

# AN APPRAISAL OF THE POTTERY AND CERAMICS INDUSTRY IN NIGERIA WITH A VIEW OF REVIVING THE ENTREPRENEURIAL SPIRIT TO COMPETE WITH GLOBAL STANDARDS

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## **Abstract**

*The age-long traditional water pots have long been replaced with modern refrigerators. Clay pots used for cooking have also been taken over by stainless steel pots and similar cooking utensils. Traditional water gourds have been overrun by plastic gourds and metallic buckets. The list goes on and on. If modern trends in the technological production of these items are so powerful enough to almost bring these traditional utensils to go into extinction, then there are questions to be asked. For instance, what are the factors for all these replacements? What are their consequences and impacts on the socio-economic lifestyle of the African traditional potter, and what can be done to salvage this situation so as to revive the entrepreneurial spirit of the African traditional potter? These are the issues this paper seeks to critically examine so as to provide practical strategies and solutions to the various challenges facing the art of pottery and ceramic production in the traditional African society, one of which is Nigeria, which happens to be one of the developing economies of the world. One of such suggestions is to adopt, to a certain extent, the modern styles of producing these earthen wares so as to favourably compete with global standards.*

## **Introduction**

The term 'pottery' is quite synonymous with the ancient civilization of man. It is as old as man's existence. As a matter of fact, archaeological research has found out that countries such as Japan, Siberia, China and some pre-historic populations actually began to produce ceramic wares as far back as 15,000 - 10,000 BC, which is more than 5,000 years earlier than when production began in the near east (Yasuda, 2002; Kuzmin, 2006).

In Africa, however, history records that the earliest evidence of pottery has been found in the large mountain Massifs of central Sahara, in eastern Sahara, and the Nile valley dating back to about 30 BC. Close, (1995), Roset, (2000) Jesse, (2003) and Haaland, (2007), stated that the emergence of ceramics in the Sahara and the Nile valley dates back to the end of 10<sup>th</sup> Millennium, and the beginning of the 9<sup>th</sup> Millennium BC. The reason given for this was the onset of a warmer and wetter climate in the early Holocene that enabled the resetting of the Sahara after the hyperarid

phase of the last Glacial Maximum, called the 'Ogolien' (Nelson et al.2002). Since then, man has never ceased to be involved in the art of pottery making, moving from one level of production to the other.

Several cultures and group of people have been identified with pottery both in Africa and other continents of the world. Quite recently in 2007, Swiss archaeologist Eric Huysecom found ceramics shards at Oanjougou, in Central Mali dating back to at least 9,500BC. They are known to be the oldest pottery in Africa found in the Sub-Sahara. Some other sites include the Khartoum hospital and Shaheinab in Central Sudan, which are the Khartoum mesolithic and Khartoum neo-lithic, respectively. Others are the Takarkori rock shelter in the Acacus mountains of Southern Libya; the semi-arid Sahel border region between the Sahara desert and tropical Africa( covering parts of the Gambia, Senegal, Mauritania, Mali, Algeria, Niger, Nigeria, Cameroun, Chad, Sudan and Eritrea) which yield fragments of pottery dating back to 3,000 BC. Another famous type of African pottery is the Egyptian faience, which is a non-clay based ceramic mastered by Egyptian ceramists, although it originated at Ur, in Mesopotamia. These facts present a general overview of the existence of the practice of pottery in Africa, cutting across different cultures, tribes and ethnicities. The production of these ceramic wares has evolved through different stages and processes over the past hundred years. Yet, the typical traditional African pottery is slowly getting into extinction. This paper seeks to look into some of the reasons that account for this development and to also proffer possible ways this can be salvaged with a view to reviving the entrepreneurship spirit of the African traditional potter.

Pottery and ceramic wares are made out of clay material, of which the major types are earthenware, stoneware and porcelain. According to Rado (1998), pottery also refers to "the art or craft of a potter, or the manufacture of pottery". According to the Merriam-Webster dictionary, pottery is referred simply as "objects of fired clay". The American Society for Testing and Materials (ASTM) defined pottery as "all fired ceramics wares that contain clay when formed, except technical, structural and refractory products".

