

*An Appraisal of the Women's
Level of Environmental Education in
Kano, Nigeria*

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Abstract

The goal of this research paper is to investigate the level of perception; attitudes towards environment and skills available to women in urban Kano. Women, as the catalyst of population growth, primary harvesters of natural resources and chief home-managers play crucial role in efforts to promote environmental sanitation and sustainability. In order to evaluate the depth of the women's environmental education a combination of fieldwork and a purpose made test were employed to examine the profile of environmental education among women in a typical Nigerian city – Kano. The findings revealed that women in our cities are scarcely informed and enlightened about the problems plaguing our environment as they affect them. Women need to be enlightened on how best to maintain the environment. Women are however, constrained by poverty, inadequate awareness and poor access to vital resources. From the findings of this investigation, women in our cities do not know that they can contribute significantly towards achieving environmental sustainability. It therefore recommended that there is need for the government, civil societies and educational managers and planners and curriculum experts to recast their approaches to both formal and informal education to reflect fundamentals of environmental sustainability through integration and promotion of skills, awareness and change of attitudes.

Introduction

As we waded into the layers of the 21st century, African women are expected to assume a frontline position in issues that border on the success of any meaningful environmental policy, programme or project. This is simply due to their proximity to the basic natural resources and human habitat. Interestingly, the potentials of women in that direction are being gradually underscored. This may be justified in the recognition by the international community of their role through the conferment of the *Nobel Prize* on the Kenyan lady-environmentalist, Wangare Mathaai in the year 2004. The unique award marked and celebrated her outstanding contributions in the sphere of environmental conservation in Africa.

Mathaai's award is therefore a fuel to empower the new roles of African women in correcting the environmental anomalies.

The problem that this empirical research investigates is the depth of women's environmental education in the Kano city and its environs in Northern Nigeria. This is very important in that, the net inputs of women as important segment of the population in the quest for environmental sanitation and health related issues are indispensable. In addition to that, decisions on the environmental issues as they affect women could best be poured into the matrix when the level of women's level of environmental education is well understood. The assessment of awareness of environmental problems, prevailing attitudes amongst women in the urban Kano was made via administration of a test titled Environmental Literacy Test Among the Women (ELTAW) and field observations of the refuse constituents in sampled collection points across the township.

Women and Environment: The Conceptual Background

The United Nations Environment Programme (UNEP) stresses that sustainable development is not possible without the empowerment of women. The above statement was also reinstated at the Beijing Fourth World Conference on Women (1995); the World Summit on Sustainable Development (2002); Millennium Development Goals and the same idea was expressed during the ten-years review and appraisal of the implementation of Beijing Declaration and Platform of Action at the 49th Session of the United Nations Commission on the Status of Women (www.un.orgwomenwatch/forums/review/environment/).

Waldorf and Inglis (undated) hints that Article 14.2h of the Convention for the Elimination of all Forms of Discriminations Against Women (CEDAW) enjoins states to ensure that women enjoy adequate

living conditions particularly in relation to housing, sanitation, electricity, water supply, transport and communications. The Beijing Platform of Action is bolder on the advocacy for the empowerment of women in respect of resources management and access. Its strategic objective K1 urges for active involvement of women in environmental decision making; while strategic objective K.3 enjoins states to put mechanisms in place to assess the impact of development and environmental policies on women. Four of the eight MDGs cover issues that directly affect women and the environment. Goal no. 2 stresses gender equality and empowerment, goal no.3 emphasises universal primary education, goal no.6 sets to eradicate deadly diseases like malaria which have environmental bearing, while goal no.7 talks on environmental sustainability.

Such projections and expectations on the relevance of women in the sphere of environmental upkeep may not be unconnected to the fact that in some places around the world women play visible roles in the exploitation of natural resources. For instance, *Conserve Africa*, an NGO relates that in Africa women are primary resource users, their responsibilities and activities are directly on land-based resources and they maintain that women produce 80% of the basic food commodities in Africa (www.conserveafrica.org.uk.html). Mazrui (2005) hints on the bond between environment and women in the following words:

In most sub-Saharan traditional cultures, women were culturally supposed to have a triple custodial role - as custodians of fire, water, and earth. As custodian of fire the sub-Saharan African woman finds herself in charge of rural Africa's most important source of domestic energy - firewood. She treks long distances to collect it. As custodian of water, the African woman ensures water-supply for the home and for the extended family. Again she often walks a mile or two to the lake or river (unless a well is more readily available). The woman's role as custodian of earth is linked to the concept of dual fertility - the fertility of the womb (woman as mother) and the fertility of the soil (woman as cultivator). In

many African countries, even today, women are the majority of the farmers - as well as being major suppliers of domestic water and firewood.

