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Technology in Traditional Igbo Society with the Manifestation in the Modern Global Development

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Abstract
This paper examined Technology in the Traditional Igbo Society and the Manifestation in the Modern Global Society. The write up showed that the Igbo people from the cradle of her emergence as a society had been technologically oriented and prominent since they had always produced all their needs independent of external influences. Technology had enabled the Igbo people to be economically/socially viable with such indicators as prominence in metal works (smelting and black smiting), wood works (harvesting, processing and calving), pottery (moulding and firing), building (construction and dwelling), textile (spinning and weaving), agriculture (planting, harvesting, processing consumption) and many others. Archeological findings had shown that the Igbo had through all the ages of human civilization got involved in all stages of technology from the primitive to the modern eras. The technological ingenuity of the Igbo people had manifested glaringly during the Nigeria and Biafra war during which the made discoveries and produced military devices and equipment, exploit crude oil and built refinery, constructed air

ports and survived//resisted total annihilations for three decades without external assistants. The above achievements of the Igbo people were subjected to wastages since there was no development and continuity of their technological breakthrough after the war. The technological ingenuities of the Igbo which had been hindered by marginalization had helped the Igbo people for their post war survival and their economic progress/successes. The Igbo people had contributed immensely in the technological development of Nigeria in particular and the world in general. Certain challenges such as non enabling environment, political/social factors and under development had hindered the optimal development of the technology of the Igbo people. To overcome these hindrances that had prevented the development of the technology of the Igbo people, recommendations among which include: the Igbo people should encourage technological development through vocational training (apprenticeship), research; practical oriented technical, vocational, technological/engineering education/trainings are here by proffered.

Introduction

Material culture had remained the bases for human existence on earth. This is evidenced by the fact that mankind can hardly survive without the supports of material resources such as food, water, clothes, shelter and air. These are material resources which had made live meaningful and worthwhile for humanity. In the quest for the betterment of living conditions of the people on earth efforts had been devoted to the development of material resources which had advanced human civilization through various stages of development. (Peil 1977)

These stages of human development and civilization include: stone age, bone age, human settlement from wandering, domestication of animals, farming, Iron Age, copper age to mechanization, high tech electronics, computer and mechatronics stages. These stages were made possible by

the human resourcefulness in the development of instruments and methods called technology that facilitated the production of goods and services to ensure survival within the immediate environment of mankind.

According to Izuegbu (2015) from the concept of nature, people have to work for their achievement of their common goals. People struggle to create for themselves what they think is good that will provide their basic needs that will ensure their survival and sustainability. To overcome the obstacles to the above challenges, man therefore developed tools and methods called technology.

Technology had from ages to ages served as instrument to overcome the harsh effects of nature and to the development of the environment to make life bearable for humanity. The human race as rational and dynamic being had right from ages made giant strides towards the improvement of lives, overcoming natural and artificial challenges and transformation of his social and biological environments. The total sum of human activities that had imparted positively on the mother earth which had transcended from darkness to lightness and steady upgrade from one stage to another is called civilization.

World Bank (No Date) explained civilization as a way of living in which people possess many tools to help them produce food and make the goods they need. World Bank added that to be civilized, a people must have a system of writing, know how to make metal implements, be able to transport goods over the land and the sea and have a government that protects property, punish evil doers and defend the people from unfriendly neighbors. Wallbank concluded that in order to attain civilization, and this meant the rise of works and cities made possible by technology and science.

The above portrays technology as the prime mover of human progress, producer of human needs and creator of

organized society. Therefore technology as the engine room of human development is propelled by education, research, culture, science, tradition, values and other fields of human endeavors.

Elekwa, Bamiro, Oluyide, Ladoye Nurudeen, Akuru and Olopade in Okparaeke (2010) defined technology as cultural tradition developed in human communities for dealing with their physical and biological environment. These cultural traditions include body of knowledge, skills and the procedures for making, using and doing things. Elekwa etal in Okparaeke further stressed that technology involves the methods and processes by which people produce and process, what they eat, drink and wear; provide shelters for themselves, communicate with one another and outsiders, defend themselves, tap their resources and ensure healthy living for the people.

The above elaborate explanations showed that technology covers every aspects of human existence on earth. And that it had functioned from age to age in all the cultures. Right from time immemorial, technology had remained part and parcel of universal existence and therefore the prime mover or engine room of human existence. All the stages of human civilization have had subsisting technology which had guaranteed human survival, development and the sustainability of environment for mankind.

All the stage of human development such as stone age, bone age, iron age, mechanization age, jet age, computer age and the present mechatronics age (application of mechanical to high tech electronics) technology had remain the bastion of productivity. Technology is as old as the universe, every community had always devised means of solving her problems and supplying her needs. Technology in one form or another whether in the primitive or modern societies had existed as need provider, problem solver and instrument for human survival.

