

# Investigating the Role of Non-Governmental Organisations in Green Energy Innovations and Sustainable Practice in Lagos State, Nigeria



Bamidele Olajide<sup>1</sup> , Loveth Walker<sup>2</sup>  & Victor Ojakorotu<sup>3</sup> 

<sup>1</sup> Department of Political Studies and International Relations, North West University Mafikeng Campus, South Africa; Department of Political Science, University of Lagos, Nigeria.

<sup>2</sup> Department of Political Science, University of Lagos, Nigeria.

<sup>3</sup> Department of Political Studies and International Relations, North West University Mafikeng Campus, South Africa.

## ABSTRACT

This paper investigates the role of Non-Governmental Organizations (NGOs) in green energy and sustainable practices provision in Lagos State, Nigeria. Given the huge energy deficit in the state and its impacts on the socioeconomic dynamics of the state, the study, dwelling on the blending of theoretical assumptions of stakeholder theory and Ecological Modernization Theory and qualitative research design found that NGOs are central to the efforts of Lagos State government in promotion of renewable energy adoption and other sustainable practices. Data for the study was collected through in-depth interviews with 15 NGOs working in the area of green energy and sustainability practices. The study found that NGOs have recorded relative success stories in green energy innovation and continue to be strategic partners to government and other sustainability stakeholders in mobilizing the grassroots for green energy adoption. It concludes that the efforts of NGOs in green energy innovations and sustainability practices adoption are fraught with challenges, including financial inadequacy, bureaucratic delays, and low cooperation from communities, among others. The recommends that the government and other stakeholders, among others, should strengthen their support towards the activities of NGOs in green energy adoption to reduce carbon footprints and enhance the socioeconomic dynamics of the states. This study emphasises the strategic roles NGOs can play in helping the government achieve its energy transition and sustainability goals in Lagos State.

### Correspondence

Bamidele Olajide

Email:

[contactdele@gmail.com](mailto:contactdele@gmail.com)

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## INTRODUCTION

The rise of climate change and the growing severity of its impacts has necessitated the need to develop sustainable ways of generating and using energy. The worsening climate scenarios caused by global warming are motivating the need for energy transition, which is anchored on green innovation. According to Tekile and Yagmur, green innovation is central to achieving growth and development while ensuring

the global environmental mandate.<sup>1</sup> As countries around the world work to improve energy production, the allure of green energy has been on the rise. This is because it widens the energy mix of countries, thereby ensuring there exists a diversity of energy sources. Hence, green energy enhances energy efficiency and helps to drive home the world's climate agenda.

Climate change response is a multi-stakeholder affair.<sup>2</sup> To this extent, the global climate mandate expects governments to liaise with stakeholders across the socioeconomic spectrum of their respective nations to address the climate change menace and its impacts. This is because climate change is a transboundary crisis that is caused by human activities. Hence, for any nation to mount an effective climate change response, it must ensure broad-based collaboration among many actors within its boundaries.<sup>3</sup> One such actor is the NGOs, who are deemed essential to how states address climate change. According to Youssef, NGOs play important roles in the climate policy process and act as critical intersections between the state and society.<sup>4</sup> This means that NGOs enhance the flow of information on climate change and its dynamics between the state and society.

In terms of green innovation and sustainable practices, NGOs enhance the access of different sections of society within climate governance. Given that climate change exacerbates the socioeconomic distress already faced by the people, it is pertinent to have intervening bodies such as the NGOs to act as the voice of those whose voices would not have ordinarily been heard in climate change response and its policy process.<sup>5</sup> Youssef holds that NGOs complementarily perform institutional, social, and economic roles in climate change response.<sup>6</sup> These roles find expression in green innovation and sustainable practices as NGOs galvanize different segments of society to creatively approach energy transition and other sustainability issues.

The specific case of Lagos State, Nigeria's economic nerve centre and most populous state demonstrates both an allure and challenge. Given the high but steeply rising population of the state, the need to ensure energy efficiency while also ensuring environmental sustainability has been a necessity. This is much noted in the Lagos State Climate Action Plan 2021-2025 as sedentary energy consumption is the highest source of carbon emission in the state.<sup>7</sup> However, the challenge exists in the fact that green energy requires intensive capital outlay and high-level innovation and creativity. The multi-stakeholder outlook of climate change response makes the case of Lagos an interesting one because the role of NGOs in green energy innovation has become an existential reality.

Despite the increasing significance of NGO-led innovations in green energy in Lagos State, there exists unclarity in the roles of NGOs in green energy adoption and sustainable practices in Lagos State. While the number of NGOs working around green energy and sustainability is not clear because of data crises in the state and Nigeria at large, there is an emerging ubiquity in their activities. This also demonstrates their importance in those areas. Hence, the lack of awareness of their activities in these areas is proving to be a disservice to climate change response in the state. This is because, as critical stakeholders, an understanding of their roles and activities and helps to emphasise the pressing need for sustainable practices to address the impacts of climate change in the state.

The following research questions underlie the study.

1. To what extent do NGOs in Lagos State actively contribute to the promotion of green energy initiatives and sustainable practices, and what specific roles do they currently play in fostering environmental sustainability?
2. How effective are the innovative approaches initiated by NGOs in Lagos State in influencing the adoption of green energy and sustainable practices, and what factors contribute to or hinder their

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<sup>1</sup> Derese Kebede Teklie and Mete Han Yağmur, "The Role of Green Innovation, Renewable Energy, and Institutional Quality in Promoting Green Growth: Evidence from African Countries," *Sustainability* 16, no. 14 (2024): 6166.

<sup>2</sup> Bamidele Emmanuel Olajide, "An Evaluation of Subnational Climate Change Response in Lagos State, Nigeria and Kwazulu Natal Province, South Africa" (North-West University, South Africa, 2022).

<sup>3</sup> Olajide, "An Evaluation of Subnational Climate Change Response in Lagos State, Nigeria and Kwazulu Natal Province, South Africa."

<sup>4</sup> Adel Ben Youssef, "The Role of NGOs in Climate Policies: The Case of Tunisia," *Journal of Economic Behavior & Organization* 220 (2024): 388–401.

<sup>5</sup> Noah Lumun Abanyam and Kingsley Mnorom, "Non-Governmental Organizations and Sustainable Development in Developing Countries," *Zamfara Journal of Politics and Development* 1, no. 1 (2020): 17; Youssef, "The Role of NGOs in Climate Policies: The Case of Tunisia."

<sup>6</sup> Youssef, "The Role of NGOs in Climate Policies: The Case of Tunisia."

<sup>7</sup> Lagos State Government, *Second Five Year Climate Action Plan 2020 – 2025* (Ministry of Environment and Water Resources, 2021).

effectiveness in promoting environmentally friendly behaviours?

