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## Enhancing climate resilience through green entrepreneurship education in Nigeria

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### Abstract

Climate change is presently an issue of global concern requiring urgent attention from individuals, institutions, governmental and non-governmental organizations to enhance resilience. This study identifies the role of green entrepreneurship in addressing the challenge of climate change in Nigeria. It further identifies how green entrepreneurship education can enhance climate resilience for sustainable development in Nigeria. This study further seeks to draw the attention of policy makers in government, private sectors, non-governmental organizations, educationists and entrepreneurs to the role of green entrepreneurship education in enhancing climate resilience in Nigeria. Through literature review and participant observation, this study proves to be very timely and significant, as it explores new opportunities, practices and policies for green entrepreneurship education for enhancing climate resilience in Nigeria.

**Keywords:** Climate change, education, green entrepreneurship, resilience, sustainable development

### Introduction

According to the World Health Organization (WHO) Director General on the World Health Day 2008, "Climate change is one of the greatest challenges of our time. Climate change will affect, in profoundly adverse ways, some of the most fundamental determinants of health: food, air, water. In the face of this challenge, we need champions throughout the world who will work to put protecting human health at the center of the climate change agenda (Chan, 2008)". Education is the bedrock of the society and the wings on which our nation can soar to greater heights. Education for the sustainable development of the various sectors of our nation will certainly require lifelong learning (Anabaraonye, 2017) <sup>[1]</sup>. Education for Sustainable Development (ESD) empowers learners of all ages with the knowledge, skills, values and attitudes to address the interconnected challenges the world is facing, including climate change, environmental degradation, loss of biodiversity, poverty and inequality. Climate change has been described as an existential threat to human well-being. Globally, it affects the social and environmental determinants of health: clean air, safe drinking water, sufficient food and secure shelter. The effects of climate change are far-reaching and include heat waves and severe weather, deteriorated air quality, displacement and migration of vectors resulting in increase of a range of diseases related to water and ecological factors. Increasing incidences of mental health issues are being recorded and identified as a consequence of environmental change (Lu, 2016; PAHO, 2013) <sup>[13, 15]</sup>. Climate change is the most significant challenge to achieving sustainable development, not only because it affects the global physical environment directly, but also because it affects all aspects of socio-economic development (Anabaraonye, 2018) <sup>[2]</sup>. Generally, climate change is caused by natural and human activities. Human activities are subdivided into those that either emit large amount of greenhouse gases into the atmosphere contributing to the ozone layer depletion or activities that result in reduced carbon absorption from the atmosphere (Anabaraonye, Okafor & Hope, 2018) <sup>[4]</sup>. In the first category are industrialization, burning of fossil fuel and gas flaring. The latter include deforestation, alterations in land use, water pollution and agricultural practices (Lu, 2016; PAHO, 2013) <sup>[13, 15]</sup>. Climate change adaptation refers to the ability of a system to adjust to climate change (including climate variability and extremes) to moderate potential damage, to take advantage of opportunities, or to cope with the consequences. Climate change mitigation is any action taken to eliminate or reduce the long-term risk and hazards of climate change to human life, property and the society. The Intergovernmental Panel on Climate Change (IPCC) defines mitigation as: "An anthropogenic intervention to reduce the sources or enhance the sinks of greenhouse gases"

(GGW, 2018; IPCC, 2007a) <sup>[10, 11]</sup>. Researchers have identified green entrepreneurship education as one of the strategies for enhancing climate resilience thereby achieving sustainable development in Nigeria (Anabaraonye, Okon, Ewa, Adeniyi & Nwobu, 2022). Green entrepreneurship education across various communities, cities, campuses and companies can be enhanced through the green office model (Omilabu, Anabaraonye, Olisah & Onwuzurike, 2023) <sup>[14]</sup>.

### Methodology

This paper examined current progress with the green entrepreneurship education for sustainable development in Nigeria through existing literature review. The main purpose of this research work was to survey theoretical backgrounds and previous studies on the green entrepreneurship education for sustainable development in Nigeria and the current progress with the implementation of these strategies in Nigeria.

