

The Role of Agripreneurship in Enhancing Climate Resilience for Sustainable Economic Growth in Nigeria

Ifeanyi W Okonkwo¹, Benjamin Anabaraonye^{2*}, Ijeoma E Orji³, Nzemeka C Olisah⁴ and Beatrice O Ewa⁵

¹Department of Agricultural and Bio-Resources Engineering, University of Nigeria, Nsukka, Nigeria

²Benjy Poetry and Music Global Concepts, Nigeria

³Department of Environmental Education, Faculty of Arts and Social Science Education, University of Calabar, Calabar, Nigeria

⁴Department of Physics and Industrial Physics, Nnamdi Azikiwe University, Awka, Nigeria

⁵Nnamdi Azikiwe University Library, University of Nigeria, Nsukka, Nigeria

*Corresponding author

Benjamin Anabaraonye, Benjy Poetry and Music Global Concepts, Nigeria.

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ABSTRACT

Nigeria has rich agricultural resources endowment and an avalanche of laudable agricultural policies that could turn her into an industrialized economy and reduce the incidence of hunger and poverty. This study highlighted that agripreneurship programme is vital to develop entrepreneurs and leaders to improve agribusiness in Nigeria. This study defined the concept of agripreneurship and its role in enhancing climate resilience in Nigeria. It recommended that climate resilience and sustainable economic growth can be achieved if we run agriculture as a business to enhance climate resilience and encourage private-sector led engagements as the main objective driver. It further enumerated the numerous benefits of agripreneurship as it helps to build resources by wealth creation along the value chain through production, value addition, and export of processed or unprocessed goods among others. It concluded by the call for more in-depth research on agripreneurship and its role in enhancing climate resilience in Nigeria.

Keywords: Agripreneurship, Climate Change, Economic Growth, Nigeria, Sustainable Development

regulations to create an agripreneurship-friendly environment, reduce barriers, or change prevailing values in societies.

Introduction

Entrepreneurship is a concept that encompasses transforming an idea or vision into a new business, enterprise, company or venture creation with the goal of solving specific problems in the community while making profits. It also involves the expansion of an existing business, by an individual, a team of individuals, or an established business [1-3]. Agriculture today faces many challenges, including globalization and market liberalization, food price crises, natural resource depletion, climate change, rapid urbanization, changing production and consumption patterns, demographic changes, and so on. Many of these directly or indirectly lead to changing markets, and create both opportunities and risks for farmers, especially for smallholders, youth, and women [4]. With a growing recognition of the important role smallholder agriculture holds in economic and rural development in many countries, agripreneurship becomes a major factor in market-oriented agriculture. Rural advisory services play a crucial role in supporting farmers to become successful agripreneurs. They provide important information and access to people, markets, and financial services and train the farmers in the required managerial and other functional skills. Rural advisory services can also influence policies and

Methodology

Materials used for this study were derived from online academic journals, magazines, articles, conference papers, textbooks, and educational materials from libraries. The researchers gathered a lot of materials for the research but summarized the characteristics of the papers that centered more on "The Role of Agripreneurship in Enhancing Climate Resilience for Sustainable Economic Growth in Nigeria". This enabled the researchers to generate the synthesis of various views of other researchers on the subject matter.

Literature Review

The future of the Nigerian economy depends largely on its entrepreneurs as well as government policies on entrepreneurship. A positive entrepreneurial and eco-friendly environment is very important to ensure an entrepreneurial individual or a firm succeeds at its venture. In Nigeria, different factors have deterred emerging entrepreneurs from starting and successfully running their businesses. In Nigeria, there is a high rate of unemployed youths who need to be engaged in entrepreneurial activities to ensure a stable and sustainable economy. In Nigeria, opportunities abound in agriculture and agro allied businesses in improving both

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rural and urban economy. Climate change, global warming and other related environmental challenges presently pose a threat to sustainable economic growth in Nigeria's agricultural sector [5]. Thus, green entrepreneurship has a great role to play to ensure that agripreneurship opportunities are properly maximized for sustainable economic growth in Nigeria. In conducting this study, a theoretical approach was adopted using secondary data obtained from journals. This approach was adopted to bring to limelight the efforts made by entrepreneurs and the government locally, nationally and globally toward green entrepreneurship, climate resilience and sustainable economic growth.

