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Women Participation in Forest Management Practices for Sustainable Livelihood in Abeokuta Local Government Ogun State

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Abstract: The study is to assess the level of participation of women in agroforestry practices in the study area as well as ascertain the benefits they derive from the activities. The study was carried out in Abeokuta South local government area of Ogun state. A multi-stage sampling procedure was used to select 100 women farmers for the study using interview schedule to collect data from them. Frequencies and percentages were used to describe the data while PPMC was used to draw inferences from the data of the study. Most (58%) of the respondents are married and 41-50 years was the modal (37%) age group. Majority (67%) of them had between 7-12 years of formal education while 62% of them are involved in farming as their primary occupation. Majority (84%) of the respondents are involved in the practice of shifting cultivation, 76% are involved in home gardening and 49% practice alley cropping while 45% of them practiced shelterbelt and 34 and 30% were involved in Taungya and Apiculture, respectively. Positive and significant relationship exist between participation and crop yield increase (r = 0.315), environmental conservation (r = 0.215), weed control (r = 0.219), medicinal materials (r = 0.406), source of building materials (r = 0.334), economic empowerment (r = 0.195), source of food (r = 0.225) and improved level of living (r = 0.325). Given the fact that they derive substantial benefit from the practices and the problems encountered are not considered debilitating, the avenue of agroforestry practices could be effectively exploited to enhance sustainable livelihood among rural women.

Key words: Forestry, agroforestry, environmental management, women, participation, cultivation, gardening

INTRODUCTION

Forestry practice has changed dramatically over the last 30 years. In addition to its traditional role in the protection and management of trees, forestry now takes a holistic approach to resource use. One of the most important directions is community or social forestry, which addresses the human and social problems associated with forest and land use. Social forestry stresses the need for the participation and active involvement of local communities in all aspects of project design and implementation. Largely through this approach, the contribution of women, as a distinct social group in the forest sector, has been recognised and the need for attention to gender consideration addressed (CFAN, 1992).

Exploitation of natural resources, in the name of food production, often becomes problem. In the bid to increase food production to meet the needs of the ever-increasing population, over-exploitation and destruction of natural resources do arise. However, the problem of depletion of environmental resources would not be a valid excuse to discontinue the efforts to commensurately increase food production; hence, balancing the necessary activity with conscious environmental strategies is the way out of the problem.

Agroforestry is one of such strategies used for forest management within agricultural production activities. It is a collective term for all land use systems and practices in which perennial, lignified plants are cultivated on the same field units at the same time as annual plants and/or grazing animals. It is a relatively recent branch of science, although combined growing of trees and other crops and plants has a long history and tradition both in temperate and tropical regions (Mabille, 1997). The interest in agroforestry over the last two decades stems from the potential of this integrated resource management approach to secure sustainable agriculture and optimise production as a whole. Aside the agroforestry strategy, most rural people live on the forest resources and hence implication for the management of the resources.

Recent studies conducted in the tribal regions of India offer empirical evidence for the extent of dependence of tribal households on Non-Timber Forest

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Products (NTFPs) collection. For example, in a study of Soliga households, it was found that the income contribution from the collection of NTFPs is disproportionately greater than the time spent in collecting the products. Their study indicated that households living on the periphery of the forest spend 39.25% of their time in collection and realise 47.63% of their income from NTFPs; for those living closer to the forest, the figures are 54.46 and 60.44%, respectively. Moreover, "variance in income from the extraction of NTFPs is much less than that of income from other vocations, indicating that the collection of NTFPs constitutes the most reliable source of income (Hedge *et al*., 1996). This implies that the critical role that NTFPs play in the livelihood strategies of rural households is emphasised by the favourable income returns to the time spent in collection, as well as the stability of income from the efforts.

According to CFAN (1992) it has been noted that more women than men, in the developing world, are farmers, cutters and users of firewood, collectors and sellers of minor forest products and tenders of livestock. Collecting and using the wide variety of forest products commonly found in the tropics demand a great deal of women's time and labour. When these products cannot be grown or collected, hard-earned cash must be used to buy them. Shortages caused by disappearing resources would have a severe impact on the lives of women and their children. Women's involvement in agroforestry went beyond fuel and wood provision but also including planting, transplanting, protecting and maintaining trees-putting the products into multiple uses such as food, animal feed, health and income (CFAN, 1993).