From the above expressions, one cannot afford to lose sight of the pivotal role that women command in the web of debates on sustainability of the natural resources and human habitat. In fact, it means that taking care of the environmental resources and human settlements is a new challenge to the womenfolk who have been the most qualified home managers since time has started. Part of the new challenges that demand extra and better care of the women which Akanbi, Alhamdu and Muhammad (1995: 65-69) list as the challenges for women in the 21st century includes environmental safety and security. This is more so because, Uchegbu (1998: 188-198) referring to the situation of the Nigerian environmental dismemberment as it affects women enumerates exposure to cooking smoke, dilapidated slums and varieties of degraded environment to be root cause of several women sufferance e.g. eye and respiratory ailments, vulnerability to epidemics, cancer, stillbirths and even poverty. In the same vein, Etta (1999) maintains that women are more likely to suffer from a degraded home, neighbourhood and city environment and to shoulder more of the burden that go with living in poor housing and communities with inadequate infrastructure since they spend more time at home and its immediate vicinity. Thornham (2000:138) laments on the mass consumption culture among women especially those in urban areas who expend huge sums on shopping. The author condemns the rising attitude of shopping among the women and views it as a leeway for making women net consumers in the capitalists society.

Indeed, the above cases prevail in most of the Nigerian cities and towns. But, contrary to the maxim of women's predominance in the act of scouting for the natural resources, WIN Document (1985: 11-12) postulates

that in Hausaland, women are tethered to home by act of *pardah* (seclusion of women) which is common in the area and other parts of the Muslim world. Ibid maintains that, movements of women in the Hausaland in search of resources is further downplayed by availability of maids, beasts of burden, general access to land, and high water table which makes it easier for many homes to have their own wells. This may point may be contrary to the view expressed by Mazrui as quoted above.

However, the Mazrui's view is rather relevant to Kano city that suffers from perennial water shortage. This should not however distract us from the fact that, one of the common environmental problems identified with most of Nigerian towns and cities is the poor sanitation especially of the unplanned neighbourhoods. However, in spite of such, there are spots of success story, for instance, Adebayo and Anyawu (2005) remark in India women recorded success in solving environmental problems that was achieved through understanding the cause and effects of myriad problems like land use and erosion among other ecological problems women were able to reclaim some damaged sites.

Concerning the demographic characteristics, the 1991 National Population Commission census figures reveals that females are slightly fewer than males in Nigeria but in general there is balance between the two sexes (44,529,608 males and 44,462,612 females) the situation of demographic sex balance is not different in Kano state whose 5,725,116 population constitutes 6.5% of the country's total population. However in respect of women, the NPC figures indicate that in Kano whose 39.8% population is urban based, only 46.8% of women are educated (Umoh, 2001:13,126,148). Now the 2006 census figures reveal that males still outnumber the females. The total population for the country is now

140,003,542 million. Out of this number the males are 71,709,856 while the females are 68,293,683. The population figures also indicate that for Nigerian woman, her fertility ratio is that she can deliver five children. This suggests that not only are women responsible for population inflation but they bear the consequences of the declining health facilities and services as well as other risks like malnutrition and uncomfortable environment.