The discovery of agriculture marked the beginning of

technology for mankind. This started with human settlement from hunting, wandering and collection of food from the wild. Food production gave room for the development of skills to get implements for planting, harvesting, processing and consumption which had involved technological processes to mankind. Inevitably technology had influenced all methods of production of goods, providing all our needs and the totality of people's lives and survivals in every society.

Agreeably, technology had universally served as the engine rooms or back bones of all human productivities, developments and civilizations. Therefore all societies that had advanced their technologies are said to be developed countries while countries that have their technologies still backward are third world or developing countries. The levels of technological developments are determined by such indices like means or the methods of productivities such mechanizations or industrializations, products output, standard of living, life expectancies (life span) and per capital incomes.

Technology in Traditional Igbo Society

The Igbo people had remained part and parcel of technological development of the globe. The Igbo people had undergone all stages and ages of human development and had produced/provided her needs as means of survival in her environment independent of external influences. Therefore Igbo people had been technologically oriented right from the initial moment of their emergence as a society.

Ejiofor (2002) wrote that there are indication that the lgbo people had undergone various stages of civilization and technological development through the contacts made with other cultures in the long distant past as shown by lgbo Ukwu archeological findings and the antecedents of the people of Nri and Aguleri in more than four hundred years before the white men penetrated the west coast of Africa in their drive for imperial expansion. As evidenced by oral history, the lgbo

people were said to be very rich in culture, tradition, economy, technology, crafts, creativity and civilization. The above attributes had been subjected to development and transformation.

Fafunwa (1974) classified the area where technology/crafts are prominent in traditional Africa societies which the traditional Igbo society is inclusive as: Agriculture which includes crops farming, fishing and ventinary (animal care and production).. Trades and crafts involving weaving (baskets and cloths), smelting (iron, silver, gold etc), hunting, carving (wood and bronze) sculpturing, painting/decoration, carpentry, building construction, barbing, drumming, dancing/acrobatic, hair plaiting, dress making, boat building, leather working, soap making, wine tapping and trading in all kind of merchandises. Others are professions involving herbal medication, priesthood, shrine keeping, hunting and leadership.

The traditional lgbo society concentrated with yam production and according to research findings most yam and cocoa yam originated in West Africa. The lgbo people had very few food crops such as yams, okro, egwusi, oil palms, variety of rice and kolanut. Later banana, coco yam and plantain came from Asia. While tomatoes, cassava, maize and pepper came from America and later other food crops like guavas, cashew nuts and coconut emerged from Europe. The implement for the above crops production came from stone, bone, wood, while bushes were cleared by fire. Iron working started in lgbo land during the Christian eras from Nok from Northern Nigeria. And the Nok people acquired the technology of lron working from North Africa. lgbo people adopted the implement from iron working for clearing the bush, tilling the ground, planting, weeding, harvesting and food processing. (Isichie 1976)

The above is the account of lgbo man's initial technology for transition from wanderers and food gatherers to settler and agriculture. However the implements from stone, bone, wood and iron were equally employed for hunting,

shelter provision and self deference. Njoku (2001) writing on technology in lgbo land wrote that in Africa according to western historians stated that trades, currencies, markets, net works, crafts men and crafts women of various hues had been in operations in lgbo land before the advent of the Europeans in the area. That is to say that positive development in the realms of the economy and technology had been in progress before the advent of the Europeans and the sub sequent evolution of the trans- Atlantic trade. It is clear that slave trade derailed economic and technological development in lgbo land since able bodied, intelligent, skilled and gifted men and women were taken away forcefully which resulted to brain drain.

Njoku (2001) classified technology and the industrial based production systems in Igbo land which are second in importance to agriculture as soil based – iron, salt, pottery; plant based as textile, mat/ allied weaving, wood working – wooden crafts, calabash, animal based crafts, - leather crafts and ivory crafts. Each of these areas served / sustained the lgbo communities and facilitated both internal and external trades.

In another detailed presentation, Njoku (2001) stated that iron and the workings remained the foremost important technological system of the lgbo people that impacts on all aspects of lgbo economy/ society. Recently dated archaeological recoveries show Nsukka area as the oldest iron working centre in Nigeria that was followed by Nok. Iron industry formed the technological foundation of lgbo society. For instance, when building or destructing of kingdoms and empire iron weapons will be critically very important.

Njoku (2001) added that iron production in the traditional lgbo society emerged as technological tools for production processes such as smelting which is the system of extracting iron from the ore in the furnaces through high intensive fire or heat with hard fire wood and the smelting which involves further processes of working on pig iron by the

black smith to produce valuable items. Njoku identified lgbo areas where iron smelting took place based on historical evidences to include: Abriba, Okigwe, udi, Nsukka, Aku, Lejja, Opi and Orba.