### **Sustainability and Innovation: Conceptual Discourse**

The economic development of the world hinges on the ability to leverage resources. This situation brings about an unhealthy depletion of resources, such that the ability of future generations to meet their needs is already being compromised. To address this, there is a need to ensure that there is an equilibrium between the consumption and the regeneration of resources to ensure today's optimum development and tomorrow's adequate resource availability. This equilibrium is known as sustainability. The concept of sustainability came to the fore following the release of the Report of the World Commission on Environment and Development (WCED), popularly referred to as the Brundtland Commission in 1987. Following a gory pattern of resource use and the rising complexity of problems across the world, the Commission recommended that the world must ensure that today's development does not have to stand in the way of future generations. It then defined sustainable development as "development that meets the need of the present without compromising the ability of future generations to meet their own needs."<sup>8</sup>

The definition is an attempt to call the attention of the world to the possible irreversible consequences of its growing consumerist orientation. This position is supported by Ben-Eli who avers that sustainability is the "dynamic equilibrium in the process of the interaction between a population and the carrying capacity of its environment that the population develops to express its full potential, without producing irreversible, adverse effects on the carrying capacity of the environment upon which it depends."<sup>9</sup> Olajide holds that "sustainability is the science and politics of altering existing patterns of production and consumption which have to strain and stretching effects on life and quality of life of the people by adopting methods that allow for resource utilization in ways that make life abundantly livable for the people now and in the future."<sup>10</sup> The definitions portend that the world needs to take a detour from its socially, economically, and environmentally ruinous patterns of doing things in the present to give a full life to those coming. Hence, development must be equitable, viable, and bearable for people across time and space.<sup>11</sup>

One principal way of ensuring sustainability is innovation. This is because the former hinges on adopting new ways of doing things, that is forging a new outlook or product by altering the existing way(s) of doing things. With a foundation in Schumpeter's theory of creative disruption, innovation is a function of the longing for development and economic change through the activities of entrepreneurs.<sup>12</sup> This portends that innovation is an existential imperative for humanity. The economic development of the world has been a function of innovation. For example, the emergence of steam engine industrial production in the 19th century brought a whole new dynamic to human development. Similarly, the massive disruptions being caused by communications and computing technologies in the world today are the height of innovation humanity has known yet.<sup>13</sup>

According to O'Sullivan and Dooley, "Innovation is the process of making changes to something established by introducing something new that adds value to customers."<sup>14</sup> This definition sees innovation in the light of its final process which is value addition. For Twiss cited in Kogabayev and Maziliauskas innovation is "a process that combines science, technology, economics and management, as it is to achieve novelty and extends from the emergence of the idea to its commercialization in the

<sup>8</sup> Special Working Session WCED, "World Commission on Environment and Development," *Our Common Future* 17, no. 1 (1987): 1–91, 48.

<sup>9</sup> M. Ben-Eli, *Sustainability: Definition and Five Core Principles* (New York: A Sustainability Laboratory Publication, 2015), 3.

<sup>10</sup> Bamidele Emmanuel Olajide, "Politics of University Funding and the Elusive Search for Sustainability in Nigeria.," in *Reinventing Nigerian Universities for Sustainable Development: A Festschrift for Rt. Revd. Prof Dapo Asaju.*, ed. O. Oshin et al. (Ajayi Crowther University Press, 2020), 185–202, 187.

<sup>11</sup> Olajide, "Politics of University Funding and the Elusive Search for Sustainability in Nigeria."

<sup>12</sup> Christopher Ziemnowicz, "Joseph A. Schumpeter and Innovation," in *Encyclopedia of Creativity, Invention, Innovation and Entrepreneurship* (Springer, 2020), 1517–22.

<sup>13</sup> John Bessant and Joseph Tidd, *Innovation and Entrepreneurship* (John Wiley & Sons, 2007).

<sup>14</sup> D O'Sullivan and L Dooley, *Applying Innovation* (SAGE Publications, 2008),

<https://books.google.com.gh/books?id=azgXBAAQBAJ>.

form of production, exchange, consumption.”<sup>15</sup> This means that innovation is beyond the linear iterations it enjoyed over the decades. This is because it covers more dynamics than just improving on the existing state, critical dynamics must be in place for the new state to be successful. Hence, innovation is a highly nuanced concept with an idea of its meaning coming in almost every sector. Therefore, there are at least four dimensions of innovation. These are product innovation, process innovation, position innovation, and paradigm innovation.<sup>16</sup> Thus, innovation covers a vast spectrum of activities such that not only products can be improved upon, but other aspects of the productive process can also be improved upon.

The foregoing brings about the nexus between sustainability and innovation. Though innovation had its formation in the Schumpeterian tradition, it has moved into new areas including social innovation. While technology and technological advancement are still central to it, a whole new way of conceiving and producing technology has been in the offing. To this extent, sustainability which aims to balance resource utilization pressure between today's and tomorrow's users brings a new orientation to innovation. Thus, while innovation is meant to be an improvement on the existing products and processes, the quest for sustainability ensures that such improvement is socially, economically, and environmentally viable. The rise of new environmental dynamics such as climate change and its associated issues brought a new outlook to innovation. Innovations must help to reduce pressures on resource utilization and help to address existing environmental problems such as carbon emission through green energy and sustainable practices.

### **NGO-Led Innovations in Green Energy and Sustainable Practices**

Studies have been conducted on how NGOs have been playing a crucial role in enhancing green energy and sustainable practices. Accountability pressures from NGOs often impose significant pressures on private and public sectors to engage in sustainability practices. NGOs play a crucial role in the development of local communities.<sup>17</sup> These roles are even more pronounced in developing countries where members of the society engage in self-motivated community projects since the government has failed to perform the basic task of governance.<sup>18</sup> Bauer & Greiling in a qualitative study showed how NGOs promote sustainable innovations and green energy among firms in Austria.<sup>19</sup> The study showed that NGOs play a crucial role in enhancing sustainable innovations in the way firms offer products and services to their customers. The findings from the study also showed that due to the pressure by NGOs as stakeholders in CSR practices of organizations, business organizations engage in green practices and environmental, social and governance reporting. Business organizations who engage in sustainability practices do so as a fulfilment of the needs, demands and aspirations of stakeholders of the business.

Schweitzer and Yan Meng conducted a quantitative study to determine how two different types of nongovernmental organization (NGO)–business collaboration for green innovation impact consumers' purchase intentions.<sup>20</sup> The study explains why these two types of collaboration influence consumers' purchase intentions differently. They also identify aspirational talk about a company's future ambitions as an important boundary condition. These findings are important for literature on corporate social responsibility (CSR) communication, co-development, and co-branding and contribute to the discussion of the role of business in society.