Olofin (2004) argues that households are one of the major sources of solid waste in Kano and Nigeria as a whole; he laments on the poor attitude of Nigerian families in the act of generation and disposal of domestic waste as compared with the German families who keep different buckets for different types of waste generated by the family. For example, biodegradables and non-biodegradables are kept separately. Above all, families separate the waste because they are enlightened of its hazardousness or harmlessness. The said German family practice has a positive impact as far waste collection and disposal is concerned. The situations of reckless waste disposal in Nigeria may not be unconnected to the fact that there are lapses and deficits in the curriculum of *Home Management* and *Home Economics*: the traditional subjects that are taught to girl students in Nigerian schools. This allegation may be substantiated by the fact that some of the books regarded as most important reference materials put much and unnecessary emphasis on the modern, expensive and urban based sanitary techniques which may appear very uncommon to students from poor homes or rural areas (see for example: Anyakaoha and Eluwa, 2000: 22-37). On the other hand, the non-challance attitude exhibited by the society towards sanitation is also principally responsible for that. Margaret (1975: 158-159) identifies three major sources of domestic waste as: waste from toilet; waste water which contains kitchen scraps; and solid waste – tins, packets which

can be damp, smelly or messy. But, Maigari, Binmak and Bewul (1998: 35-38) advise women to upkeep their homes because they are, at least, the first victims of disasters that may arise due to poor sanitation. Nnubia (1998: 83-86) maintains that women have a composite role in environmental sanitation through education and mobilisation, supply of sanitary facilities, sanitary discipline and maintenance of family size.

But whether we shift blames of environmental and sanitary failures on women because of their inaction and natural proximity to homes and natural resources, we must not lose sight of the fact that women (especially in rural areas) are constrained by lack of access to land and other resources, poverty, lack of education and training a view expressed by a Conserve Africa, a UK based NGO (www.conserveafrica.org.uk.html).

The Study Area

Urban and Peri-Urban Kano compose of the major spatial arrangements of settlements that continue to expand outwards from the ancient city of Kano (*Birni*). While the city is, itself, part of the study area, *most* of the areas within the six metropolitan local government areas namely, Kano Municipal, Dala, Fagge, Gwale, Tarauni and Nassarawa are inclusive. Consequently, seven districts for this research were formed and each district has under it all adjoining quarters and wards. The districts are as follows: Birni (the ancient city), Fagge, GRAs, the Central Business District, Kurna/Rijiyar Lemu, Tudun Wada, Sharada/Rijiyar Zaki and Gyadi-Gyadi-Naibawa. This area sits on a plain that rarely exceeds 450 metres above sea level. The physical environment has been seriously modified by the long human settlement. Urban rain fed and irrigated agriculture is still practiced in pockets of lowland parts of the city. By the figures of the 2006 census about 3 million people inhabit Kano metropolis and that implies that the

population women is likely to be half of that going by the national and state population sex ratio.

Research Methodology:

Sampling and Sampling Procedure

There are a lot of demographic, social, economic and educational differences within the study area. The choice was made for a stratified sampling. The choice was informed by the need for a fair representation of areas that constituted the research population. Therefore, the six metropolitan local government area councils namely Kano Municipal, Dala, Fagge, Gwale, Tarauni, Nassarawa and two other peri-urban local government areas namely Kumbotso and Ungogo.

Consequently, a total of 160 tests were conducted for the study. Thus, each of the involved eight local government areas was allocated twenty 20 questionnaires. In the case of the field observations on the environmental behaviour of the populace, that was achieved through conduct of the field visitation to few selected areas within the metropolis where environmental problems are critical e.g. populous residential areas; motor parks; beggars and destitute joints, roads and so on.

Instruments of Data Collection

Problems relating to the physical environment are real life problems that all and sundry could discern. Such problems could not however be necessarily understood in their broad perspectives – implications to the women psyche and health in particular. Consequently, for this study, the key methods to achieve the analysis of the problems and how they relate to public understanding were the following:

- i) Field Observations
- ii) Environmental Literacy Test Among the Women (ELTAW)

Observation is a twin project where in the first instance, the researcher undertook a fieldwork which exposed him into close contact with the types of environmental problems that sweep the study area. This involved random inspection of some refuse collection points and assessing and relating them to the waste materials derivable from homes and by extension women. The second phase of observation focused on the women's environmental behaviour. The environmental behaviour said a lot about the level of public awareness, skills and attitudes available to women. The women's environmental behaviour on the other hand, entailed how they react to the perceived and obvious ecological risks. The environmental behaviours of women are observable from the refuse collection points and from their attitude while buying essential commodities and from their homes sanitary conditions.

