



## Green Campus Initiatives in Nigerian Universities

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**Abstract:** This paper examined the strategies to promote green campus initiatives in Nigerian universities. The paper is a position paper, hence secondary sources data that were used in the paper. The secondary data were collected from government documents, print resources and online publications. Content analysis was used to narrow the literature to the theme of the study. Establishment of a Green Campus programme, provision of adequate funds, adoption of energy conservation and efficiency, waste reduction and recycling programs, water management and conservation system, sustainable transportation system, green spaces and biodiversity conservation, sensitization and awareness campaign programme, digitalization of academic service and eradication of disposable items on campus and installation of water stations around campus and adoption of Green Infrastructure facilities on campuses are some of the strategies to enhance green campus initiative in the Nigerian universities. Based on the findings of this study, the paper recommends that the National Universities Commission should develop policies and programmes on green campus initiatives and order universities to follow the model and develop their respective own for implementation. National Universities Commission ensures organised capacity building programmes for administrators of universities on green campus initiative implementation in all the universities. Governments should provide special funding for the implementation of the green campus initiative. International organizations and private institutions should support universities in the implementation of the green campus initiative by providing financial aid and technical support.

**Keywords:** Green Campus Initiatives, Universities, Nigeria.



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### Introduction

According to the NPE (FRN, 2014), university education is expected to make an optimum contribution to national development through the intensification and diversification of its programs for the development of a high-level human resources base within the context of the needs of the nation; make professional course contents to reflect Nigeria's national requirements; make all students, part of the general program of all-round improvement and to offer general study courses such as history of ideas, philosophy of knowledge and nationalism. Universities are



expected to encourage and disseminate their research results to both government and industries. Universities are expected to inculcate community spirit in their students through projects and action research. They are expected to ensure that faculty in their professional fields have relevant industrial and specialized experience. However, the NPE states that a huge percentage of funding for university education shall be devoted to Science and Technology.

The university system is a micro set of society (Ogunode & Ayeni, 2024) and the world is facing an immediate environmental crisis. Human actions like burning fossil fuels and deforestation have led to a catastrophe and an increase in greenhouse gases in the atmosphere. Greenhouse gas emission is a major human cause of climate change. University campuses can contribute significantly to climate change. The university laboratories and on-campus transport emit significant greenhouse gases. So, universities should try their level best to mitigate the effects of climate change. It is here that the concept of a Green Campus emerges (**GIETU 2021**).

To ensure a sustainable environment in Nigeria and in the universities' environment, the Nigerian government in 2021, updated its Nationally Determined Contribution (NDC) to the United Nations Framework Convention on Climate Change (UNFCCC) Paris Agreement, which establishes an unconditional contribution target of reducing greenhouse gas (GHG) emission reduction by 20 per cent below the business as usual emissions scenario by 2030, and a conditional target of 47 per cent GHG emission reduction below 2018 emissions levels contingent on international support. The 2021 NDC update includes emissions reduction from the waste sector for the first time, covers the water resources sector, and articulates other nature-based solutions. The National Council on Climate Change, established in 2021 by the Nigeria Climate Change Act, works to mainstream climate change actions and achieve low GHG objectives. Nigeria's National Adaptation Plan Framework (2020) articulates Nigeria's adaptation objectives and principles that guide these adaptation actions and facilitate the implementation of priority adaptation activities. The Nigeria Energy Transition Plan outlines Nigeria's commitment to carbon neutrality by 2060 across 5 key sectors: power, cooking, oil and gas, transport and industry (USAID, 2023). The Nigerian government has directed ministries, public institutions and educational institutions to adopt practices that will promote environmental sustainability. The directive of the Nigerian government to comply with environmental sustainability will serve as a magic wand if they employ law and politics to enforce to policy (Godwin, Ayeni & Peter, 2021).

A report by Naturenews (2023) has it that some Nigerian campuses are taking steps to create green havens for their students, where they can learn, live and thrive in harmony with nature. These are some of the examples of how Nigerian campuses are creating green habitats for students. This development is expected to help the socio-economic well-being of students. For instance, it has been noted that the responsibility of safeguarding the economy and putting in place infrastructure will boost development and enhance financial security so that people can provide for their basic needs (Ayeni, 2024). Putting in place green havens for students will help the socioeconomic and health conditions of members of the university community, thereby safeguarding their economy.

The University of Lagos (UNILAG) has established a Botanical Garden, which covers an area of 11.34 hectares and hosts over 300 plant species, some of which are endangered or endemic to Nigeria. The garden serves as a living laboratory for teaching and research, as well as a recreational and educational facility for students and visitors. The garden also provides ecosystem services, such as carbon sequestration, air purification, water conservation and soil erosion control. This garden is an example of green infrastructure. Thus, it has been noted that massive infrastructural development provides a suitable environment (Ayeni, Abdullahi & Andeshi (2021). This Botanical Garden in the University of Lagos is a green infrastructure that provides a suitable environment for relaxation for both students and staff.

