

**Women Involvement in Environmental Protection and Management:
A Case of Nasarawa State**

By

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ABSTRACT

This paper provides a general review and a case study of women's involvement in environmental management in Nasarawa State. Primary data were generated from a questionnaire survey of women from five local government areas. Majority of the women (80%) are involved in farming and contributed significantly to land/soil conservation. Seventy percent of them have planted trees or flowers in the last five years, while 79% indicated clearing their surrounding daily, in terms of sweeping, clearing drainages, and refuse disposal. Problems being faced by the women include lack of waste disposal equipment, poor drainage systems, and lack of awareness among the general public. Appropriate recommendations were proffered to enhance women's involvement in environmental protection and management.

INTRODUCTION

A lot of studies on women and environment have shown that women are significant actors in natural resource management and they are major contributors to environment rehabilitation and conservation. In addressing some key environmental problems, women play a dominant role. Women, through their roles

as farmers and as collectors of water and firewood, have a close connection with their local environment and often suffer most directly from environmental problems.

Women's direct contact with environment has produced their deep- knowledge about the environment. Thus, women have served as agriculturalists, water resources managers, and traditional scientists, among others. Women are not only knowledgeable about the environment, they are also protective and caring (Akwa, 2008).

Women, being primarily responsible for domestic and household management, interact more intensively with both the natural environment and build the environment more than men. Consequently, they are more likely to suffer from a degraded home, neighborhood, and city environment and to shoulder more of the burden that goes with living in poor housing and communities with inadequate residential and health infrastructure, since they spend more time at home and its immediate vicinity (Etta, 1999).

Governments are now seeing the global dimension of a number of environmental problems, such as climate change, ozone depletion, dumping of hazardous wastes, destruction of biological resources and of forests, and the impact of desertification (Tolba, 1992). Therefore, the need to protect the environment becomes imperative.

Women have recorded successes in solving environmental problems all over the world. In India, the women realized that degradation of productive land has led to the erosion of top soil; the choking of water drainage was causing salinity and loss of food crops. They collectively lease degraded land and revived them through traditional farming. In three years, 700 acres of land were restored to productive use (Ress, 1992). They are more concerned about environmental protection and ecological preservation.

A lot has been said about women activities in environment improvement and protection. Moser (1991) distinguishes between three roles for women:

- i. As managers or maintainers of the natural environment,
- ii. Rehabilitators of the natural environment in the sense of sustainable development, and
- iii. As innovators in the use of appropriate technology in the creation of new environments.

Dankelman and Davidson (1998) observed that women play a key role in managing their natural surroundings and adopt several mechanisms to deal with the kinds of environmental crisis they face. They, however, observe that the responses of governments have not been significant and as a result women, men, and children continue to face problems including pollution, poor services, human waste pollution, fumes from household fuel, and the consequences of soil erosion and flooding.

As rightly noted by Dashe (1991), without the enhanced perception of a gendered analysis to guide into the future environmental management programmes, a crash is inevitable. Therefore, there is the need to understand the various ways women have actively participated in environmental protection and management with a view to integrate them into environmental management programmes. The objective of this paper is to appraise women's involvement in environmental management, with particular reference to Nasarawa State, Nigeria.

METHODOLOGY

This paper makes use of two types of data. The first are the secondary source materials obtained from past studies on women involvement in environmental protection and management. The second is primary data obtained through a questionnaire survey of 250 women in Nasarawa State. Five local government areas around the state capital were purposively selected for the survey. They are *Akwanga, Awe, Doma kokona, and Toto*. The respondents were randomly selected from the various wards and settlements in the study area. The data were analyzed using percentages.

A review of the role of women in environmental protection and management

(i) Water Resources Management

Women are always at the center of the management of the communal water resources and household water requirement. A survey conducted by Ebam Etta (1999) at Maroko Low-Income Settlement in Lagos confirmed this. At the communal level, women are always in-charge of the control and management of communal taps or water points. At times they lock the taps to prevent children from damaging the water pipes. At the household level, the burden of fetching water for cooking, washing etc. falls on the women and girls, while men control the water trade. Where women do not have access to the tap water, they make use of streams, rainwater, wells, rivers, etc. At times, women also suffer from

water pollution from untreated sewage, which has a lot of health hazards (Uyanga and Buteyo, 1999, Etta, 1999; Mascarenhas, 1999; Akwa, 2005).