Iron smelting which is the craft of iron working had been of great antiquity in lgbo land as noted from iron swords and razor found in lgbo Ukwu dating back to ninth century and from Ezira, dating back to fifteen century. These areas were more and very prominent in the mass iron working; Awka which got the raw iron smelted by Agbaja of Udi, Nkwere was another famous town which the smith skills in gun manufacture gave them the name Nkwere Opia Egbe. Abriba was another wealthy community of smiths which got her working raw iron from the mines of the Okigwe- Arochukwu ridge. Other areas where iron working took place in lgbo land include: Agulu-Umunna, Umukabia, Okpuala and some other area such as Ihitte and Uboma involved in low scale iron smiting. Both smelting and iron working were widely diffused in the Nsukka area (Isichei 1976).

In a further presentation, Njoku (2001) wrote on the byproducts of iron working by saying that from the smith forge in lgbo land came title staff, ritual and ceremonial bells, pendants and anklets. Farmers relied on smiths for the production of such tools as diggers, machetes and hoes. Hunters needed traps, hunting bells, iron arrow tips and guns. Wood workers needed axes, cutlasses and carving knives, for such domestic utensils as door hinges, staples, nails, kitchen knives and tripod stands were produced by black smiths. Iron smiting impacted on all segment of traditional lgbo society Njoku added.

Surprisingly, through the process of trial and error and self teaching, lgbo smiths replicated the worn-out parts of a gun. Over time, they were able to produce a whole gun and converted an inferior gun to a high caliber type within short instance Nkwere, Awaka and Udi smiths very easily converted

flint lock guns to percussion cap guns. Surprisingly the local guns produced locally could scarcely be distinguished from the English made gun (/lsichie 1976 and Njoku 2001). Interestingly the lgbo were not left out in the technical assurance and inventiveness in lgboukwu true bronze made of copper, tin and lead abducted. The high class portrait demonstrated intricate craftsmanship. Other lgbo artistic knowledge of metallurgy showed in objects like copper was jewelry/bracelets and anklets) and calabash handles made by beating and drawing pure copper for numerous purposes (lseichie 1976).

Other soil based technological and crafts based products of the lgbo were:-

Salt was one of the chief minerals in lgbo land used for domestic, industrial and medical purposes such as edible, promotion of fertility in women, treatment of dandruff and stomach ailments. Salt was equally used as additives for textile dyeing and soap making. In lgbo land salt was produced among the Ohaozara villages of Uburu, Okposi and Oshiri. The salt which was made from saline water from the salt lake was processed for use. The salt production at Ohaozara was done during dry season and the technology was based on heating furnaces, filtration and evaporation. The salt was a serious source of income that projected the Uburu as a prominent town in traditional lgbo hinter land (Njoku 2001)

Pottery:

Pottery was one of the most traditional craft in lgbo land made from clay which predated the Neolithic Revolution. Potters produced pots, plates, bowls and other containers used for cooking, eating, boiling, storing, frying and drinking water. Other uses were religious purposes, storing agricultural products, marketing of salt and palm oil. The areas of lgbo land that was prominent for pottery were Afikpo, Nsukka, lnyi, lshiagu and lbeku. The technology/craft involved in pottery include: digging/exaction of pith or tunnels to extract clay,

weathering/washing, mixing, moulding, drying, glazing and firing in the open (lsichie, 1976 and Njoku, 2001).

Plant based:

Plant based technology/crafts forest resources were harnessed in lgbo land for various purposes, the plant based technology areas include:

Textile:

Textile is one of the most manufactured and traded commodities in lgbo land made of cotton and fabric such as aji and raffia cloth. Cotton cloths produced mainly by women had these areas as production clusters of lgbo land: Ndoki especially Akwete, Anioma (Onitsha and Asaba), and Nsukka – Udi (Elugu). These women were spinning and weaving cotton dyed and made into garments. Aniọma women produce snowy white cloths from cotton with elaborate design and perforations use at ceremonies. Akwete in Ndoki was very renowned in the production of cotton cloth and the use of vertical loom in Nigeria. In Akwete the instructions on the technique of cloth production start early in life for girls which made every woman to know how to weave cotton cloth. The technology of textile production include: production of cotton yarn which was in five integrated stages of ginning, carding, spinning, dyeing and weaving.

Ginning involves extraction of material from cotton by hand, selection of unwanted matter or placing the cotton on wooden block and rolling with metal bar.

