

## Survey on the Use of Ornamental Plants for Environmental Management in Southwestern Nigeria

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**Abstract:** A survey on the role of ornamental plant in environmental protection was conducted in two main areas viz: the ancient and modern communities in Ibadan, the largest city in West Africa. The study identified awareness of the inhabitants of these communities to the importance of ornamental plant in their environment. It was revealed that the respondents from the ancient communities paid no recognition to the importance to ornamental plants, while only few of the respondents from the modern communities paid recognition to the importance to ornamental plants as; environmental plants environmental protector (22.50%) or conservator (20.00%) respectively. Thirty three percent (33.25%) of the respondents from the ancient communities claimed that ornamental plants arrest dust, supplies oxygen and help as wind break. Both male and female respondents found in the modern communities like Bodija, Oluyole Estate etc owns ornamentally beautified houses while there were no ornamental activities involved in the ancient communities. To control these environmental problems it was suggested that people should cultivate the habit of having ornamental plants, grasses as a cover-mat and fruit trees in their surrounding.

### Key words:

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### INTRODUCTION

Throughout human history, people have altered and often degraded their environment, though it has been taken place so gradually that its effects have not been so drastically felt. Most often, people become aware of the effect of environmental problems through direct or personal experience. Environmental problems are manifestation of disharmony between human activities and the environment. There are some natural factors that have contributed to environmental degradation. These include drought, fire from lightening, degradative processes that are man-made such as deforestation, desertification, siltation, degradation, decline of soil fertility due to over cropping population.

The unabated continuous environmental degradation could be attributed to population pressure, but lingering mainly on mismanagement of resources. The present environmental situation requires redefining strategies to bring about environmental management that are in conformity with national and international development efforts.

Ornamental plants have a wide spectrum of uses in environmental management; the most obvious are the

direct effect on the ecological position of human being such as the control of erosion by wind and water.

The objective of ornamental horticulture is the functional and aesthetic integration of people, building and site, using plants and space as its main tools<sup>[5]</sup>. The necessity of it in landscape architecture is for positive control of the fast changing land-scape for the future.

Few places in Nigeria where ornamental plants have been used functionally for environmental improvement include places like Lucky Fibres in Lagos, Cheveron in Lagos, International Institutes for Tropical Agriculture (IITA) Ibadan, Muritala Mohammed Botanical garden Epe, Lagos just to mention a few.

Ornamental plants can also be used as cover mat on eroded areas, they help in eliminating dust, and they reduce glare, air pollution, heat build up and noise pollution. They provide convenient stadia for sport activities such as football, soccer, pollo, lawn tennis and other athletics. They provide good location for adventure parks, children playing ground rest areas and other social events<sup>[6]</sup>. Ornamental plants also serve as complementor, attractors, emphasizeers, diverters, indicators and provide aesthetic function by creating attractiveness for human activities<sup>[3]</sup>.

The beautiful trees along the road provide unquantifiable shade and comfort for pedestrians while keeping the road intact from solar radiation and other inclement climatic conditions.

The habit of using ornamental plants functionally for environmental improvement is yet to be cultivated meaningfully in developing nations including Nigeria. Most house owners believe in using spaces in their surrounding for building shop and living accommodations. There is complete neglect of environmental beautification planning across the nation<sup>[2]</sup>. The presence of some plants in an environment makes it beautiful and a beautiful environment is always cool and inviting. Plants flavouring shrubs around homes often add aesthetic values to our surrounding.

This study was initiated to investigate the awareness of Nigerians living in both the ancient and modern communities in Ibadan the largest city in West Africa on the importance of ornamental plants in environmental management.

**Methodology:** A survey was conducted to study the awareness of the inhabitants of both the ancient and the modern communities in Ibadan on the role of ornamental plant. Ibadan (7° 20'N, 3° 50'E: 200mm above sea level) is in a transition zone between the humid forest and the wet, sub-humid savanna agro-ecological zone of Nigeria. An average of about 1200-mm rainfall is received per annum in Ibadan; 90% of the rain falls during the rainy season, April to October with the major peak in June and September. Relative humidity values (80-95%) are recorded during the rainy season than the dry season (20-50%). Mean daily temperature vary between 24°C (night) and 34°C(day) and are fairly uniform throughout the year.

Ten randomly selected locations from five local government areas; the Ibadan South East, Ibadan South West, Ibadan North East, Ibadan North and Ibadan North West of Oyo State of Nigeria were used as study areas. One hundred and five questionnaires were distributed to individual on the role of ornamental plants in environmental protection. Stratified random samplings were employed in the survey data collection procedure. The local government areas surveyed were stratified into two; the ancient and modern communities. Each stratum was further sub-divided into sub-strata out of which ten substrata were randomly selected. A number ranging between ten and fifteen respondents were interviewed in each of the stratum and the questionnaires were administered to focus on inhabitants of the ancient and the modern communities, on their level of education, their knowledge of ornamental plants, its uses and its role in

environmental protection. Type of environmental problems faced in the ancient and the modern communities, suggestions and recommendations.