Mousavi & Bossink conducted a qualitative study to explore the partnership between corporate NGOs and business organizations for environmentally sustainable innovation.<sup>21</sup> The findings from the study showed that NGOs as stakeholders in the business influence business organizations to incorporate

<sup>15</sup> Brian C Twiss and Mark Goodridge, “Managing Technology for Competitive Advantage: Integrating Technological and Organisational Development: From Strategy to Action,” (*No Title*), 1989; Timur Kogabayev and Antanas Maziliauskas, “The Definition and Classification of Innovation,” *HOLISTICA—Journal of Business and Public Administration* 8, no. 1 (2017): 59–72, 63.

<sup>16</sup> C Amdropoulos and P. Dawson, *Managing Change, Creativity and Innovation* (Sage Publications, 2009).

<sup>17</sup> Gloria Agyemang et al., “NGOs in Ghana: Accountabilities, Performance and Motivations,” *The Routledge Companion to Accounting in Emerging Economies*, 2019, 210–20.

<sup>18</sup> Ikenna Elias Asogwa, “Uptake of Sustainability Reporting Adoption by Non-Governmental Organisations: An Agenda for Policy and Practice,” *Journal of Cleaner Production* 388 (2023): 135842.

<sup>19</sup> Philumena Bauer and Dorothea Greiling, “Greening Austrian Social Service and Healthcare Non-Profits,” *Heliyon* 10, no. 1 (2024).

<sup>20</sup> Fiona Schweitzer and Yan Meng, “How Collaborating with NGOs Makes Green Innovations More Desirable,” *Business & Society* 62, no. 2 (2023): 363–400.

<sup>21</sup> Seyedesmaeil Mousavi and Bart Bossink, “Corporate-NGO Partnership for Environmentally Sustainable Innovation: Lessons from a Cross-Sector Collaboration in Aviation Biofuels,” *Environmental Innovation and Societal Transitions* 34 (2020): 80–95.

sustainability practices into overall operations. The findings from the study also showed that many leaders of business and industrial sectors agree that addressing challenges of environmental sustainability requires unparalleled cooperation. The findings from the study showed that the logic behind NGOs and business sector cooperation is to make mutual use of each other's resources and competencies. The findings from the study also showed that the cooperation between NGOs and business organizations enables business organizations to deliver sustainable innovations and green energy to receive legitimacy for their efforts through the associated NGOs.<sup>22</sup> NGOs can be external sources of specialized skills and knowledge, especially when the internal development of such expertise is inefficient, costly, and time-consuming.<sup>23</sup>

Dyck and Silvestre conducted a qualitative study on an NGO approach to sustainable innovations among small-scale farmers in Nicaragua.<sup>24</sup> The findings from the study showed that NGOs facilitate the adoption of sustainable innovations among farmers using non-centrist approaches. NGOs provide skills, knowledge, technological transfer, decision-making support, and knowledge dissemination.

## THEORETICAL FRAMEWORK

This study is anchored on the blending of assumptions of the stakeholder and ecological modernization theories. The stakeholder theory is a theory of strategic management that speaks to the need for organizations to take cognizance of individuals or groups that can affect it or those that their activities can affect. The theory was developed by Freeman as a theoretical perspective in strategic management and business ethics.<sup>25</sup> Stakeholders include "employees, suppliers, the community, partners and, of course, shareholders." The core argument of the theory is that businesses must reflect good for all stakeholders rather than just business owners and shareholders. This portends that businesses should have a broader outlook in terms of who they create values for and whose values affect or are likely to affect them. Thus, Mahajan et al. note that stakeholder theory is;

"a theory that (i) encourages organizations to acknowledge and consider their stakeholders, which exist internally or externally to the organization, (ii) promotes understanding and managing stakeholder needs, wants, and demands, and thus (iii) represents a holistic and responsible framework that goes beyond the focus of shareholders in decision-making processes, which, in turn, (iv) enables organizations to be strategic, maximize their value creation, and safeguard their long-term success and sustainability."<sup>26</sup>

The foregoing suggests that businesses can only have a sustainable outlook for their activities if they take requisite cognizance of their environment by recognizing who their stakeholders are. Parmar et al. note the strategic importance of stakeholders as the forces and dynamics of globalization become more complex.<sup>27</sup> While profit-making remains the main drive of business owners, they must commit themselves to creating values for a wider spectrum of actors, who are stakeholders in their activities. These stakeholders bring a much-needed nuanced outlook to the strategic management and decision-making of the businesses. For example, businesses must take the interests of the local communities where they operate into their decision-making because it is one of the strategic ways of enhancing their sustainability and guaranteeing their long-term existence.

Betts et al. categorize stakeholders into four groups.<sup>28</sup> They are external stakeholder (customers, and suppliers); internal primary stakeholders (financial institutions, shareholders, and employees);

<sup>22</sup> Palie Smart et al., "Open Science and Open Innovation in a Socio-political Context: Knowledge Production for Societal Impact in an Age of Post-truth Populism," *R&D Management* 49, no. 3 (2019): 279–97.

<sup>23</sup> John Peloza and Loren Falkenberg, "The Role of Collaboration in Achieving Corporate Social Responsibility Objectives," *California Management Review* 51, no. 3 (2009): 95–113.

<sup>24</sup> Bruno Dyck and Bruno S Silvestre, "Enhancing Socio-Ecological Value Creation through Sustainable Innovation 2.0: Moving Away from Maximizing Financial Value Capture," *Journal of Cleaner Production* 171 (2018): 1593–1604.

<sup>25</sup> R Edward Freeman, *Strategic Management: A Stakeholder Approach* (Cambridge university press, 2010).

<sup>26</sup> Ritika Mahajan et al., "Stakeholder Theory," *Journal of Business Research* 166 (2023): 1.

<sup>27</sup> Bidhan L Parmar et al., "Stakeholder Theory: The State of the Art," *Academy of Management Annals* 4, no. 1 (2010): 403–45.

<sup>28</sup> Teresa K Betts, Frank Wiengarten, and Suresh K Tadisina, "Exploring the Impact of Stakeholder Pressure on Environmental Management Strategies at the Plant Level: What Does Industry Have to Do with It?," *Journal of Cleaner Production* 92 (2015): 282–94.

secondary stakeholders (Environmental NGOs and Media, local and international competitors) and Regulatory stakeholders (National governments and public institutions). Thus, the wants, needs, attitudes, and demands of each category of stakeholders must be considered in organizations' strategic decision-making. This gives organizations ethical grounding and demonstrates they are attuned to the dynamics and unique expectations of their environment. This environmental sensitivity can only be achieved by developing the right stakeholder mapping and fitting engagement strategies.

Ecological Modernisation Theory (EMT) on the other hand, speaks the possible reconciliation of the opposing pressures of economic development on the one hand and social welfare and environmental projection through the encouragement and adoption of technological innovations to foster eco-friendly development.<sup>29</sup> The theory developed in the 1980s as a response to the development in environmental politics of Europe at that period through the works of Joseph Huber and Martin Jänicke.<sup>30</sup> The core assumption of the theory holds that while it is true that industrial development has caused ecological damage to the world, it can also help in addressing the damage and bring the world into a state of sound ecological ambiance. Mantuong notes that theory EMT is the theoretical mediation between the rather theoretical extremes of neo-Marxism and neo-liberalism.<sup>31</sup> This is because the theory preaches against being averse to the possibility of adapting the industrial process to address environmental issues and concerns.