(ii) **Women in Agriculture and soil Conservation**

All over the world, women contribute to agricultural production. They produce more than half of all the food that is grown (FAO, 1996). In Sub-Saharan Africa and the Caribbean, women produce 80% of the basic foodstuffs. In Asia, they provide fifty to ninety per cent of the labor force for rice cultivation. Women's roles in agriculture, as listed by Levinger (1987) include: production and distribution, planting and cultivation, weeding, hoeing, harvesting and storage, marketing, and home preparation and distribution of foods. In addition, 80% of African food is produced by women; 50% is planted by women, and 70% of the weeding and hoeing is done by women.

Women contribute to food production in Nasarawa state from growing of crops and keeping of livestock, such as sheep, goats, poultry, and rabbits (Akwa, 2005). As victims of soil degradation, women have participated actively in soil conservation projects. An example is the project Agro-Forestier in Yatenga, Burkina Faso. Women's input has been central (IDS, 1995). Thus, if humanity is to feed itself, environmental degradation must be contained.

(iii) **Women and flood Management**

Especially during the rainy season, incidence of flood is high (i.e April to October), so flooding is a regular problem in most places. Women play a significant role in the management of flooding either by clearing bushes, digging gutters, or baling water. At times they pay laborers to do sand filling for them. Flood management could be at the household level or community level. During the rainy season many houses get waterlogged and streets are flooded. So women play a vital role in environmental management.

(iv) **Drainage Management**

Women's involvement with environmental management and problems make them participate actively in keeping drainages around them clean and free from trash and sand. According to Kwagala (1999), in his study in Kampala, Uganda, drains are mainly cleaned by the women on a regular basis or pay to have them cleaned.

(v) Solid Waste Disposal

This presents many challenges, particularly in the large cities whereby the amounts of solid waste are increasing faster than the growth of population. Solid wastes are dumped at compound dumping or undeveloped land or left at various illegal dumps (Uyanga and Buteyo, 1999). Women, because they are closer to the environment, engage in environmental management by cleaning the environment and keeping it clean, especially in terms of garbage disposal. Given the health hazard of garbage, women see to its regular disposal at the community level, either by doing it themselves or pay people to do it. This is because the dumping ground stinks and can lead to outbreak of diseases, if it is not burnt in time or collected by the Environmental Agency Unit.

In addition, polythene bags and plastics are causing a lot of eyesore in the urban centers because of their non-degradable substances. Discarded packaging plastics create a visible littering problem and contribute to air pollution if the wastes are burnt.

(vi) Human Waste Disposal

Since environmental health is essential to prevent certain diseases, women take an active part in preventive measures against environmentally transmitted diseases and waterborne diseases, such as malaria, diarrhea, cholera, cough, cold, measles, etc. In some places, the slum areas or urban informal sector or rural areas, most houses do not have latrines and so the residents do use drainage or polythene bags and later throw them on the streets, drains, or anywhere they can. Some residents that have latrines or water system toilets don't use them, especially the children. Studies have shown that eventually, women are generally responsible for human waste disposal of children and cleanliness of latrines and other facilities (Kwagala, 1999). Thus, the burden of human waste disposal falls on women.

(vii) Forest Management and Tree Planting

The need to protect biological diversity (forest) has been realized. This is because forests play a vital role in protecting the soils, watersheds, and climatic stability. They are also a rich source of products – ranging from fruits, pharmaceuticals, and latex to timber. Apart from that, Tolba (1992) rightly noted that loss of the species and the forests is something that cannot come back again; extinction is forever. Whereas, water pollution, air pollution, ozone depletion, and desertification could all be controlled or minimized. Unfortunately, the main sources of energy (cooking fuel) for women are from natural

resources: charcoal, firewood, and kerosene - intensive use of which can lead to deforestation, soil degradation, and air pollution. Only very few rich women use gas or electric cookers. The interesting part of the whole dilemma is that we have greater women's participation in forest management through tree planting, rehabilitation, or protection. For example in India, women participate in Forest Management Scheme (IDS, 1995). Farm forestry is being practiced whereby small holders are encouraged to grow more trees on their land. The women tend the trees after planting to maturity.