## RESULT AND DISCUSSION

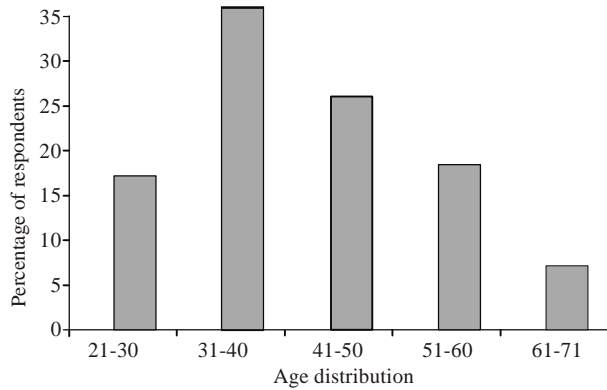
The percentages of the respondents are summarized in table 1. Figure 1 shows the age distribution pattern with most of the respondents in the modern communities ranging within middle age classes of 31 - 51 years. These middle age groups in the well-planned areas are educated and are aware of the aesthetic and protective measures given by ornamental plant, especially grasses to prevention of soil erosion.

Both male and female respondents found in the modern communities like Bodija, Oluyole Estate etc owns ornamentally beautified houses while there were no ornamental activities involved in the ancient community (Figure 2). This might be due to the fact that people in those areas have very low or no educational background. About 41.25% of the respondents the modern communities had tertiary education and only 5% of the respondent had only secondary /high school education. In the ancient communities 45% of the respondents had no formal education, while 21% attended only primary school and about 10% of the respondents had secondary /high school education. However, none of the respondents had any tertiary educational experience. It can be deduced that education is one of the major factors initiating individual to planning his environment as well as to evaluating ornamental plants, its role and importance in the environment.

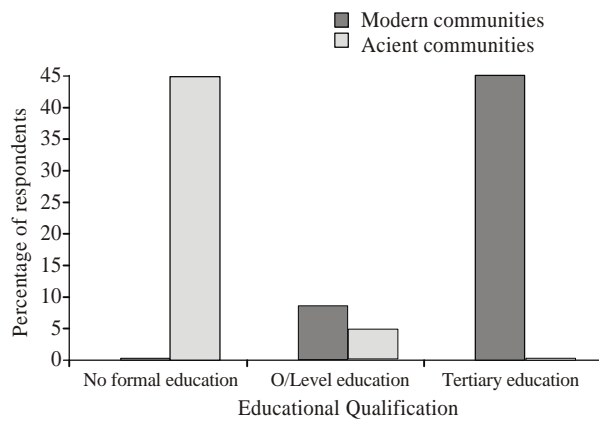
Result of the survey revealed that only few of the respondents in the modern communities recognized ornamental plants as; environmental protector (22.50%) or conservator (20.00%) respectively (Figure 3). Only 22.5% of the respondents appreciate the aesthetic values of ornamental plants. Some of the respondents who also

**Table1:** Percentage of respondents to questionnaire on the role of ornamental plant in sampled sites within Ibadan in Oyo state of Nigeria

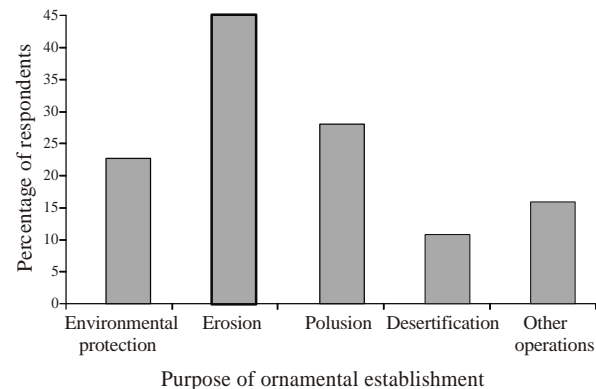
No.	Strata	Sub Strata	Questionnaires	
			No distributed	Number returned
1	Planned area	Oluyole estate	15	15
		Jericho Reservation area	15	15
		Bodija estate	15	15
		IITA	10	10
2	Core Area	Gege	10	9
		Kudeti/Idi Arere	10	9
		Oje	10	9
		Orita merin	10	9
		Oja Oba	10	8
			105	99



**Fig. 1:** Age distribution of the respondents and their involvement in ornamental plant activities



**Fig. 2:** Educational status of the respondents



**Fig. 3:** Response of respondents on their knowledge on the purpose of establishing ornamental plant in the selected planned areas in Ibadan

reside in urban (modern communities) areas in other parts of Nigeria claimed to have ornamental plants in their home base environment for the purpose of relaxation (23.5%), while no response was recorded for any of these