EMT is a sort of theoretical wake-up call to states to adopt the industrial process to be responsive to the environment and nature such that through technological innovations, environmental damages and other issues can be adequately addressed. This way, the necessary environmental outcomes can be achieved while the development of the world is not hampered in any significant way. Huber notes this perspective by stressing that the world needs to attain superindustrialization that involves addressing environmental concerns through the development and application of sophisticated technologies.<sup>32</sup> This means states must address their economies to innovatively readapt environmentally dangerous machinery to those that help to keep the sanctity of the environment and nature. This brings to the fore the definition of EMT by Hassan that environmental modernization "refers to a group of optimistic theories based on the idea that economic growth can continue while ensuring environmental protection via long-term changes in the structure of production and consumption."<sup>33</sup>

The foregoing portends that states begin to attune their economic and industrial process towards the kind of technology that helps to improve the environment. In contemporary times when environmental problems such as global warming and climate change are causing serious havoc across the world, EMT suggests a transition from dirty to clean industrialization. Within this industrial rebirth, there can also be technological innovations that are tasked with the reduction of global carbon footprints and general environmental revamp.

Theoretically, this study holds that the world is an intermingling and webbing of stakeholder activities. This brings the activities of NGOs to the fore as agents of development.<sup>34</sup> Thus, in the green energy and sundry sustainability activities, they have emerged as critical stakeholders. States have recognized them as important partners in governance.<sup>35</sup> Similarly, NGOs also recognize the need for stakeholders in their activities even as they propagate the essence of innovative technologies that can help to achieve sustainable development. NGOs are critical stakeholders in helping the state towards the adoption of green energy technologies. Hence, they also need to do effective stakeholder mapping and develop fitting engagement strategies in their awareness creation efforts. As countries continue to adjust their industrial process towards the necessary technological innovations that help to improve

<sup>29</sup> David Gibbs, "Ecological Modernization," *International Encyclopedia of Geography: People, the Earth, Environment and Technology: People, the Earth, Environment and Technology*, 2016, 1–13.

<sup>30</sup> Gibbs, "Ecological Modernization."

<sup>31</sup> Kamminthang Mantuong, *Ecological Modernisation: Environmental Sociology: Nature and Scope* (IGNOU, 2000).

<sup>32</sup> Joseph Murphy, "Ecological Modernisation," *Geoforum* (Elsevier, 2000).

<sup>33</sup> Gholam Hassan Khajavy, Peter D. MacIntyre, and Elyas Barabadi, "Role Of The Emotions And Classroom Environment In Willingness To Communicate," *Studies in Second Language Acquisition* 40, no. 3 (September 2, 2018): 605–24, <https://doi.org/10.1017/S0272263117000304>.

<sup>34</sup> Abanyam and Mnorom, "Non-Governmental Organizations and Sustainable Development in Developing Countries."

<sup>35</sup> Abanyam and Mnorom, "Non-Governmental Organizations and Sustainable Development in Developing Countries."

environmental dynamics, the place and role of NGOs as critical stakeholders and their ability to discover end-use stakeholders for such technologies is becoming important.

## **METHODOLOGY**

This study adopted the qualitative research design to understand the views, perceptions, beliefs, values, experiences, and perspectives of participants.<sup>36</sup> This is reflected in the aims and objectives of the study, which are to examine NGO-led sustainable innovations and sustainable practices in Nigeria critically. This study also seeks to evaluate the effectiveness of NGO-led innovations in promoting the adoption of green energy and sustainable practices in Lagos State. It also seeks to analyze the impact of collaboration between NGOs and governmental bodies on developing and implementing policies supporting green energy in Lagos State. 15 participants from environmental NGO backgrounds were interviewed with each person presenting an NGO. The study was based on a sound ethical foundation as respondents were freely recruited and their anonymity was ensured in reporting research findings. The responses of participants during the interview process were categorized and structured into various sections. These sections were divided according to the responses of the participants. The responses of the participants were analysed using the iterative approach. This approach involves analyzing data by identifying common patterns or trends within which they will be organized into themes.<sup>37</sup>

## **PRESENTATION OF DATA AND ANALYSIS**

### **Roles and Involvement of NGOs in Lagos State in Promoting Green Energy Initiatives and Sustainable Practices**

#### **a. Primary Focus on Environmental Sustainability and Green Energy**

This is one of the dominant themes that emanated from this study. Participants held that NGOs emphasize carbon emissions reduction, promote energy conservation, and advocate the adoption of renewable energy such as solar and wind. For the participants this will broaden the energy mix, allowing the people and businesses to have more access to energy. This aligns with the global quest for environmental sustainability that advocates for the cessation of fossil fuel usage and climate change mitigation.<sup>38</sup>

A participant noted that;

“Our NGO’s focus is on advocating the adoption of renewable energy, which is necessary for reducing the carbon footprint of Lagos State. We do this by promoting the use of solar energy in both rural and urban areas of the state. We also support small businesses to transition to cleaner energy.”(P.2)

This demonstrates NGOs’ involvement in the promotion of green energy and aligns with the literature on the linkage between renewable energy and efforts at addressing environmental degradation.<sup>39</sup>

Another participant discussed the focus of their NGO as follows.

Our focus is on renewable energy, which is the hub of energy transition. Our NGO is facilitating awareness creation on the need to adopt sustainable practices through natural energy sources such as solar and wind to reduce carbon emissions.”(P.2)

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<sup>36</sup> Patrik Aspers and Ugo Corte, “What Is Qualitative in Qualitative Research,” *Qualitative Sociology* 42 (2019): 139–60.

<sup>37</sup> B. M. Bloomberg, “A Qualitative Descriptive Study: University Student-Athletes Experiences with Verbally Aggressive Coaches” (Grand Canyon University, 2019).

<sup>38</sup> United Nations, “Making Peace with Nature: A Scientific Blueprint to Tackle the Climate, Biodiversity and Pollution Emergencies,” *United Nations Environment Programme (UNEP)*, 2021.

<sup>39</sup> Muhammad Tariq Majeed and Tania Luni, “Renewable Energy, Water, and Environmental Degradation: A Global Panel Data Approach,” *Pakistan Journal of Commerce and Social Sciences (PJCSS)* 13, no. 3 (2019): 749–78.

This suggests that NGOs in Lagos State are at the forefront of sustainability awareness creation. This shows that education through awareness creation and advocacy are the core tools of environmental sustainability.<sup>40</sup>

NGOs are also involved in addressing the environmental concerns of marginalised residents of the state. This also speaks to the capacity of green energy and related sustainability practices to address issues of poverty.<sup>41</sup> A participant quipped on this by averring that.