Understanding Agripreneurship

Agripreneurship refers to entrepreneurship in agriculture. Agripreneurship is the type of business that deals with manufacturing, processing and distribution of agricultural products mostly among farmers, and rural SMEs operators for local and international consumption [6]. Singh and Bhowmick defined agripreneurship as the entire agricultural activities that include the production, supply of inputs, processing, transporting, and marketing of agricultural and related products [7]. Equally, Ito, Qian and Hassanzoy defined agripreneurship as all enterprises derived from and around agricultural production (food production, seed supply, agrichemicals, farm machinery), distribution, processing, marketing and retail sales [8]. Furthermore, Otache highlighted that agripreneurship is the ability and willingness of a person to recognize a feasible agricultural business opportunity, gather resources, establish and manage the resulting agribusiness successfully [9]. Agripreneurship involves innovative ways of cultivation, planting, application of fertilizer, processing of harvested farm produce and converting such into finished products, and conveying them to the point of sales with the use of unique promotional efforts [4]. The recent rate of unemployment, level of poverty and depleting form of agricultural activities in Nigeria indicate that there is a dire need to tap into the opportunities for promoting agripreneurship in a way that is sustainable. Therefore, the integration of entrepreneurial skills and knowledge into modern agricultural practices is necessary to produce entrepreneurs and workforce to cater for agricultural enterprises in Nigeria and beyond [4]. This will in turn address the present problem associated with agricultural production since enterprise development is arguably more sustainable than economic development strategies of business attraction and business retention [10]. Agripreneurship growth does foster economic development by generating employment and creating jobs through the increase of micro, small and medium enterprises establishment. Agripreneurship is defined as the integration of entrepreneurial and innovative business ideas and skills into agriculture to produce better results. It involves innovative ways of cultivation, planting, application of fertilizer, processing of harvested farm produce and converting such into finished products, and conveying them to the point of sales with the use of unique promotional efforts [11]. Agripreneurship opportunities abound and have stood to mediate between the socio-economic and psychosocial challenges as well as improving food supply and economy. Agripreneurship plays various roles in growth and development of national economy through entrepreneurship development which increases the income level and employment opportunities in rural as well as urban areas. It is pertinent to state that the promotion of agripreneurship has benefits as it creates and enhances value to primary agriculture as well as improving

income accruable. Results from various studies have shown the direct link between entrepreneurship and economic growth. However, agripreneurship can be innovatively used to enhance climate resilience thereby achieving sustainable development in Nigeria.

Understanding Green Entrepreneurship

Green entrepreneurs are said to combine the environmental, economic and social components of sustainability in a holistic manner and to have a different organizing logic to more conventional entrepreneurs [12]. Green entrepreneurs seek to use the enterprise (which may involve agribusiness) as a tool for enhancing climate resilience for sustainable development [13]. Over the years, the population growth across the globe increased the production and consumption of goods and services leading to the depletion of the natural resources and causing severe damage to the environment. Some of the serious repercussions of environmental damages include global warming, increased environmental pollution and decline in the flora and fauna [14]. Various countries in the world realized the threats to the environment and began working hard to minimize the harmful effects of business activities on the environment. The realization, concern and conscious actions towards the environment led to the emergence of sustainable development which emphasizes the need to promote sustainability; by advocating the form of development that emphasizes minimal damage to the environment and the society bearing in mind the well being of future generations. The drive for sustainability created the platform for eco-innovations and green consumption. Eco-innovation encourages and advocates the incorporation of environmentally sustainable practices at every stage of production process and service delivery. The need to go green creates opportunities for agripreneurs and such green businesses are gaining popularity as more opportunities arise for agripreneurs to invest in and this will in turn result in a green economy which is the agenda of the United Nations Environment Programme (UNEP).

Despite, the benefits of agripreneurship to the economy of Nigeria, it is pertinent for the sustainability of the environment to be put into consideration by farmers and other operatives. Hence, it becomes imperative for the agripreneurs to adopt green practices in business. Among the promising applications for enhancing climate resilience include the use of renewable energy such as solar energy, wind turbines, etc. in agricultural production activities. Some farmers are gradually using the technology of green energy for poultry production, crop drying, rural water supply and for irrigation systems. However, there is great need for more agripreneurship and green entrepreneurship education in Nigeria [12]. It is obvious that the response and efforts of environmentalists and governments is not enough to produce the desired economic and environmental results towards enhancing climate resilience in Nigeria. Agripreneurs can play a great role in combating environmental challenges through the use of green energy technologies in their business operations. The green entrepreneur is an actor in the green economy that embodies the marriage of economy and environment, taking into account the human factor and social development into business operations. [15,16]. This provides innovative solutions to the way goods and services are produced and consumed and also scale-up the business model and contributes to the greening of the economy.

