Potential Roles of Industrial Clusters in Economic Diversification in Nigeria

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A b s t r a c t

Nigerian economy depends on the oil sector as a major source of foreign exchange earnings, but crash in the price of oil at international market made economic diversification a front-burner issue. The purpose of this study is to explore the potential roles of industrial clusters in Economic Diversification in Nigeria. The paper adopt a critical discourse analysis, while sourcing the required data from scholarly articles and policy documents on clusters development and diversification. The generated non-numerical data were subjected to content analysis from which insightful findings were drawn. It was found that the six geo-political zones possess huge deposits of natural resources from which several clusters could be developed as springboards for accelerating Nigeria's quest for economic diversification. The potential benefits of clusters development across the six geo-political zones include development of strong industrial base, growth in GDP, import substitution, export promotion, food self-sufficiency, spin-offs, urbanisation, agglomeration, employment opportunities, infrastructural enhancement, poverty reduction and improved wellness of the citizens. The implication of this paper is that, it provides a sustainable approach for economic diversification through clusters development. The findings arising from this theoretical paper need to be strengthened with empirical investigation/testing. The paper concludes with far-reaching recommendation that, the three levels of Government in Nigeria need to embrace clusters development in the six geopolitical zones in Nigeria in the face of dwindling oil revenue.

Keywords: *Industrial clusters, Economic diversification, Nigeria*

Background to the Study

Before independence and few years after independence, Nigeria made fortunes from agriculture, mining and other real sectors of the economy. In a bid to put the economy on the path of sound footing for sustainable development, the Federal Government of Nigeria initiated a number of national development plans (NDPs) and fortified these plans with series of entrepreneurship development Interventions (EDIs) with the objectives of boasting industrial production and level of employment.

Unfortunately, these NDPs and EDIs could not produce the desired developmental outcomes, as the citizens contend with poverty, unemployment, crime and hopelessness. A Spatio-Temporal Audit of Nigeria's EDIs from 1946 to 2013 revealed that four decades after independence, the nation's economy still depends largely on proceeds from oil resources, at the expense of other critical sectors such as solid minerals, services, manufacturing, tourism and agriculture that have contributed significantly to the economy for years (Raimi, Patel, Yekini and Fadipe, 2014).Worse still, the huge foreign exchange revenues realised from oil exploration, exploitation and exportation were mismanaged, stolen and wasted by corrupt political officeholders at the three levels of government in Nigeria. With crash in oil prices at the international level, the Nigerian economy lay prostrate in the face of self-inflicted Economic Recession – a phenomenon of short period of economic downturn in a country that leads to fall real GDP, income, employment, manufacturing and retail sales (Raimi, 2017).

Besides, it is a paradox that beats human logic that the resource-poor countries (countries without abundant natural resources) out-performed the resource-abundant ones. Similarly, among the resource-endowed countries, those with small mineral resources economically overshadow the heavily-endowed oil-exporting countries. The singular solution to the above paradoxes christened in development literature as Resource Cause or Dutch Disease is for these countries to leverage economic diversification by judiciously deploying mineral rents into critical sectors of the economy through massive investment. Nigeria's economic recession is self-inflicted. The most potent solution to reposition a recessionary economy such as ours, and avert future reoccurrence is to adopt am economic diversification strategy leveraging clusters development for sound industrial and technological progress in Nigeria.

Analysts have discussed extensively the multifaceted roles that clusters played in the technological progress, new innovations and economic prosperity in industrial locations such as Silicon Valley in United States, Bangalore in India and Hsinchu Science Park in Taiwan (Cai, Todo, and Zhou, 2007; Raimi, Shokunbi and Peluola, 2016). Learning from the industrial experiences of the world, Nigeria attempted to pursed clusters as the nation's industrial development strategy, but after establishment, they were abandoned by the military government that managed the nation's economy at a stage in Nigeria. At a stage in the development process of Nigeria, the Ministry of Science and Technology had oversight functions over 9,555 industrial clusters established to optimise natural resource endowment in the industrial districts (Amaefule, 2012).Nigeria definitely needs to restructure its economy, what exactly needs to be restructured and how does the nation go about the restructuring? These are the critical issues that need to be looked at against the backdrop of call for economic diversification. Anything short of this, may engender an irreversible break-

up of the country. This is the gradual long-term restructuring. Focusing industrial clusters to drive economic diversification in Nigeria is surely the best way to restructure the Nigerian economy learning from the experiences and technological progress of America, Europe and emerging economies like Brazil, Russia, India and China where industrial clusters were vigorously promoted by both public and private sectors (Raimi et al, 2016).

The eagerness to promote clusters for strong industrial development has attracted the attention of academics, leading practitioners and international organizations because of the inherent opportunities of clusters (Kuah, 2002; Iwuagwu, 2011). The economic opportunities of clusters include reduced operational costs; emergence of new businesses/spin-offs, emergence of new innovations, cheaper technologies, increased specialisation/division of labour and collaboration among companies in the clusters, leveraging on social infrastructure and consistent knowledge-sharing for greater competitive (Porter 1998; Ellison & Glaeser, 1999). These shall be further elaborated in subsequent discussion. The cluster concept as conceived in this paper is a deliberate policy designed to refocus Nigeria's industrial strategy at creating a community of small medium and large businesses coexisting and collaborating together in a given industrial districts with enabling infrastructural facilities . The advantage on clusters is that collaborating companies can effectively and efficiently work towards leveraging global business competitiveness while the government focus on providing the required infrastructure and other amenities to boost productivity because cluster is simply an assemblage companies in a given locality, sharing common facilities like electricity, water and access roads (Okoronkwo, 2012) From the foregoing, the impact of the cluster development as one of the strategies for industrial development would boost employment and increase income generation for all players in the clusters including the government (Oyeyinka, 2017).