It is equally important to note that the place where such wares are made is also called a 'pottery', and the person who produces these wares is called a 'potter'. The word 'pottery' according to the Word Web dictionary, (2016) refers to "ceramic" as wares that are from clay and fired in a kiln, while 'ceramics' is the art of making and decorating pottery".

### **Pottery Making**

To make a pottery ware, be it locally produced or by the modern method, all clay bodies have to be formed into objects of a required shape and firing them to high temperatures either using local open firing or in a kiln which is the modern way of firing to remove all the water from the clay, which in turn induces reactions that lead to permanent changes, including their strength, hardening and setting of their shape. This clay body can be decorated before or after firing. However before the shaping process, the clay must be prepared by a process called 'kneading' which helps to ensure even moisture content throughout the body. Any air trapped within the clay must be removed through another process called 'de-airing'. This is accomplished through the use of a machine called a 'vacuum pug' or done manually through a processes called 'wedging'.

These are modern processes of pottery production which the traditional (local) African potter who had to grapple with. Deep appreciation must be accorded Mr. Michael Obrien, who took over from Michael Cardew at the present Ladi Kwali Pottery centre, Abuja, and from time to time, still visits to oversee the pottery production by helping local traditional potters develop their skills and knowledge-base on pottery production using modern methods and materials. It is quite important to note here that it is not as though the African traditional potters are not engaged in production but the challenge is in the end products, that is " packaging" or " finishing" that meets global standards.

### **Pottery Making in Developing Economies**

In general sense, developing nations, or economies, are those countries with low, lower or upper- middle incomes. According to the United Nations criteria, countries with less than \$400 level of per capita income are designated as low income countries and those with less than \$750 per capita income are

called less developed economies. These countries are generally identified through the following characteristics;

- a. General poverty
- b. High dependence on agriculture
- c. Underutilized natural resources
- d. Lack of industries and enterprises
- e. Lack of capital and technology
- f. Lack of basic infrastructures
- g. Vicious circle of poverty
- h. Demographic characteristics
- i. Socio-cultural characteristics
- j. Dualistic economy
- k. Malnutrition, disease and ill health
- l. Low life expectancy

Looking at the above characteristics, it can be visibly seen that every country in Africa is a complete developing, under-developing, or under-developed economy. The implication of this is that there is hardly any business venture or enterprise that can successfully thrive on a global standard without going extra miles of thinking-outside-the box. Of particular note is the pottery business in Africa. African potters have produced good works and ceramic wares but these have not been favourably competing with global standards. The entrepreneurship spirit of the traditional African potter is so dampened and their morale very low that they had to either change their line of business or resort to meagre incomes from the little they sell to clients.

Great potteries such as the Sirigu society in the Upper East region of Ghana; the Giri pottery and Ladikwali pottery both in Abuja Nigeria; the Ceramic water jars of the Quadhias culture of the great Kabylia, Algeria; the Azande vessels of Angola; the Nupe vessels of Niger state, Nigeria; the general African beer; the carved vessels of South Africa; and the popular kin-kin musical instruments of Southern Kaduna, Nigeria, to mention but a few, have not been able to meet global standards because of several challenges facing the African continent.

#### **Entrepreneurship Prospects of Pottery in Africa**

It is one thing for African countries to be considered developing or under-developed economies, and it is an entirely different thing for them to glide into economic recession. In Nigeria, for instance, the nation is fast declining into the worst economic recession

the country has ever experienced due to the fall in oil price, the main stay of the country's economy and its over dependence on imported goods. One of the ways recommended to get out of the economy recession is to diversify the economy by venturing into the other aspects of generating income for the country. The government is highly advocating for the development and growth of small and medium scale enterprises in both the rural and semi-urban areas of the country, so as to encourage local production/manufacturing of goods, and to reduce to a large extent, our over-dependence on imported goods by engaging in exportation of locally produced goods.

One business opportunity that can be explored is the ceramic and pottery business whose 85 per cent of the needed raw materials can be locally sourced. In spite of modernization that has brought in substitutes such as metals, aluminium, plastics and stainless steel, it is quite important to note that traditional pottery in Africa has survived and is still relevant to meet the needs of a large number of people. This fact alone presents Africa with a long shot of venturing into entrepreneurial opportunities in the pottery and ceramic business so as to revive the entrepreneurship spirit of the traditional African potter.