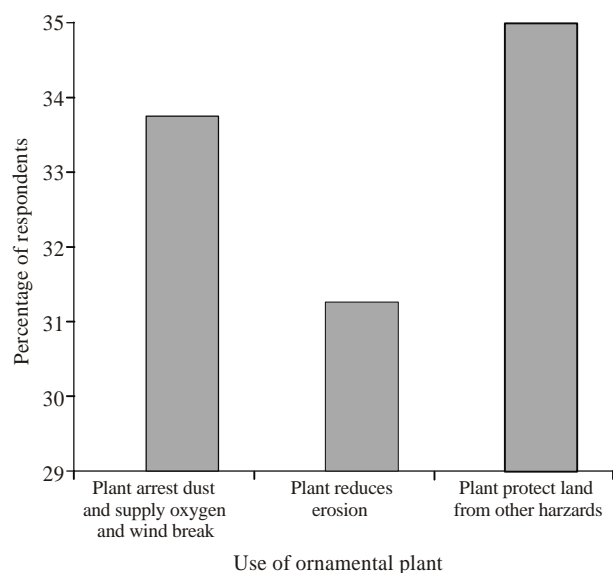
parameters in the ancient communities.

In the ancient communities almost all the inhabitants are totally ignorant of the of environmental planning and management. However in modern community area only few of the respondents are totally ignorant of environmental planning and management.

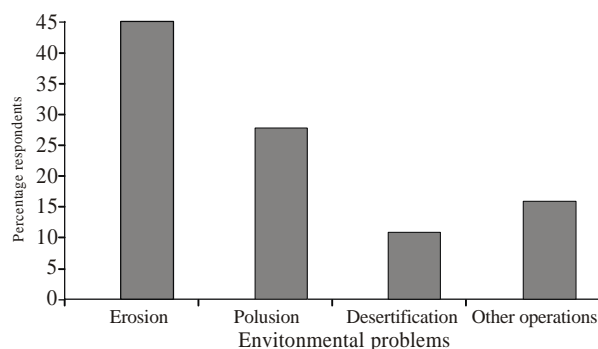
Thirty three percent (33.25%) of the respondents in the modern communities claimed that ornamental plants arrest dust, supplies oxygen and help as wind break. Some of the respondent (31.5%) believed that plants reduce erosion and while 35% of the respondents also claimed that ornamental plants protect the environment from other natural hazard (Figure 3). While respondents in the ancient communities had no response or ideas as to how ornamental plants could alleviate any environmental problems (Figure 4). The sense of beauty or aesthetic does not fall within their mode of planning; besides, the beauty of the environment might have been eroded by over population and unemployment, which made them to turn any available space into shops.

Most of the respondents (45%), from the ancient communities claimed that erosion the prevailing environmental problems their community. More over, 28% and 14% of the respondents also reported that air pollution and desertification respectively are the prevailing environmental problems the community. Land degradation is not left out, as part of other problems encountered in the ancient communities. From this result one can state that lack of planning and ignorance of the inhabitants to the use of plant i.e. grasses, trees and ornamental plants are some of the major causes of erosion disaster, in the ancient community's areas in Ibadan.

The study also revealed the lack of public awareness on the importance of ornamental plants in our environment. The non-participatory approach of the respondent in environmental management is highly demonstrated. The need to emphasis the training of landscape personnel and more town planners in Nigeria is an important issue to be addressed. The effort of the government agencies concerned with protecting the environment can greatly be achieved and aided by emphasizing conscious aesthetics maintenance and careful design of homes and the environment. The main causes of the environmental problems (like erosion, flood and others) are due to; illiteracy, ignorance and lack of extension services, it is therefore important for the policy makers to embark on mass education of the populace on the importance of ornamental plants in the environment<sup>[6]</sup> Since Ornamental plants also serve as complementor, attractors, emphasize, diverters, indicators and provide aesthetic function by creating attractiveness for human activities<sup>[3]</sup>. It is believed that proper education of the



**Fig. 4:** Percentage respondents on the uses of ornamental in alleviating environmental problems



**Fig. 5:** Percentage respondents on the environmental problems faced in the Ancient communities of Ibadan, Nigeria

masses on the importance of Ornamental plants will create employment opportunities for the teeming unemployed youths especially from the ancient communities.

Generally in the developing countries of the world, there is the lack of adequate knowledge or recognition of the true nature of the environment. Environmental

awareness in Nigeria is still young as it is shown from the study. As such an effective public awareness campaign must be launched.

Government and non-governmental organization (NGO) should therefore support the dissemination of awareness of the roles of ornamental plants in the environmental conservation. The ornamental and landscape specialists should be encouraged as they utilize the traditional agro forestry-farming system approach predominantly in the compound farm system to check the menace of soil erosion. Since environmental problems are now on top priority in government agenda, every effort should be made to mobilize the people and the NGOs to complement the environmental protection efforts of government.

The main cause of this problem is illiteracy and lack of extension services which are means of educating and communicating to the ancient community dwellers. There has not been a commensurate resource and efforts put in place by both the government and the private sector to effectively address the needed strategies.

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