In situating the paper properly within the theme of the conference, the study explores the potential roles of industrial clusters in economic diversification in Nigeria adopting a critical discourse analysis Apart from the introduction, there are fourth other parts. The second part focuses on the conceptual definition of economic diversification and clusters. The third part discusses the restructuring through economic diversification and clusters development in Nigeria. The fourth part presents the research methods and findings/results of the study. The final part of the paper concludes with implications of the research and far-reaching recommendations.

Conceptualization and Review of Literature
Economic Diversification
Economic diversification emerged as an intervention concept directed at minerals-rich continent with huge deposits of mineral resources. Rationally, for these mineral-dependent countries to match the industrialized countries in terms of knowledge capacity and industrialization, they need to diversify their mineral sectors for long-term mineral sustainability. There are three definitions of diversification for nations with exclusive dependence on mineral resources. The first definition of diversification (with specific reference to mineral resources) is promoting the exploitation of different minerals thereby forestalling a situation where a country is heavily dependent on a single mineral for its foreign

exchange. Secondly, diversification connotes an inclusive economic policy orientated towards tapping to the fullest all the potential natural resources not only resources in the mineral sector, but focusing other critical sectors such agriculture, manufacturing, tourism, construction and services for the betterment of the broader economy using the mineral sector as a growth catalyst for launching the diversification process. Thirdly, diversification is the utilization of the incomes (foreign exchange earnings) from a country's mineral resources by the governments to promote structural change for sustainable economic growth and development (Solomon, 2000). The above definitions underscored the need for development of non-mining related activities and non-mining investment in mining regions to reduce the dependency of regional governments on the central government, as is the case in Nigeria, where the local and state governments are perpetually dependent on the Federal government.

More succinctly, the United Nations (2014) defines economic diversification as the process by which a country expands its growing range of economic outputs by increasing the markets for exports thereby broadening existing income sources away from domestic economic activities. Economic diversification is therefore a term reserved for the developing countries or emerging economies, as their economies are generally characterized by the lack of varied income sources because they relied heavily on the traditional production of primary commodities that are predominantly vulnerable to climate variability and international price fluctuation when exported to developed countries. It has been argued that these countries would do better in the long run with a diversified economies, because diversification attracts array of economic activities with different income sources.

With specific reference to Nigeria, economic diversification would simply means creating new and more competitive income-generating streams for the nation's economic growth and sustainable development. It involves using the right strategy to boost revenue generated from other sectors of the economy such as integrated agriculture, construction, tourism, integrated transport system, manufacturing, services, telecommunications and other critical sectors of the economy (Raimi, 2016).Diversification becomes imperative for an emerging economies to attain greater self-discovery, to earn premium returns from agro-allied companies and full-fledged manufacturing enterprises as opposed to low return from raw materials and other primary products. Developing economies of Brazil, Russia, India and China often called BRIC nations had in the past explored diversification to move upstream and downstream in their resource chain. This diversification strategy paid off, as these countries improvised for resource exhaustion, cater for population growth, reduce potential risk from mono-economy and were better positioned to generate massive jobs for the citizens(Gelb, 2011).Malaysia, Indonesia and Chile popularly called MIC nations emerged as strong mineral resource countries after leveraging economic diversification. The MIC nations after diversification manifest prudent macroeconomic management, business competitiveness, relatively open trade and open investment policies, sustained human capital development and a good business climate for local and foreign investment (Raimi, 2017; Gelb, 2011).

United Arab Emirate (Abu Dhabi) and other Gulf countries also depended on oil revenues as the mainstay of their economies. In recent years, the policymakers in Abu Dhabi had vigorously pursued tourism business and non-business aspects of tourism as alternative

sectors for long-term economic diversification with a view to countering instability in global oil prices. To this end, this oil-rich country has consistently focus investment in tourism product and promotion as cost-effective means of achieving economic growth and diversification (Sharpley, 2002). Sustainably, the economy of UAE especially the cosmopolitan Dubai has consistently enjoyed agglomeration externalities, efficient bureaucracy, strong Information Technology, minimal taxation, open economy to investment/labor/skills, stable exchange rate and low-cost of doing business (Gelb, 2011). However, the economic diversification strategy in UAE lacks more inclusive political participation by citizens because the upper political class see no justification for compromise between capitalists and workers, an important tenet on which capitalist democracy is built (Herb, 2009). In spite of this skewed political economy that favoured the ruling and elite segments of the UAE's society, the economic diversification is paying off, as Abu Dhabi has been repositioned as one of the beehives of tourism across the globe.

Even Tanzanian, an African country with less human and material resources compared to Nigeria had adopted economic diversification long time ago at the village level with record of positive performance. Seppälä (1996) reported that economic diversification actually aided different wealth groups in their quest to incorporate income-generating activities into their livelihood strategies. Tanzania's economic diversification enhanced the division of the village into segregated cultural spheres, increased economic differentiation and improved level the diversity of income-generating activities in the villages as well as reduced economic dependency of these villages on the state or on market actors.