Simply put, "entrepreneurship is the process of starting a business or an organization", and the person who does this is called an 'entrepreneur'. It then means the entrepreneur has to develop a workable business plan, and then get the necessary human, material, and financial resources to start and sustain it. The entrepreneur is solely responsible for the success or failure of that business. According to Schumpeter (1959), the entrepreneur is seen as an innovator who is saddled with the responsibility of carrying out new combinations called "Enterprise". This combination involves five aspects which are the introduction of new goals and objectives; new methods of production, opening of new markets or marketing, new sources of supply of raw materials, and new industrial organizations.

The years gone by has proven that entrepreneurship has been claimed as a major driving force of the economic growth in

both the United States of America and Western Europe, even though entrepreneurship activities differ substantially with respect to the kind of businesses and innovations involved. Entrepreneurship plays a vital role in economic development because according to Baumol (1993), an entrepreneur is “a person who gets a new idea for creating a new business, brings that substance into existence and then carry on the work of the enterprise”. Therefore, using Nigeria as a reference point to other African economies, the prospects for pottery /ceramic production on industrial and commercial proportions are highly phenomenal as it stands to accelerate the country’s development. This is because the world today has metamorphosed through giant strides in science, technology and engineering to take a posture as a formidable role in the modern and Jet age of man’s existence. For instance, without ceramics, convenient employment of electricity would have been impossible; the production of the highest grade of steel and a host of other products of the furnace would have been a mirage. Also, there would have been no tiles, bricks, production of corrosive chemicals and use of crucible for refining purposes, to mention but a few. As a matter of fact, achieving a modern industrial economy without the various forms of pottery would just have been unimaginable. This is a very great opportunity for industrial growth that the traditional African potter can explore into driving the African State out of economic recession.

#### **Advantages /Benefits of Pottery and Ceramic Business in Africa**

In a story published in The Sun Newspapers of 8<sup>th</sup> August 2009, Mr. Patrick Sonny Aigborkhaebholrabor, Nigeria’s Deputy Director in charge of Solid minerals, Ceramics and Electroplating Technologies at the Federal Institute of Industrial Research, Oshodi, Lagos, believes that there is a very big opportunity in the ceramic/pottery business awaiting this nation, Nigeria, and I believe Africa as a whole. He strongly posits that the development of ceramic glazes to service producers will encourage the activation of dead factories, the establishment of new industries, improve the exploration and appropriate utilization of our nation’s abundant natural and solid mineral resources. Furthermore, it would create the much needed

industrial activities, employment generation and economic empowerment of the citizenry, while the huge import-dependence of ceramic products would be reduced drastically. This means that the development and investment in this non-metallic solid mineral-based sector would go a long way in the actualization of the much talked about diversification of the mono-oil economy. In a related development, Professor Eguakhide Patrick Oaikhinan, who is the sole Professor of Ceramic Engineering in Nigeria, the Managing Director and Chief Executive Officer of EPINA Technologies limited, also discusses strategies for revamping the country’s ceramic industry, giving details of the benefits the country stands to gain. Drawing from his wealth of experience, he speaks extensively on the ceramic and pottery industry as one of the major activities in the nation’s economy up until the 1980s, but today, about 75 percent of its products are being imported. He further states that in the 80’s, the ceramic industry was a strategic enabler for growth, innovation, and sustainability, where ceramic manufacturing business was among the earliest and greatest achievements of Nigeria’s businessmen.

As earlier mentioned, pottery formed part of human history since man learned the science to control fire and manipulate clay, and today, ceramics and potteries incorporate design and innovation while continuing to meet our needs, because those are key factors in competing favourably in the global market place. As Nigeria undergoes enormous internal change and aims to maintain its role as a global leader in Africa, the ceramic/pottery industry finds itself well positioned to bridge the gap between the old world and the new, as in the case of Mohammed Bah Abba of Jigawa State Polytechnic College of Business and Management studies, who invented the Pot-in-Pot technology of refrigerating perishable food items in Jigawa state, Nigeria using earthenware. Likewise, in his notes on the Suyascape series, Onuzulike (2009) has this to say; “One can therefore safely assert that clay remains a primal medium charged with great potentials for heavy artistic statements and cannot be ignored simply because it has for so long been associated with what modern-art-oriented historians and critics call ‘craft pottery’”. In general, therefore, some of

the advantages the continent stands to gain by engaging in this business are highlighted below;