“We help low-income households with the necessary knowledge and tools for transitioning to green energy. Through this project, we are demonstrating our commitment to reducing carbon-producing fuels by advocating solar power and energy-efficient technologies.”(P.9)

### **b. Community Engagement and Outreach**

Participants in this study held that their respective NGOs have strong grassroots engagement in green energy and sustainability. They maintained that the reason for doing this is to ensure local ownership of green energy and sustainability programmes and projects.<sup>42</sup> A participant explained that;

“We reach out to local communities to organize town hall meetings and workshops. These strategies have proven useful as tools for educating the communities on the benefits of green energy and incorporating sustainability into their daily lives.”(P.5)

This position is consistent with the position of literature on the critical role local communities perform in environmental sustainability.<sup>43</sup> The NGOs’ activities are also consistent with the position that NGOs perform important functions in sustainable development through self-help projects and community outreach. This encourages environmental sustainability programmes and practices at the community level.<sup>44</sup> Many of the NGOs strategically focus the environmental and sustainability education on community leaders. This is because they believe that once these leaders have bought into their initiatives and programmes, they can help cascade the ideals down to their members. A participant noted this by asserting that;

“We understand that the empowerment of community and local leaders is linked to the success and longevity of our projects and initiatives. Therefore, we have focused our outreach attention on local leaders, who we believe can advocate for the adoption of green energy in their localities.”(P. 7)

NGOs deploy existing social structures to promote their sustainability initiatives. This is because social structures in local communities as headed by local leaders have serious effects on sustainable practices.<sup>45</sup>

Another participant held that;

“Communities have been a critical part of our sustainability advocacy. This spans from the conception to the execution stages. This encourages the necessary participatory approach that ensures that the community participates, benefits from green energy solutions and sustainability practices and is responsible for the maintenance of projects.”(P. 12)

The above quote speaks to the integration of stakeholder engagement in the delivery of projects to communities. This resonates with the position of Asogwa et al. that the involvement of local communities brings about unity of purpose, accountability, and project monitoring at that level.<sup>46</sup> This position

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<sup>40</sup> United Nations Environment Programme, “Promoting Environmental Sustainability Through Renewable Energy: UNEP’s Perspective,” *UNEP*, 2022.

<sup>41</sup> Jeffrey D Sachs, *The Age of Sustainable Development* (Columbia University Press, 2015).

<sup>42</sup> J Pretty, “The Role of Community Participation in Sustainable Development,” *Journal of Sustainable Development* 12, no. 4 (2023): 23–37.

<sup>43</sup> Dan Brockington, “Community Conservation, Inequality and Injustice: Myths of Power in Protected Area Management,” *Conservation and Society* 2, no. 2 (2004): 411–32.

<sup>44</sup> Abanyam and Mnorom, “Non-Governmental Organizations and Sustainable Development in Developing Countries.”

<sup>45</sup> Robert Chambers, “Participatory Rural Appraisal (PRA): Challenges, Potentials and Paradigm,” *World Development* 22, no. 10 (October 1994): 1437–54, [https://doi.org/10.1016/0305-750X\(94\)90030-2](https://doi.org/10.1016/0305-750X(94)90030-2).

<sup>46</sup> Asogwa, “Uptake of Sustainability Reporting Adoption by Non-Governmental Organisations: An Agenda for Policy and Practice.”



supports extant works on participatory development that advocate for the involvement of beneficiaries of development initiatives in designing and implementing such projects.

### c. Success Stories in Green Energy Projects

Majority of the participants spoke about the success of their green energy and other sustainability initiatives and projects. These include the installation of solar panels and the construction of biogas systems. This speaks to the presence of NGOs and their essential services in the promotion of renewable energy and sustainable practices in Lagos State. One of the participants submits as follows;

“Our solar panel installation project turned around the lives and livelihoods in a rural community that previously had no access to electricity. This allowed them to leverage clean energy and allowed for traders to extend their business hours beyond the previous normal times.”(P.12)

This and related projects in Lagos State demonstrate the utility of renewable energy in enhancing the quality of life and enhancement of economic opportunities.<sup>47</sup> Its beautiful strides of the NGOs affirm the position of Asogwa et al. that NGOs are doing well in advancing the cause of humanity by providing social, economic and environmental succour to vulnerable groups and communities.<sup>48</sup>

Another participant corroborated the earlier submission on the success of NGOs in green energy projects in Lagos State. He noted that;

“We are turning waste into energy across Lagos State through the implementation of biogas system in many communities. This has helped communities to manage waste and provide sustainable energy for cooking and heating” (P. 6)

Biogas is an important source of renewable energy that promotes the ideas of the circular economy in the satisfaction of the energy needs of the people. This aligns with the position of Van der Werf et al. that extols the utility of biogas as a practice of sustainable development.<sup>49</sup>

The participants affirmed that their success in green energy and sustainability also enhances education and learning in Lagos State. One of the participants reported as follows;

“Our NGOs allied with schools in many communities to install solar panels. This reduced their reliance on grid-produced energy. It also allows the schools to save cost hitherto expended on energy to run them and more importantly, our projects now allow students to learn about renewable energy firsthand” (P. 15)

The foregoing speaks to the activities of NGOs in the enhancement of education and learning. It affirms the position of literature that when students are exposed to green technologies, they can imbibe the culture of sustainability. Agyeman toes this line by noting that they perform institutional roles in sustainable development in areas or communities where the state is not functioning optimally.<sup>50</sup>

### d. Challenges Faced in Promoting Green Energy

While NGOs have had impressive performances in the provision of green energy and advocacy of sustainable practices, they have also faced many challenges. These include financial inadequacy, poor support from the government and hostility from local communities. This situation aligns with extant knowledge of the challenges faced by NGOs in carrying out their functions in developing areas. Aklin & Urpelainen list the challenges to include infrastructural political and financial barriers.<sup>51</sup> A participant painted a clearer of the situation as follows;

“Inadequate funding is our main challenge. This is because green energy projects are capital-intensive, though they later become cost-effective. It is always difficult getting the start-up capital for many of the projects”

<sup>47</sup> International Renewable Energy Agency, “Renewable Energy Policies in a Time of Transition,” IRENA, 2018.

<sup>48</sup> Asogwa, “Uptake of Sustainability Reporting Adoption by Non-Governmental Organisations: An Agenda for Policy and Practice.”

<sup>49</sup> G.R. Van der Werf et al., “Global CO<sub>2</sub> Emissions from Land Use Change,” *Global Change Biology* 25, no.1 (2019): 56–73.

<sup>50</sup> Agyemang et al., “NGOs in Ghana: Accountabilities, Performance and Motivations.”

