

1 **Women's Participation in Natural Resource Conservations in Giwa Local Government** 2 **Area of Kaduna State, Nigeria.**

3

4 **Abstract**

5 The study was conducted to assess the Role of Rural Women in Natural Resource
6 Conservation in Giwa Local Government Area of Kaduna State. A multistage sampling
7 technique was used to select respondents for this study. The first stage involved the purposive
8 selection of Giwa local government area. Secondly, 5 villages were randomly **selected** and
9 20% of the respondents from each of the villages were randomly selected. Primary data was
10 collected from 120 respondents using **structured** questionnaire. The study revealed that the
11 usage of indigenous knowledge had influence on women's participation on management and
12 conservation practices. The study also **shows** that, the major problems encountered by rural
13 women in conservation practices are plant diseases and pollution. It was recommended that,
14 sensitization in rural communities by government so as to fight ecological destruction.
15 Degradation of natural resources gradually diminishes the capacity of women in the study
16 area.

17 **Keywords: Women Participation, Natural Resource Conservations, Nigeria.**

18

19 **INTRODUCTION**

20 Over the past 50 years, ecosystems have **changed** more rapidly than in any comparable period
21 of time in human history, largely because of the need to meet rapidly growing demands for
22 food, water, timber, fiber, and fuel (natural resources) for their livelihoods (FAO, 2004;
23 MEA, 2005). Thus, livelihoods of women and men depend on the condition of natural
24 resources (World Bank, 2005). Over many generations, women have learnt how and when to
25 use the natural biodiversity that surrounds them. Women, particularly those living in the rural

26 areas have considerable knowledge and experience of managing and conserving natural
27 resources. Through their use of natural resources, women provide sustenance to their
28 families and communities. As consumers and producers, women play an important role in
29 promoting sustainable development through their concern for the quality and sustainability of
30 life for present and future generations (Montenegro, 2006).

31 The 1970s and 1980s represented an era in which protection and conservation of the
32 environment became an integral part of national and international policies (Davidson, 2005).

33 Unsustainable and uneven consumption levels have resulted in an increasingly stressed
34 environment, where natural disasters, desertification, and biodiversity loss endanger humans
35 as well as plant and animal species. The complex cycle of poverty, inappropriate
36 development and environmental degradation, have forced people into activities which include
37 destruction of the environment (United Nations, 1995; Buckingham, 2000; Huyun, 2005).

38 According to Ivbijaro (2006) society is ecologically sustainable when it conserves ecological
39 life-support system, conserves biological diversity; ensures that the uses of renewable
40 resources are sustainable and minimizes the depletion of non-renewable resource.

41 The United Nations conference on environment and development held in Rio de Janeiro in
42 June 1992 highlights the importance of women as playing a vital role in environmental
43 conservation and development since they constitute the majority in the world (Montenegro,
44 2006). The challenge of reversing the degradation of natural resources involves significant
45 changes in practices (FAO, 2007a). This paper is therefore aimed at analyzing the role of rural
46 women in natural resource conservation for sustainable development in Giwa Local
47 Government area of Kaduna State.

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1.1 Objective of the study are to

- i. describe the socio-economic characteristics of women in the study area;
- ii. describe existing natural resource conservation practices in the study area;
- iii. assess the role of rural women in natural resource conservation practices in the study area;
- iv. identify the problems women encountered in natural resource conservation in the study area.

2.0 LITERATURE REVIEW

2.1 The concept of natural resource conservation and management

Natural resources depict occurring substances that are considered valuable in their relatively unmodified natural form. Natural resources occur naturally within environments that exist relatively undisturbed by mankind, in a natural form. Natural resources are materials and components that can be found within the environment. Every man-made product is composed of natural resources (at its fundamental level). Natural resources may exist as a separate entity such as fresh water, and air, as well as animals and aquatic life, or it may exist in an alternate form which must be processed to obtain resources such as metal ores and soil (www.ecoca.ro/meteo/tutorial/.../Conservation_and_Preservation.html).

There are very few resources that are considered inexhaustible (will not run out in foreseeable future) – these are solar radiation, geothermal energy, and air (though access to clean air may not be). The vast majority of resources are exhaustible, which means they have a finite quantity, and can be depleted if managed improperly.

2.2. Rural women's indigenous knowledge in natural resource conservation

Women living in rural areas have learnt what, how and when to use the natural biodiversity that surrounds them. They have the knowledge and the awareness necessary to exploit natural

74 resources for food, medicine, textiles and energy in a sustainable way (Montenegro, 2006).
 75 During the 1995 Beijing conference, it was stated that women have particular knowledge of
 76 ecosystem conservation. Their special knowledge of the environment is derived from the
 77 various activities they are engaged in; this knowledge not only includes practical, technical
 78 and environmental information but also embodies “wisdom that accrues with training and
 79 experience” (Thomas *et al.*, 1996).