In Nigeria, entrepreneurial development has made significant improvement as a result of individual's drive for entrepreneurial activities and various programmes put in place by the government to encourage entrepreneurial activities. For example, the Structural Adjustment Programme (SAP) in 1986, the National Directorate of Employment (NDE), National Open Apprenticeship Scheme (NOAS), the Small and Medium Enterprise Development Association of Nigeria (SMEDAN), After-school Graduate Development Centre (AGDC). Another initiative to encourage entrepreneurship in Nigeria was the move to introduce a mandatory course on entrepreneurial development skills in tertiary institutions, the Centre for Entrepreneurial Development (CED); with the aim of teaching and encouraging students to acquire entrepreneurial, innovative and management skills [1,2]. improved economy. Thus, this paper looks at the concept of agripreneurship, green entrepreneurship and how they can enhance climate resilience for sustainable economic growth in Nigeria.

Enhancing Climate Resilience Through Agripreneurship in Nigeria

Entrepreneurship is of great importance to our communities, country and continent to achieve sustainable economic growth. It is necessary for enterprising individuals and firms to think about the consequences and impacts of their business operations on the environment; this results in the concept of green entrepreneurship, climate resilience, green economy, sustainability and eco-friendly products, services and marketing. Agriculture today faces many challenges, including globalization and market liberalization, food price crises, natural resource depletion, climate change, rapid urbanization, changing production and consumption patterns, demographic changes, and so on. Many of these directly or indirectly lead to changing markets, and create both opportunities and risks for farmers, especially for smallholders, youth, and women. With a growing recognition of the important role of smallholder agriculture for economic growth and rural development in many countries, market-oriented agriculture appears more prominently on the agenda.

For this purpose, this study explored the concept of green entrepreneurship with the view of the opportunities it relates to agripreneurship. An exploratory approach was adopted in this study which involves the review and analysis of various research works on green entrepreneurship, green economy and agripreneurship and the findings indicate that most developed and even some developing countries have worked hard but need to work harder on their compliance to green economy requirements according to UNEP. The need to go green creates opportunities for entrepreneurs and such green businesses are gaining popularity as there are more opportunities for agripreneurs and green entrepreneurs to invest in and this will in turn result in a green economy which is the agenda of the United Nations Environment Programme (UNEP). Despite, the benefits of entrepreneurship to the economy of any society, it is pertinent for the sustainability of the environment to be put into consideration by business operatives. Hence, it becomes imperative for the Nigerian entrepreneur to adopt green practices in business as it relates to agriculture and agro allied sectors. The question then is, of what benefit is the transition to green economy and what are the opportunities available for the green

entrepreneur in Nigeria especially in the agricultural sector? It is obvious that the response and efforts of environmentalists and governments is not enough to produce the desired economic and environmental results and so businesses (entrepreneurs) play a key role in combating environmental challenges.

Case Study on Agripreneurship in Nigeria

A research by Joshua SR, Ali MD, Happy DG. examined the impact of entrepreneurship on the environment and how green entrepreneurship can be used to sustain development in Nigeria [18]. The study indicates that opportunities for environmental entrepreneurs exist in the country and that the negative impact of entrepreneurial activities can also create a means for green entrepreneurship which will in turn aid the greening of the Nigeria's economy. Solar powered poultry farm is another case study, it exposes how solar energy being a renewable energy (RE) can be used in poultry farms to provide controlled environment by supplying heat requirement for brooding of day-old chicks, poultry egg incubation and drying of poultry manure. The application of solar energy enhances poultry farming, energy efficiency and climate change mitigation in poultry production systems. It can be used in a poultry farm to provide controlled environment (heat for chicks in the brooding room and lower temperature for broilers in the breeding room) in order to enhance and ensure effective poultry production. Capturing the sun's energy for light, heat, hot water, and electricity can save you money, whether drying crops, heating buildings, or powering a water pump, using the sun can make your farm more efficient. Solar power installation is an innovation in agripreneurship whereby farmers can make use of solar energy in lighting their farms, grinding of grains, etc. Agripreneurship combined with green entrepreneurship is certainly one that helps in achieving sustainable economic growth in our nation. Its importance cannot be over emphasized as it moves the demand of burning petroleum products in generating electricity to using the radiation from the sun to generate electricity in the agricultural sector. Generators used in farms consume petroleum products which makes the farm incur extra cost of production, it also emits gases (carbon dioxide) into the air that causes air pollution and depletes the ozone layer. Noise pollution can also be associated to the use of generators. The reverse becomes the case in solar powered farms, we get low-cost electricity tariff, no emission of gases, no air nor noise pollution, constant electricity. It is pertinent to note that many farmers are not aware of this green innovation, therefore there is great need to enlighten farmers both in rural and urban areas on the best ecofriendly practices to get better results and sustain the nation's economic growth.

