

Sustainable Technologies in Eastern Nigeria from Pre-Coloniality to 1996

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Abstract

An industry was usually underpinned by skills, especially, the productive. Thus, a discuss on indigenous industries entailed a survey of the skills and practices of the people “in their efforts and various activities for survival in pre-colonial and post-colonial times. In whatever endeavours the people engaged in, such as agriculture and warfare, local blacksmiths, technologists and craftsmen fabricated metal and wooden tools and implements. The products included hoes, machetes, metal gongs, cooking pots and iron tripods for agriculture and household uses, while guns, gunpowder, swords, specialized machetes and spears were used in hunting and warfare. The existence of immense human activity was underpinned by the strong belief in the philosophy of sweat and labour. This was also in addition to the ever presence of the gods, spirits and deities that intervened in the peoples affairs for weal or for woe. The paper concluded that indigenous industries in Eastern Nigeria from pre-colonial times to 1996 were evolved and developed for the purposes of sustenance on the use of the head and hands in

the satisfaction of human want and for the attainment of happiness as evidenced during the Biafra-Nigeria Civil war; that indigenous industries were essentially agro-based which, in turn, sustained agricultural productivity with their evolving technologies which remained dominated by the 'slash and burn' and 'hoe and matchet' methodologies; and that indigenous industries were sustained through enhanced inter-group relations, such as commerce, guild activities and migrations and not necessarily by the scientific innovations of colonial and post-colonial periods; and which successive Nigerian governments were incapable of enhancing but which industries sustained themselves.

Introduction

Indigenous industries with accompanying technologies are systems that have been evolved without external influences. In essence, as human kind passed through the phases of history: from the wandering and food gathering stage, through the Paleolithic to the Neolithic, they constantly evolved and used skills that enabled them to adjust and adapt to any ecological environment. The ecological zones also determined the type of industries and technologies that have been evolved and usable in them.

The indigenous industries in Eastern Nigeria from pre-colonial times were sustained equally by indigenous technologies. Irrespective of the terminologies applied: either indigenous industries or technologies, a consensus definition of what constitutes them are that:

Indigenous technology is a demonstration or application of creative or practical skill/s or knowledge, aimed at effectively solving a perceived problem, or supplying the particular wants or needs of the individual/s or group/s of people originating and using practical skill/s or knowledge. ¹

The Neolithic Revolution

The evolution of technologies, crafts and industries entailed the passage through several historical epochs which were underpinned by peculiar technologies referred to as the Lithic (Stone) periods. The Paleolithic (Old Stone Age) was characterized by rudimentary and unpolished stone implements. Lasting several millennia, man in history made attempts at revolutionizing these implements. The efforts transformed to the Neolithic period that has been described as the earliest and conscious attempts by man at improving agriculture and farming for foods production. It was a period that witnessed the settling down of mankind in homesteads and equally evolved social systems of interaction within and withal groups. People no longer wandered or dispersed to areas where certain species of foods (fruits and fibers) could be found in abundance for harvest. This has been referred to as sedentary existence.

Human kind learned to use polished and fabricated tools and equipment of stone, sticks and bones. The earliest discoveries were first tested in the field of agriculture. According to J. U. J. Asiegbu:

Discoveries of Neolithic farming cultures in different parts of Africa, coupled with other archaeological artifacts of metal-iron technology located in West African region, including South-Eastern Nigeria and the NOK area in Northern Nigeria, all appear to be incontrovertible evidences of agro-based skills and metal-working technology being indigenous to Africa, or at least predating the colonial era by many centuries in most parts of the continent. ²

Iron technology artifacts unearthed in various parts of Southeastern Nigeria have been dated, through the radiocarbon dating method, to be between the eight and ninth centuries AD, although a 500 BC date has been given to

the NOK culture area artifacts. To anchor a relative linkage in historical epochs, there are findings of proto-types of agricultural implements and ideas in many African communities.