#### **Industrial Benefits**

- i. Durability, Heat Resistance Energy and Resource Efficiency. Ceramic products are built to last and durability is one of their key benefits compared to many other materials. Studies conducted have proven that the average life of a brick house is more than 150 years. Vitrified clay pots can last more than that. In flooring the expected life cycle of porcelain, ceramics and mosaic tile is 50 years far longer than carpets, vinyl or natural hard wood. Same goes for wall tiles.
- ii. Ceramics play a vital role in the automotive industry by increasing safety, cost effectiveness and comfort in vehicle and automotive engineering.
- iii. In electricity, ceramic's wide range of electrical properties include insulating, semi-conducting, super-conducting, piezo electric and magnetism which are critical to products such as automobiles, boat engines, lawnmowers, cell phones, computers, television and several other consumer electronic products. High voltage insulators make it possible to safely carry electricity to houses, businesses, and industries.
- iv. In healthcare applications, zirconia is fast becoming the material of choice for components used in the medial fields where contact with body fluids is less of a problem than with most materials because of their chemical inertness.
- v. As for the machine tool industry, their thermal and mechanical stability allows them to retain their smooth, accurate cutting surfaces longer than metals do.

#### **Domestic Advantages**

From the onset, the initial purposes of clay pots were for certain domestic functions such as cooking, storage, religious/ritual ceremonies, Musical instruments and beer brewing, to mention just a few. Nowadays pottery has moved beyond those functions even though they are still being used. For the African traditional potter who is faced with the challenges of modern trends in pottery production, here are some amazing uses for pottery and ceramic wares that can be explored even in commercial proportions.

#### **Employment Opportunities**

Unemployment is one of the most critical issues all African economies are facing. The ceramic and pottery industry presents the opportunity of a major wealth creation and employment generation sector. According to Oaikinan (2015), 5.5million people can be directly and indirectly employed by the ceramics tile industry alone. Imagine what a country like Nigeria, which has some of the specific raw materials used for ceramic production such as Clay, Quartz, Feldspar, High grade Magnesia, Bauxite, Silicon carbide and Graphite readily available can achieve if these industries are established and production carried out in earnest? It will pave the way for a brighter future for the youths that constitute over 40% of the population in the areas of socio-economic transformation, job creation and employment opportunities. These industries have the potential to make people develop their own capabilities, increase their assets, and move out of poverty. Furthermore, Oaikhinan said that Nigeria occupies the 9<sup>th</sup> position among the top 18 emerging economies for ceramic trade, yet it is the only country in the world without ceramics export. How sad.

Despite the optimism expressed in exploring the advantages of pottery and ceramic production in commercial quantity to meet local and foreign needs, venturing into the ceramic business in a developing economy like Africa is not without its challenges and difficulties.

#### **Challenges Facing the Pottery Business in Africa**

The challenges and obstacle facing the pottery and ceramics business in Africa's developing economies are enormous but not insurmountable. According to Iyasara (2014), "the position of ceramic technology in Nigeria as a veritable tool in the development of any nation is that of neglect with attendant lack of manpower, moribund ceramic industries, inadequate funding, and poor research patronage or grants, occasioned with epileptic power supply and non-existence of statutory regulatory support". However, there are a number of crucial factors necessary for the establishment, development and growth of ceramic and glaze technology and manufacture, but these factors are facing

serious challenges, some of which are discussed below;

### **I. Financing**

At whatever stage one is in business, whether at the start up stage or its expansion, money is needed for such purposes which in the case of pottery and ceramics business in Africa. Sadly, it is not readily available for manufacturers to establish state-of-the-art industries that will manufacture wares and products that can compete with global standards. In cases where it is available through loans from banks, the interest rates are so high that you end up exhausting your profits and in some cases even the capital, in repaying that loan to the bank.