### Understanding green entrepreneurship

The earliest attempts aimed at finding a generalized definition for green entrepreneurship appeared around the 1990s. As reported by Hall, "green entrepreneurship" was first mentioned by Gustav Berle (1991) in his book, "The Green Entrepreneur: Business Opportunities That Can Save the Earth and Make You Money" (Hall, 2016) <sup>[12]</sup>. The author provided a poetic definition, explaining green entrepreneurship as the ability and willingness of humans to take up responsibilities of creating the kind of world they dream to live in (Hall, 2016) <sup>[12]</sup>. Nevertheless, interest on green entrepreneurship is huge, and cuts across all works of life. This can be proved based on the number of green entrepreneurship ideas in extant literature, and the proliferation of the concept (Gibbs, 2006) <sup>[8]</sup>. Green entrepreneurship can also be defined as the activity of consciously addressing an environmental/social problem/need through the realization of entrepreneurial ideas with a high level of risk, which has a net positive effect on the natural environment and at the same time is financially sustainable (Greentproject, 2016) <sup>[9]</sup>. A green entrepreneur is someone who starts and runs an entrepreneurial venture that is designed to be green in its products and processes from the very moment it is set up (Anabaraonye, Okafor & Eriobu, 2019) <sup>[5]</sup>. Green entrepreneurs are valuable assets across various communities in Nigeria today. The Green entrepreneur sees the problems caused by climate change, environmental pollution and global warming; He/she also perceives the business opportunities in waste management and recycling and takes on the risk of engaging the process of waste recycling to ensure a sustainable environment and the sustainable economic growth of his community and nation (Anabaraonye, Okafor & Eriobu, 2019) <sup>[5]</sup>. The green business environment in Nigeria is moving at a very rapid rate. This can be seen in the number of green entrepreneurship businesses springing up. Recently, the National Power Training Institute of Nigeria (NAPTIN) partnered with a tech-based firm for the proposed development of a green innovation hub with the single goal of driving green business development within the Nigerian energy sector, while also improving relationship between public and private organizations (UN Habitat, 2017) <sup>[17]</sup>. According to the UN Habitat (2017) <sup>[17]</sup>, green entrepreneurship trainings also equip interested young persons with all the required knowledge in the green business value chain and gives them the opportunity to be a

part of the solution to existing environmental challenges through green business ownership. An important consideration in the push for green entrepreneurship is public perception towards green services and products. This can either make or mar the development of green entrepreneurship. Furthermore, when green entrepreneurship thrives in Nigeria, the rate of unemployment amongst the youths will be drastically reduced and this will go a long way to help to achieve the sustainable development goals (Richard, Olatunji & Samuel, 2021) <sup>[16]</sup>. From all indication, Nigeria needs to embrace various methods through which the unemployment rates among the youths can be reduced. One way to do this is to embrace green entrepreneurship, especially as the nation has a population that continues to generate huge amount of waste. As such, investment should be directed towards cleaner production and waste-to-wealth efforts (Richard, Olatunji & Samuel, 2021) <sup>[16]</sup>. With this recognition was the emergence of Project Green Initiative in 2017 in Nigeria which serves to educate stakeholders in various sectors of the economy toward sustaining green environment for green entrepreneurial activities and opportunities (Anabaraonye, Okafor & Eriobu, 2019) <sup>[5]</sup>. The reduction and recycling of plastic waste can help address global warming and climate change as they are potent strategies for reducing greenhouse gas emissions. The waste management business is one with a plethora of opportunities in its industry. Thousands of businesses operate within several niches in its space, and they all go on to serve a varying number of clients seeking different solutions to their waste management problems (Anabaraonye, Okafor & Eriobu, 2019) <sup>[5]</sup>. Green entrepreneurship is that entrepreneurship that seeks to solve environmental problems while generating income for sustainable economic growth. Green entrepreneurship education involves the strategic training and enlightening of individuals, communities and institutions on the role of green entrepreneurship in achieving sustainable development. Green entrepreneurship education across communities and institutions is vital to enhance the effectiveness and efficiency of individuals and systems for sustainable economic growth and development in Nigeria. Green entrepreneurship education is therefore very important for establishing business support and laying a structure for entrepreneurs who desire to manage sound businesses with a special focus on environmental and social impact.

### Innovative strategies for green entrepreneurship education in Nigeria

There is great need to educate communities, cities, campuses and companies across Nigeria on the green entrepreneurial opportunities to enhance climate resilience. The following innovative strategies could be deployed towards maximizing the green entrepreneurship education for sustainable development in Nigeria:

- i) Radical awareness approach of information disseminations. The emergence of information communication and technology (ICT) around the world to a large extent has proven as very effective and efficient vehicle of letting people becoming aware of opportunities and benefits in green entrepreneurship. These information dissemination platforms besides the internet (educational blogs, facebook, twitter, Instagram, etc) include radio, television and telephone.
- ii) The government at all levels in Nigeria should provide enabling environment and sustainable fund in form of

- grants and loans to the teeming unemployed and underemployed Nigerian youths who may want to be involved in the green entrepreneurship businesses in their different capacities. This approach when incorporated into long term policy planning in climate resilience in Nigeria will go a long way in reducing unemployment among the youths in the country.
- iii) The use and involvement of non-governmental organizations that are environmental driven and climate change sensitive can go a long way in providing green entrepreneurial opportunities for a lot of individuals in Nigeria. Awareness of the economic opportunities in green entrepreneurship can be communicated to communities and cities through the various outreaches, seminars and workshops initiated by these environmental sustainability driven NGOs in Nigeria.
  - iv) Educational blogs can be used to inform, enlighten and educate researchers, green entrepreneurs and interested individuals in Nigeria especially the internet literate ones about green entrepreneurship. These blogs which are meant to be highly interactive allows individuals to contribute their ideas, suggestions and feedback to the environmental sustainability driven educators and green blogger. A good example is the Project Green Initiative blog:[www.projectgreeninitiative.wordpress.com](http://www.projectgreeninitiative.wordpress.com) featuring articles and poems on climate change adaptation and mitigation for global sustainability.
  - v) Poetry has also been discovered as a great tool which can be used to educate individuals in Nigeria about the socio-economic benefits of green entrepreneurship (Anabaraonye, Nji, Hope, 2018) <sup>[4]</sup>.

