

Gender Participation in Environmental Management in Tofa local Government Area of Kano State: Implications for Sustainable Development

Nuratu Mohammed PhD
Dept. of Geography,

Bayero University, Kano
nuratu1960@gmail.com

Abstract

This study examined gender participation with particular emphasis on the involvement of women's in environmental management in Kano State. Primary data was generated from questionnaire survey of women Tofa local government area of Kano state. A total of 405 samples were randomly selected from the whole of the sampled settlement. The sample selected in each settlement was proportional to the population of each settlement sampled. This way 105, 129, and 170 samples were selected in Yansab, Yanako and Yarimawa respectively. Majority of the women (75%) are involved in other income generating activities other than farming and are therefore not in direct contact with land resource. Only 15% of the women were farmers farming and contributed significantly to land/soil conservation. Approximately sixty four percent (64%) of them have planted tree or flowers while 82% of the total women indicated clearing their surroundings daily in terms of sweeping, and refuse disposal.

Introduction

Moser (1993) identified three main roles of women, which are reproductive, productive and community managing roles. The reproductive role comprises the childbearing/rearing responsibilities and domestic tasks undertaken by women, required to guarantee the maintenance and reproduction of the labour force. It includes not only biological reproduction but also the care and maintenance of the workforce (husband and working children) and the future workforce (infants and school-going children). The reproductive roles of women is seen as biological reproduction vis-à-vis, child bearing/rearing or reproduction of the future labour force which is actualized through their caring and nurturing roles including gathering food ,fuel providing the families' water needs. the As a result of these roles which brings women into direct contact with environment women have gained deep-knowledgeable about the environment As a result of their deep knowledge of the environment women are also protective of the environment

Together with men, women in rural Africa, provide a major part of the labour force involved in all sectors of production including food production, processing and marketing. In fact, according FAO (1994), development in Africa is unattainable without the active participation of women since women who constitute more than half of the world's population perform between Sixty to eighty percent of agricultural work is done , yet their impact and needs are not always taken into account.

Women through their roles as farmers and as collectors of water and firewood and users of these natural resources have a close connection with their local environment and often suffer most from environmental degradation/problems. Women are the most affected by environmental, yet the same women are often blamed for resource depletion, ass every day, young, old and pregnant women trek kilometres in search of fuel, food, fodder and water in trying to carry out their caring nurturing roles (reproductive roles) In the words of Moser, (1993) "the poorest of the poor, women, are mostly negatively affected by environmental degradation"

In ensuring environmental sustainability, United Nations Conference on Environment and Development (Earth Summit) in Rio de Janeiro in June, 1992 came up with Agenda 21, which among other things, recognized the link between environment and development issues. Principle 20 of the Rio Declaration on Environment and development highlights the importance of women as playing a vital role in environmental management and development since they constitute the majority in the world and specifically, in the African Landscape.

The Millennium Development Goals (MDG) number 7 aims to ensure environmental sustainability through many policies, It calls for the increasing number of women involvement in issues of environmental sustainability, biodiversity, climate change, and the protection of natural resources, accordingly it is projected that that by the year 2015 MDG 7 will be achieved. In another move to increase the involvement of women in environmental management, the Eco-Feminist movement of the twenty first century however coined a contemporary approach, gender, environment and development (GED), which encourages environmental program that focus on women's roles in environmental management.

It is against this backdrop that this paper seeks to examine the role of Gender in environmental management in the study area with emphasis of women's participation-in farming/soil conservation, tree planting, and flood control, environmental sanitation and waste management

Definition of Terms

The term Gender is used to discourse all the socially constructed attributes, roles, activities, and responsibility connected to being male or a female in a given society (Falola, 1996). This means that on Gender identity, determines how we are perceived, and how we are expected to think and act as women and men because they way society is organized. Thus, although physical differences

between the sexes are universal, gender is extremely variable between and within societies on other cultures.

Resources management: Includes all those activities which are designed to govern the use of lands, forest, water and mineral resources in given environment, taking into account environment conditions, social, economic and political implication, technological, national policy, and possible future needs, (Shettima,2006).

The term rural landscape refers to recovering all resources that it processes and the interrelationship that are established in it (Mohammed,1991).It is generally dominated by extensive uses of land, such as agriculture and forestry, or large open spaces of underdeveloped land.

According to Haq (1993), the United Nation Development Program (UNEP) defined sustainable development as programs to improve people's quality of life within the carrying capacity of the earth's life support systems, that is meeting the needs of the present generation without damaging the earth's resources in such a way that would prevent the future generation from meeting theirs, (Haq,1993). It emphasised equitable development, which bridge for the sustainable development to be achieved.