The Ahmadu Bello University (ABU) has developed a Green Campus Initiative (GCI), which aims to promote environmental sustainability and social responsibility among its students and staff. The above initiative is expected to enhance the well-being of the university community. It

will therefore not be out of order to say that there is governance in the institution since “there is the provision of those amenities and facilities that enhance the well-being of the people” (Ayeni & Sani, 2021, p. 149). The GCI involves various activities, such as tree planting, waste recycling, energy conservation, environmental education and advocacy. The GCI also organizes an annual Green Festival, which showcases the achievements and innovations of the campus community in environmental sustainability.

The Federal University of Technology, Minna (FUTMINNA) has implemented a Green Campus Project (GCP), which seeks to transform the campus into a model of environmental excellence and best practices. The above observation shows good leadership that is bringing about development in the federal university. This is because the quality of leadership is the bedrock of development in every human society (Ayeni, 2018). The GCP includes several components, such as green buildings, green transportation, green energy, green landscaping, green waste management and green awareness. Abenu, Alfa-Yusufu and Ugochukwu, (2024) did a study that focused on the current status of sustainability in public higher education institutions in Nigeria and the challenges that inhibit the integration of sustainability into its operations and practices. They found out that the school has made progress in teaching courses that promote environmental sustainability. However, only limited achievements have been made in integrating sustainability into its operations and practices. It is based on this that the paper examines the strategies to promote green campus initiatives in Nigerian universities.

### **Concept of Green Campus Initiative**

A green campus is where environmentally friendly practices and education combine— its goal is to promote sustainable and eco-friendly practices. The concept of a green campus offers an institution the opportunity to redefine its campus and come up with new eco-friendly and more sustainable strategies. A green campus refers to an area with optimum land use, with environmental planning and resource management. The aim is to improve energy efficiency, conserve resources, and enhance environmental quality, including habitat preservation. And promote a healthy living environment that focuses on the management of waste and water recycling (**GIETU 2021**). The Green Campus concept offers an institution the opportunity to take the lead in rethinking its environmental culture and developing new paradigms for solving problems that are local, national, and global. It also presents a review of the approaches, methods and tools to inform, communicate and educate university students and the public on climate change being used by universities around the world (ASCC). Green Campus Initiatives encompass a diverse array of programs, policies, and practices aimed at minimizing environmental impact and maximizing sustainability within the campus environment. These initiatives typically address various facets of sustainability, including energy conservation, waste reduction, water management, transportation, green spaces, and environmental education (Makemyassignment, 2024).

Greening the campus is all about reducing wasteful practices. The use of non-conventional sources like solar energy and biomass energy can efficiently meet an educational institution’s energy needs. The University can also purchase environment-friendly supplies and conduct an effective recycling program. Thus, energy efficiency and environmental sustainability should be the two pillars upon which the green campus concept needs to be based (**GIETU 2021**).

From the above, green campus can be seen as programmes meant for schools to promote environment sustainability through conservation of natural resources like water and biodiversity, optimize energy efficiency and manage waste within and outside the school environment. Green campus is an organized programme that is designed for maximization of nature environment and protection and to provide support for sustainable resources within the school environment. The objectives of the Green Campus initiative include; promotion of green programme activities within the campus, to raise awareness in the campus about waste recycling which is a high-level educational institution, to create an awareness that can be effective and beneficial outside the campus and to create a wide-scale sensitivity circle, sustainable environmental management and



the protection and management of exhaustible resources. Green campus initiative is a planned school sustainable environment programme that focus on environment, ecology and protection of the planet and continuity of resources and reduction of carbon footprint and work toward a sustainable future.

### **Strategies to Enhance Green Campus Initiative in Nigerian Universities**

Many strategies can be deployed to promote green campus initiatives in Nigerian universities. Some of these strategies include; the establishment of a Green Campus programme, provision of adequate funds, adoption of energy conservation and efficiency, waste reduction and recycling programs, water management and conservation system, sustainable transportation system, green spaces and biodiversity conservation, sensitization and awareness campaign programme, digitalization of academic service and eradication of disposable items on campus and installation of water stations around campus and adoption of Green infrastructure facilities on campuses.

#### **Establishment of Green Campus programme**

One of the strategies to promote green campuses in the Nigerian university system is to establish a centre or unit in charge of green campus initiatives. The centre or unit will develop policies, plan action and programme for the integration of green campus initiatives into the university programme. The centre will include and engage the management in policy formulation to strengthen the development of green campus initiatives in the respective universities. The units or centres will involve the students and university stakeholders in the implementation of a programme to ensure sustainable universities in Nigeria. Adeyemi (2018) observed that the first step to be taken by higher institutions for the realization of the green campus initiative is to establish a department that will handle programmes related to university sustainability. This can be achieved through effective school leaders since they can either use administrative bottle-neck to retard growth or do otherwise to ensure growth (Asaju & Ayeni, 2020).