By and large, the test sought to find out the actions, reactions, postulations and beliefs held by people about the problems of environmental abuse within the study area. The issues covered include sources of waste and energy; energy sources based on efficiency, and the level of environmental education among women in urban and Kano.

Results and Discussions:

Analysis of the Field Observations and ELTAW

In this section, analyses of the observations made at the field are outlined. Descriptive and inferential statistics are used and the findings are also revealed. Descriptive statistics is mainly drawn from percentages of given values of items tested. While chi-square (X^2) a non parametric statistical technique was used for the statistical analysis of the research problem.

a) Field Observations

The field observations reveal the following findings:

i) Consumption of Unhygienic Items

It is observed that the inhabitants of many areas in the urban Kano patronise the ‘markets’ of some edible materials e.g. fruits, vegetables, food ingredients and others which are displayed for sale at some precariously hazardous areas e.g. hospitals neighbourhoods and dumping sites. Such situations were found around Murtala Muhammad Specialist Hospital; Infectious Diseases Hospital, Fagge; Sheikh Jidda at Gabon Gari; Jakara maternity and Nassarawa Specialist Hospital.

It is observed that the inhabitants of Kano city and its environs especially the children and women carelessly patronise the sellers of uncovered food items which are often exposed to houseflies and unhealthy breeze which might be carrying one form of pollutant or the other. In the course of field observation, this researcher cast a glimpse of children fetching water from a broken tap situated within a drainage that carries waste water from various unhygienic sources.

ii) Spatial Distribution of Refuse Collection Points

The field survey also revealed that the spatial distribution and composition of the refuse dumps in the study area is skewed. In the core city or *Birni*, there is average of four (4) dumping sites per major tarred streets of the city. Fagge has an average of three (3); Sharada-Rijiyar Zaki has two (2); Gyadi-Gyadi-Naibawa axis has two (2); GRAs (Nassarawa/Hotoro) get one (1); and Kurna-Rijiyar Lemu gets average of two (2).

For all the areas, field observation identified that in each case, there is significant proportion of household waste, which includes both biodegradable and non-biodegradable types of solid waste.

iii) Women and Fuel wood

The field outing has helped in exploring the new dimensions in the relationship sphere between women and the environment. It is observed that, in some areas within the old city of Kano, some women are now involved in marketing of the wood fuel. An act induced merely by the will to escape the hit of the urban poverty. This phenomenon is quit unknown a decade ago. It is also found that some women show preference to charcoal (burnt wood) at the wake of scarcity or inflation in the price of kerosene and cooking gas. This indicates the failure of the government in instilling and supporting best practices for environmental management among the citizens.

b) Descriptive Statistics of the Environmental Literacy Among the Women (ELTAW)

Table 1: Women's level of Education in the Study Area

Degree and above	23%
A Level: NCE, Diplomas and IJMB	20%
Ordinary Level	20%
Islamiyya Education	23%
Primary School	10%

Source: ELTOW 2005

The Table 1 shows that women in the study area are *fairly* (though formally) educated from elementary to tertiary levels. This however will mean that formal education is distinct from informal education that comes from among others the media. An educated lady must not know adequately about the environment and sanitation principles especially if she has not been exclusively trained in subjects like Home Economics/Home Management

Family Population Size and Waste Generation

The average size for the homes in the sampled areas for this research is estimated at nine (9) persons per home. And a random sampling of the weight of the solid waste generated by homes is put at average of 50 kilograms per week. This means that a group of twenty homes will generate one ton of waste per week. Urban Kano is settlement with tens of thousands of living houses.

Table 2: Opinions on the Sources of Domestic Waste in all the areas

Consumables	100%	Extra Occupational Sources:
Animal Waste	33%	Tailoring, sell of items etc =
Plants Waste	22%	40%
Wind Dust	7%	

Source: ELTOW 2005

From the table 2 above, it can be concluded that in urban and peri urban Kano apart from consumables, the respondents indicated that waste associated with raising animals (poultry inclusive) and waste released by plants (trees and ornamental plants) constitute another critical waste generating sources. In the same way 40% of the respondents mentioned that they generate extra waste through in house occupational means like tailoring which is very common among women in the city.

