

Indigenous Knowledge of Rural Women in Sustainable Ecology, Agricultural Productivity and Environmental Conservation in Southwestern Nigeria

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Abstract

In many tropical sub-Saharan African countries, misguided planning policies, local cultural traditions often work together to deter rural women's indigenous skills in conservation Ecology, Environmental conservation and Agricultural productivity. The argument has been that they are major contributors to forest exploitation and other ecological damages, through their various activities -- such as fetching of fire woods, snail hunting in the wild and many other socio-economic activities. Most of the arguments are unfounded, because they fail to address the major problems in forest exploitations. The fact is that these women are major ecological sustainers; they are not exploiters *per se*. But even if they exploit, they are being driven by prevailing economic circumstances into exploitation. Hence, the conditions that plague them into exploitation should be addressed. In this article the various activities of rural women in sustainable agro-ecology are investigated. Data were collected in the south western part of Nigeria to reflect the major agro-ecological activities of rural women which clearly indicate women's roles in sustainable practices.

Introduction

Ecology as a discipline deals with the functional interaction between co-occurring organisms and nature. As part of an evolving world, human beings have been interacting with their environment, both positively and negatively. The domestication of uncountable flora and fauna species, each bearing a wide genetic variation, is an evidence of the beneficial human interaction with nature. The struggle to survive in a particular environment has put nature's mark on culture, with the resulting varied cultural forms from social structure, diet, and language; to such as land management practices including nomadism or shifting cultivation. One significant dimension of this continuous affinity that has largely been ignored, are the 'vital roles' of rural women with regards the living diversity of their surroundings and in Agricultural productivity.

It is a reality that economic development is important to relieve widespread poverty in the developing world (IWTC, 1994). It must also be both people-centered and conservation-based. There is no doubt that sustainable development is fundamental to conserving biodiversity and improving human well-

being, but sustainable development will not really be feasible if the indigenous roles of the people that manage it (rural women) are not recognized in the policies of their communities and nations in pursuing it. Their needs and roles and indigenous knowledge should be integrated into Agro-ecological (Agricultural and Ecological) decision-making, not just confined to a “women-in-ecology and agricultural ghetto”.

Although the relationship between women and ecology is relatively new as an area of study, but it has been a central reality since the dawn of civilization. For this generation to secure a healthy planet and better lives for the current and future generations, it becomes pertinent to recognize and support the crucial linkages and interaction between rural women and ecology. In this regard, their indigenous knowledge constitutes major impetus of integrity in the inheritance of earth's flora and fauna life (Pietela and Vickers, 1994). However, it is important to know that ecological, environmental and agricultural problems are often a cause-effect of a life long menace that has plagued the global world and some causes have been attributed to activities of the rural populace in the tropical developing countries, with respect to biodiversity loss. Specifically, rural women's socio-economic activities have been seriously implicated as a major cause. It is a fact that they are primary resource users (Appleton, 1993b) these women do much of the hard work needed to maintain or conserve their biodiversity and improve Agricultural productivity, often in the face of great odds against success. But they have been labeled as agents of ecological, environmental and Agricultural problems mainly because they shoulder the heavy workload needed to keep their families fed, housed, and clothed. It must be emphasized that, their strong interactions with nature is significant to the survival of livelihood.

With the aforementioned, this study is therefore aimed at investigating the activities of rural women in sustainable agro-ecology based on their indigenous knowledge and practices.

Methodology

Study Areas: Two local government areas in O'Sun State of the south western Nigeria were chosen (Ife South and Ife central local Governments) The choice of these local Government areas was informed by preliminary study carried out which revealed that the two Local Governments are well endowed with natural resources that will facilitate implementation of the project. Ife central and Ife south local government areas are predominantly rural areas in a tropical rainforest region. The areas are inhabited by Yoruba speaking tribe. Ife central covers about 678 square kilometers while Ife south 875 square kilometers of land. The former has estimated inhabitants of about 5,500 people while the latter has about 50,000 inhabitants. Ife central has about 64 small size communities/ villages with population ranging from 300 to 8000 while Ife south has 85 small sized communities/villages with population ranging from 500 to 10,000. Women population is about 54% of total population. Majority of the village at Ife central are connected by motor able roads. The Obafemi Awolowo University is located within the Ife central local government area while Ife south is located in the south east of the university with very few motor able roads.