In Zimbabwe most wild fruit is consumed before cultivated food crops are ready for harvest. In the recent drought in Southern Africa, the forests provided survival foods for thousands of people when their crops failed. As well, forests are the habitat for wildlife that are hunted for food. Game accounts for 84% of Nigerian forest communities' consumption of animal protein. Trees, in the form of fuel-wood and charcoal, are the most important source of energy in developing countries, mostly used for domestic cooking.

The primary players in the collection, processing and marketing of NTFPs are women; they gather the bulk of forest produce, including food and fuel-related forest products and also gather those that are primarily sold in the market. The importance of women in collection of forest produce is supported by data from almost every country in Asia, Africa and Latin America. For instance, a study in the North-West Frontier Province of Pakistan showed that 78% of morel mushrooms are collected by women and children (Iqbal, 1991). The same study also showed that while women and children are the dominant players in collecting and drying, men play a much more active role in selling the morels. Similarly, women and children collect 90% of the medicinal herbs and 100% of the drying is done by women. About 71% of medicinal herbs are sold by women and children and 29% by men.

Making a case for gender analysis in forest resource use and management, Leach (1994) argued that women's access to and control over natural resources is often treated in terms of static and predetermined 'female domains'. The impression is that women operate within a fixed framework; that their resource-management activities are isolated from their relations with men and each other. However, the questions of rights and control implicate the social relationships within which resources are managed and used. The implication of this is that focusing women exclusively obscures their relations with men, implying that resource-management activities of women and men proceed along isolated, parallel tracks which is not the case as mentioned earlier.

Meanwhile, as stables of cultural orientations and first teachers of children, women assume a very serious responsibility in the orientation of generations of human race on environmental management issues. This realisation among others is particularly important to development practitioners in developing countries to evolve appropriate strategies-to involve relevant stakeholders-for their natural resources management programmes.

This study provides answers to the following research questions;

- What are forest management activities in which the women are involved?
- What are the benefits derived from the practices?
- What are the constraints to women's participation in forest management practices?

Objectives of the study: The main objective of the study is to determine the participation of women farmers in forest management practices in Abeokuta south local government area of Ogun State. The specific objectives are to:

- Identify the forest management practices in which the women farmers are involved.
- Determine the benefits they derive by participating in the practices.
- Determine the constraints the women encounter in participating in forest management practices.

Hypothesis to the study: There is no significant relationship between women farmers' participation in forest management activities and the benefit derived.

MATERIALS AND METHODS

Ogun state is one of the 36 states in Nigeria, with Abeokuta as its capital. The area of study is Abeokuta South local government of Ogun State. Five wards out of the 15 wards in the local government area were purposively selected based on their relative rural nature. Two villages were randomly selected from each of the selected wards giving a total of 10 villages. Ten women farmers were selected from each of the 10 villages to give a sample size of 100.

A well-structured and validated interview schedule was used to collect information from the respondents. Information was collected on the women's socio-economic characteristics, forest management activities and benefits they derived from participation in the practices.

Variables of the study: The dependent variable of the study was the participation of women in forest management activities. The respondents identified the practices in which they are involved from a list of 10 activities. The level of their participation in the agroforestry activities was used to capture the variable.

The independent variables to the study include socio-economic characteristics of the respondents, other livelihood practices, benefits derived and constraints to participation in the forest management practices.

Statistical analysis of the data was carried out using frequencies, percentages, mean score and correlations.