### **II. Shortage of skilled expertise**

Another major challenge facing pottery and ceramic business in Africa is shortage of professionals with appropriate skills and expertise in the production and manufacturing processes. For instance, in Nigeria back in the 80s, there were only about six (6) Ceramic Industries that include Richware Ceramics Industry, Ilupeju, Lagos; Nigergrob Ceramics Industry, Abeokuta; Quality Ceramics Industry, Shagamu; Modern Ceramic Industry, Umuahia; Ceramic Manufacturer, Kano; and another located at Ifon, Ondo state. Today, the total cost of imported ceramic products into Nigeria is over N130 billion (US \$600million) all because there are no locally well-equipped laboratories and institutions to offer help in acquiring the necessary skills in mineral processing and process technologies. These have had negative impact on the growth of this industry in Nigeria and other African countries.

### **III. Lack of appropriate technology**

In a situation where 80% of the basic raw materials for the production of pottery and ceramic wares are locally sourced, African economies are still battling with the appropriate and conventional technology of processing this material. Developed economies have long advanced in modern technology and industries that process the raw materials for the manufacture of pottery and ceramic wares far beyond words can say. In comparison to developing economies like Africa, there is an inadequate number of trained personnel with the appropriate technology and machinery to process the raw materials needed for the production of

ceramics. The absence of skilled manpower has prevented the growth of the industry, thereby forestalling the creation of more than five million direct and indirect jobs that could be made available from local manufacturing annually.

According to Irabor (2009), it is significant to acknowledge the science and engineering nature of the ceramic discipline. He also said that this fact is not in doubt in the developed worlds, except in the under developed economies where a degree of lack of knowledge exists in the area of pottery, its technology and engineering. This has forced the available skilled manpower in this sector to either be frustrated, change into other professions, or become redundant, leaving the stage for pseudo-experts in ceramics. Furthermore, he stated that "in the area of equipment, Nigeria's machinery and system building capabilities is very low and this sad situation has reflected on the level of production, huge import bill, poor maintenance culture and high rate of industrial projects". With particular reference to ceramic manufacturing in Nigeria, Irabor also stated that "the dependence on imported machinery remains high as the most vital system must be imported, maintained and operated efficiently for a sustainable production process".

### **IV. Infrastructural Issues**

African economies are faced with a major challenge of infrastructure. One main issue that bothers on this is the lack of uninterrupted power supply. The power sector in most African states is so epileptic or inadequate to power these industries where available, such that the use of alternative power like diesel generators increases the cost of production by a magnitude which discourages manufacturers from staying in the business.

Other infrastructural issues include bad roads, poor storage facilities, and inappropriate means of transportation. All these factors extend the time, or make it very hard for a manufactured product to conveniently get into the hands of the consumer.

### **V. Politics and Poor Government Framework**

Citing Nigeria as a typical example, the history of ceramic development is a classic illustration of how a nation could actually overlook a key

manufacturing industry to its own detriment through inconsistent policies and sheer display of lack of purpose due to the discovery of oil. All attention has been shifted to the oil sector as a major source of national income which politicians and lawmakers have manipulated through poor policy framework to their own benefits, thereby crippling other sectors of the economy, of which the pottery and ceramics industry is key.

### **Adopting Conventional Methods of Production: The Way Forward**

Despite the enormous challenges facing the pottery and ceramics industries in Africa's developing economies, Irabor (2009) still remains optimistic believing that there is a big opportunity in the ceramic business awaiting Nigeria and the African continent as a whole. Considering the great benefits and advantages the country stands to gain in this industry, one can clearly see that the prospects for ceramic are phenomenal as it stands to accelerate development at an unprecedented rate. In his own words, "the way forward lies in charting a positive course to revert the current situation so as to reduce our import dependence, create employment opportunities, improve living standards, and reduce poverty just by exploiting and utilizing our natural solid mineral resources more appropriately through adequate Research and Development (R & D) funding, manpower development, and general capability building in the non-metallic mineral and ceramic sectors".