#### **Provision of Adequate Fund**

The importance of funds cannot be overemphasized. This is because a fund is the lifeblood of every organisation or society (Ayeni, 2017). Funding is very critical for the development of green campus initiatives in the universities. Funding is needed for the establishment of centres or units for the administration of green campus initiatives. Funds are needed for recruitment of staff, and procurement of facilities to support the implementation of the green campus initiative in the various universities. Musa (2019) noted that higher institutions should provide an adequate budget for the financing of green campus programmes.

#### **Adoption of Energy Conservation and Efficiency**

Universities in Nigeria can promote green campuses by adopting renewable energy. GIETU (2021) observed that due to surging electricity bills and the desire to contribute towards a green future, many educational institutions worldwide are turning to solar energy to meet their energy demands. Solar power provides warm water in geysers, helps run laboratories and auditoriums, and illuminates street lights within the University campus. Makemyassignment (2024) notes that one of the cornerstone initiatives of green campuses is energy conservation and efficiency. Institutions implement strategies to reduce energy consumption through measures such as upgrading lighting systems, optimizing heating and cooling systems, and promoting energy-saving behaviours among students and staff. The use of green campus initiatives or green infrastructure serves as effective communication that can enhance peacebuilding and peaceful co-existence on the campus (Ayeni, Sani, & Uzoigwe, 2019). Additionally, many campuses are investing in renewable energy sources like solar and wind power to transition towards carbon-neutral operations.

## **Waste Reduction and Recycling Programmes**

The organic waste of the campus, like kitchen waste and dried leaves, can be turned into compost using waste converters or vermicomposting. The University should encourage the segregation of waste. There should be separate dustbins for biodegradable wet waste and inorganic dry waste and a total ban on single-use plastic and straws inside the campus. Makemyassignment (2024) opined that another vital aspect of green campuses is waste reduction and recycling. Institutions implement comprehensive waste management programs that prioritize waste minimization, recycling, and composting. By promoting recycling bins, composting facilities, and educational campaigns, campuses encourage responsible waste disposal practices and divert significant amounts of waste from landfills. America Dinning Creation (2023) argued that food waste piles up fast, especially when you have a lot of people eating in the same place repeatedly, like a college cafeteria. Composting minimizes the amount of food that your school sends to the landfill. It can be as simple as composting food scraps from prep and waste left on plates or as extensive as using plant-based compostable tableware. To involve the students even more, it can become a competition between the years to see who has the least amount of waste. This would teach students to also be more aware of how much they put on their plate. The easiest and most common way that people participate in sustainability is by recycling. Installing bins across campus makes recycling as easy as possible. Students sometimes won't go out of their way to find a recycling bin, but if there is one nearby, they're more likely to recycle. A way to ensure there is always easy access to recycling is by putting a bin anywhere there's also a trash can. If your campus doesn't already have recycling in place and you want to install a plan, you can:

## **Water Management and Conservation System**

A University can set up a wastewater treatment facility within its campus. This treated water can be used for several purposes. The scarcity of water is a significant concern that universities and the entire country face. Campuses can tackle this issue by setting up a rooftop rainwater harvesting unit. This stored water can then be effectively used for several purposes like watering plants, and usage in toilets, among others. Makemyassignment (2024) submitted that water management and conservation are also key components of green campus initiatives. Institutions implement measures to reduce water consumption through efficient irrigation systems, water-saving fixtures, and landscaping practices that prioritize native and drought-resistant plants. Additionally, campuses often undertake projects to harvest rainwater and implement greywater recycling systems to further conserve water resources.

## **Sustainable Transportation System**

Green campuses promote sustainable transportation options to reduce reliance on carbon-intensive modes of transportation like personal vehicles. Initiatives may include providing bike-sharing programs, installing electric vehicle charging stations, promoting public transportation subsidies, and implementing carpooling initiatives. By encouraging alternative transportation methods, campuses mitigate traffic congestion and air pollution while promoting healthier and more sustainable commuting habits. America Dinning Creation (2023) maintained that a bike rental program will encourage students to rent a bike to use instead of their cars during the semester. Biking can have as little as one-seventh the impact as driving a car on the environment. Bike sharing encourages those who wouldn't normally ride a bike to use green transportation, funds other campus sustainability initiatives with the bike rental fees, reduces vehicle emissions around campus and promotes exercise and healthy living. Riding a bike is one of the most sustainable forms of local transportation since it only uses the energy produced by peddling.