Economic diversification was adopted by Poland, a nation with great agriculture potentials in rural communities. The country adopted economic diversification of rural economies through two-fold diversification typologies namely: Enterprise diversification and Employment diversification. The enterprise diversification empowers citizens with farm households to set up innovative non-agricultural businesses; but the employment diversification enabled the citizens take up self-employment outside the farm otherwise called off-farm salaried work (Chaplin Gorton & Davidova, 2007). Economic diversification for Poland's agriculture sector is expected to enhance consolidation of agricultural activities as well as lead to substantial efficiency gains (Latruffe, Balcombe, Davidova and Zawalinska, 2005).

Clusters Development and Typologies

Clusterrefersto a concentration of specialised industries in particular industrial district for mutually-beneficial economic interests, or agglomeration economies (Kuah, 2002). Porter (1998) prescribed clusters as a desirable and worthwhile industrial strategy based on competitive advantages or agglomeration economies. These competitive advantages shall be discussed in the relevant part of this presentation.From another perspective, clusters are geographic concentrations of interconnected businesses, specialized suppliers, service providers, firms in related industries, and other organisations that peacefully cooperate and compete with one another in particular industries (Boja, 2011; Department of Trade & Industry, 1998; Martin and Sunley, 2003; Porter, 1998).

From the foregoing, clusters especially industrial ones represent geographical concentration of interrelated small and large companies in the same value chain, which together collaborate to promote technological development, wealth creation, regional competiveness and export of goods and services for long-term relationships (Raimi et al, 2016). They are critical in the development process because companies operating within industrial clusters source their raw material, components and value-added services cheaper and prompt from other companies in what could be described a symbiotic relationship. Some model clusters include across the globe include the wine clusters in California, textiles industry in northern Italy, shipbuilding clusters in Glasgow (Scotland, UK), steel clusters in Pittsburgh (Pennsylvania, USA), car manufacturing clusters in Detroit, Michigan USA (Kuah, 2002; Mueller, Sumner & Lapsley, 2006). In Nigeria, there are a number of clusters in industrial cities such as Nnewi, Aba, Enugu and Owerri. The Nnewi Automotive Parts Industrial Cluster reputed for its exports of fabricated automotive parts to West African countries, while in Latin America, the Brazilian Shoe Cluster of Snios Valley is a model example of the world's leading leather shoes cluster where leather shoes are produced and exported to other parts of the world (Amobi, 2006; Raimi et al, 2016). The understanding of clusters extends to knowledge-based institutions and financial institutions that cluster together in a particular location training, research and consulting services in various disciplines to the society (Raimi et al, 2016).The following are eight (8) different cluster typologies across the globe. The policymakers across the three levels of government in Nigeria could leverage on these typologies to design the layout of their respective Industrial Development Centre (IDCS).

i. **Sectoral clusters:** These are clusters formed along sectors of the economy where the companies operate. The media clusters by design accommodate newspaper houses, TV stations, film industry, while the commercial clusters attract chain of supermarkets, bookshops, groceries and related stores.

ii. **High-tech Clus#ters:** Clusters within the high-tech domain attract companies with products heavy technological inputs such as like ships, aircraft, arm& armament, cars etc. Such clusters are often supported by research institution and specialized universities in developed countries. Silicon Valley, the East London Tech City or Paris-Saclay and several other locations in Germany and France are good examples of High-Teach Clusters.

iii. **Historic know-how-based Clusters**: These are cluster which enjoyed age long expertise, mastery of certain skills and historical advantage in the production of certain products and services for centuries. Notable examples are the London financial clusters, Leather Clusters in the Northern Nigeria, Shoe/Spare-part fabrication clusters in Aba etc.

iv. **Factor Endowment Clusters:** These are specialized clusters created to gain competitive advantage as a result of their presence in certain geographical districts. For example, Burgundy and Champagne clusters in France have for years enjoyed comparative advantages in wine production over other places because they are located in mountainous districts, where quality grapes are found and grown.

v. **Horizontal Clusters:** These are clusters that accommodate many companies in the same industry, producing the same or similar products and competing for the same

market, but deliberately cooperate and act like a jointly-owned business in the clusters. Examples are many companies producing different brands of shoes in the shoe clusters, computers clusters and wrist watches clusters.

vi. **Vertical Clusters:** These are clusters which accommodate many companies producing different but related products/services that could be integrated. In these clusters, the products of some companies are the inputs of others within the industry's value chain. Example of vertical cluster is car clusters where there are companies producing related products like car tyres, auto-engine, upholstery products, iron doors etc, which are assembled as a complete car.

vii. **Low-cost Manufacturing Clusters:** These are clusters that emerged in certain region of the world because of access to cheap labour, land/rent, low consulting services, affordable energy/overhead costs. These types of clusters are often found in developing countries such as rural China, Mexico, Argentina, Africa, Eastern Europe and Latin America where factor inputs are extremely cheap.

viii. **Knowledge Services Clusters:** These clusters are established because of collaborative linkages with institutions that provide low-cost engineers, unhindered access to other cheap experts/professionals, low-cost consultancy fees from knowledge-based institutions.