RESULTS AND DISCUSSION

Table 1: Distribution of respondents' socio-economic characteristics

Socio-economic characteristics	Frequencies	(%)
Marital status		
Single	58	58
Married	18	18
Divorced	11	11
Widow	8	8
Separated	5	5
Total	100	100
Age		
20-30 years	37	37
31-40 years	37	37
41-50 years	18	18
51-60 years	3	3
> 60 years	5	5
Total	100	100
Religion		
Christianity	55	55
Islam	35	35
Traditional	10	10
Total	100	100
Education		
1-6 years	24	24
7-12 years	67	67
> 12 years	9	9
Total	100	100
Occupation		
Farming	62	62
Traders	27	27
Civil servants	11	11
Total	100	100
Years of experience		
1-20 years	86	86
21-50 years	12	12
> 50 years	2	2
Total	100	100
Family size		
< 2	17	17
3-5	33	33
6-12	47	47
> 12	3	3
Total	100	100
Farm size		
1-2 acres	69	69
3-4 acres	15	15
5-7 acres	16	16
Total	100	100

Socio-economic characteristics: Result in Table 1 shows that most (58%) of the respondents are married, 18% are single, 11% are divorced, 8% are widowed while 5% are separated. This finding has an implication for forest management programmes because married women cannot be involved in such programmes without their husbands if it to be successful (Leach, 1994).

About 37% of the respondents are within the age range of 41-50 years of age, 3% are within the age range of 51-60 years of age while 5% of them are above 60 years of age.

About 55% of the respondents are Christians, 35% are Muslims while 10% are traditional religious adherents. Majority (67%) of the respondents had between 7-12 years of formal education, 24% had between 1-6 years of education while 9% had more than 12 years of formal education. This shows that the population is a fairly educated one. This particularly has implication of the types of extension communication method that can be used for them.

Most (62%) of the respondents are involved in farming as their primary occupation, 27% are traders while 11% are civil servants. Majority (86%) of them had between 21-50 years of experience while 2% had 50 and above years of experience.

About 47% of the respondents have between 6-12 member family sizes, 33% of them have between 3-5 member family sizes, 17% have less than 2 member family sizes while 3% of them have 12 and above member family sizes. Most of them have relatively large family

Table 2: Distribution of respondents by agroforestry practices

Agroforestry practices	Frequencies	(%)
Shifting cultivation	*84	*84
Home gardening	76	76
Alley cropping	49	49
Shelter belt	45	45
Taungya	34	34
Apiculture	30	30

* Multiple responses, Source: Field Survey, 2005

Table 3: Distribution of respondents by collection of non-timber forestry products collection

NTFP collection	Frequencies	(%)
Seasonal fruits	*95	*95
Fuel wood	92	92
Fodder	68	68
Mushroom	66	66
Leafy vegetable	46	46
Herbs	40	40
Building materials	33	33
Household materials	28	28
Edible insects	23	23

* Multiple responses; Source: Field Survey, 2005

sizes. The implication of large family sizes to rural women is additional burden because they would have to spend more time attending to them.

Most (69%) of the respondents had farm sizes between 1-2 acres, 16% had farm sizes between 5-7 acres while 15% of them had farm sizes of between 3-4 acres. Their farm sizes are generally rather small, which is due to their restricted access to production resources especially land (Thomas-Slayter and Rocheleau, 1995).

Agroforestry practices: The result in Table 2 show the distribution of the respondents according to the agroforestry practices in which they are involved. Majority (84%) of the respondents are involved in the practice of shifting cultivation, 76% are involved in home gardening and 49% practice alley cropping. Also 45% of them practiced shelterbelt while 34 and 30% were involved in Taungya and Apiculture respectively.

Participation of women farmers in collection of Non-Timber Forest Products (NTFPs): Table 3 show the distribution of respondents by their participation in the collection of NTFPs. Majority (95%) of the respondents participated in the collection of seasonal fruits. About 92% collected wood, 68% collect fodders for animal use, 66% collect mushroom, 46% collect leafy wild vegetable, 40% collect herbs for medicinal purposes, 33% collect forest materials for building purposes, 28% collect forest materials for household purposes while 23% collect edible insects. This finding conforms to the findings of Gautam *et al.* (undated) the study that states that women put forestry products into many uses.