Carding is a method of disentangling the cotton fiber with carding bow made of salient wood of half into with the end attached to a string. Spinning was done on a wooden spindle about 150 to 200 mm long. To spin, a piece of cotton should be pulled out from the mass with the end attached to the spindle and as more cotton was drawn out thread of fluff will be obtained. Hand spinning takes time but the traditional lgbo

women spinners were experts, flexible and faster.

Dyeing was very specialized stage of textile production. The dye was obtained by burning green fire resistant wood. The ash was put in filtering device over earthen pot. The filter ash water had chemical constituent use to extract dye from the balls of indigo. The filtered ash water when mixed with indigo at a given proportion will result to the desire colour. And the dyeing take place when the cloth was dipped in the dye water.

Weaving was done on vertical loom that produce cloth in length of 1800 to 2700mm and width of 3600 to 6600mm. The horizontal looms produced much narrower stripe of cloths. Textile technological or industrial processes were very prominent among the pre-colonial lgbo in the production of cloths in such areas like Akwete in Ndoki, Nsukka and Abriba.

Mats and allied weaving in lgbo land

Mats were weaved from the leaves of pandamus plants cut and dried in the sun. These plants were grown in swampy and saline areas such as Uturu. The leaves which were split into mats without the use of looms but with principles of inter-lacing wefts and wafts applied. The edges were rimmed with special ropes to secure the mats. In lgbo land mats were used for sitting, sleeping, screens and ceilings in homes. Mats are also used for carrying, storing and seasoning of various agricultural products.

Equally the lgbo made mats from rafria palm. The byproducts of palm trees were put into such uses like beds for sitting and sleeping, brooms for sweeping, palm leaves and stems for roofing, baskets for collection and processing food. Palm products could equally serve as walls and doors of building. The palm fibers serve as energy for cooking and lighting, palm oil served as delicacy to the people. Historically, palm produces from Igbo land served as lubricants in Europe which facilitated the success of industrial revolution of 17th

century. What crude oil is to Nigeria today was what palm produce was to the Igbo then.

Wood working:

Wood working had remained very prominent traditional art and craft in the traditional lgbo society due to the abundance of trees as forest resources. Igbo land as forest area grows a lot of trees which supports wood work occupation. Wood working, calving and art work produced products of utilitarian values and socio-cultural significance. Domestic utensils and house hold furniture, such as mortars and pestles were made from hard wood. Other utensils were ladles, spoons, plates, saucers trays and bowls were produced from wood.

The lgbo wood makers produced musical instrument like wooden drum: - ekwe and the lkoro which is giant ekwe like that stood as symbol of greatness and identity of each community. The Ikoro was used during emergency to gather the people to the village square, herading the starting of war, announcement of the return of heroes from war and broad casting about the death of great people. The lgbo wood workers produced doors with animal carvings and the above products. Also produced from wood are stools of one, three or four legs for the Nze, Ọzọ and other title holders.

The lgbo people of the riversides were involved in boat building for water transportation and celebration of festivals. Therefore, wood working arts and crafts caught across the length and breath of all the lgbo people. The technology of wood working spanned through all the stages of human civilization- the stone, bone, fire, iron etc. The implement of the above ages were used for wood processing. For instance, fire was used to fell big trees, while holes were bored on logs with fire.

Use of calabash in lgbo land

Calabash which grew from creeping plants produced

fruits or gourds which were harnessed, cut open and the internal content removed. Calabash served the same purposes which earthen wares served such as storing and fetching water, traveling with or storing agricultural produce, drinking water or wine. Large calabashes were used for cloth washing. Some calabashes were carved upon to make them decorative and Pleasants. Therefore calabash technology and uses were very prominent in lgbo land.

Animal based crafts

The technology of production of animal products such as hide and skins was prominent in lgbo land. These products of animals were sourced from wild animal such as elephants, lions, tigers, antelopes, leopards, snakes and many others. The skins of the above animals were used as mats for sitting and sleeping and equally as cloths. They were equally used as decorative furnitures at homes and heroic display by hunters who answered lion or tiger killers.

Ivory craft

Another product of animal use in lgbo land was ivory. The elephants were hunted for meat and ivory. The elephants were available from Cross river basin, Anambra and from Niger flood plains. The lgbo people used elephant tusks and ivory for religious and social purposes of display of wealth. Till this day, it serves as important items in the regalia of Ọzọ, Eze, Nze and other title holders in lgbo land. These items are used as symbols of wealth and staff of offices of important dignitaries of reputes in Igbo land as artifacts of technological developments and productivities.