Restructuring through Economic Diversification and Clusters Development
What the Federal Government needs to do is to formulate a National Economic Diversification Strategy on Clusters Development (NEDSCD) along promising critical industrial sectors such as food production, petroleum/energy, mining, manufacturing, ecotourism, high-tech, automobile assembly plant, spare parts production, textile production and other critical sectors for sustainable growth and expansion. More importantly, the National Economic Diversification Strategy on Clusters should leverage both vertical and horizontal diversification within the identified industries. Clusters as models of industrialization have economic justification both in theory and practice. Theorists and practitioners argue that when several companies in related fields or industries cluster together, their costs of production decline; they enjoy access to multiple suppliers of raw materials at reduced costs; they enjoy increased specialization and division of labour (Amobi, 2006; Ellison & Glaeser, 1999; Kuah, 2002; Porter, 1998).Furthermore, Glaeser (2010:1) restates that:

> *"Agglomeration economies are the benefits that come when firms and people locate near one another together in cities and industrial clusters. These benefits all ultimately come from transport costs savings: the only real difference between a nearby firm and one across the continent is that it is easier to connect with a neighbour."*

Besides, industrial clusters stimulate competitiveness in three ways. Clusters wherever they are located have increase the productivity of all collaborating firms operating in the clusters. Secondly, industrial clusters encourage the development innovative products and novel services. Finally, industrial clusters stimulate emergence of new businesses often called spin-off (Amobi, 2006; Raimi et al, 2016). Apart from the three-fold benefit of economic

competitive, industrial clusters as industrial strategies enhance reduced transaction costs and lower risk premium on capital of companies (i.e. cost of production is lower in clusters than elsewhere. Furthermore, clusters foster productivity and specialization among collaborating companies of different sizes and strengths operating within a particular industry. It affords different companies the opportunities of exploiting their specialties thereby fostering innovation, emergence of new business or spin-offs and embedment of technological improvements of both process and products. Furthermore, businesses operating industrial clusters have the advantage of work out joint solutions to common operational challenges through collaboration and strategic networking. Clusters afford companies the unique opportunity to build a labour pool of experts, technology, infrastructure and knowledge-sharing and team competitiveness, which they could all benefit from at different times. Another benefit of clusters provide opportunity for utilization of abundant natural resources, access to markets and fostering increased upstream and downstream employment in locations with greater factor endowment. Finally, clusters relative to non-clusters industrial locations offer lower barriers to entry and exit for companies (Boja, 2011; Kuah, 2002; Amaefule, 2012; Raimi, Peluola and Shokunbi, 2016).Having understood the economic benefits of clusters development for a developing economy like Nigeria intending to embrace Economic Diversification to leverage the potential of employment generation. Therefore, this policy paper hypothesis that should the six geopolitical zones in Nigeria embrace diversification by creating clusters along their factor endowment, they would be able to exploit their natural resources optimally there by accelerating the process of economic growth and sustainable development in the 36 states across the six-geopolitical zones in Nigeria.

After all, thrust of Nigeria's extant industrial policy is to accelerate economic growth and sustainable development through active involvement in agriculture, semi-processing, full-fledged manufacturing, construction and services thereby making Nigeria one of the Top 20 economies with at least a GDP of $900 billion combined with a minimum per capita income of $4000 per annum (Raimi et al, 2016; Vision 20:2020 Blueprint, 2009). To achieve the industrial vision enunciated above across the 36 states in Nigeria, there is need set up clusters in these states based on the nature and types of natural resource endowment. When clusters are establish in selected Industrial Development Centres (IDCs) across the 36 states in Nigeria; they would logically have the capacity to boost total factor productivity among collaborating companies, communities and local government areas through knowledge-sharing, risk-pooling, cost-sharing and skill-intensive production. It was reported that, the developed countries and emerging economies where clusters formed the foundation of their industrial development strategy, the forward and backward clusters spanning different industries are encouraged (Amobi, 2006).It is therefore re-assuring to submit that, economic opportunities of clusters to the states include broad-based industrialization, employment generation, wealth creation, urbanization, reduced operational costs for existing companies, emergence of new businesses as spin-offs, development of new innovations/ technologies/processes, cheaper technologies, increased specialization/division of labour by states and improved collaboration among companies and consistent knowledge-sharing for greater business competitiveness.

For the policy above to be effectively implemented, there is need for restructuring. Restructuring when viewed from developmental lenses should focus on the critical areas in the economy that would allow the states to improve on revenue generation, to improve on protection of lives and properties, and to improve on building critical infrastructure. In the first phase of four years, the Federal Government through the instrumentality of the law permits state policing, greater control of the education, health and transportation systems, and the generation and distribution of power by the states. In the second phase, there is need to free the local government from the apron-strings of the states by granting them autonomy. This should be followed with an upward review of the revenue-sharing formula to 65 per cent in favour of the states. The exclusive list should be drastically reduced while increasing the concurrent list. The third phase should be the time to stop federal ownership of inter-state roads and the federal character principle. Full resource control should be the last item on the agenda when it is crystal clear that there is maturity and level-headedness on the part of the administrators of the states (Abdur Raheem, 2017).

Materials and Methods
This is a qualitative research with interpretive research paradigm. The main sources of data for this exploratory paper were secondary data. The paper adopt a critical discourse analysis by reviewing scholarly articles on clusters development and economic diversification as well asuse ful information from policy documents on natural resources across the 36 states in Nigeria. The generated non-numerical data were subjected to content analysis from which insightful findings were drawn. At the end of the analysis, relevant tables and discussion were used for presentation of the qualitative findings.