The impact of modernization and the innovations associated with it on indigenous industries are obvious. Among the impacts and innovations are the presence of the European equivalents of indigenous industries, such as the Aba textile Mills and the Ceramic Corporation in Umuahia. Definitely, their impact on the cloth weaving and pottery making traditional industries are obvious. Yet, the products of indigenous industries, such as cooking tripods, machetes, single-pronged forks, kitchen knives, town criers gongs, hunting-dog gongs, ceremonial brass bells, hoe blades and spearheads, have survived modernization since a greater percentage of Nigerians still live in the rural areas where modern implements and facilities are unavailable, could be inapplicable and not usable at all. For instance, the Akwete weaving looms have survived into the present, especially, since the Akwete clothes are specialized fabrics. The local gin brewing industry has had its clay pot storages changed to metal drums and plastic containers.

Indigenous Industries

The study of indigenous industries and technologies in Eastern Nigeria would at best be predicated on the observations of Asiegbu when he stated that:

After centuries of what appeared to be a good start in the various fields of indigenously based technological skills in the production of goods, how did the decline come about in almost every angle and to almost totally wipe out existing local knowledge in cloth weaving, blacksmithing, pottery and clay works, wood

working, and carving, cosmetics, palm produce and traditional medicine.³

The pre-history and archaeological studies on Eastern Nigeria vis-à-vis its technological and industrial evolution has seemingly been carried out. It will also be stating the fact that some parts of Eastern Nigeria have received wider coverage, especially the Awka, Nsukka and Igboukwu areas, than others. Yet, gaps exist in the studies of indigenous industries.

Thus, attempts have to be made to isolate and re-categorize the points where the raw materials, such as iron ore and slags were, and could still be, found; and second, the places and peoples who actually worked them and could still resuscitate the industries in post-coloniality. For instance, in the Nsukka axis, the famed Lejja iron masters only bought slags from the Umundu who were adept at smelting and did not mine the slags.

The paper appropriately contextualized definitions of what constituted, and still constitutes, an industry and technology. This is against the background that the industries in Eastern Nigeria from the Paleolithic to the Neolithic times were, and still are, agro-based. Answers have been to relevant questions, such as: What raw materials other than iron ore sustained local industries in Eastern Nigeria? Over the years, students of industrial growth have subsumed all factors of industrialization under the metallurgical age. Yet, most of the industries in Eastern Nigeria had, and still have, little metal/iron inputs. For instance, other than the use of hoes and machetes in farming, how were the raw materials used, and still used, in weaving, pottery and other non-smithing engagements in Eastern Nigeria procured? What, therefore, were the other industries in Eastern Nigeria that prevalently sustained the people? How were the dyes and looms, for instance, among the Akwete, produced before the use of iron? Antique looms were non-metal contraptions.

In answer to these questions and fill the observable gaps, the paper engaged in a comparative analysis of industrial periods in Eastern Nigeria. At what point did the communities of Eastern Nigeria start frying Garri

after the 16th, which at the onset of its consumption was elitist while the rest consumed fermented cassava, Akpu. How were the bamboo beds, Akwaa, built before the introduction of machetes?

In received literature, industrialization has been portrayed as originating from the point of the introduction of iron working. This notion consequently erased a greater part of the industrial life of the peoples of Eastern Nigeria. Thus, the local industries that existed before the introduction of iron works and implements have been surveyed. For instance, pottery and clay works have been posted over time to be synonymous with the Ishiagu in Ebonyi State. Yet, an entire community, the Ndi Ite Abam of the Cross River Igbo area, lived and worked clay until the closing decades of the twentieth century and were not known to have had contacts with the Ishiagu of northern Igboland. ⁴

As the title implies, the paper surveyed indigenous industries in Eastern Nigeria as well as the foreign-oriented ones, such as the Aba Textile Mills, Modern Ceramics, Umuahia, Nkalagu Cement Industries in the present-day Ebonyi State and the Golden Guinea Breweries also in Umuahia, among others, most of which have presently gone moribund.

Unarguably, the above-mentioned modern industries, because they could not source their raw materials locally, could not produce enough to compete with foreign imports. This is because the importation of raw materials from overseas has been expensive and in addition to foreign trade being regulated by multinational corporations and developed nations. More importantly, replacements of parts and general turn around maintenance have been expensive. Indigenous and modern industries of Eastern Nigeria have been unable to compete with and contend with expatriation trade policies in a globalizing world, which, from whatever angle they are viewed, are premeditated policies constructed to inflict capitalism and perpetuate neocolonialism.