In a similar vein, Oaikhinan (2015) states that "more than business as usual is necessary, because the transition to a competitive resource-efficient economy represents a challenging target for the Nigerian Ceramic Industry". As demonstrated in its long history, the sector is committed to contributing responsibly to the achievement of such a target. This enormous challenge means we need to build on our current know-how and expertise, and of course, new breakthroughs in technologies will be highly needed. Considering the great benefits derived from the industry's products, there is the need to create a competitive and conducive atmosphere to place the industry on a global stage. Africa is richly endowed with enormous mineral resources which have the potential to lead the continent on the path of industrial

development in ceramic processing and manufacturing among the comity of nations.

To achieve all these, however, all hands, both in the public and private sectors, must be on deck to consciously and strategically set in motion the necessary tools and paradigms that make for industrial growth and development. If fully implemented, these strategies contain in them the capacity to lift the African traditional potter and ceramist from the ashes of decay and corruption into a global industrial landscape to compete favourably with any developed economy in the world. Some of these strategies are further given and explained below.

### **a) Mineral Intelligence and Manufacturing Technology**

Drawing from Oaikhinan's recommendations on how to revamp Nigeria's moribund ceramic industry, mineral intelligence and manufacturing technology is a key component in charting a new course and moving the African continent forward. Mineral technology is so vital to high productivity in manufacturing; efficient energy conversion; maintaining a high level of health and safety; and striking a good balance between our standard of living and environmental protection. Countries like America and Britain have made great strides in ceramic manufacturing business because they have learnt how to properly plan, manage and utilize their abundant mineral resources. Entrepreneurs and business investors interested in the pottery and ceramics industry need the necessary mineral intelligence which make up a unique and exhaustive body of knowledge that cut across every aspect of raw materials knowledge and management; the economics of mineral resources; knowledge on the sub-soil and deposit models; exploration and assessment of reserves; operational and post-mining site expertise; substance life-cycle analyses; process management, and forward studies.

**b) Research and Development Centres**

There is also the need to establish significant research and development centres in mineral processing and characterization techniques, as well as setting up research centres in Polytechnics and Universities working specifically in Ceramics Technology. This will go a long way in boosting the morale of intending potters and ceramists in acquiring the much needed knowledge in ceramic technology.

**c) Ceramic Skill Acquisition Centres And Trained Personnel**

The Federal and State governments need to, as a matter of urgency, establish Ceramic Skill Acquisition Centres in order to support the promotion and attraction of investments in the mineral resources sector so as to enhance infrastructural and Socio-economic development for wealth and Job creation, and to improve the quality, distribution and effectiveness of the nation's human resource base. This will help solve the industry's problems in terms of human capacity building, raw material characterization, products formulation, process technologies, glaze processing and provision of the appropriate knowledge.

**d) Clay Extraction Supply and Restoration/Recycling**

The basic raw material in pottery and ceramic production is clay. Without it, there is nothing anyone can do, and this component is abundantly available in almost every nation of the world. There is, therefore, the dire need to develop action plans that will identify the mineral resource, extract them, ensure adequate supply, and in turn develop means of recycling them in their natural state. This can be achieved through establishing and implementing mineral policy development that improve the identification and use of subsoil wealth; develop new raw materials deposits through recycling, establish rules of governance for mineral markets; and measure the environmental impacts of mineral sectors. To be able to maintain a constant flow of raw material and encourage investment in the sector, there must be of necessity, a well-planned

extraction of clay and other minerals after which river banks and quarries must be restored by allowing them to naturally return to their original conditions, thereby creating new habitats and promoting bio-diversity. Through this, the pottery and ceramic industry can then play a vital role in maintaining sustainable local communities.

**e) Appropriate Government Policy Framework**

To be able to effectively carry out all the strategies highlighted so far, there is the need to appropriately establish a very good and viable government policy framework which serves as a yard stick for industrial development in Africa's developing economies. This is because the Ceramic Industry's domestic and international competitiveness largely depends on effective trade policies to counter tariff or non-tariff barriers, enforcement of intellectual property rights, and protection against counterfeiting and dumped or subsidized imports. According to Oaikhinan (2015), "a supportive and legal framework will be very essential to mobilize the human and financial resources needed to acquire and implement the essential breakthrough in technologies, because since the Nigerian Ceramic Industry operates in a global market, it is quite necessary that the impact of the Nigerian legislation and Africa at large, on the domestic and international competitiveness of the industry is properly addressed.