Results/Findings
After a critical analysis of the latent natural resources across the six geopolitical zones in Nigeria as contained in government documents, it was found that the 36 states across six geopolitical zones have significant potential of creating clusters along their factor endowment thereby accelerating the nation's quest for economic diversification. The tables below provide further explanations.

Potential Clusters in the South-West of Nigeria
The South-West geographical zone of Nigeria is often called Yoruba-speaking states. The six states in this zones are blessed with massive arable land, solid minerals, clay, glass-sand, bitumen, fresh water (Lagos and Ondo have both fresh and salty water), natural ecosystems, festivals/ceremonies, forest and well developed industrial layout. The six states in the south-west are Lagos, Osun, Ogun, Oyo, Ondo and Ekiti States. The major clusters that could flourish in each of the states as presented in the Table 1 below.

Table 1: Potential Clusters in the South-West of Nigeria

SN	States	Resource Endowment	Potential Clusters
1.	Lagos	Water Resources, Agricultural Resources Bitumen, Beach, Clay & Glass-sand, colonial relics and recently oil	Fish production cluster Crops & Food production cluster Manufacturing/Services Cluster Ecotourism services Cluster Pleasure Tourism Cluster
2.	Osun	Solid Minerals such as Columbite, Gold, Granite, Talc, Tantalite, Tourmaline, Agricultural Resources Natural Ecosystem Traditional Festivals	Mineral Mining Clusters Crops & Food Production and Agro-allied clusters Ecotourism services Cluster Pleasure Tourism Cluster Manufacturing/Services Cluster
3.	Ogun	Solid Minerals - Bitumen, Clay, Feldspar, Gemstone, Kaolin, Limestone, Phosphate, Rocks Agricultural Resources Natural Ecosystem Traditional Festivals	Mineral Mining Clusters Crops & Food Production and Agro-allied clusters Ecotourism services Cluster Pleasure Tourism Cluster Manufacturing/Services Cluster
4.	Oyo	Aqua Marine, Clay, Arable land, Dolomite, Gemstone, Gold, Kaolin, Marble, Silimonite, Talc, Tantalite, Cassiterite, Ancient monuments and Traditional Festivals	Fish production cluster Crops & Food Production and Agro-allied clusters Ecotourism services Cluster Pleasure Tourism Cluster Manufacturing/Services Cluster
5.	Ondo	Water resources, Bitumen, Clay, Coal, Dimension Stones, Feldspar, Gemstone, Glass-Sand, Granite, Gypsium, Kaolin, Limestone & Oil/Gas	Fish production and processing Cluster Crops & Food production and Agro-allied clusters Mineral Mining Clusters Petro-chemicals Cluster
6.	Ekiti	Water Resources, Land Resources, Feldspar, Granite, Kaolin, Syenite, Tatium, Traditional Festivals	Fish production Cluster Crops production and Agro-allied clusters Mineral Mining Clusters Ecotourism services Cluster Pleasure Tourism Cluster

Source: Authors' Content Analysis of States' Endowment (2017)

Potential Clusters in the South-East of Nigeria

The South-East geographical zone of Nigeria is often called Igbos or Ibo-speaking states. The five states in this zones include: Imo, Eboyin, Anambra, Enugu and Abia. They are naturally endowed with natural resources such as arable land, sold minerals like coal, lead, zinc and forest resources in forms of iroko, mahogany, obeche, bamboo, rubber tree and oil palm. The states are rich culture and traditional festivals.

Table 2: Potential Clusters in the South-East of Nigeria

SN	States	Resource Endowment	Potential Clusters
1.	Imo	Water Resources, Arable land, Gypsium, Lead, Zinc, Lignite, Limestone, Marcasite, Oil/Gas, Phosphate, Salt, Ancient Shrines and Festivals	Fish production & Water Services Cluster Mineral Mining and Manufacturing Clusters Petro-Chemical Cluster Wood production and Furniture Cluster Pleasure Tourism Cluster Manufacturing/Services Cluster
2.	Eboyin	Water Resources, Oil, Arable Land, Forest Resources, Natural Ecosystem, Gold, Lead/Zinc, Salt	Fish production & Water Services Cluster Mineral Mining & Manufacturing Clusters Petro-Chemical Cluster Wood production and Furniture Cluster Pleasure Tourism Cluster
3.	Anambra	Water Resources, Arable Land, Clay, Glass-Sand, Gypsium, Iron-ore, Lead/Zinc, Lignite, Limestone, Phosphate, Salt, Ancient Shrines and Festivals	Fish production & Water Services Cluster Mineral Mining and Manufacturing Clusters Petro-Chemical Cluster Wood production and Furniture Cluster Pleasure Tourism Cluster
4.	Enugu	Water Resources, Arable Land, Solid Minerals such Coal, Lead, Zinc, Limestone, Ancient Shrines and Festivals	Fish production & Water Services Cluster Mineral Mining and Manufacturing Clusters Petro-Chemical Cluster Wood production and Furniture Cluster Pleasure Tourism Cluster
5.	Abia	Water Resources, Forest Resources, Gold, Lead, Zinc, Limestone, Oil/Gas, Salt, Ancient Shrines and Festivals	Fish production & Water Services Cluster Mineral Mining and Manufacturing Clusters Petro-Chemical Cluster Wood production and Furniture Cluster Pleasure Tourism Cluster

Source: Authors' Content Analysis of States' Endowment (2017)

Potential Clusters in the South-South of Nigeria

The South-South zone of Nigeria is rich in oil, other natural, forest and water resources forest resources of immense economic potentials. Apart from oil resources, there are exploitable solid minerals such as sand, clay, salt, limestone, coal, silver nitrate, etc. By design, the six states in this zone include: Bayelsa, Rivers, Akwa Ibom, Cross River, Edo, and Delta States. In view of the similar resources in this zone, the three major clusters that could flourish in each of the states as presented in the Table below.