Findings and Discussion

For sustainable and economic growth to be achieved in Africa, there is an urgent call to investigate and get to the root of environmental issues (such as climate change, waste disposal, pollution, the depletion of non-renewable natural resources such as petroleum, natural gas and energy shortage) bringing out innovative measures to tackle these challenges facing most countries especially third world countries. Raising consciousness about environmental issues requires a radically new way of thinking, which cannot be gained in a single lesson. We must learn to live everyday conscious of our environmental impact [19]. Our environment becomes our concern when we think ahead.

Which kind of environment do we want to leave to the future generations? Agriculture has been identified as a sector that takes care of SDG(2) and SDG(3) of the United Nations sustainable development goals. Agriculture is the prime mover of Nigerian economic growth and has created employment opportunities, served as important sources of raw materials and has employed about two third of Nigerian labourforce. Agriculture has been the engine of economic development of our great nation and needs to be supported with efficient marketing system, reduction of post-harvest losses, diversification towards high value crops and promotion of agripreneurship in wake of shrinking resource base and rampant unemployment in rural areas [20]. Many Nigerian youths still view agriculture as a dead-end career that entails life-long labour on a farm. However, it does not appear to be true. It is pertinent to state that with the right investments to support entrepreneurs in agriculture, profitable careers could await Nigeria's young population. It is the consensus that Nigeria is blessed and well endowed. Where many other nations lack talented people, a burgeoning population, an advantageous demographic, climate, abundant natural resources and cultural diversity and agricultural potentials exist in Nigeria. Unfortunately, in rural areas, where 85 per cent of Nigeria's poor reside, the major cause of poverty has been identified as the use of out-modeled and inefficient systems in agriculture. Although, the negative impact of entrepreneurial activities can also create a means for green entrepreneurship which will in turn aid the greening of the Nigeria economy. Therefore, the Nigerian entrepreneur needs to see the opportunities created by the transition to green economy and explore these opportunities for the nation to thrive economically, socially and environmentally.

The concept of green economy has gained popularity because it gives credence to major global issues which include environmental, economic and food crisis. The concept offers a chance of economic process and food supply without putting the environment in jeopardy. It advocates and promotes a system that proactively addresses and prevents economic and environmental crisis as against the system that permits it [21]. According to UNEP, green economy is an economy that leads to improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities. The UNEP's working definition of a green economy sees it as a system of economic activities related to the production, distribution and consumption of goods and services that result in improved human wellbeing over the future while not exposing future generations to significant environmental risks and ecological scarcities. From the above perspective, the concept carries the promise of a new economic growth paradigm that is friendly to the earth's ecosystems and can also contribute to poverty alleviation. This is viewed to be compatible with the concept of sustainable development which has been a major drive of the United Nations. Khor analyzed the principles of sustainable development and green economy, he concluded that both concepts are geared towards the same goal of environmental protection and economic prosperity [22]. Jarvis et al. asserted that businesses play a key role in the economy; green businesses and the relevant markets should be a key priority for an economy by improving energy efficiency and resource use, and that by recognizing green growth as a business opportunity, green entrepreneurs can become the agents of change [23].

Studies have shown the positive impact of entrepreneurship on economic growth, which include employment generation and empowerment of the poor in the society. In industrialized nations, increased entrepreneurial activities serve to reposition dying industries, provide new jobs to compensate for unemployment and generally enhance economic flexibility and growth. When agripreneurs begin to go green in the sense that they are thoughtful about environmental issues, they begin to practice green entrepreneurship which reduces environmental pollution and deals with other climate change issues. Entrepreneurs can take advantage of these opportunities and start up green businesses resulting in entrepreneurial development; and millions of jobs are created in the process for our ever growing population.

Strategic Role of Renewable Energy in Agripreneurship and Climate Change Mitigation

Renewable energy can significantly contribute to agripreneurship and create opportunities for innovative practices that will address climate change issues in agricultural production sector. Renewables-based adaptation solutions promote mitigation and reinforce adaptation efforts across many processing activities in agricultural sector. It provides a broad range of adaptation needs and provide benefits that other forms of energy resources may not offer more especially in the rural areas where agricultural practices are prominent and major source of income. Specific adaptation needs and potential renewables-based solutions in agripreneurship include in water management, food production, agriculture and forestry and natural disaster response. In food preservation, handling and storage, renewable energy is an important key factor in handling postharvest losses. Most farmers use solar energy for drying their agricultural produce. Renewables allow implementation of energy-intensive adaptation solutions – such as air conditioning, desalination and irrigation – with net-zero emissions [24]. Solar PV systems are used for rural water supplies and irrigation of farm crops to enhance economic growth. In poultry production industry many systems that use solar energy for operation have developed for enhancing climate resilient and mitigation in poultry production systems [25,26].