<sup>51</sup> M. Aklin and J. Urpelainen, *Renewable Energy in Developing Countries: Challenges and Policy Solutions* (Oxford: Oxford University Press, 2018).

The statement aligns with the world-acknowledged fact that funding is the principal barrier to green energy adoption and energy transition in general.<sup>52</sup> The slow pace of energy transition in developing countries is caused by financial challenges. In the specific case of Nigeria, transitioning into green energy is proving costlier than maintaining the status quo with fossil fuel. Khan et al. opine that to address this challenge, stakeholders must enarmour the process with a robust financial system that can support and mitigate risks involved in the energy transition.<sup>53</sup> The statement above is buttressed by another participant who lamented that;

“Many local communities are averse to adopting new technologies. The pervasive lack of understanding of benefits of green energy makes it strenuous” (P. 5)

This affirms the position of literature that social and cultural barriers can affect the adoption of new technologies.<sup>54</sup> Kim et al. notes that the traditional attachment to fossil fuels in developing countries such as Nigeria is a major impediment to the integration of renewable energy in local communities.<sup>55</sup> Governments also slow the adoption of renewable energy. This comes to the fore in the form of bureaucratic bottlenecks and other issues in the officialdom. One participant addresses this issue as follows;

“Government policies in many cases affect green energy projects negatively. In some situations, the necessary speed and flexibility to get things done are lacking. Hence, this allows for bureaucratic issues that make it difficult for noble green energy and sustainability projects to get approval” (P. 14).

This shows that there are regulatory impediments to the ease of adoption of green energy in Lagos State. Lund notes that regulatory frameworks can be a challenge to green energy transition, especially in areas where they are weak or non-existent.<sup>56</sup>

#### **e. Collaborations with Stakeholders**

Participants in the study noted that collaboration is essential in their quest for sustainability in Lagos State. They partnered with stakeholders such as local communities, the private sector, government agencies and international bodies. They affirmed that if sustainability and green energy are to be scalable and successful, then there is a need for collaboration. This position agrees with literature that emphasized a multi-stakeholder approach to the sustainability and development agenda of countries.<sup>57</sup> A participant shed light on this;

“We depend on and partner with private sector players who have the required technical expertise and technology for the projects we want to embark on. These partnerships are necessary for our operations because we cannot carry them out on our own” (P. 6)

The foregoing shows that sustainability is a function of an effective public-private partnership (PPP). The World Bank harped on this type of partnership for countries and other sustainability actors to effectively achieve their aims.<sup>58</sup> This is why Asogwa et al. argue that NGOs are the critical links between

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<sup>52</sup> International Energy Agency, “Africa Energy Outlook 2020,” IEA, 2020.

<sup>53</sup> Parvez Alam Khan, Satirejit Kaur Johl, and Shakeb Akhtar, “Firm Sustainable Development Goals and Firm Financial Performance through the Lens of Green Innovation Practices and Reporting: A Proactive Approach,” *Journal of Risk and Financial Management* 14, no. 12 (2021): 605.

<sup>54</sup> Kristin Reichardt et al., “Analyzing Interdependencies between Policy Mixes and Technological Innovation Systems: The Case of Offshore Wind in Germany,” *Technological Forecasting and Social Change* 106 (2016): 11–21.

<sup>55</sup> J. Kim and K. Reichardt, “Social and Cultural Barriers in the Adoption of Renewable Energy in Nigeria,” *Renewable Energy Journal* 56, no. 2 (2020): 178–95.

<sup>56</sup> Peter D Lund, “Effects of Energy Policies on Industry Expansion in Renewable Energy,” *Renewable Energy* 34, no. 1 (2009): 53–64.

<sup>57</sup> Markku Lehtonen and Florian Kern, “Deliberative Socio-Technical Transitions,” in *Energy for the Future: A New Agenda* (Springer, 2009), 103–22.

<sup>58</sup> World Bank, *Public-Private Partnerships for Green Growth: Aligning Interests for Sustainable Development* (World Bank Publications, 2023).

development and sustainability partners towards the facilitation of effective and scalable green energy projects.<sup>59</sup>

Another NGO affirmed the earlier position that;

“We work hand in hand with governments to ensure that what we are doing is in tandem with national sustainability imperatives and agenda. We have also been calling on governments and other partners to develop more supportive policies so that NGOs like ours can plan and deliver more green energy initiatives” (P.1).

This aligns with literature that shows the activities of NGOs in the energy sector are chiefly of advocacy. This calls the attention of other stakeholders to what needs to be done and creates awareness for the beneficiaries to adopt the new technologies.

NGOs also align their projects to the social and cultural realities of local communities in the state. A participant brought this to the fore as follows.

“We ensure that we carry local communities and their leaders in our projects. This allows us to gain the trust and support of the people because we are sensitive to the culture of the people. This enables our project to be accepted by them” (P. 4)

This position resonates with Escobar who notes that development practices must be culturally sensitive and inclusive.<sup>60</sup> This approach, which is based on culturally built collaboration helps to mitigate the challenges facing green technology adoption in the State such as resistance of the people, and financial and technical inadequacies.

## **Evaluating the Effectiveness of NGO-led Innovations in Promoting the Adoption of Green Energy and Sustainable Practices in Lagos State**

### **a. Technological Innovation**

Participants noted that many of the activities have yielded impressive technological innovation in the areas of green energy and sustainability. Many of these efforts have resulted in community-specific innovations in urban and local areas. NGOs have developed solar-powered microgrids that have provided renewable and clean energy in many communities in the state. This has helped in reducing the use of diesel generators to generate power and reduced emissions from such sources, which the Lagos State Government noted is the highest source of carbon emissions in the state.<sup>61</sup> These solar microgrids provide environmentally friendly energy and bring stability and reliability to energy access in many areas. A participant paints the picture of this development as follows;

“We have provided some communities that were previously off-grid with microgrids that served home clusters. This has helped in reducing emissions because the people stopped using fossil fuel powered generators” (P. 6)

These innovations show that there can be decentralized energy systems in Nigeria. This is deemed important by IRENA because it helps to increase access to energy, especially in developing countries.<sup>62</sup> The development of microgrids with locally sourced materials shows that all that is required for carbon emissions and sustainable energy solutions are available in the state.

### **b. Community-based Models**

Participants mentioned the development of renewable energy cooperatives by encouraging community members to invest in solar power projects. They noted that this is aimed at long-term ownership, which makes members of communities active participants in the maintenance of green energy infrastructure. It also aids the ability of stakeholders to expand on ongoing projects in the future. A participant puts this in the following words;

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<sup>59</sup> Asogwa, “Uptake of Sustainability Reporting Adoption by Non-Governmental Organisations: An Agenda for Policy and Practice.”

<sup>60</sup> A. Escobar, *Encountering Development: The Making and Unmaking of the Third World* (Princeton University Press, 1995).

<sup>61</sup> Lagos State Government, *Second Five Year Climate Action Plan 2020 – 2025*.