Table 3: Potential Clusters in the South-South Nigeria

SN	States	Resource Endowment	Potential Clusters
1.	Rivers	Water Resources, Forest Resources, Clay, Glass-Sand, Lignite, Marble, Oil/Gas and Ancient monuments	Fish production cluster Petro-Chemical Cluster Manufacturing Cluster Wood production and Furniture Cluster Pleasure Tourism Cluster
2.	Cross River	Water Resources, Forest, Barite, Lead/Zinc, Lignite, Limestone, Manganese, Oil/Gas, Salt, Uranium, Traditional Festivals	Fish production Cluster Petro-Chemical Cluster Wood production and Furniture Cluster Pleasure Tourism Cluster Steel Manufacturing Cluster
3.	Delta	Clay, Glass-sand, Gypsium, Iron-ore, Kaolin, Lignite, Marble & Oil/Gas, Water Resources and Forest Resources.	Fish production Cluster Petro-Chemical Cluster Wood production and Furniture Cluster Pleasure Tourism Cluster Steel Manufacturing Cluster
4	Edo	Water Resources, Forest Resources, Bitumen, Clay Dolomite, Oil, Phosphate, Glass-sand, Gold, Gypsium, Iron-ore, Lignite, Limestone, Marble, and Ancient monuments	Fish production Cluster Petro-Chemical Cluster Wood production and Furniture Cluster Pleasure Tourism Cluster Steel Manufacturing Cluster Glass Production Cluster
5.	Bayelsa	Water Resources Glay, Gypsium, Lead/Zinc, Lignite, Limestone, Maganese, Oil, Uranium	Fish production cluster/Ship Building Cluster Petro-Chemical Cluster Wood production and Furniture Cluster Pleasure Tourism Cluster Steel Manufacturing Cluster
6.	Akwa-Ibom	Water Resources, Forest Resources, Clay, Lead, Zinc, Lignite, Limestone, Oil/Gas, Salt, Uranium	Fish production cluster/Ship Building Cluster Petro-Chemical Cluster Wood production and Furniture Cluster Pleasure Tourism Cluster Steel Manufacturing Cluster

Source: Authors' Content Analysis of States' Endowment (2017)

Potential Clusters in the North-East of Nigeria

The North-East zone of Nigeria is rich in both agricultural and solid mineral resources of immense economic potentials. The exploitable solid minerals include Gold, Cassiterite (tine ore), Columbite, Gypsium, Wolfram, Coal, Limestone, Lignite, Iron-ore & Clay etc. The six states in this zone include: Adamawa, Bauchi, Bornu, Gombe, Taraba and Yobe, The six major clusters that could flourish in this zone are presented in the Table 4 below.

Table 4: Potential Clusters in the North-East Nigeria

SN	States	Resource Endowment	Potential Clusters
1.	Adamawa	Bentonite, Gypsium, Kaolin & Magnesite, Land Resources, Animal resources, Traditional Festivals	Meat, Dairy and Leather Production Clusters Crops & Food production cluster Manufacturing/Services Cluster Mineral Mining Clusters Pleasure Tourism Cluster
2.	Bauchi	Gold, Cassiterite (tine ore), Columbite, Gypsium, Wolfram, Coal, Limestone, Lignite, Iron-ore & Clay, Animal Resources, Land Traditional Festivals	Meat, Dairy and Leather Production Clusters Crops & Food production cluster Manufacturing/Services Cluster Mineral Mining Clusters Pleasure Tourism Cluster Steel Manufacturing Cluster
3.	Bornu	Bentonite, Clay, Diatomite, Gypsium, Hydro-carbon, Kaolin & Limestone, Animal Resources, Land Resources Traditional Festivals	Meat, Dairy and Leather Production Clusters Crops & Food production cluster Manufacturing/Services Cluster Mineral Mining Clusters Pleasure Tourism Cluster Glass manufacturing cluster
4	Gombe	Animal Resources Agricultural Resources Land Resources Gemstone & Gypsium, Traditional Festivals	Meat, Dairy and Leather Production Clusters Crops & Food production cluster Manufacturing/Services Cluster Mineral Mining Clusters Pleasure Tourism Cluster
5.	Taraba	Lead/Zinc, Animal Resources, Land Resources, Traditional Festivals	Steel Manufacturing Cluster Meat, Dairy and Leather Production Clusters Crops & Food production cluster Pleasure Tourism Cluster
6.	Yobe	Soda Ash & Tintomite, Animal Resources Agricultural Resources Land Resources Solid Minerals Traditional Festivals	Meat, Dairy and Leather Production Clusters Crops & Food production cluster Mineral Mining Clusters Glass manufacturing cluster Pleasure Tourism Cluster

Source: Authors' Content Analysis of States' Endowment (2017)

Potential Clusters in the North-Central of Nigeria

The North-Central zone of Nigeria has Benue, Kogi, Kwara, Nasarawa, Niger and Plateau states as constituents. Their valuable resources include Arable Land, Water Resources, Barite, Clay, Coal, Gemstone, Gypsium, Iron-Ore, Lead/Zinc, Limestone, Marble & Salt etc. The major clusters that could flourish in this zone are presented in the Table 4 below.