The above technological systems which had existed with people from one generation to another had been as old as mankind. These technologies had been transferred from one generation to the other through training, apprenticeship, and teaching, coaching, and mentoring. These had enabled the

emergence of craftsmen and entrepreneurs, cultural transformations and each generation bequiting the system of production to the coming generation to ensure continuity. (Bokini 2005, National Teachers Institute 2000 and Obiegbu 2002)

Manifestation of lgbo technology in modern global era:

Technology and craft in lgbo land demonstrated dynamism, diversification, self reliant, sense of industry and broad based productivity systems. The lgbo people in the traditional time had an inclusive technology and craftsmanship which demonstrated hard work, creativity, innovation and self sufficiency which have manifested in the present global technological period with the lgbo people playing both active and participatory roles nationally and internationally. These were demonstrated during the Nigeria- Biafran war when the lgbo people produced technological breakthrough such as construction of airports, building of oil refinery, flying bombs and others. (Madiebo 1980 and Emefiena 2013)

Making presentation on Biafran Technology, Onwuhanze (2008) made extensive written works that in the three years of war, necessity gave birth to invention, we built bombs, rockets and our own delivery system. Blockaded without hope of importation, we maintained engines, machines and technical equipment with our Igbo technological ingenuity and creativities. The lgbo people extracted and refined petrol from crude oil, built and maintained airport, spoke to the world through telecommunication system engineered by local ingenuity.

Onwuhanze added that the lgbo people built armored cars, tanks, modified aircraft from trainer air crafts to fighters, from passengers air crafts to bombers and had therefore broken the technological barrier of the black race. Onwuhanze concluded that the technological fits and ingenuity of the Igbo people manifested during the war. However these

technological break throughs were not harnessed by the Nigerian Federal government. The entire achievements were wasted just like that.

Nnamocha (2019) stressed that every citizen of the country no matter which geographical section of origin should be trained to develop the nation through technical education being given topmost priorities since it encourages the aspirants to come up with their initiatives and develop their potentials. These build high levels of confidence and sense of self respects in individuals and nations. If a country have enough skilled man powers, there will not be extensive or over dependence on other nations nor rely on compulsory collaboration with advanced countries of the world to harness and develop their human and material resources. Nnamocha questioned that one should have to imagine why most of our construction, manufacturing, extractive and many other industries die when the technical partners leave? Have we asked the question why we can not run or maintain our refineries rather we get involved in the importation of petroleum products? Why we have continued to import arms and ammunitions in spite of the progress made during the Nigerian and Biafran war.

Nnamocha lamented that the Biafrans constructed air ports, tunnels, Ojukwu bunkers, built refineries that refined their petroleum products and yet all our industries are subjected to foreign dominance. Nnamocha concluded that ogbunigwe technology invented during the Nigeria and Biafra war had been allowed to die. Many other discoveries made during the war with the potentials of Aba, Nnewi and Onitsha technologies have not been harnessed for the benefits of the nation by the successive government of the federation on the ground that could be said to be devoid of national development interests.

Writing further on the manifestation of lgbo traditional technological background on the modern global development, Ejiofor (2002) wrote that lgbo people had produced great

personalities in all field of human endeavour among who are one of the first and greatest Nigerian engineers as Prof. Gordian Ezekwe. Ejiofor added that lgbo people had equally produced some of the world's best known power and computer scientists like Prof. Barth Nnaji and Dr Philip Emeagwali the internet genius among others.

Writing further on the technological ingenuity of the lgbo in the modern era, Oluwole in Enefiena (2013) stated that had the lgbo people closed their eyes to the antics of politics of the Nigerian state and harnessed their God given talents in the areas of commerce and technology, their story would have been different. If this had been done, it would not have taken them up to 20 years to be dictating the commercial and technological pace of the whole Africa. All other things including political powers of which they had been a poor player would have been added at last. The Igbo lack cohesion as well as the governance to actualize their ideas technologically, politically and economically, Oluwole in Emefiena concluded.

All the above are on how the traditional lgbo technological identities had manifested in the modern global era. The lgbo people as gifted/talented society had always demonstrated creativity, innovation and hard work technologically in the modern global eras. Igbo sons and daughters are involved in the production and maintenance in all aspects of engineering and technological devices, plants and equipment internally and in all the advanced countries of the world. Within Nigeria and other African countries, Igbo sons and daughters dominate electrical, electronics, computer, auto mobile, GSM and many other works. The fix motor vehicles and competent drivers of the emerging technologies, computers, handsets, tricycles. These are indicators that the technologies of the traditional Igbo society manifested in the modern global eras. This is because when an Igbo man watches the manipulation of technological process or knows how the observation will be replicated with perfections.

Obstacles hindering positive development of technology of the Igbo people in the modern global society

The lgbo people could not realize their technological and industrial potentials because according to Ogu (2015), the greatest problem of the lgbo nation is the relegation and marginalization in Nigeria since 95 percent of Nigerian economic superstructures and political power is dominated by the rest of Nigerians other than the lgbo people. Consequently, the South Eastern citizens are alienated from the national common wealth and discriminated against in the employment market. Ogu added that, the lgbo are denied refinery, rail way lines, major industries, political appointments and politicization of second Niger Bridge.