The participation of women in environmental management can be reviewed from the perspective of their involvement in agricultural activities in their own right as farmers and/or as peasant farmers wives as in Asia where women represent a significant percentage (35-54%) of the agricultural labour force (Agarwal,1985). In the Caribbean specifically in Jamaica, women play a significant role in agricultural production (FAO, 1994) and in sub-Saharan Africa it has been estimated that women produce between 60-80% of the continents food needs as well as staple grains on subsistence plots which vast majority holds no title to.

As victims of soil degradation Women farmers are also known to be active participants in soil conservation. According to Adebayo et al (2005), women have participated actively in soil conservation projects as sited in the project Agro-Forestry in Yatenga, Burkina and in Adamawa state (Adebayo et al, 2005).

As far as forest management is concerned it has been in literature that there is a greater participation of women through tree planting, rehabilitation or protection. For example in India, with women's participation in forest Management Scheme where small holder women farmers are encouraged to plant trees on their own land (Ibid).

Women NGOs in Nigeria, Women Community Based Organizations (CBOs) and individuals have contributed a lot to the protection of the environment and forests (biodiversity). It seems as if, women are more pushful in the move for the protection of our ecosystems for sustainable human development.

In addition to the role of women in farming, soil conservation and tree planting, women also play active role in flood management either by clearing bushes, digging gutters, or baling water either individually or on a communal basis.

Women also participate in drainage management with the sole aim of keeping the drainage around them clean and free from trash and sand. According to Kwagala (1999) cited in Adebayo et al (2005) in the study in Kampala, Uganda, drains are mainly cleaned by the women on a regular basis or pay to have them cleaned.

Women are also known to be active participants as far as environmental sanitation and solid waste disposal is concerned. For most especially in large urban cities solid wastes are dumped at compound dumping or undeveloped land or left are various illegal dumps (Adebayo et al, 2005). Women, because they are closer to the environment, engage in environmental management by cleaning the environment and keeping it clean.

And as far as human waste disposal is concerned, studies have shown that in some parts of Africa, 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.

Materials and Methods

Study covers three settlements purposively drawn from Tofa local government of Kano states. The villages are Yansabo (long 8⁰20' and lat 12⁰40'), Yanako (8⁰21' and lat 12⁰10'), and Yarimawa (see figure 1) The study area is Tofa L.G.A has 33 political wards with its headquarters in Tofa. The area is served mainly by Watari River. Tofa Local Government has an estimated population of 97,734 in 2006 (NPC 2006). The dominant ethnic groups are Hausa and Fulani who are predominantly Muslims.

The climate of the area is the tropical wet and dry type coded as AW by Koppens classification. With annual rainfall received between May and October, the highest amount of rainfall is recorded in August the annual total rainfall is between about 600mm-700mm. The temperature regime is usually very warm with a mean of 26°C.

The average elevation of the relief units ranges between 430m west of the area and 400m at the north-eastern margin. (Olofin 1987).

The matured soil of the study area is derived mostly from wind drift materials, which cover the regolith of the ancient rock in many areas.

The natural vegetation of the area is the Sudan Savannah type of vegetation, which is composed of a variety of trees scattered over expanses of grassland. Most of the trees in Tofa are of average an height of between 3m- 15m, and are characterized with broad canopies and grasses which grow hardly taller than 1.5m. Typical examples of such trees is the Baobab (*Adansonia Digitata*) which is common all over the landscape others are African ebony (*Diospros, mospiliformis*) tamarind (*Tamarindus indica*), Kalgo (*pillostigma thoning*).

However most of the trees in the area have common characteristics of building long resistance to drought conditions through their long tap roots, leathery and tiny leaves.

Purposive sampling techniques was used to select the study sites. This is because the region is homogenous from physical, social/cultural religious and economic spheres. The samples for the study were randomly selected. This way a sample of 105 female were selected in Yanako, 129 in Yansabo and 171 in Yarimawa through systematic sampling technique where a sample was picked after every tenth (10) households. This way a total of in the settlement were selected for the study.

The main source of data was through observation, discussion, interview and administration of 405 copies of the questionnaire to samples selected. Information sought was on personal variables of respondents which included their age, sex, marital status, educational level, occupational orientation and their involvement or participation in any form of environmental management.

Results and Discussion

This section discusses the results of the questionnaire survey administered to the respondents on the role of gender in environmental protection in the settlements. The socio economic variables of the samples are shown in tables 1.