<sup>62</sup> International Renewable Energy Agency, “Renewable Energy Policies in a Time of Transition.”

“We were able to set up renewable energy cooperatives in communities as we encouraged members to collectively invest in projects and be a part of the maintenance of the power installations. We assured them that the model will make them active stakeholders and owners while also promoting the long-term sustainability of the installations” (P. 11).

The approach aligns with the position of Jenkins who advocated for the establishment of cooperative models that can ensure long-term commitment to sustainable energy initiatives.<sup>63</sup> The model empowers local communities and gives them control over the projects. This makes them more invested in ensuring the success of solar power installations.

## Impact Measurement and Evaluation

### a. Quantitative Metrics:

NGOs are very much interested in the success of the projects. Therefore, they use various quantitative indications to measure this. They use indications such as the number of households or institutions that transitioned into renewable energy, reduction in the use of fossil fuels, and improvement in air quality. This allows NGOs to ascertain the environmental impacts of green and sustainable energy interventions.

“We conduct evaluative activities such as tracking the number of houses and institutions that dumped their generators for renewable energy because of our projects. We also consider the reduction in diesel generator usage and monitor air quality improvements” (P. 8)

This shows the importance of data collection for evaluating the utility of environmental projects. Ebrahim and Rangan note the importance of well-defined metrics by organisations to reflect the outcome of their activities, including in sectors like energy and sustainability.<sup>64</sup>

### b. Qualitative Feedback

Just like they have developed quantitative metrics for measuring the effectiveness of their interventions, NGOs also use qualitative metrics to determine the wider social and economic impacts of their interventions. They conduct this using surveys, interviews, and Focus Group Discussions (FGDs) to determine community satisfaction, improvement in quality of life, and reduction in energy costs.

“We conduct surveys to gauge the feelings of communities on the changes caused by renewable energy. We have received heartening feedback such as reduced costs of energy and fewer air pollution-related health issues across communities” (P. 13).

The foregoing quote aligns with the need for participatory evaluation methods noted by Pretty.<sup>65</sup> This allows local communities to be involved in assessing the functionality of development interventions. NGOs can determine if their projects meet the needs of the people by getting local communities to play active roles in the evaluation process.

## DISCUSSION OF FINDINGS

This study focused on the activities of NGOs' green energy and sustainable practices provisioning and awareness creation in Lagos State. These organizations are strategic in the quest for sustainable development of the state. This is much noted by the state in its Climate Action Plan, 2021 – 2025.<sup>66</sup> As a state with a burgeoning population that increased by 86 new persons arriving by the minute, there is always a growing energy demand.<sup>67</sup> The inability of the state to provide adequate energy to power its

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<sup>63</sup> K. Jenkins, “Community-Based Renewable Energy Models: A Path to Sustainable Development,” in *Energy Policy*, 95th ed., 2017, 62–69.

<sup>64</sup> Alnoor Ebrahim and V Kasturi Rangan, “What Impact? A Framework for Measuring the Scale and Scope of Social Performance,” *California Management Review* 56, no. 3 (2014): 118–41.

<sup>65</sup> Pretty, “The Role of Community Participation in Sustainable Development.”

<sup>66</sup> Lagos State Government, *Second Five Year Climate Action Plan 2020 – 2025*.

<sup>67</sup> Olajide, “An Evaluation of Subnational Climate Change Response in Lagos State, Nigeria and Kwazulu Natal Province, South Africa .”

development has led citizens to adopt unsustainable and dirty energy, chiefly from petrol and diesel generators. The state acknowledged this challenge by stating that this is the largest source of carbon emissions, representing 55% of its 26,443,656 tCO<sub>2</sub>e, or 1.3 tCO<sub>2</sub>e per capita in 2015.<sup>68</sup> Given the need for self-help in energy production in the state, many communities operate off-grid.

From this study, it is apparent that NGOs have been at the forefront of green energy and sustainable practices promotion in Lagos State. As critical stakeholders, they have helped to bridge the gap in energy access in many local communities that had hitherto been off-grid or poorly serviced by existing energy arrangements. They have done this through technological innovations such as the installation of solar panels and biogas system development in many local communities in the state. NGOs have shown that the future of energy lies in the adoption of renewable energy in the state. As a fast-developing economy, Lagos State requires a wide energy mix to power homes and businesses on a sustainable basis. Their stakeholdership in this context shows that while the state is responsible for leading the light on green energy and sustainable practices adoption, the closeness of NGOs to grassroots helps to bring green policy objectives to quick and effective implementation.

The import of the intervention in the green energy and sustainability space of Lagos State is palpable. Given the need for resource use in ways to ensure abundant life across time and space, the propagation and adoption of green energy innovation has important benefits across the state. Beyond the apparent ability to reduce emissions, green energy adoption performs the function of 'de-taxation', which means reducing energy costs which citizens must incur because of the state's inability to optimally perform its functions. This is because renewables help in alleviating energy poverty, which has a direct relationship with economic poverty reduction.<sup>69</sup> Thus, NGO-led green energy innovation in Lagos State lowers the state's high carbon footprint and ensures that people can save because of the reduction or outright cessation of petrol or diesel generators in local communities.

While NGOs are critical stakeholders in Lagos State green energy, their cascading pattern of stakeholder mapping is very helpful. This is because they demonstrate astute sensitivity to the nature and character of the local communities where operate. Thus, NGOs have developed effective collaboration with local communities, by recognizing local authorities and adopting participatory, culturally sensitive, and inclusive approaches to green energy projects and sustainability awareness creation in Lagos State. Participants noted that this approach helped them navigate the neryv process of technology adoption at the community level. This resonates with the advocacy of Sovacool et al. that social innovation and inclusion are sine qua non to accelerated energy transitions.<sup>70</sup> It also helps to generates support and community ownership for green energy projects. This is because a sustainability drive without grassroots participation and support cannot be effective. Therefore, NGOs in Lagos State's green energy space recognised this rule of thumb as key to doing justice to funders' investments.

NGOs contribute to ecological modernization in Lagos State through green energy innovations such as the development of microgrids that supply power to clusters of houses and businesses in local communities in the state. The development of microgrids in off-grid communities helps to promote the necessary decentralization in sustainability enhancement. This has helped to increase access to energy and reduce energy poverty. Many businesses that could have closed because of the unsustainability of energy costs arising from intermittent hiking of fuel prices in Nigeria can now look towards a sustainable future. The microgrid model also shows that people can cooperate with authorities or facilitating bodies in the provision of social amenities.

Further to the foregoing, encouragement of green energy cooperatives among community members shows that NGOs can help to stimulate popular participation in sustainability. These also show that with the right policies, management and principally, trust, the people can be mobilized to invest in sustainable projects that will help their communities over the long term. NGOs have developed the necessary social capital with the communities such that they stand in the gap where trust in government is lacking. While Nigerians lack trust in government and its institutions, they do have high trust in

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<sup>68</sup> Lagos State Government, *Second Five Year Climate Action Plan 2020 – 2025*.