Similarly, in Kenya, soil degradation and deforestation have created an acute shortage of wood, the women's major source of energy. Thus, a Green Belt Movement of Kenya was formed; it planted over 7 million trees in 10 years and set up over 1,000 tree nurseries to the extent that it harvests fuel wood from its own trees and the fruit trees are bearing fruits. In addition, women participate in providing seedlings in nursery and flowers to beautify the environment (Maye, 1994). It is now very clear that women globally are playing a key role in the protection of the environment.

As rightly pointed out by Maye (1994), women worldwide are part of a growing movement for the protection of the living world, environment health and security, social justice, and the alleviation of poverty. Women play a major part in the protection of biological diversity through their many roles and responsibilities. In the South, women act as resource managers. Women tend the fields and grow the food that feeds their families (in fact, women grow most of the food in Africa). They gather the firewood and raise the alarm when the forest dwindles.

In India, the threat of deforestation led to the rally of the local women to civil disobedience to protect the ecosystem. This is because their well-being was closely tied to that of the forest in terms of food, fire wood, pure water, etc.

Pertaining to the need for restoration of the forests, women worldwide also have known the essence of not only protecting the biodiversity, but to restore and recreate it. As we have stated earlier, Wangari Maathai founded Kenya's Green Belt Movement, which comprises of over 80,000 women for planting of trees. They established more than 1,000 nurseries and plant a variety of trees to satisfy human and non-human needs (Maye, 1994).

Thus, in many countries (developed and developing), women have championed the resistance to non-sustainable resource exploitation. For example, Penan women and children have spent weeks on logging blockade in Sarawak, attempting to protect what is left of the world's oldest rainforests on the Island of Borneo. Maye (1994) made it clear that the rate of harvesting there is clearly not sustainable, and the rate of extinction is excessively high.

Vandana Shira of India has also raised awareness of the potential loss of genetic diversity as a result of the patenting of life forms. In Columbia, Margarita de Botero has increased awareness of the need to protect biodiversity through the Green University. From the foregoing, we can see that women are in the forefront of advocating for the protection of biodiversity.

Women NGOs in Nigeria, Women Community Based Organisations (CBOs), and individuals have contributed a lot to the protection of the environment and forests (biodiversity). In advanced countries, Collee McCrory has done a lot as regards environment, and more specifically Late Rachel Carson of the United States raised the alarm about the dangers of biological diversity and human health from the indiscriminate use of chemical pesticides. It seems as if, women are pushful in the move for the protection of our ecosystems for sustainable human development.

LESSONS FROM NASARAWA STATE

This section discusses the results of the questionnaire survey of women's participation in environmental management in Nasarawa State. The age and marital status of the women is shown in Table 4.1. Only 4% of the women surveyed are below the age of 20 years. Majority of the women (32%) are in their middle ages (20-39 years). The implication of this age distribution is that most of the women are still in their prime ages and, hence, energetic to take an active part in environmental management activities.

Marital status indicates that 79.2% of the women are married, while only 20.8% are single. This high proportion of married women in the study area suggests that they are likely to be more responsible in protecting and keeping the environment clean because of their roles as home keepers.

A majority of the women surveyed (60.8%) are involved in farming (Table 4.2). This confirms findings from other studies that women participate greatly in food production, especially in developing countries. As earlier established in the review, women contribute significantly to land/soil conservation. In the study area, the most common method employed by women in soil conservation is mulching.