Table 3: Waste Evacuation from Homes: Time and Methods& and Home Facilities

Time	Percentage	Method	Percentage
Daily	33	To dumping sites	76
Weekly	43	Incineration	13
Fortnightly	10	Scavengers	10

Monthly & Others	3		
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Source: ELTAW 2006

Table 3 reveals that almost 83% of women in the urban and peri urban Kano evacuate waste from their homes to public dumping sites within short period of time. And this invariably means that dumping sites register waste restlessly and that women do not employ any means to tackle waste indoors. Additionally, talking about disposal techniques 76% of the respondents said that they send their domestic waste to dumping sites and only few incinerate and sell or allow scavengers to deal with their waste. 33% of the respondents claimed to have one refuse bucket in their homes while some 30% keep 2 and only 20% keep 3 and above containers. This indicates that the process of waste collection is poor because one or two buckets may not be adequate to a home with a sizeable population. Wet and dry waste materials may end in one bucket and that may accelerate growth of bacteria and some vectors like mosquito.

Response to the Government Policy

Almost 76% of the respondents claimed that they make use of the monthly sanitation exercise to tidy up their homes. If this is true, then it is glad to say that women are pretty ready to support most of the government policies on the promotion of environmental well-being.

Table 4: Energy Sources and Preference

Energy Type		Energy Type Preference	
Electricity	33%	Wood fuel	30%
C/Gas	26%	Kerosene	20%
Wood fuel	76%	Electricity	31%
Kerosene	23%	Gas	26%

Source: ELTAW 2006

Table 4 shows the percentages of the main types of energy consumed by women in the urban Kano. It shows alarmingly that wood fuel is consumed more than any other type and this is not a good story to Kano state as one of the states on the fringes of Sahara where more trees need to be planted. Although it has to be stated that in most cases, women said they combine two or more sources of energy for example kerosene and gas. In terms of preference, only 30% prefer wood fuel and this indicates that women make use of fuel wood only because they do not have alternative. And even those who prefer other sources claimed that it is based on their accessibility.

Table 5: Water Sources and Quality

Sources of Water	Percentage
Well/borehole	53
Mains	22
Vendors	26

Source: ELTAW 2006

From the table 5 above it shows practically that water supply is very unsatisfactory in the urban and peri-urban Kano especially in that over half of the respondents claimed that they get their water from boreholes and local wells. This means that well-to-do families use borehole while the have-nots make use of local wells. Asked about their satisfaction with quantity and quality of their water sources, 63% answered in the affirmative while 36% said they were not satisfied.

On the General Knowledge of Sanitary and Safety Conditions of Homes

Some 87% of the respondents claimed that they were knowledgeable enough of principles of sanity and safety of homes. While only 13% said

they were not adequately aware. What can be deducted from this finding is that, the claim by the majority to be fully aware may not be true. This is because, by mere looking at some of the findings above like in management of domestic waste one can invariably doubt such claims.

c) Inferential Statistical Analysis

Out of the 17 items of the Environmental Literacy Test Among the Women (ELTAW), two items focus on personal data that relate to educational and residential backgrounds of the respondents. On one hand, seven items tested the perception of the general environmental/ecological systems awareness. On the other hand; five items were interested on the public attitude towards environmental upkeep. Only two items tested the skills of environmental management available to the respondents. Each test response is scored between 5-1 base on the positive and negative responses given and the type of question at stake.

Table 6: Differences in the level of public education and the environmental quality among the inhabitants of urban Kano.

S/N	Area	Scores	X ² value
1	Kano Municipal	58	0.02
2	Dala	39	5.68
3	Nassarawa	55	0.07
4	Gwale	63	0.63
5	Tarauni	79	8.49
6	Fagge	72	3.94
7	Kumbotso	46	2.12
8	Ungogo	41	4.49
Total	Urban Kano		25.44

Data Source: ELTAW 2006

The calculated $X^2 = 25.44$; while the tabulated value at 00.5 level of significance = 14.07. Calculated value is higher than the table value therefore the null hypothesis is rejected. This means that perception (awareness) of the environment as a system is not uniform across the urban

Kano. Women residing in the elite zones like the Nassarawa GRA seem to be more informed and educated on the perception of environmental systems as compared to those in the slum zones like Dorayi.