Distributed Renewable Energy Solutions

Distributed renewable energy technology solutions such as PV systems and solar lamps can provide power and lightening needs that can create a resilient energy system, and therefore support vital economic adaptation measures for the most vulnerable communities. Distributed renewable energy solutions can ease exposure to climate change impacts by providing “green infrastructure” in indispensable sectors, for example solar desalination for salt production and waste water treatment and food processing activities. By renewable energy service solutions many people (entrepreneurships) will emerge either as service providers, directly or indirectly as retail or wholesale dealers in the economic chain line, even in the mist of climate change impacts and natural disasters. Moreover, long-term access to reliable energy supply through distributed renewable energy solutions builds services, self-resilience, strong economic ties and adaptive capacities in the local community. Access to reliable energy supply decreases community vulnerability to climate change risks. These however, do not require huge upfront infrastructure investment. In Enugu state, Nigeria many medium scale solar energy powered day-old chicks brooding systems

were distributed to poultry farmers in 2000 under the UNECO-UNSPAR industrial commercialization entrepreneurship. This singular activity created an enduring awareness among the farmers of the benefits of renewable energy technology in agripreneurship poultry production. The multifunctionality of renewable energy technologies provide energy for grain, rote and vegetable crops drying operations in order to prolong their shelf-life for food security and also provide for non-energy services that contribute to climate adaptation. According to IRENA [24]. Well-designed and integrated climate adaptation policies should take advantage of the energy and non-energy services that renewable energy technologies provide.

Benefits of Agripreneurship

Nigeria is endowed with a huge deposit of natural resources and abundant soil resources with huge agricultural potentials. These agripreneurship opportunities are expected to improve the economy of individual farmers and entrepreneurs into agroallied businesses. Agripreneurship has the capacity to enhance climate resilience, eradicate poverty and hunger, create new job opportunities for sustainable economic growth in Nigeria. Agripreneurship creates new job opportunities for farmers, entrepreneurs, unemployed and underemployed youths in Nigeria. However, in order to take advantage of these opportunities, the employability of young people and women should be improved by providing targeted, up-to date training through professionals in the new skills required for the success of agripreneurship in Nigeria.

Recommendations

This study therefore recommends:

1. Further research and development in the area of agripreneurship and green economy in Nigeria that will foster our sustainable environment, sustainable development and economic growth.
2. The government, policy makers, farmers and well meaning Nigerians should invest in green entrepreneurship because it comes with green innovations which provide green jobs and aid the nation in sustaining her economic growth. Convening seminars for those interested in green entrepreneurship including farmers, educational blogging and use of green poems are also other ways to sensitize the people about the effects of environmental challenges [3].
3. Existing entrepreneurs should comply with green processes which could create opportunities for other green businesses for more sustainable agricultural livelihood initiatives.
4. Seminars, Workshops and Public orientation programs to enlighten the populace on the benefits of agripreneurship for sustainable development in Nigeria should be encouraged.
5. The government should put in place the necessary policies and the enabling entrepreneurial environment to encourage entrepreneurs in the agricultural sector. They should encourage and support green innovations and businesses as well as help to educate the farmers on the need to incorporate green entrepreneurship into agripreneurship development in Nigeria.

Conclusion

Developing agripreneurship curriculum is critical to agricultural development, whether at the undergraduate or graduate level and for it to achieve the desired outcome, learning activities must be

designed, coordinated, and facilitated in a manner that will differ from other paths in the agribusiness curriculum [27]. The World Bank Group has a great role to play in Nigeria towards enhancing agripreneurship and green entrepreneurship for sustainable economic growth [13]. Nigeria's agricultural policies target food security, import substitution to mitigate the massive food import and conserve foreign exchange, job creation and enhancing economic diversification and growth. The Nigerian government should create new mechanisms and policies to encourage agripreneurship in Nigeria. Although, efforts are already being made by the government and concerned individuals at various levels to encourage agripreneurship, more need to be done in in depth research in agripreneurship to enhance climate resilience towards achieving sustainable economic growth in Nigeria.

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