Table 4.1: Age and Marital Status of the Surveyed Women

Age Group	Number	Percentage
Less than 20 years	10	4
20 - 29 years	70	28
30 - 39 years	80	32
40 - 49 years	48	19.2
50 - 59 years	10	4
60 years and above	32	12.8
Total	250	100
Marital status	Number	Percentage
Married	198	79.2
Single	52	20.8
Total	250	100

Source: Field Survey, 2008

One of the ways protecting the environment and reducing hazard, such as windstorms and erosion, is by planting trees. In the study area, the survey revealed that almost 70% of the women have planted trees or flowers in the last five years. This again buttressed the previous findings that women are actively involved in tree planting. When asked where the trees or flowers were planted, about 70% indicated their compounds, 21% planted trees on the farm, while 4.6% planted theirs in other places. Fruit trees (e.g. mango, citrus, etc.) constitute the bulk of the trees planted by majority of the women. This is done with the twofold objectives of protecting the environment and also providing fruits for the household.

Women are main actors in environmental sanitation of homes and communities. About 79% of the women surveyed indicated that they clean their surroundings daily, 19% do it weekly, while 1.6% do it occasionally.

When asked the major activity they perform in cleaning the environment, the majority (58.4%) indicated sweeping. This is followed by weeding (16%) and clearing of drainage (16%). Other activities, such as packing refuse, filling ditches, etc. constitutes 9.6%.

The respondents listed the following (Table 4.2) as the problems confronting women in environmental management in the study area.

Table 4.2: Women Involvement in Environmental Management

Involvement in farming	Number	Percentage
Yes	152	60.8
No	98	39.2
Conservation Methods being used	Number	Percentage
Mulching	76	50.0
Planting across slope	28	18.8
Terracing	48	31.2
Planted Trees in the last 5 years	Number	Percentage
Yes	174	69.6
No	76	30.4
Where Planted	Number	Percentage
On the farm	36	20.7
Around the compound	130	74.7
Others	8	4.6
Species Planted	Number	Percentage
Fruit trees	84	48.30
Flowers	34	19.50
Others trees species	56	32.20
Frequency of Cleaning the Environment	Number	Percentage
Daily	198	16
Weekly	48	58.4
Occasionally	04	9.6
Major Activity in Environmental Cleaning	Number	Percentage
Weeding	40	16
Sweeping	74	58.4
Cleaning drainage	40	16
Others	24	9.6

Source: field survey, 2008.

- (1) Lack of environmental awareness among the general public.
- (2) Lack of waste disposal equipment.
- (3) Poor drainage systems.

RECOMMENDATIONS

To enhance women's participation in environmental management for sustainable development the following recommendations are proffered, given the challenges facing the women: Isolation of women from decision making on the environment has made their views not heard and they could not influence decision making process which affect the environment they interact with. Thus, women should be encouraged to participate in committees on environmental protection projects, programmes, and policies to address gender imbalances in decision making. Women's access to land and other resources should be ensured and not undermined. The government will have to come in, in this respect, to ensure gender equity regarding access to and control of resources.

Environmental education is required for the generality of Nigerians for sustainable development. Many people just litter the streets with pieces of paper, oranges or banana peels, cans, plastics and polythene bags, just for the fun of it. Environmental education will produce change in attitude of the public, as well as impact specific knowledge on the generality of Nigerians.

Incinerators placed at strategic places should be used by the public, as well as the environmental sanitation containers. Separation of plastic from municipal solid wastes and recycling of plastic will help to reduce the contribution of plastic to the solid waste problem, as well as eliminate the unsightly littering. "Biodegradable plastic" could also be used (Pryde, 1973). These will eventually decompose.

Women education and access to education for girls should be seen as a policy priority. Educated women will contribute more significantly to bridging the gap between environment and development. Empowerment of women in sustainable human development and in relation to the protection of the environment must be recognized and sustained.

CONCLUSION

This paper has discussed the various ways women have participated actively in environmental protection and natural resource management in order to ensure sustainable use of environmental resources. Recommendations are proffered, especially those that can help the goal of women

empowerment. The critical role of women, as resource managers, as community activists, as environmental advocates, must be recognized when strategies for the protection of the environment are being developed.

Women should be allowed to participate at the local, regional, national, and international levels on environmental issues. In the words of Maye (1994), this participation, to be meaningful, should go beyond tokenism. To make a significant impact on decision making, women should be present in equal numbers to men (or at least on a 40:60 proportional split of genders). As resource managers, women should be consulted and supported in what they are already doing to protect the environment. Specifically, more women should be involved in decision making with regard to policies, programmes, or funding of environment.

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