### Recommendations

Nigerian government should establish and promote public policies within their borders to increase the awareness of green entrepreneurship for environmental sustainability. Leadership summits on green entrepreneurship are recommended as important tools which can be used in educating communities and cities in Nigeria for sustainability locally, nationally and globally. There are numerous benefits of green entrepreneurship in Nigeria which have been enumerated above. There is also great need for further research in this field of study on green entrepreneurship education to enhance climate resilience in Nigeria.

### Conclusion

Green entrepreneurship education is obviously needed to ensure a cleaner, greener and healthier environment for sustainable development both locally, nationally and globally. Moving toward sustainable development and economic growth in Nigeria requires lasting efforts at a significant cost. Our planet needs to be preserved for future generations and its inhabitants are in the best position to do that. Let's join hands today to make our world better for our future and that of our children tomorrow through proper green entrepreneurship education.

### References

1. Anabaraonye B. Climate change education for sustainable development in Nigeria. *Review of Education, Institute of Education Journal, University of Nigeria, Nsukka.* 2017;28:403-414.
2. Anabaraonye B. The Innovative Use of Renewable Energy For Sustainable Development in Nigeria. *International Journal of Climate Change Studies, Energy & Environment, University of Nigeria, Nsukka, Nigeria.* 2018;1:122-130.
3. Anabaraonye B, Okon OE, Ewa BO, Adeniyi TF, Nwobu EA. Green entrepreneurship education for sustainable development in Nigeria. *International Journal of Research in Civil Engineering and Technology.* 2022;3(1):16-19. Available from: <https://www.civilengineeringjournals.com/ijrcet/article/23/3-1-3-106.pdf>
4. Anabaraonye B, Okafor CJ, Hope J. Educating Farmers in Rural Areas on Climate Change Adaptation for Sustainability in Nigeria. Springer Nature Switzerland AG. 2018. In: Leal Filho W, editor. *Handbook of Climate Change Resilience.* doi:10.1007/978-3-319-71025-9\_184-1.
5. Anabaraonye B, Okafor JC, Eriobu CM. Green entrepreneurial opportunities in climate change adaptation and mitigation for sustainable development in Nigeria. *Journal of Environmental Pollution and Environment.* 2019;2(1):1-6.
6. Chan M. Message from WHO Director General. [http://www.who.int/worldhealth-day/dg\\_message/en/](http://www.who.int/worldhealth-day/dg_message/en/)
7. Edom S. Top 3 Recycling Business Ideas And Opportunities In Nigeria. <http://startuptipsdaily.com/top-3-profitable-recycling-business-ideas-and-opportunities-in-nigeria/>
8. Gibbs D. Sustainability Entrepreneurs, Ecopreneurs and the Development of a Sustainable Economy. *Greener Management International.* 2006;55:63-78. doi:10.9774/GLEAF.3062.2006.au.00007.
9. Greentproject. An attempt to define green entrepreneurship. [greentproject.eu/wp-content/uploads/2016/01/Definition-green-entrepreneurship.pdf](http://greentproject.eu/wp-content/uploads/2016/01/Definition-green-entrepreneurship.pdf)
10. GGW. Climate mitigation and adaptation. <http://www.global-greenhouse-warming.com/climate-mitigation-and-adaptation.html>
11. IPCC- Intergovernmental Panel on Climate Change. *Climate change 2007: the physical science basis.* Cambridge University Press; 2007.
12. Hall R. The Enterprising Eco-villager: Achieving Community Development through Innovative Green Entrepreneurship. *Baltic Eco.* [www.balticecovillage.eu](http://www.balticecovillage.eu).
13. Lu JLD. Impact of climate change on human health. *Acta Medica Philippina.* 2016. doi:10.1007/978-3-319-16751-0\_53
14. Omilabu A, Anabaraonye B, Olisah N, Onwuzurike U. Enhancing Sustainable Entrepreneurship in Nigeria: The Green Office Concept. *Covenant Journal of Entrepreneurship.* 2023;7(1):6. Available from: <https://journals.covenantuniversity.edu.ng/index.php/cjoe/article/view/3850>
15. PAHO. Health, Environment and Sustainable Development: Towards the Future We Want A collection of texts based on the PAHO Seminar Series towards Rio+20 that occurred in the period between 8 February and. Washington, DC. Retrieved from <https://www.paho.org/hq/dmdocuments/2013/seminario-rio-20-eng.pdf>
16. Richard M, Olatunji F, Samuel T. Green Entrepreneurship and Employment Generation in a

- Developing Nation: The Nigerian Case. Journal of Humanities, Arts and Social Science. 2021;5(1):81-88. doi:10.26855/jhass.2021.01.009.
17. UN Habitat. Youths in Nigeria trained in renewable energy technologies and green entrepreneurship. Africa Renewal. <https://www.un.org/africarenewal/news/youths-nigeria-trained-renewable-energy-technologies-and-green-entrepreneurship>.