This had necessitated a provocative question, where is the country? Ogu lamented. Achebe (1983) lamented against the creation of lesser number of states and local government areas in South East by successive Federal governments aimed at the reduction of revenues from the federation accounts. Achebe added that the above deprivations against the South East were made since the federating units served as fiscal arrangement that determines the shares of the revenue allocation from the federation accounts. Presently, South East zone have five states while other zones had six or seven states. And out of the 774 local governments in Nigeria, South East had only 94 while Kano state alone had 44 local government areas. And revenue allocation from the Federation accounts to the zones are based on created states and local government areas Achebe (1983) equally spoke against the deprivation against the Igbo people from the sitting of major federal industries, huge irrigation schemes and agricultural projects of revolutionary dimensions. Achebe also condemned the exclusion of the South East in the establishment of five steel industries and rolling mills worth 4.5 billions of naira with estimated employment capacity of 100,000 only in the North

and West of the country.

Besides, the technological breakthrough and achievements made by the Igbo people during the war were not developed rather they were abandoned to wastage. This is contrary to the post Second World War situations during which advanced countries harnessed and developed the technological achievement of the Adolphus Hitler of Germany and those of Japan for the benefits of mankind. Externally imposed marginalization had no doubt hindered technological development of the Igbo people, the Igbo people are equally the problem to their development, many most of the state governors of Igbo states had left many industries and agricultural project built by the past governments to be defunct and dead without reactivations to make them functional. Igbo states' governments and other political office holders at levels of governances are not establishing or encouraging the people through enabling environment to invest in new industries or agricultural projects like live stock production. The present day Igbo had turned to generation of consumers of imported goods instead producers/exporters of goods to other lands. We import practically everything we use. This development is contrary to the technological culture of the traditional Igbo society that was inward looking and self sufficient.

The attitudes of Igbo sons and daughters who are working in federal agencies that use their positions against the progress of their people had remained disturbing. How can one justify situations whereby goods imported by Igbo businessmen will be cleared at the sea ports and transported across more than five states of the West only to be seized in the South East by Nigerian Customs and Exercise dominated by Igbo sons and daughters in the East?

Of more concerns are the activities of the Federal Road Safety Corps (FRSC) members in Igbo land who instead of the use of corrective measures as safety re-engineering to motorist

penalize them with large sum of money when FRSC members in the other parts of the country hardly fine road offenders thereby, causing capital flight from Igbo land. During the ban on rice importation sagas, a bag of rice sent home to relative from the North or West will be seized by the security operative in the South-East or South-South after crossing so many states in the North and West as country bound. The above is not implying that these agencies should not do their work; there should be the need for human face. Beside, the above high handedness is not applicable in the Northern and Western parts of the country. The act of confiscating imported goods in the markets in only in certain part of the country instead of at the boarder posts stood condemned.

Other factors that had militated against industrializations and technological developments in the modern Igbo land include fraud, arm robbery, embezzlement, stealing, insecurity, internet fraud, kidnapping and others. The non availability of such infrastructures like electricity, water, gas, good road network rail transportation system and internet services had increased the cost of establishing business in South East.

Many of the state governments in Igbo land are over taxing and extorting businesses and industries in their states. This had discouraged prospective investors from establishing industries and business ventures in Igbo land. The above non equitable distribution of the national resources and the non location of federal industries, agricultural projects with denial of the supposed numbers of states and local government in the South East with some short comings of the Igbo people themselves had continued to deter the technological development of the Igbo people.

Many Igbo entrepreneurs prefer to establish their factories, industrial complexes and businesses outside Igbo enclave both within the country and abroad, the think home philosophy not with standing. These core Igbo investors had

refused to learn from the ugly experience of the abandoned properties syndromes. Should all these sons and daughters of the Igbo decide to invest in their home land, there will be faster industrialization, technological advancement and micro and macro economic development.

This is because the availability of industrial and technological infrastructures and production systems facilitate practices and experiences that support technological development that will in return, lead to production of skilled manpower that will institutionalize economic growth and technological development to have manifested in these global technological eras. Equally, provision of conducive/enabling crime free environments to enhance industrialization and technological advancements to globally acclaimed standards are lacking in the present Igbo society.