Consequently, confronted with the obvious failures of modern industries and which existence caused the collapse of pre-modern ones, the paper reassessed indigenous industries, their operational processes, and

their sources of raw materials and what generally sustained them that were, and still are, indigenous. For instance, the quantity of firing vis-à-vis the temperatures applicable to clay in pottery making in order to strengthen the clay determines the eventual name or brand of the clay product. Referred to as the processes of vitrification, the higher the temperature applied to the clay material turns the clay product to what is wanted: either a ceramic cup or tea jug or clay pot for storing water in traditional homes. They have all been produced using clay as raw material.

The decline of indigenous industries in Eastern Nigeria and the inability of the people and government to resuscitate them have elicited some puzzles. A teething question has been: why would a people whose industries thrive in the pre-colonial period suddenly lose grips and let them become moribund? While the effects of competition with modern industries have been mentioned earlier, why should the indigenous industries of Eastern Nigeria that produced the implements that underpinned their agriculture, warfare and the provision of domestic utensils, have been allowed to go into disuse?

The paper studied the production processes and productive capacities of some of them and found out that they were, first, family-based and, foremost, communal. In fact, the harvest of clay in pre-colonial Eastern Nigeria was not regulated by any known laws. Even when some areas became restricted later, there was enough for all those into the pottery business to harvest. All that the government needs to do now, in view of its inability to grow the sector, is to streamline its activities with the aim of resuscitating them, import less of the items that could be produced locally and empower community-based industrial complexes or cooperatives.

Sustainability of Indigenous Technologies

Sustainability of indigenous industries/technologies has often been made difficult by obvious problems that are litany. Yet, the prospects for their development that aided their sustenance have equally remained obvious. The pre-modern constraints and weaknesses have been

counterbalanced by the factors of giving full employment to the people; that they are small-scale and manageable; and these have over the years accounted for their functionality and appropriateness which, in the words of Asiegbu, have been aided by certain factors, namely:

- (a) The handicaps and constraints which the development of indigenous African technology suffered because of the lack of an indigenous literary tradition or culture, which would have permitted the recording, and storing of ideas for further systematic analysis and expansion into a body of ascertained and verifiable scientific knowledge of productive techniques, skills and methods;
- (b) The limitations imposed by Western imperialism on the full development of existing African strategies of self-reliance, or on indigenous skills and productivity and expansion.
- (c) The bad effects of climatic or geographic factors; and also the effects of bad leadership, a curse which African peoples have continued to suffer at the hands of dishonest, predatory and ignorant political and business elites;
- (d) Examples of the existence of technological productive skills in pre-colonial or traditional African societies, such as the Umuahia communities and their immediate neighbours in the past; the successful establishment and expansion of such skills as iron technology or blacksmithing both within and even beyond Igboland in the earlier centuries;
- (e) Charts showing the productive labour units in some occupations, organized on family units or as the existing social organization permitted or warranted at the time; and

- (f) The continuing relevance of 'full-employment-generating' enterprises; i.e. 'appropriate technology' or small scale cottage industries and productive enterprises based on the use of new or adapted knowledge, improved technical skills in organization and production of goods and services for the satisfaction of the society's and the peoples' needs in our time. ⁵

The Eastern Nigeria peoples have, like the Far East communities of Hong Kong-China, have a wide range of practical and productive skills which remained the motive force that determined the best possible means through which basic human needs have been supplied vis-à-vis the perceived size of the needs to be supplied. Through the optimization of size, age and gender of groups, it was, and still is, easy to select those best suited and qualified to be trained in skills, methods and means. These activities in traditional societies have been achieved through the development and use of appropriate technologies.

Archaeological and Industrial Sites in Eastern Nigeria

There have been excavated a number of archaeological and industrial sites in Eastern Nigeria that showed that its indigenous industries did not originate in a vacuum and had sources of raw materials that sustained them. Among the archaeological sites are the Ugwuele, Lejja and Igboukwu sites.