Table 1: Distribution of the Respondents age

Age in years	Yansabo N=105	%	Yanako N=129	%	Yarimawa N=171	%
20-30	19	18	20	15	21	12
31-40	40	38	52	40	120	70
41-50	00	00	00	00	2	1
Over 50	46	44	57	44	30	17
Total	105	100	129	100	171	100

Source: Author's fieldwork, 2011

The data on the personal variables of respondents showed that 18 % and another 16% and 12% of the respondents were within the age range of 20-30 years in Yansabo, Yanako and Yarimawa respectively an age considered as prime youth age. Equally, in the young adult age category, 31-40 years 38%, 40% and 70% of respondents in Yansabo, Yanako and Yarimawa. 2 (1%) respondents in Yarimawa fall within the age 41-50years. Also, a great number of respondents 44%, and another 44% and 17% were found to be over 50 years of age. In the three settlements it can thus be concluded that a greater proportion of the women in the study area are made up of youths and adults and this age range happened to be the peak period or active years of labor participation by both men and women.

As far as the marital status of respondents of the total 405 samples in the three villages, 90 (86%), 119 (92%) and 165(.96%) of the women are married in Yansabo, Yanako and Yarimawa respectively. It was also found that 9 (8.5%), (3.8%) and another 5 (3%) in Yansabo, Yanako and Yarimawa are divorced. While 6 (6%), 5 (5%) are single in Yansabo and Yanako. Only 1% of the females are widowed in Yarimawa. This implies that majority of the women are reasonable enough to participate in environmental management practices in their localities.

Table 2: Marital status of Respondents

Marital	Yansabo N=105	%	Yanako N=129	%	Yarimawa N=171	%
Married	90	86	119	92	165	96
Divorced	9	8.5	5	3.8	5	3
Widowed	00	00	00	00	1	1
Single	6	5.7	5	3.8	0	0
Total	105	100	129	100	171	100

Source: Authors' field work, 2011

As far as the educational level of respondents is concerned, 13 (12%), 15 (12%) and 10 (5.8%) in the three settlements respectively had primary education. 2 (2%), another 2 (2%) and 1 (5%) had secondary education. Majority of the women 90 (86%), 112 (86%) and 160 (94%) have Quranic and adult education. The implication of this on environmental management cannot be underestimated.

Table 3: Education Level of Respondents

Education	Yansabo		Yanako		Yarimawa	
	N=105	%	N=129	%		%
Primary	13	12	15	12	10	5.8
Secondary	2	2	2	2	1	0.5
Adult/Qur'an	90	86	112	86	160	93,56
Total	105	100	129	100	171	100

Source: Authors' fieldwork, 2011

Table 4 shows that 19 (18%), 20 (16%) and 21 (12%) of the women are farmers in Yansabo, Yanako and Yarimawa respectively. A greater proportion of the women 38%, 40.3% and 70% are traders. 46 (44%), 57 (44%) and 30 (17%) of the females are engaged in craft production. Only 2 (1%) respondents in Yarimawa said they work as cleaners in Bayero University's new campus in other words they are civil servants.

From table 4 it can be said that only 15% fifteen percent of the samples are farmers and thus have direct contact with natural resource,(land) in their various localities. This contradicts the findings of Adebayo et al (2005), which said that (70%) of women in Adamawa (Nigeria) are involved in farming. The minimal involvement of women in farming in the settlements should be seen from the perspective of the socio-cultural value of the study environment which sees women as primarily responsible for reproduction and as such culturally they not supposed to be involved in any form of secondary activity that divert their attention or take them out of the home environment (Brydon and Chants, 1985).

Table 4: Occupational Orientation of Women

Activities	Yansabo		Yanako		Yarimawa	
	N=105	%	N=129	%	N=171	%
Farming	19	18	20	15.5	21	12
Trading	40	38	52	40.3	120	70
Civil service	00	00	00	00	2	1
Craft	46	44	57	44.18	30	17
Total	105	100	129	100	171	100

Source: Author's fieldwork, 2011

Participation of Women in Environmental Management: The Role of Female Farmers

The involvement of women in environmental protection through farming cannot be achieved if they lack access to land access to farm plots, In fact, lack of access and control over land as a factor of production has been found to be one of the factors militating against effective participation of women in environmental management the world over. To appreciate the participation of women in environmental management, it is important to acknowledge their access to land resources as land is an

important natural resource that women in rural Africa have close contact with by virtues of the being the regions food producers, towards this end, the respondents farm plot size is shown in table 5.

Table 5: Average Farm Plots of Female Farmers.