However, this is more so because the nation adopted Federal character and quota system in the selection of candidates for placement in her educational system and employment which have not accorded merits and competitiveness and competence top priorities. In Nigeria placement in educational institutions, or recruitment or employment are not offered to the best candidates rather to those from a section of the country especially those from Northern Nigeria more than those from the southern Nigeria. Known technological advanced countries of the world do promote merit in the selection of candidate into their institution and manpower for their workforces to institutionalize creativity, innovation and technological breakthrough. The technological advanced countries do not discriminate against their citizens or even foreigners who are talented to achieve their technological or industrial goals in the quest for their economic development.

According Onwuka (2005), the Federal government created educational disadvantaged and educationally advantaged states, certain amount of money have always been

set aside and allocated to the educationally disadvantaged only. Onwuka added that the federal government invests huge sums of money to sponsor universities in the educationally disadvantage areas while those in advantaged areas are underfunded.

Study by Gravenir (1983) showed that the federal government unit cost of maintaining a student in Southern Nigeria to be #2678 while that for maintaining a student in Northern Nigeria is #8717. The money located for maintaining one student of the universities in Northern Nigeria will be enough for the maintenance of 3 students in Southern Nigeria. The above funding policy was designed to close the educational gap between the North and the South. The above discriminatory funding policy cannot transform or promote the technological development of the nation and those of ethnic nationality like the Igbo in this modern global era.

Above all, technological development will always elude a nation which her educational system is characterized with resume falsification, plagiarism, cheating, examination malfeasance, sexual harassment, contract kick back, and obligatory purchase by students lecture notes. Parts of this type of country involved in the above practices can hardly progress socially, economically, technological or politically. (Saint, Hartnet and Stressner 2003).

Okebukola (2010) decried that the nation had been subjected to growing menace of students' gansterism, cult practice, armed robbery, kidnapping and other forms of violence and destructive behaviours. This Okebukola concluded that can hardly facilitate technological advancement to the known international standards of developed countries of world.

Conclusion

The traditional Igbo society as a people had demonstrated age long affinity to technological development in

line with all stages of human civilization. The traditional Igbo industries produced goods and services based on the subsisting technology that were prevalent in those eras with the use of materials and human resources available then which symbolized inward looking and self sufficiency. The above technological achievement had manifested in the global technological development that have been evidenced by the Igbo people taking the center stages of Nigerian and indeed global technological development. During the Nigerian-Biafran war the people made a lot of technological discoveries, innovations and developments of military harwares, crude oil exploration/refining and other areas. These benefits were not encouraged and developed further after the war which could be said to be set backs to the quest for technological development to Africa and the Black Race. In the post war eras the Igbo people have contributed immensely to the technological development of Nigeria in all the fields such as manufacturing, construction, aviation, marine, transportations, information communication technology and many others. However, the slow rate of investment due to so many factors has affected industrialization and technological developments in Igbo land in this modern global systems. If the technological talents and ingenuities of the Igbo could be harnessed and encouraged and developed the Igbo people have the capacities and capabilities of becoming a world technological power like China, Japan, USA, Britain, France, Russia, Germany and others.

Recommendations

- The Igbo people should encourage technological development through vocational training (apprenticeship), research, practical oriented technical, vocational, technological engineering education/ trainings.
- Igbo people should encourage their sons and daughters to study overseas in such areas like aeronautic

engineering, marine engineering, space technology, automotive production, computer engineering to acquire the necessary production skills and competencies with which to transform Igbo people to higher technological production nationality instead of being consumer oriented and dumping ground for local goods outside Igbo enclaves and foreign industrial goods.

- Government of Igbo states should reactivate factories and industries such as breweries, Niger cement, Niger steel, Avutu poultry and many others through consationing to core investors to encourage technological development and employment of the teaming unemployed.
- State governments in Igbo land should encourage industrialization through the provision of amenities/infrastructures like assess road, water supply, electricity and telecommunication facilities to encourage investors to develop Igbo land.
- State governments in Igbo land should prevent over taxation of business establishments, factories, industries and agricultural companies. The above agencies should be offered tax incentives/ rebates to encourage more investments in Igbo land.
- Igbo sons and daughters working overseas who possess competencies or are experts in technological/engineering fields should come home to develop Igbo land technologically.
- Igbo entrepreneurs all over the world should minimize their rate of investment outside Igbo land. They should return home to do their investment to secure their investment and help to develop their father land.
- Governments and security agencies in Igbo states should ensure safety and security of lives, properties, establishments and investment, to encourage

continuity of existing businesses and new investment being made.