Table 7: The environmental attitude of the women in urban Kano does not significantly differ within studied areas.

S/N	Area	Scores	X ² value
1	Kano Municipal	60	0.07
2	Dala	63	0.43
3	Nassarawa	59	0.02
4	Gwale	52	0.62
5	Tarauni	61	0.16
6	Fagge	61	0.16
7	Kumbotso	50	1.10
8	Ungogo	54	0.28
Total	Urban Kano		2.84

Data Source: ELTAW 2006

The calculated $X^2 = 2.84$; while the tabulated value at 00.5 level of significance = 14.07. The calculated value is less than the table value. Therefore the null hypothesis - H_{02} is retained. This means that the attitude of the residents towards healthy and safer environment does not significantly differ from one area into another. Observation has vindicated that as many elite areas also suffer from various forms of environmental decay with out commensurate efforts to reverse or curtail the situation.

Table 8: Basic environmental management techniques do not significantly contrast within urban Kano

S/N	Area	Scores	X ² value
1	Kano Municipal	40	0.24
2	Dala	35	0.10
3	Nassarawa	35	0.10
4	Gwale	40	0.24
5	Tarauni	31	0.97
6	Fagge	39	0.10
7	Kumbotso	41	0.43

8	Ungogo	33	0.43
Total	Urban Kano		2.61

The calculated $X^2 = 2.61$; while the tabulated value at 00.5 level of significance = 14.07. Therefore, the null hypothesis is accepted. This indicates that relatively people of urban Kano (across the board) have same level of skills of managing environmental problems. This confirms the H_{04} which envisions no significant difference in skills between the residents of urban Kano.

Recommendations

At this juncture, some recommendations will be prescribed in order to improve the contributions and performance of Hausa women in the management of environmental resources and sanitation of homes. Basically, the recommendations will come under the following:

- There is need for ladies to take up challenge of reducing their waste generating capacities and resources overuse and misuse. This can be achieved for example through optimum use of things like polythene bag. Women should always make sure that they only replace things like polythene bags *only* when it is necessary. In the same vein, women who make use of fuels like wood should make sure that they put it off after use. And that electricity should be used only when it is necessary. We often see homes with all lights on at the mid-day or burning wood even after finishing cooking. That is bad.
- Women as parents also have a pivotal role in checking children's waste generating ability by training them on how to reduce waste and the general environmental up keep. Charity begins at home.

- There is need for the government and civil societies to gear efforts towards mass enlightenment of the general public. Women in particular should be the target. Many of them are fairly educated formally but they need a reorientation on sanitation and sustainable use of resources. In Kano state, the government reorientation programme namely *Adaidaita Sahu* is in good weather to do that. The media should also create conducive operating climate for success of such campaigns by giving an airtime and print space.
- Government should always remain the Environmental Custodian No.1. As such, governments should as a matter of necessity come up with programmes that aim at reducing grassroots pressure-exertion-continuum on the environment. The recent removal of subsidy on petroleum products by the federal government is very negative and insensitive to the environment. Many people now find wood fuel as the best alternative and accessible source of energy. By extension, that means more tree felling. An appeal is hereby made to all the tiers of government in Nigeria to undertake vigorous programmes and projects on the supply of electricity in both rural and urban areas. Other sources like kerosene should be made cheaper and affordable to commoners.
- The public sector should liaise with the private sector in the supply and distribution of sanitised water for domestic consumption. Many homes have little or rather erratic supply of water. And without adequate water around, our homes hygiene is hardly attainable and sustainable.

Conclusion

Having looked at the concept of women and environment, it revealed that women are routinely in closest contact with environmental resources and the human settlements. And empirical case-study of the situation among the women inhabitants of urban Kano revealed the same. In a short hand, women are found to ready and willing to conform to the ideals of healthy and ideal environment but unfortunately they are not well enlightened to achieve that. By and large, urban women have great potentials and kinetic energy to play active role in environmental and habitat safety in this country. Women must be consulted in all campaigns for attaining environmental sustainability in our cities and towns. By and large, the chances of the society to achieve harmony with environment in the Nigerian city like Kano is a matter of the time, when women are enlightened and challenged to do that. They will surely do it.

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