Table 5: Potential Clusters in the North-Central of Nigeria

SN	States	Resource Type	Cluster Type
1.	Benue	Water Resources, Agricultural Resources Barite, Clay, Coal, Gemstone, Gypsium, Iron-Ore, Lead/Zinc, Limestone, Marble & Salt; Traditional Festivals	Meat, Dairy and Leather Production Clusters Crops & Food production cluster Manufacturing/Services Cluster Steel Manufacturing Cluster Mineral Mining Clusters Salt Manufacturing Clusters Pleasure Tourism Cluster
2.	Kogi	Agricultural Resources Cole, Dolomite, Feldspar, Gypsium, Iron-ore, Kaolin, Marble, Talc, Tantalite Natural Ecosystem Traditional Festivals	Meat, Dairy and Leather Production Clusters Mineral Mining Clusters Crops & Food Production and Agro-allied clusters Ecotourism services Cluster Manufacturing/Services Cluster Steel Manufacturing Cluster Cement Cluster
3.	Kwara	Agricultural Resources Cassiterite, Columbite, Feldspar, Gold, Iron-ore, Marble, Mica, Tantalite, Animal resources, Traditional Festivals	Crops & Food Production and Agro-allied clusters Mineral Mining Clusters Steel Manufacturing Cluster Manufacturing/Services Cluster Meat, Dairy and Leather Production Clusters Ecotourism services Cluster
4	Nasarawa	Agricultural Resources Amethyst (Topaz Garnet), Barytex, Clay, Barite, Cassirite, Coal, Chalcopyrite, Talc, Columbite, Coking Dolomite, Marble, Feldspar, Galena, Iron-ore, Limstone, Mica, Salt, Sapphire, Tantalite, Tourmaline Quartz, Zireon	Meat, Dairy and Leather Production Clusters Crops & Food Production and Agro-allied clusters Ecotourism services Cluster Pleasure Tourism Cluster Mineral Mining Clusters Steel Manufacturing Cluster Manufacturing/Services Cluster Ecotourism services Cluster
5.	Niger	Agricultural Resources Gold, Lead/Zinc & Talc, Natural Water, Traditional Festivals	Meat, Dairy and Leather Production Clusters Mineral Mining Clusters Crops & Food Production and Agro-allied clusters Ecotourism services Cluster Manufacturing/Services Cluster
6.	Plateau	Barite, Bauxite, Coal, Betonite, Bismuth, Cassiterite, Clay, Tin, Kaolin, Emeral, Salt, Fluoride, Gemstone, Granite, Iron-ore, Lead, Zinc, Marble,	Meat, Dairy and Leather Production Clusters Mineral Mining Clusters Crops & Food Production and Agro-allied clusters Ecotourism services Cluster Manufacturing/Services Cluster Steel Manufacturing Cluster

Source: Authors' Content Analysis of States' Endowment (2017)

Potential Clusters in the North-West of Nigeria
North-Central zone of Nigeria has five states namely: Jigawa, Kaduna, Katsina, Kano Kebbi and Sokoto. The zone is blessed latent resources such as Amethyst, Aqua Marine, Asbestos, Clay, Flosper, Gemstone, Gold, Ruby Graphite, Kaolin, Mica, Hyanite, Rock Crystal, Sapphire, Sihnite, Superntinite, Tentalime, Topaz, Tourmaline, Agricultural Resources and tourism sites. The major clusters that could flourish in this zone are presented in the Table 6 below.

Table 6: Potential Clusters in the North-West of Nigeria

SN	States	Resource Type	Cluster Type
1.	Jigawa	Water Resources Agricultural Resources Butyles Traditional Festivals	Meat, Dairy and Leather Production Clusters Fish production cluster Crops & Food production cluster Pleasure Tourism Cluster
2.	Kaduna	Amethyst, Aqua Marine, Asbestos, Clay, Flosper, Gemstone, Gold, Ruby Graphite, Kaolin, Mica, Hyanite, Rock Crystal, Sapphire, Sihnite, Superntinite, Tentalime, Topaz, Tourmaline Agricultural Resources Traditional Festivals	Meat, Dairy and Leather Production Clusters Mineral Mining Clusters Crops & Food Production and Agro-allied clusters Ecotourism services Cluster Pleasure Tourism Cluster Manufacturing/Services Cluster
3.	Kano	Gassiterite, Copper, Gemstone, Glass-sand, Lead/Zinc, Pyrochinre, Tantalite, Agricultural Resources Natural Ecosystem Traditional Festivals	Meat, Dairy and Leather Production Clusters Mineral Mining Clusters Crops & Food Production and Agro-allied clusters Ecotourism services Cluster Pleasure Tourism Cluster Manufacturing/Services Cluster
4	Katsina	Kaolin, Marble, Salt, Agricultural Resources Natural Ecosystem Traditional Festivals	Meat, Dairy and Leather Production Clusters Mineral Mining Clusters Crops & Food Production and Agro-allied clusters Pleasure Tourism Cluster
5.	Kebbi	Gold, Agricultural Resources, Natural Ecosystem Traditional Festivals	Mineral Mining Clusters Crops & Food Production and Agro-allied clusters Ecotourism services Cluster Pleasure Tourism Cluster
6.	Sokoto	Clay, Flakes, Gold, Salt, Granite, Gypsium, Kaolin, Laterite, Potash, Limestone, Phosphate, Silica Sand, Agricultural Resources, Traditional Festivals	Mineral Mining Clusters Crops & Food Production and Agro-allied clusters Ecotourism services Cluster Pleasure Tourism Cluster Salt and Manufacturing/Services Cluster
7.	Zamfara	Coal, Cotton, Gold, Agricultural Resources Natural Ecosystem Traditional Festivals	Mineral Mining Clusters Crops & Food Production and Agro-allied clusters Ecotourism services Cluster Pleasure Tourism Cluster