<sup>69</sup> Kai Zhao, "Rural-Urban Gap in Academic Performance at a Highly Selective Chinese University: Variations and Determinants," *Higher Education Research & Development* 41, no. 1 (2022): 177–92.

<sup>70</sup> Benjamin K Sovacool et al., "Social Innovation Supports Inclusive and Accelerated Energy Transitions with Appropriate Governance," *Communications Earth & Environment* 4, no. 1 (2023): 289.

NGOs.<sup>71</sup> Thus, NGOs have leveraged their high public trust profile to stimulate cooperative tendencies towards green energy and sustainability practices adoption in Lagos State. Thus, the communities can claim ownership of green energy installations, which enhances their long-term sustainability.

NGO-led green innovations and sustainable practices in Lagos State have been very impactful. Through the feedback mechanisms, they have been able to measure the impacts of their projects quantitatively and qualitatively. This shows that NGOs' stewardship in green energy a sustainable practices advocacy and adoption has been very helpful in Lagos State. This explains why Osunmuyiwa & Kalfagianni notes the stakeholdership of NGOs in the renewable energy transition in Lagos State ranks Lagos State as a pioneer state in that regard.<sup>72</sup> Within the multistakeholder green energy space of Lagos State, NGOs have been very effective in ensuring that more households and businesses transition seamlessly into green energy use. This has led to economic enhancement, environmental revamp, and improvement in the health of the people, among other positives in local communities where green energy projects have been done in the state.

## **RECOMMENDATIONS**

1. The operations of NGOs in Lagos State have been largely hampered by bureaucratic bottlenecks, hence, the state government should streamline its administrative processes. These include those related to policy approval and state project implementation. Hence, the government should reduce layers of approval, simplify documentation requirements, and establish clear decision-making timelines. This will make NGO-government relations on green energy policies in Lagos State seamless.
2. The activities of NGOs in green energy initiatives are also affected by inadequate funding. There is, therefore, the need to increase financial support for NGO activities in the state, especially those working on green energy and sustainability initiatives. NGOs, too, need to widen their revenue-generation efforts by extending their public partnership and international grants-seeking portfolios.
3. There should be an improved formal process of communication between NGOs and the Lagos State government. This is critical to the success of NGOs' involvement in green energy initiatives. Hence, there should be an ongoing dialogue, collaborations and other formal platforms where both government and NGO officials can discuss policy issues and share best practices information. By involving NGOs in government advisory councils and working groups on green energy and sustainability practices, the necessary culture of collaboration can be birthed such that green energy policies can be improved based on the latest developments and feedback from stakeholders.
4. NGOs should develop clear metrics for measuring their projects' success. This will help to ensure the scalability and effectiveness of the interventions in green energy and sustainability practices. It will also help them to track and report on the metrics, thereby determining the impacts of the projects and enhancing their capacity for attracting grants for their initiatives.

## **CONCLUSION**

The quest for sustainable development through green energy adoption and other sustainability practices is high on the agenda in Lagos State. The state also takes cognizance of sustainability stakeholders, including NGOs that have the necessary technical expertise to help green energy and other sustainability practices and engage in their advocacy. This study shows that NGOs are very much involved in increasing energy access through green energy innovations such as biogas and solar panel installations. These activities have helped to reduce carbon footprints in local communities across the state, helped in the economic improvement of households, and enhanced business viability in many local communities in the state. The state government collaborates with NGOs in policy discussions because the former is a critical bridge between the latter and the grassroots. Given the social capital that NGOs have built in different

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<sup>71</sup> Chain Reaction Africa, *Trust and the Role of NGOs in Green Energy Projects in Africa* (Chain Reaction Africa Press, 2021).

<sup>72</sup> Olufolahan Osunmuyiwa and Agni Kalfagianni, "Transitions in Unlikely Places: Exploring the Conditions for Renewable Energy Adoption in Nigeria," *Environmental Innovation and Societal Transitions* 22 (2017): 26–40.

areas of sustainability, they are able to contribute to the environmental enhancement of Lagos State in significant ways.

Despite the robust collaboration between NGOs and the government, they are faced with many issues and challenges. These include bureaucratic delays in their relations with the government, financial inadequacy in green energy and sustainability practices and lack of cooperation by local communities, among others. These issues and challenges have not allowed NGOs to realize their full potential in sustainability innovations in Lagos State. Climate change response dynamics such as green energy innovation and other supportive sustainability practices can only be robust by adopting a multi-stakeholder approach. Therefore, the government and other sustainability must work together to address issues that can hamper NGO-led green energy innovations in Lagos State. As an unrelentingly growing state, the consequential energy demands can only be met with a strong civil society, in which NGOs' interventions are unencumbered.

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## ABOUT AUTHORS

Bamidele Olajide is a postdoctoral researcher in the Department of Political Studies and International Relations, at North West University, South Africa. He is also a lecturer in the Department of Political Science, University of Lagos, Nigeria. He holds a doctorate in International Relations from North West University, South Africa. His areas of research interests include Environmental and Energy Politics, Aspects of the Environment as Political Theory, International Relations, Films and Politics and Comparative Politics. Dr Olajide has published articles and chapters in accredited journals, edited books and volumes and conference proceedings. He has also attended and presented papers at local and international conferences and research fairs.

Loveth Walker is a student in the Department of Political Science, University of Lagos. She is a climate advocate and leader working on projects at the intersection of sustainability, technology, and

environmental advocacy. Partnering with NGOs, she has led initiatives promoting innovation and raising awareness of environmental solutions aligned with Environmental, Social, and Governance (ESG) principles. A Political Science graduate from the University of Lagos, Loveth is committed to empowering youth in sustainable development and climate action. Her work focuses on advancing climate resilience and fostering equitable, climate-conscious practices for a more sustainable future.

Victor Ojatorotu is a scholar of International relations and an astute professor at North West University, South Africa. He holds a PhD in International Relations from the University of the Witwatersrand, Johannesburg, South Africa. A First Class Honours graduate (BSc) from the prestigious Obafemi Awolowo University, Ile-Ife, Nigeria in International Relations and an MSc. Degree in the same school. He has actively worked at various capacities as an academic of repute in the last 28 years, specifically, he worked for Obafemi Awolowo University, Ile-Ife, University of Kwazulu-Natal, Pietermaritzburg, and Monash University, Johannesburg. Currently, he holds a position as Deputy Director, School of Government Studies, North West University, Mafikeng – South Africa and recently appointed as an Honorary Professor at the Sefako Makgatho Health Sciences University (SMU) South Africa. His research interests span across several areas which are not limited to peace and conflict issues, social movements, environmentalism, peace advocacy and inter-ethnic harmony in local communities in Africa.