Ugwuele

Ugwuele is a small village in Uturu near Okigwe in Abia State. The findings of hand axes, cleavers, stone knives and other small tools portrayed Early Stone Age (Paleolithic) artifacts. Astonishingly, these artifacts are similar to those discovered in 1830 by Monsieur Boucher de Perthes at St. Acheul, to the north of Paris in France. The presence of hand-held axes showed that the people who existed here in antiquity hunted big games and engaged in some warfare. ⁶

Lejja

Lejja is another small community located about fourteen kilometres south of Nsukka in Enugu State. The presence of cylindrical lumps of iron slag in the village portrayed expansive iron smelting works. But oral interviews revealed that the Lejja did not know the processes of smelting iron ore and only bought the lags from their neighbouring Nsukka community of Umundu.⁷

Igboukwu

Igboukwu, in Anambra State, was the first archaeological site in Eastern Nigeria that was excavated by Thurstan Shaw. Similarly, at Amichi, three kilometres southwest of Igboukwu, some thousands of blue glass beads were found. Then at Ichida, a town less three kilometres west of Igboukwu, a Terracotta head, motifs and potsherds were found. The findings at the three sites showed an advanced system of iron smelting and the manufacturing of farm and military implements and hardware in Eastern Nigeria.

The Awka

Early Awka culture-history is synonymous with its metal smithing. Awka smiths supplied implements for its agriculture, weapons of warfare and hunting, such as machets, spears and hoes, in pre-colonial times. In fact, smithing is commemorated annually in Awka in recognition of master smiths who usually returned, and still returns, every twelve months. This is the Otite festival which is given a prime place among other cultural events.⁸ The disagreement over who introduced iron smelting into Awka is not within the purview of this thesis; rather it seeks to point out industrial raw material points in Eastern Nigeria before 1900 which underpinned the development of metal-based industries. Itineration and the guild system popularized the Awka iron works throughout Southeastern Nigeria to as far the Niger Delta communities among which the Isoko.⁹

The itineration and guilds system facilitated the development of metal works in different parts of Eastern Nigeria, notably among the Abiriba. Strictly as an example of the development of indigenous industries in Africa, is the Bini metal and bronze works. The British punitive expedition of 1887 brought Benin plundered arts to the attention of the World. Then it became a problem to place where the bronze works and artifacts originated from. Some attributed Portuguese and Ife origins to them. But recent researches have shown that Benin art forms are:

Indigenous artistic expression[s] but that the technique ... was already at least six centuries old in West Africa when the first Europeans groped their way around the Guinea Coast. ¹⁰

Attention has been drawn away from Bini bronzes and castings to Bini pottery which have turned out to veritable sources of history. Benin weaving was a thriving industry. The Bini used the cotton that was grown in abundance in various parts of the region to great advantage. The cotton, as also obtained among the Akwete of Eastern Nigeria, was first made into threads and then woven into cloth of various patterns and colours using looms. ¹¹

Post-Second World War Era: A Transition

The post-World War II era witnessed increasing incidences of massive importation of foreign goods and the irreversible decline of indigenous industries. Evenso, there was the trend of producing in order to meet the increasing demands of local and foreign products, on the one hand, and the fabrication of made in Nigeria European-looking shovels, forks, bells and keys, among others. Other than the pervasive effects of European manufactured goods have been the effects of Western education, Christianity and urbanization. In the words of Ifeanyi Anagbogu, the above-mentioned trio:

Was changing the Igbo society to the point that traditional handicraft industries were becoming lesser and lesser attractive to young people especially school leavers. This development, of course, affected the apprenticeship system. The young school leavers this time around preferred to take to wage employment as gardeners, guardsmen, messengers, clerks, and so on. Others took to modern trades, such as bricklaying, welding, bicycle repairing, servicing of motor vehicles etc. and of course many joined the retail trading profession for which the Igbo had become famous at the terminal end of colonial rule.¹²

While the industrial Revolution and the uncontrolled importation of European goods that are manufactured overseas or in Nigeria affected local industries, such as textiles, leather products and domestic (metal and pottery) utensils, there was also the factor of indigenous peoples joining expatriate firms as workers. Instead of modernizing indigenous industries and technologies, the colonists introduced expatriate firms which substituted instead of complementing them. Evenso, indigenous businessmen joined the expatriate firms in the importation of foreign made goods. As a hindsight:

The colonial economic policy which had hitherto neglected the introduction of modern industry (sic) in the country began to support it to the extent that indigenous politicians who were gradually taking over from the British embarked on programmes of modern industrialization in their respective regions.¹³

While Igboland became flooded with machine-made goods, the iron-working industries could not be obliterated. In consonance with A. G. Hopkin's observations, traditional crafts survived because:

- i. Certain products [were] protected by proximity to the markets and by low overheads at the manufacturing stage;
- ii. Some products continued to be sold in spite of the availability of cheap European imports because they were highly regarded by consumers;
- iii. Traditional crafts survived because they were able to secure niche as special lines in a differentiated product markets; and
- iv. Some crafts survived by employing new techniques. For instance, the use of sewing machines enabled tailors to cut their production costs and increase their output. ¹⁴

In addition to the factor itemized by Hopkins that enabled some indigenous industries to survive into post-coloniality were:

- i. The existence of continued demand for some products of indigenous industries which had no foreign equivalents. For instance, shrine or religious accoutrements and regal objects have remained in demand till date especially since the priests fear contamination of foreign products;
- ii. Local smiths, in addition to using locally sourced iron-ore which was labour-intensive and time-consuming, started using foreign-made iron scraps;

- iii. Many indigenous smiths diversified or combined smithing with other businesses, such as trading in foodstuffs, bicycle repair trade and motor mechanic works; and
- iv. Most importantly, operators of indigenous industries were able to generate their own capital or received assistance from their relations.... "The tools of the iron-smith are simple and produced by him". Evenso, the apprenticeship system has survived in spite of out-migrations and urbanization and continues to provide entrepreneurial skills.¹⁵

Other than the external influences of colonialism and industrialization, there were other often-traumatic factors that influenced the growth or decline of indigenous industries.

The Biafra-Nigeria Civil War (1967 – 1970) Period

The Biafra-Nigeria civil war which lasted between 1967 and 1970 witnessed unprecedented efflorescence in industrialization in Eastern Nigeria. In consonance with the old adage of necessity being the mother of invention, industries that aided the war effort were established. Although the Biafran side did not revisit the old metal working sites at Igbo Ukwu and Ugwuele, among others, and depended on picking metal scraps which were smelted and reused, resort was made to indigenous technologies and instinct to build its weapons, such as the dreaded Ogbunigwe bomb and the Nwa Baby rifles, produced its petrol and gas/diesel, and foods that were, however, insufficient. The economic blockades, a scorched earth policy, imposed on Biafra in order to quickly defeat her, especially from the Bakassi and Cross River valley areas exacerbated industrialization. There was a weapons' assemblage and re-fabrication points at between Abiriba and Abam and in parts of the Umannato (of Alayi, Item, Igberere and Nkporo). This was achieved through the refashioning of new guns from the parts of guns of any species picked from here and there.

Concluding Remarks

Certain factors have been enumerated as aiding the survival of indigenous industries and technologies from pre-colonial to post-colonial times. According to Anagbogu:

Apart from iron working, many other crafts [have] survived ...[and] are still practiced by Igbo people. They include: wood-works, calabash-works, clay-works, cane-works, dry glass-works, works based on skins, hides, bone, horns and shells of animals. Others include works based on poles, leaves, seeds, shells and fibre of the oil, raphia and coconut palm, and related products from other plants and shrubs.

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Traditional farming implements, such as the hoes and machetes manufactured by indigenous iron-smiths, in spite of the orchestrations on mechanization and the millions of Naira budgeted by Nigeria's successive governments, are still in high demand. In essence, farming in southeastern Nigeria is still largely done through "slash and burn". Regarding their continued sustainability, what the Igbo iron-worker needs is support from government at all levels. To retain the apprenticeship system, government should instead establish iron-working colleges where iron crafts would be taught with improved methods. While there are a few of such government institutions which give 'starter packs', more should be established and loans given to the graduates on completion of prescribed courses.

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