Source: Content Analysis of States' Endowment (2017)

Conclusion

This paper which sets out to explore the potential roles of industrial clusters in Economic Diversification in Nigeria using a critical discourse analysis, found that the six geo-political zones possess huge deposits of natural resources from which several clusters could be developed as springboards for accelerating Nigeria's quest for economic diversification. The potential benefits of establishing clusters across the six geo-political zones include development of strong industrial base, growth in GDP, import substitution, export promotion, food self-sufficiency, spin-offs, urbanisation, agglomeration, employment opportunities, infrastructural enhancement, poverty reduction and improved wellness of the citizens.

Conclusion

The paper reinforced that fact that establishment of clusters across the identified industrial clusters listed above will open a number of opportunities in the 36 states in Nigeria. Specifically, the development of cash and food procession clusters would strengthen Nigeria's mineral, construction, agriculture and manufacturing by making it strong enough to produce made-in-Nigeria semi-finished products and finished products thereby enhancing the industry's competitiveness. The crops and food clusters when established would afford interaction and collaboration among farmers, food processing & packaging companies, marketing agents and distributors/retailers to pursue mutually-beneficial interests. For other clusters such as Solid minerals, Ecotourism services Cluster, Pleasure Tourism Cluster, Manufacturing/Services Cluster, the associated economic opportunities include reduction of imports, conservation of wasted foreign exchange, import substitution, avoidance of dumping and control over the quality of food consumed by the public. Establishment of mineral and mining clusters is a proactive strategy for harnessing the latent solid minerals wasting away in different states in Nigeria. Meat, Dairy and related products clusters when established could serve as an effective mechanism for attaining meat sustainability, that is, attainment of cheap, quality and regular processed protein-oriented products for Nigerians in the face of hunger, endemic poverty and extreme deprivation.

Other inherent opportunities in these clusters include prospect of stimulating more employment, wealth creation, growth of local technology, poverty reduction and sustainable economic development. The implication of this paper is that, it provides a sustainable approach for economic diversification through clusters development. The findings arising from this theoretical paper need to be strengthened with empirical investigation/testing. The paper concludes with far-reaching recommendation that, the three levels of Government in Nigeria need to embrace clusters development in the six geopolitical zones in Nigeria in the face of dwindling oil revenue. When clusters are also pursued as a national policy, Nigerian businessmen and communities would be well-positioned to take advantage of business support interventions and investment incentives offered by the Raw Materials Research and Development Council (RMRDC), the Nigerian Export Promotion Council (NEPC) and the National Investment Promotion Council (NIPC).

Recommendations

From the foregoing discourse, it is clear that clusters are important for economic diversification and accelerated industrial development in Nigeria. However, the following policy suggestions are critical for leveraging clusters as mechanisms for economic diversification across the six-geo-political zones in Nigeria.

i.   There is urgent need for more sensitization on clusters development through workshops, stakeholders meeting, retreat and public lectures on the meaning, essence of clusters and procedures/modalities for establishing and managing clusters across the various sectors identified in this paper.

ii. With regards to cash crops production for food sustainability, the Ministry of Science & Technology, the Raw Materials Research and Development Council (RMRDC), the Nigerian Export Promotion Council (NEPC) and the National Investment

Promotion Council (NIPC)should provide the needed technical and managerial support services because most government-led industrial programmes on industrial development have been ineffective in actualizing their set objectives.

iii. It is also strongly recommended that clusters development especially government-led model should provide organised high-quality entrepreneurship training and capacity-building workshops for small and medium enterprises (SMEs) across the six geo-political zones on the benefits of promoting greater cluster competitiveness.

iv. For long term sustainability and competitiveness, it is recommended that there should be periodic partnership dialogue among all the states, cluster companies and other participants for ideas/knowledge-sharing, risk-pooling, strategic networking and government engagement for mutually-beneficial policies/programmes in the clusters. The Lagos-Kebbi partnership and strategic collaboration that led to the production of Lake Rice is a welcome development.

v. It is therefore suggested that effective coordination is needed in the Food Industry in order to achieve the set objectives discussed above. Particular attention should be paid to business communication, leadership and conflict management, which are all critical issues for building sustainable cluster synergy.

vi. Before fully embracing clusters development by the 36 states, there is need for macroeconomic and political stability in terms of stable and sound economic policies, transparent regulatory framework, infrastructural enhancement, sustainable rules & incentives for competition in the clusters, friendly tax policies, fair legal system and security for lives & property in the industrial clusters are issues to be taken seriously.

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