## **Green Spaces and Biodiversity Conservation**

Creating and preserving green spaces is essential for fostering biodiversity and enhancing the overall campus environment. Green campus initiatives prioritize the preservation of natural habitats, the creation of wildlife corridors, and the establishment of sustainable landscaping practices that support native flora and fauna. These efforts not only enhance the aesthetic appeal

of the campus but also provide valuable ecosystem services and educational opportunities. America Dinning Creation (2023) submitted that a campus garden can grow organic produce, which saves money and lowers carbon emissions, but it can also directly involve the students, teaching the importance of sustainability and healthy living. You can also support the community by donating produce to local food pantries to help those in need.

### **Embark on Sensitization and Awareness Campaign Programme**

University education is expected to play a crucial role in promoting a green campus and sustainable environment within campus communities and beyond. This is even as a university education is advanced education in teaching, research and community service (Ogunode & Ayeni, 2023; Ogunode, Ayeni, & Ogwuche, 2024). The community service being rendered by university education will in no small dimension help in the sensitization campaign of green initiatives. Green campus initiatives incorporate environmental education and outreach programs to raise awareness, foster a culture of sustainability, and empower students, faculty, and staff to take meaningful action. Through workshops, seminars, sustainability-themed events, and experiential learning opportunities, campuses inspire individuals to integrate sustainable practices into their daily lives and future endeavours.

### **Digitalization of academic services**

Tertiary institutions in Nigeria must adopt the digital model of carrying out academic services to reduce the use of paperwork. The failure of tertiary institutions to do the above will make such institutions malfunction. Scholars have argued that the inability of any structure to perform its function will cause the system to malfunction (Ayeni & Nwaorgu, 2018). This is one of the ways the institutions can reduce carbon emissions in the institution's learning environment. America Dinning Creation (2023) maintained that using fewer notebooks, textbooks, folders and paper handouts by going digital will create much less waste. Utilize the technology on your campus to reduce your paper usage. Encourage both professors and students to only print what is necessary. You can even limit printing allowances to ensure that people are making a conscious effort to watch their paper waste.

### **Eradication of disposable items on campus and installation of water stations around campus**

Plastic forks, knives, spoons, cups, Water bottles and anything else that has one use before being thrown away are the biggest sources of water. These kinds of items will often sit in landfills for hundreds of years before breaking down. Using reusable plates, cutlery and cups creates a much more sustainable lifestyle while also saving money. Some universities go as far as banning the sale of bottled water on their campus to encourage everyone to contribute to a more sustainable community.

Also, universities in Nigeria can adopt the use of reusable water bottles to ensure green universities. America Dining Creation (2023) noted that a reusable water bottle keeps needless plastic out of landfills. Offering plenty of easily accessible refill stations encourages students to make the switch to a reusable bottle. American Dining Creations offers a water purification system that is sustainable and hassle-free. It guarantees that you'll always have an unlimited supply of purified fresh water available. They can even personalize the system for your specific water conditions for great-tasting water. You can save anywhere from 30-70% by going bottle-free with their system. Refill stations help reduce your carbon footprint by more than 70%.

### **Green Infrastructure facilities**

Another way universities in Nigeria can enhance the green university system is to install green infrastructure facilities on the campuses. University management should ensure adequate insulation and energy-saving windows and use a programmable thermostat for more efficient heating and cooling — and, of course, energy-saving lightbulbs for more efficient lighting. Universities should generate its power from wind, solar and other clean sources. This infrastructure is expected to have intended and unintended benefits (Ayeni, Sani, Andeshi,

Ibrahim & Adamu, 2020). It has been noted that infrastructure can provide long-term satisfaction (Ayeni, Doosuur, & Kefas, 2021) Installing rooftop solar panels or solar water heating also helps the planet and can save you money. Many states now offer incentives to help you green your home or rental at low or no cost. Call your energy provider to see if it offers free energy audits or know of a company that does.

## Conclusion and Recommendations

This paper discussed the strategies to promote green campus initiatives in Nigerian universities. The paper identified; the establishment of a Green Campus programme, provision of adequate funds, adoption of energy conservation and efficiency, waste reduction and recycling programs, water management and conservation system, sustainable transportation system, green spaces and biodiversity conservation, sensitization and awareness campaign programme, digitalization of academic service and eradication of disposable items on campus and installation of water stations around campus and adoption of Green Infrastructure facilities on campuses as some of the strategies to enhance green campus initiative in the Nigerian universities.

Based on the findings of this study, the paper recommends that the National Universities Commission should develop policies and programmes on green campus initiatives and order universities to follow the model and develop their respective own for implementation. National Universities Commission ensure organised capacity building programmes for administrators of universities on green campus initiative implementation in all the universities. Governments should provide special funding for the implementation of the green campus initiative. International organizations and private institutions should support universities in the implementation of the green campus initiative by providing financial aid and technical support.

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