seems to be the main yield of the fruit, there are other vital parts like the sugary sap which the tree produces when cut. This sap is used to produce a certain kind of palm wine for consumption.

Among the Efik, palm wine is referred to as '*Mmin Efik*' while the Ibibios call it '*Ukot*' and the Igbo, '*Mmaya*'. The kernels of the palm fruits are also of immense value to the body as it is used to make a local body cream known to the Efik as '*mmayanya*'. *Mmayanya* is used to prevent convulsion in babies and to ward off evil spirits. Palm oil is also used in making local soaps, and the crushed shell and shaft used as cooking fuel. The fronds of the palm tree are used to fence, and protect the wall of houses. Similarly, the palm tree stems make good timber from where wooden chairs and tables are designed while the midribs are used in making ropes and brooms. Dried palm leaves make

excellent crafts like baskets and mats and the palm fruits are used in making palm oil soup commonly known to the Delta and Edo people of southern Nigeria as '*banga* soup'. Among the Ediba people, the young palm leaves, known as '*utra*' are used for religious and ritual purposes. (Ada Ewa, interview, 7/2/2013). Palm oil by itself neutralizes poison when ingested and nullifies the potency of charms (Bassey Edet Efiang, interview, 6/2/2013).

The importance of palm oil to the socio-economic development of Southern Nigeria cannot be over-emphasized. Following the effective abolition of the Trans-Atlantic slave trade in 1807, the produce became one of the leading export crops of West Africa (Njoku, 1978). By 1911, British West Africa alone exported 157, 000 tonnes of palm oil with about 75% coming from Nigeria (oilpalmafrica.wordpress.com/2010) making the country the largest exporter of palm oil. By 1934, Nigeria was overtaken by Malaysia (oilpalmafrica.wordpress.com/2010). In 1966, oil production in Nigeria dropped to 43% and further reduced to 7% (oilpalmafrica.wordpress.com/2010) as emphasis drifted to petroleum. In spite of this, palm production and marketing helped in alleviating problems of unemployment as both young men and women engaged in the harvesting and processing of the fruit. While some were employed in harvesting, others were engaged in pounding or operating the hand press machine

Palm oil production has indeed boosted the economy of many Southern towns in Nigeria. In Ikom, revenue accrued from palm oil was used in developing educational institutions and

building town halls (Samuel Ogar, interview, 8/2/2013). In Ediba, the proceeds made from palm leasing were used in granting scholarships to the intelligent children of the community (Ada Ewa, interview, 7/2/2013). In Ohafia, palm oil merchants bettered or improved on their lives by using the proceeds from palm oil to build more houses and marry more wives who could assist in their farms (Mba Vincent Anya, interview 5/2/2013). Men like King Jaja of Opobo and Eyo Honesty II of Creek Town, gained prominence because of their involvement in the palm oil business. The former's control of the palm oil trade and inland oil markets drew the entire of the European supercargoes who perceived him as a threat to their business. In the 19<sup>th</sup> century, Efik kings and nobles like Eyo Honesty II, Eyamba V and Yellow Duke benefitted from the trade in palm oil and established commercial empires for themselves. Yellow Duke extended his commercial empire to the Cameroons while Eyo Honesty II, known to be the greatest oil trader in Calabar established at Ikpa Oil market and placed his agents there (Aye, 2000). The palm oil trade made coastal towns wealthy as well as other hinterland groups that participated in the trade. Women were not left out as they benefitted greatly from palm oil production and trade. This was because proceeds accrued from the trade were used for their upkeep and those of their children, a situation which reduced the burden on their husbands.

## CONCLUSION

In this paper, we have pointed out that palm oil processing and marketing can be traced to the pre-colonial era although it gained major prominence after the abolition of the Trans Atlantic slave trade in 1807. We have examined the production and processing of palm oil using two methods- the traditional and the modern. The latter method made use of the hand presser or screw press which was introduced in the 1940's but became popular in the 1960's. This work has also shown that the development of this technology enhanced the revenue base of communities which in turn led to the development of infrastructures, provision of scholarships for indigenes, and the empowerment of individuals and families. Accordingly, it is important to emphasize that there are potentials for reviving and benefitting greatly from indigenous palm oil technology. This technology, if further harnessed, would meet the challenges of globalization and lessen Nigeria's overdependence on the petroleum industry.

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