Villages	1-3	%	4-6	%	Over 6	%
Yansabo	14	74	5	26	0	0
Yanako	13	65	6	30	1	5
Yarimawa	14	67	6	28	1	4.7

Source: Fieldwork, 2011

From table 5 showed that 74%, 65% and 67% of female farmers in Yansabo, Yanako and Yarimawa respectively have farm plots of between 1-3 hectares. While 26%, 30% and 28% have farm plots of between 4-6 hectares in Yansabo ,Yanako and Yarimawa . Very few women 5% and another 5% in Yanako and Yarimawa had over six(6) hectares of farm plots. As pointed out earlier women are the who contribute between 60-80% of time put to agriculture have little or no access to land as a means of production as can be seen from the data analysis. This confirm Lalage's (1990) which said that women who perform two thirds of the hours worked whether at home or outside the home only have one hundredth of world's property registered in their names Women farmers in the settlements are not directly involved in the laborious tasks of tilling the land however elderly women do participate in pre planting operations, weeding, harvesting and storage. In addition women farmers engage in methods that conserve the soils by mulching, terracing and planting across the slope this is presented inn table 7.

Table 7: Conservation Methods Adapted by Female Farmers in the Settlements

Conservation methods	Yansabo	%	Yanako	%	Yarimawa	%
Mulching	5	26	5	25	8	38
Planting across slope	5	26	5	25	5	24
Terracing	3	16	5	25	5	24
All	6	32	5	25	3	14
Total	19	100	20	100	21	100

Tree planting

Yes	12	63	13	65	13	62
No	7	37	7	35	8	38
Total	19	100	20	100	21	100

Source: Authors' fieldwork, 2011

As far as protecting the environment through the planting of trees is concerned the respondents were asked whether they participated in tree planting or not It was found that majority of the women farmers approximately 63%,65%and 62% in Yansabo, Yanako and Yarimawa participated in tree planting of fruits and citrus trees on their farms at the managerial level. Women in other occupations were also asked whether they have ever planted trees or not, their response is listed in the

table 8 which shows that majority of the women, 81%, 83% and 67% in the settlements respectively said they have never planted trees. Very few of them 19%, 17% and 33% in all the settlements have ever planted trees.

Table 8: Female non farmers' participation in tree planting

Response	Yansabo	%	Yanako	%	Yarimawa	%
Yes	16	19	19	17	50	33
No	70	81	90	83	100	67
Total	86	100	109	100	150	100

Source: Authors' fieldwork, 2011

This again confirmed the earlier findings of Maye (1994) which says that women are protectors of the environment through their tree planting activities as could be seen in the case of women in Kenya where the Kenyan greenbelt movement on environmental protection organization of women that planted over 7 million trees in 10 years and set up over 1000 tree nurseries to the extent that it harvests fuel wood from its own trees and the fruit trees are bearing fruits. On the contrary however the involvement of women in tree planting in the study settlements is on a small scale when compared with situation in other parts of world India, china and in some parts of Nigeria such as Adamawa, Taraba, Bauchi, Imo, Niger, Nassarawa, Ogun, Oyo, Delta just to mention but a few.

Involvement in Environmental sanitation

Environmental sanitation or the maintenance of a clean hygienic environment is also a means of protecting and managing the environment.

Majority of the women are involved in environmental sanitation through the following means; sweeping, weeding and drainage clearance. From table it can be seen that Majority of the women 81%, 88% and 79% in Yansabo, Yanako and Yarimawa sweeps, 5%, 4% and 6% in the three settlements respectively weeds. 14%, 8% and 15% of the women said the sweep and do all activities related to sweeping and weed'

Table 9: Participation of women in environmental sanitation

Activities	Yansabo	%	Yanako	%	Yarimawa	%
Sweeping/waste	85	81	114	88	135	79
Weeding	5	5	5	4	10	6
All	15	14	10	8	26	15
Total	105	100	129	100	171	100

Source: Authors' fieldwork, 2011

The involvement of the majority of the women in environmental sanitation in the study area should be seen part of what Moser(1993) termed reproductive roles of women which includes biological reproduction and all those activities (cooking, cleaning, washing, fetching water, fuel and fodder) that guarantees the continued reproduction of the labor force. It has earlier been said in this

write up that women's knowledge of the environment emanate from their daily with the environment as they are responsible for providing for the family's need in terms of fuel, fodder water and food (Shettima, 2006).

Table 10 shows the source of knowledge of environmental management in the settlements 78 (74%), 90 (70%) and 165 (90%) acquired the knowledge from home/environment. 12 (11%), 12 (13%) and 1 (.5%) learned from school. Very small number acquired their knowledge from extension officers. The implication of this is most that the knowledge of the environment comes from what women learned from the home and the environment.