There is, therefore, a call on all policy makers to create a supportive regulatory framework to keep Ceramic Manufacturing Competitive in Nigeria and Africa in general. Without a policy shift to encourage foreign direct investment (FDI) based on the whole life cycle of the industry rather than during production only, there is a likelihood that legislation will misguidedly drive consumers to either ceramic materials made in less environmentally- stringent countries, or to other less durable products with higher annualized emissions. This is actually feasible especially when policy makers work in tandem with the Ceramics Researchers Association of Nigeria

(CeRAN) goal of a smart, sustainable growth and competitiveness.

**f. Adequate financing**

By the time all these steps, actions, and strategies are consciously implemented, it becomes much easier and the grounds more conducive for both the public and private sectors to fund the ceramic industries so that they could operate and function effectively to their maximum capacities.

**Recommendations**

1. Local pottery raw materials in Africa should be researched upon for better production.
2. Traditional African potters should be trained on how to upgrade their knowledge-Base through embracing modern methods of production to meet global standards. Like introducing the local potters to the use of a throwing wheel, just as the late Dr. Ladi kwali was trained by Michael Cardew.
3. Decorations too should be upgraded to new trends of production to meet up with global standards.
4. Modern machines need to be developed for processing of raw materials to the manufacturing of ceramic wares.
5. Both public and private sectors should organise a training section to assist the local traditional potters in upgrading to global standards. For example, entrepreneurship development centres should be established in all Colleges of Education, alongside the research Centres in Polytechnics and Universities.

**Conclusion**

At present, despite its aims and objectives of maintaining its role as a global leader in Africa, Nigeria is undergoing major internal changes. This places the Ceramic Industry in

a well-positioned advantage of bridging the gap between the old status of development and the new, since the industry has been quietly playing a major role in our everyday lives and forms the cornerstone of our rich culturally heritage. It is pertinent to state here that the government should be ready to constantly take a tour of the industries and evaluate the strategic role each of them plays in enhancing the quality of life. It is equally important to mention also that the Ceramics Researchers Association of Nigeria (CeRAN) should be saddled with the responsibility of presenting a realistic roadmap for pacing up the development of the Ceramic Industry that has always been at the heart of developed nations and traditions which continues to lead on the global stage.

Through the support and encouragement of the government, the Ceramic Industries stand a great chance to significantly contribute to the economic and industrial growth of our nation, Nigeria, both now and in years to come, especially at this time of economic recession that calls for a dire and urgent need to diversify other sectors of the economy. Furthermore borrowing the words of Irabor (2009) "the development of the ceramic glazes to service producers will encourage the reactivation of dead factories, the establishment of new industries, and improve the exploration and appropriate utilization of our nation's abundant natural solid mineral resources'. This positive actions will go a long way in creating industrial activities across the country, generate enormous employment opportunities and economic empowerment of the citizenry, thereby reducing to a large extent, the dependence on the huge import of ceramic products. The development and investment in this non-metallic solid mineral-based sector would give a long shot towards the much talk about diversification of the mono-oil economy, and in the long run, revive the entrepreneurial spirit of the traditional African Potter to compete favourably with global standards of pottery and ceramic wares.



**Plate i: Potter at work on the wheel**



**Plate ii: Finished (Glazed) Ceramic ware**



**Plate iii: Vitrified clay pots**



**Plate iv: Ceramic Tiles**



**Plate v: Sanitary ware**



**Plate vi: Some automobile parts produced using ceramic materials**



**Plate vii: Electric insulators manufactured from ceramic materials**



Plate viii: Some health care facilities



Plate ix: Artificial teeth made from ceramics



Plate x: Some Machine parts made from ceramic materials



Rain Chain



Bird Feeder



Accent Table



Beverage Dispenser Stand



Jewelry Stands



Bird Bath



Chic Bathroom Container



Cup Cake Stand



Candle Holders



Clay Pot Smoker

**Plate xi: Samples of amazing house products made from ceramics and pottery**



House Numbers



Ice Cream Planters



Potted Candle Planters



Garden Mushrooms



Vertical Garden

**Plate xii: Samples of amazing house products made for aesthetic purposes**

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