80 It was noted that for centuries, in India, women’s knowledge of nature and water resources
 81 have provided the basis for making water safe for drinking (Asia and Pacific Development
 82 Center, 1992). Today large numbers of drugs that benefit the entire world have been
 83 discovered by following leads from indigenous knowledge systems. Drug discovery is based
 84 significantly on indigenous women’s knowledge of the uses of plants and the medicinal
 85 properties (Montenegro, 2006). In Mali, rural women use indigenous knowledge to produce
 86 *Jatropha curcas* oil as raw material and fuel. Traditionally, the seeds were harvested by
 87 women and used for medical treatment and local soap production. Rural women use
 88 *Jatropha curcas* for medicine i.e. seeds as laxative, latex to stop bleeding and against
 89 infections, leaves against malaria (Hennig, 2002). Rural women in most African villages have
 90 acquired an intimate, practical knowledge of suitability of different tree species for cooking,
 91 they know which trees burn slowly and which burn faster, which smoke and kindle easily;
 92 thus conserving wood (Sontheimer, 1991).

93 A lot of studies on women and environment have shown that women are significant actors in
 94 natural resource and contributors to environment rehabilitation and conservation. Women’s
 95 direct contact with the environment has produced their deep knowledge about the
 96 environment; they are also protective and caring. Women have held much of this indigenous

97 knowledge which is customarily passed through generations of women from grandmother to
98 granddaughter, aunt to niece, mother to daughter (Thomas *et al.*, 1996).

99 METHODOLOGY

100 2.3.1 Study area

101 The study was carried out in Giwa Local Government Area of Kaduna state (LGA), Nigeria.
102 This LGA lies between latitudes 11.20⁰ and 11.50⁰N and longitudes 7.0⁰ and 7.5⁰E. It is
103 located northwest of Zaria in the Northern Guinea Savannah and about 640m above sea level.
104 The local government is bounded in the north by Funtua and Malumfashi local government
105 areas of Katsina state and on the west and south by BirninGwari and Igabi local government
106 areas of Kaduna state respectively (N P C, 2006).

107 Dry and wet seasons are two distinct seasons in the study area: the wet season which begins
108 between April / May usually for 6 months and the dry season starts in November and ends
109 around late March. Mean annual rainfall varies between 1100 and 1520mm and mean
110 maximum ambient temperature varies from 27-35⁰C, depending on the season. The average
111 relative humidity during the wet season is about 72%, and during harmattan period is about
112 21%.Giwa LGA has an estimated population of about 286,427 (NPC, 2006). Majority of the
113 population engage in traditional system of farming. Agricultural production is undertaken by
114 small scale farmers, use of heavy machinery and other sophisticated implements is minimal.
115 Mixed cropping is more common amongst farmers.

116 2.3.2 sampling technique and data collection

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118 A multistage sampling technique was used to select respondents for this study. The first stage
119 involved the purposive selection of Giwa local government area. Secondly, 5 villages (Giwa,
120 Shika, Yakawada, Gangara and Galadimawa) were randomly selected. Furthermore, random

sampling was also employed in selecting respondents from each of these villages. In all, 120 women were randomly selected for this study. Primary data were collected by the use of a structured questionnaire (interviewer-administered). Data was collected based on the socio-economic characteristics, natural resources in the area, their experiences with resource conservation and constraints encountered. Descriptive statistical tools were used to analyze the data, these includes the use of tables, frequency distribution, percentages.

3.0 RESULTS AND DISCUSSION

3.1 Socio-Economic Characteristics of the Respondents

The result of the study (table 1) revealed that majority (57%) of the respondents were between the ages of 18-30 years. This implies that, the respondents are in their youthful age, still active and can participate adequately in natural resources conservation activities. Education is an important socio-economic factor that influences farmers' decision because of its influence on farmers' awareness, perception and adoption of innovations that can bring about increase in production or reduction. The result shows about 42% of the respondents do not have any formal education and 27% had secondary education. This indicates that the respondents have low educational level.

Forty two percent (42%) of the respondents household size was between 4-6 persons. This shows that a reasonable number of the respondents have a large household size. High household size provides enough persons for family labour and less money will be needed to pay for hired labour (Oluwatayo *et al.*, 2008). With more number of people in a family, there is tendency for increase in the level of family labour supply to accomplish various farm operations. However, the absolute number of people in a certain family cannot be used to justify the potential for productive farm work. This is because it can be affected by factors namely; age, sex and health status.

Findings from the study area showed that 45% of the respondents are traders while 50% of the respondents are farmers. This implies that majority of the rural women are farmers. Similarly, United Nations (2004) stated that women are rural sustainers based on their activities; women carry out most of the work, cultivating the soil, tending livestock, preparing food, fetching water, collecting firewood and wild plants, dealing with waste and managing the household.