Table 10: Source of Formal knowledge of Environmental Management

Source	Yansabo	%	Yanako	%	Yarimawa	%
Home/community	78	74	90	70	162	95
School	12	11	17	13	1	.5
Extension/ campaign officers	5	5	10	8	5	3
Others	10	10	12	9	3	1.5
Total	105	100	129	100	171	100

Source: Authors' field work, 2011

From the fore going, it can be said that the involvement of women in environmental management cut across farming/soil conservation, tree planting end environmental sanitation (where majority are involved), their lack of active participation in farming and tree planting has been linked to the following reasons.

Table 11: Reasons for low participation in environmental management

Reasons	Yansab	%	Yanako	%	Yarimawa	%
Inadequateresourc	90	86	110	85	120	70
Lack of Awareness	5	4	9	7	6	4
Indifference	10	10	10	8	45	26
Total	105	100	129	100	171	100

Source: Authors' fieldwork, 2011

Table 11 shows that 90 (86%), 110 (85%) and 120 (70%) of the respondents in settlements said lack of access to resources is one of the reasons they are not very active in environmental management programs. Very few 5%, 7% and 4% said they were not aware. Some 10%, 8% and 26% claimed indifference to the whole issue of environmental management

Conclusion

In conclusion therefore can be said that the involvement of women in environmental management specifically revolve around farming, tree planting and environmental sanitation. Even then there participation in farming and tree planting is not direct but indirect.

References

1. Adebayo, A.A and Anyanwu S.O (2005) Women participation in Environmental Protection and Management ; Lessons from Adamawa State in Towards the Sustainable Environmental Management edited by Uyanga,J . Galtima ,G. and Ono,M. Eds (2005) Paraclette Publishers, Yola.
2. Afshar, H. (1991): Women, development and survival in the Third World. Longman, New York. pp. 79 – 99
3. Agarwal, B. (1985): “Neither Sustenance nor Sustainability; Agricultural strategies, Ecological Degradation and Women in Poverty,” Agarwal, B. (ed) Structures, Patriarchy, State, Community and Household in Modernizing Asia, Women and Household in Asia vol. 3, Zed books, London
4. Agarwal, B. (1985): “Rural Women and High yielding Variety of Rice Processing Technology in India” in Women in Rice, IRRI, pp. 307 – 330.
5. Anyanwu, S.O. and Adebayo, E.F. (2000). Women in Agriculture in Adamawa State. An unpublished manuscript, Federal University of Technology, Yola.
6. Azumah, A. (1988) Women and Agricultural Development in Nigeria being a paper presented at a workshop on the role of Women in Development: Held at Kaduna between October 20 – 23
7. Brydon, L. and Charts (1985) Women in the third World Gender Issues in Rural and Urban Areas. Edward El gar Publishing, Hants, England
8. Falola, J.A. (1996) ”Towards the sustainability of the sustainer “Women and Technological Interventions in Rural Production System. Bayero University, Kano.
9. FAO (1994) Improving the Relevance and Effectiveness of Agricultural Extension activities for Women. United Nations, NewYork
10. Haq, B.U. (1993). New Models Needed for Sustainable Human Development UNEP, our planet, Vol. 5 No. 4, pp. 14-15.
11. IDS, (1995). Policy Briefing, Issues 5: August.
12. Kwagala, B. (1999). Katwogo and Kawaala Low-Income Urban. Settlements in Kampala, Uganda: Gender and the Management of Urban environmental Health on D.L. Smith, women managing resources. Mazingira Institute, Nairobi.
13. Lalage, B.(1990)Action Aid Development Report Preparing the Future in Women, Literacy and Development.Somerset,London,pp1-10
14. Maye. (1994). Women: The Resource Managers. UNEP, Vol. 6 No. 4, pp. 23-24.
15. Mohammed,N. (1991) Pattern of Land use in Sharada,Kano and the Implication of Urban Expansion on Fringe land. An unpublished M.sc thesis,Bayero University, Kano.

16. Moser, C.O.N.(1993) *Gender Planning and Development: Theory, Practice and Training*. Routledge London
17. NPC (1996). *National Population Census Figures Nigeria*. National Population Commission
18. Olofin, E.A. (1987) *Some Aspects of the physical Geography of Kano Region and*
19. *Related Human Responses* Departmental Lecture Note Series No. 1, Department of Geography Bayero University Kano
20. Shettima, A.G. (1996). *Gender Issues in Monitoring the Environment: The case of Rural Nigeria*. A paper presented at the 39th Annual conference of the Nigerian Geographical Association, 5th – 8th May, at University of Maiduguri.