- Igbo people should be united as to speak with one voice to discourage marginalization to facilitate the establishment of federal industries and agriculture in Igbo land.
- All technological discoveries, innovations, creativities, findings or changes such as those developed by the Biafrans during the war should not be allowed to get wasted, the part of the country that did the discovery or development notwithstanding. Such break through should be developed for the good of mankind just as the developed countries utilized the breakthrough of the Germans after the Second World War**.**

References

Achebe, C. (1983) The Trouble with Nigeria Fourth Dimension Publishing Company Ltd. Bokini, SK (2005) Skill acquisition and Development for craftsmen and Artisans. Lagos: The Nigerian Professional Builder. Journal of Nigerian Institute of Building (100-111)

Ejiofor, P. (2002) An address of welcome presented at the first south East education summit held on may 15th 2002 at the Nnamdi Azikiwe university Awka. In EO Akuezulo and RI Egwuatu (Eds) Education at cross Road in the South east Zone of Nigeria. Value perception and new Directions. Awka: Nuel centi publishers and Academic limited. For consultative Forum of vice chancellors of south East universities.

Emefiena E (2013) In Biafra Africa died. The Diplomatic plot London. Veritas Lumen Publishers.

Fafunwa, A.B. (1974) History of Education in Nigeria. London George Aken & Union.

Farrant, J. (1980) principles and practice of education. London Longman publishers. Gravenir, F.O.(1983) assessment of the suffiency of funds allocated to run Nigeria University. Education development 3 (1) 50- 58.

Isichie, E. (1976) A History of the lgbo people London. The Macmillan press

Izuegbu, M.O. (2015) Global economy: Overthrow of the socialist by the capitalist In I. Onwuji (Ed) lgbo Leadership challenges the Role of lgbo socio-cultural Organization. Igbo life. Light of the people 4 (12) 35q

Joshua, M.F. Abdulahi, .M. & Gbobo, V.F. (2012) Assessment of Entrepreneurial knowledge & skills Acquisition by University students in Nigeria: A case study of University of calabar in T.A. Bolarin & l. A Role. Entrepreneurial Education. The Nigeria Academy of education.

Madiebo, A.A. (1980) the Nigerian Revolution and the Biafran civil war, Enugu: Furth Dimension Publishing company Ltd.

National Teachers Institute (2000) NCE/DLS Course Book on Social studies cycle 4 kaduna: Author

Njoku, O.N (2001) Economic History of Nigeria -19th and 20th century.Enugu; Magnet Business Enterprises (publishing Division) Ltd.

Nnamocha, P.N. (2019) Technical Vocational Education and Training: soaring for national productivity. Book of proceeding; www.voctechconferenceaifce.2019.com.

Obiegbu, M.E (2002) Training and retraining of craftsmen for Nigerian construction industry the millemum challenge. Lagos: The professional Builder Journal of the Nigerian Institute of Buildings (57-62).

Odumegwu- Ojukwu, D. (2015) My Grandfather finance Nigeria independence struggk. In I. Onwuji (Ed) lgbo Leadership challenges the Role of lgbo socio-cultural

Organization. Igbo life. Light of the people 4 (12) 30-32.

Ogu, B (2015) Moses' Perspective of lgbo conceptual leadership challenges: The role of lgbo Socio-cultural organization lgbo Life, Light of the people 4 (12) 37-39. Okoro, A (2015) lgbo Leadership challenges: The Role of lgbo socio-cul Tural Organization lgbo life, light of the people: 4 (12) 44-46.

Okebukola, P (2010) fifty years of higher education in Nigeria, trends in quality assurance. Presented at Interenational Conference of Contributions of Nigerian Universities to the fifty years independence anniversary of Nigeria 27-29 September 2010.

Okparaeke G M (2010) Mately of Areas common to all basic Technology trades; A panacea to effective basic Technology instructions in Junior secondary schools. A paper delivered at training and retraining programme for basic Technology teachers Organized by Universal basic educations commission Owerri, Imo state on August 2010. Onwuka, Chris, J.A (2005) Education for all "Nigerian perspective" Review of Education. Institution of Education Journal 16 (2) 51- 57.

Onyeulo C. (2015) Jewish Dispersion afitithesis of lgbo dispersion Inl. Onwuji (Ed) lgbo Leadership Challenges: The Role of lgbo Socio-cultural Organization lgbo life, light of the people 4 (12) 33-34.

Onwuhanze, J.U (2008) The Genesis of Nigerian, Biafran civil/ war (1861-1970) – British conspiracy, Religious and Ethic politics and the deliver of lgbo Nation. Uyo, UO press.

Osuagwu, C.G (2011) Ugbaghaji and Oronomics: Indispensibe Agriculture and Unsustainable Raw-material Exporting and Luxury Importing Economy,

paper presented at the 2011 lriji- Ikeduru, Amainai 22 October, Department of Biomedical Technology, Federal University of Technology, Owerri Imo State.

Peil, M (1977)Consensus and Conflict in African Societies. An Introduction to Sociology. London. Longman Group Limited..

World Bank, T.W. (No date) Man's story world History in geographic setting. New York: Scotch Foreman and company.