Table 1: Distribution of the respondents base on socioeconomic characteristics

Variables	Frequency	Percentage (%)
Age (years)		
18-30	68	56.7
31-40	26	21.7
41-50	22	18.3
51-60	4	3.3
Educational level		
Primary education	38	31.7
Secondary education	32	26.7
No formal education	50	41.7
Family Size		
4-6	50	41.7
7-10	58	48.3
11-13	10	8.3
14 and above	2	1.7
Major occupation		
Trading	54	45
Hair dressing	6	5
Farming	60	50
Total		

3.2 Natural resources utilized and conservation practices

Table 2 shows the existing natural resources utilized by the respondents in the study area. Eighty three (83%) percent of the respondents identified soil, firewood, water and plant extracts. This implies that over 80% of women utilize these resources in the study area, which involves resource conservation and management. These activities are major among others

like fuel-wood collection, fetching of water for domestic use, cooking, treatment of common rural ailments using plant extracts and soil conservation practices such as usage of local manure to replenish the soil fertility. This result is in consonance with Lope and Gabriael (2007) states that women are typically involved in the selection, improvement, and adaptation of local plant varieties, as well as seed exchange, management. They often keep home gardens where they grow traditional varieties of vegetables, herbs, and spices selected for their nutritious, medicinal, and culinary advantages. Women, therefore, play an important role in maintaining biodiversity, working against the decrease in biodiversity caused in part by men favoring cash-oriented monocultures.

The role of rural women in natural resources Conservation Practices

In conserving natural resources, about 1.7% of the respondents employ the method of afforestation (tree planting) in conservation; 10% of the respondents employ the method of land fallowing in conservation of natural resources; 3.3% of the respondents employ the method of using tree barks as herbs for medicinal purposes; 3.3% of the respondents employ erosion control method in conservation of natural resources while 81.7% of the respondents employ all the above mentioned methods (afforestation, land fallowing, and erosion control) in conservation of natural resources. This implies that rural women are actively involved in conserving natural resources in their localities in which a variety of methods are used by these women to conserve land resources and diversity of species. This is in line with Wuyep et al. (2014), who state that One of the ways of protecting the environment and reducing hazard such as wind storms and erosion is by planting trees, mulching, multiple cropping, crop rotation, use of natural fertilizers are mostly methods employed by rural women in conserving and managing natural resources. Similaliy, Montenegro (2006) observed women in some part of Africa, for generations have used the bark of *Prunus Africana* as a cure for

186 prostrate diseases and were always careful to harvest in a manner that preserves this resource.
 187 Likewise, the indigenous women in Chile who spin sheep's wool know the type of plant
 188 species used to dye wool fiber and also the manner harvest in a manner that ensures re-
 189 growth.

190 **Table 2: The Existing natural resources management and conservation practices**

Variables	Frequency	Percentage (%)
Existing natural resources		
Soil	4	03.3
Firewood	4	03.3
Water	6	05.0
Plant extract	6	05.0
All of the above	100	83.3
Conservation of natural resources		
Afforestation	2	01.7
Land fallowing	12	10.0
Tree bark as herbs	4	03.3
Erosion control	4	03.3
All of the above	98	81.7
Total	120	100

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193 **3.3 Problems encountered by women in natural resources management and** 194 **conservation practices**

195 Women in the rural areas encounter problems in conservation practices. Three percent (3%)
 196 of the respondents stated that pollution was the problem that they encountered while
 197 managing natural resources; 35% stated that depletion of soil nutrients was the problem that
 198 they encountered; 55% says that plant diseases was the problem encountered; 03.3% choose
 199 plant extinction while another 3.3% says traditional belief were all problems associated with
 200 women in natural resources management and conservation practices. This means that, the
 201 most common or major problem encountered by rural women in managing natural resources
 202 as well as in conservation practice is that of diseases.

203 **Table 3: Problems associated with women in natural resources management and**
 204 **conservation practices**

Constraining Variables	Frequency	Percentage (%)
Pollution	4	03.3
Depletion of soil nutrients	42	35.0
Plant diseases	66	55.0
Plant extinction	4	03.3
Traditional belief	4	03.3
Total	120	100

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207 **CONCLUSION AND RECOMMENDATIONS:** Conservation and wise use of natural
 208 resources is mostly the domain of women. However, degradation of natural resources
 209 gradually diminishes the capacity of women in sourcing and conserving of natural resources.
 210 Their traditional activities, skills and modern knowledge are crucial in understanding why
 211 land deteriorate or remain viable, why it is becoming increasingly important to protect soil
 212 from erosion and degradation. It can therefore be stated that women **will** accept natural
 213 resource management and conservation practices from Extension Agents, Crop protection
 214 experts and Plant scientist to take care of the predominant problems faced. Therefore the
 215 following recommendations **were** made:

- 216 i. **The findings show that majority of the rural women studied use indigenous**
 217 **knowledge in understanding the concept of natural resource conservation.** It is
 218 recommended that research institutions should bring about modern methods of
 219 resource conservation for sustainable development so as to boost sustainability,
 220 reduce ecological destruction and depletion, improve their livelihood and also make a
 221 significant contribution to the development of local communities.

- 222 ii. It is evident that the rural women had little or no access to formal education. It is
 223 recommended that government and other intervening agencies on agriculture should
 224 introduce adult education/extension to educate rural women on new and improved
 225 natural resources conservation and management practices.
- 226 iii. The study had identified some constraints such as water pollution, soil depletion, plant
 227 extinction, diseases that may affect the activities of rural women. It is recommended
 228 that government and other intervening agencies on agriculture should ensure that
 229 strong institutional linkages and awareness are created among farmers for mitigating
 230 the negative effects of these human activities on natural resources to their livelihood.

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