Table 4: Rank order of respondents by benefit of participation

Benefits	Weight mean scores (wms)
Increase in crop yield	4.60
Enhancement of the environment	4.09
Forest materials for building materials	4.06
Source of medicinal materials	3.85
Use for fallowing of crop lands	3.60
No extra benefit than that of Agriculture	3.15
The practice is too burdensome	2.67
Time of harvest of products is too long	2.55
It is expensive to practice	2.34
It requires additional labour	1.93

Source: Field Survey, 2005

Table 5: Distribution of respondents by constraints faced on agroforestry practices

Constraints	Frequency	(%)
Lack of finance	*92	*92
Disease prevalence	84	84
Lack of land	82	82
Lack of labour	74	74
Stealing/pilfering	69	69
Lack of access to land	56	56
Land ownership constraint	33	33
Lack of defined rights	29	29
Inferior status by law	27	27

* Multiple responses; Source: Field Survey, 2005

Benefit derived from participating in agroforestry practices: The result in Table 4 shows benefits the respondents indicated they had from participation in agroforesty and NTFP collection. They equally ranked the benefits in the order of importance of the benefits to them and their activities. Benefit of increase in crop yield ranked highest with a mean score of 4.60. Enhancement of environmental conservation has mean score of 4.09, being followed closely by provision of forest materials for building purposes (4.06). Other benefits are in the following order; provision of medicinal materials (3.85), uses in the fallow of crop land (3.60), no extra benefit apart from agriculture (3.15), the practice is rather burdensome (2.67), too long time taken before reaping benefits (2.55), it is an expensive practice (2.34) and additional labour requirement ranked least (1.93). This finding shows that the respondents mostly have much benefits than problems enumerated in the least ranked items.

Constraints to participation in agroforestry practices: Table 5 shows the distribution of respondents according to the constraints they face in agroforestry practices. In a multiple response analysis, majority (92%) of the respondents indicated lack of finance as their constraint, 84% adduced disease prevalence as their constraint, 82% of them attributed lack of land as the problem. Other identified problems are lack of labour (74%), stealing/pilfering of products (69%), land ownership (33%), lack of defined rights (29%) and inferior status by

Table 6: Relationship between participation of respondents and benefit derived

Benefits derived	Correlations (r)
Increase in crop yield	0.315*
Enhancement of the environment	0.215**
Control of weeds	0.219**
Source of medicinal materials	0.406*
Forest materials for building materials	0.334*
Economic empowerment	0.195**
Source of food	0.225**
Improved level of living	0.325*

* r at 0.01; ** r at 0.05; Source: Field Survey, 2005

Table 7: Distribution of respondents by severity of constraint

Constraints	Frequency	(%)
High	12	12
Medium	25	25
Low	63	63

X±1 SD-Levels; Source: Field Survey, 2005

law (27%). The problems indicated by most of the respondents i.e., finance, land availability and labour are regular problem with women who are involved in agricultural production enterprises. Further analysis on perceived severity of the problems show that majority (63%) of the respondents considered the problems mild, 25% considered them of medium consequence while 12% considered them serious. This revelation shows that majority of the respondents do not perceive the problems debilitating. The implication of this is that despite the problems, participation in agroforestry and NTFP collection practices are not adversely affected.

Hypothesis testing: Relationship between participation in agroforestry activities and benefit derived. The hypothesis was subjected to test using Pearson's Correlation analysis. Result in Table 6 show the relationship between participation and benefit derived by the respondents. Positive and significant relationship exist between participation and crop yield increase (r = 0.315), environmental conservation (r = 0.215), weed control (r = 0.219), medicinal materials (r = 0.406), source of building materials (r = 0.334), economic empowerment (0.195), source of food (0.225) and improved level of living (0.325). The result implies that the women have benefited tremendously from their participation in agroforestry practices through their active involvement.

CONCLUSION

Most of the women are married and are in the range of 20-60 years. About 50% of the respondents have family size between the ranges of 6-12 persons. Most of them had no formal education and are engaged in farming activities. The study reveals that the respondents are involved in different forms of agroforestry practices. Analysis revealed that there is positive and significant relationship between participation derived. Also, the result shows that majority of the respondents considered the problems experienced mild which implies that they are not serious enough to prevent them from participating. Given the fact that they derive substantial benefit from the practices and the problems encountered are not considered debilitating, the avenue of agroforestry practices could be effectively exploited to enhance sustainable livelihood among rural women.

RECOMMENDATION

Based on the findings above, the following suggestions are made;

- Adequate awareness programmes should be held on benefits of agroforestry at the local levels to encourage continuous participation in the practices
- Men and women should be equally encouraged to participate in the practice so as to make it sustainable

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