Data collection

Twenty communities were selected from each local government. Data were collected through the use of structured questionnaire that addressed the socio-demographic characteristics of respondents, comparative involvement in farming operations between men and women, assessment of indigenous knowledge and traditions and cultures as they affect rural women in sustainable agro-ecology. Sessional discussions were also held to generate some qualitative and quantitative information within the context of this study and corroborate with existing and available data where necessary. Women of child bearing age and women with diverse socio economic, cultural and ecological and production activities associated with living resources of the environment were selected. In-depth interviews that corroborate with the questionnaire were carried out and translated to reflect the issues in the questionnaire.

Results and Discussion

Socio demographic characteristics of respondents

Table 1 presents the socio demographic characteristics of respondents. All the women interviewed are married with age ranging between 21 and 57. These women are still having children and are of diverse socio-economic activities.

Table 1; Socio demographic characteristics of the rural women

Age of women	% of women that fall in this group
21- 25	9.10
26-30	9.10
31-25	18.20
36-40	27.30
41-45	16.00
48-50	18.44
50and above	2.20

Majority of the women were not born in the village (about 73%), they are residing in the village but have moved there as a result of marriage, search for good farm land while the remaining 22% were born in the village. About 60% of the women are presently living with their husbands while about 22% are widows and the remaining, 17.2% are not living with their husbands. For those that have their husbands living with them 78% of them are farmers while the remaining 22% are of various occupation ranging from clergy, transporter, artesian e.t.c. Apart from their husband other member of the family working was 43.22% while 56.78% are not working. On the women's part, about 92.3% are predominantly

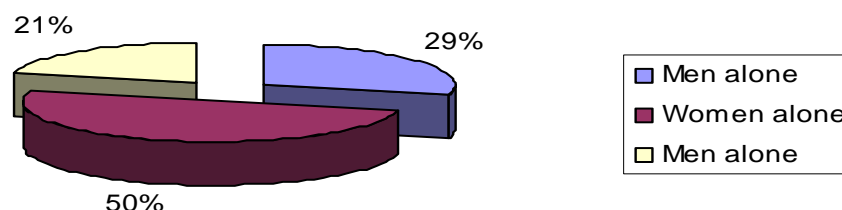
farmers, while out of the remaining 7.7%, 5.25 combine farming with other occupation and the remaining 2.5% have other occupation which include tailoring, dyeing of cloths, mat weaving e.g.

Table 2 reveals the percentage contribution of rural women in comparison to men in farming operations in the investigated areas. On the whole, rural women contributed overall performance of 50% when compared with 29% of men and 21% of joint (men and women) implementation of farming operations (Fig 1). Major planting operations carried out by women include, planting, weeding, shelling, sun-drying while male farming operations mainly include pruning and packaging (Table 2). Discussions with the village leaders reveal that traditionally men are bestowed with political and decisions making of the communities, while rural women are tradition confined into Agricultural productivity. In fact, male children are given more priority when it comes to education, while females are expected to work with their mothers on the farm and produce food for the household.

Table 2: Comparative Contribution (%) of Rural Women and Men to Farming Oerations

Farming operations	Men and women	Women alone	Men alone
Planting	5.00	70.50	25.50
Fertilizer application	56.58	34.62	8.80
Weeding	15.86	65.23	8.91
Pruning	39.80	10.20	50.00
Harvesting	30.52	45.68	23.80
Removal of fruit and seeds	25.20	70.20	4.60
Depodding/shelling	15.0	75.00	10
Fermenting	25.63	63.23	11.14
Sundrying	20.35	68.59	11.06
Packaging	15.03	14.76	70.21
Storage	34.25	56.23	9.52
Trade and marketing	59.56	29.56	10.88

Fig. 1: Percentage contribution of rural women in farming operations



In the rural community labor market, Table 3 shows that the average income per day for a rural woman is less than a dollar, while men earn more money than their female counterparts while performing the same operation. Despite the small earnings, about 42% of these women are the primary breadwinners while 33% share the responsibility with their husbands and only about 25% of the husbands are breadwinners with their wives supporting them in the various capacities they can.

Table 3: Average Wage (Dollar) Structure of Selected Farming Operations for Men and Women in the Investigated Villages.

Farming operations	Women	Men
Planting	0.60	0.25
Weeding	0.80	0.50
pruning	0.80	0.60
Harvesting	0.50	0.30
Depodding/shelling	0.50	0.30
Fermenting	0.40	0.30
Sundrying	0.40	0.30
packaging	0.20	0.30

Assessment of Indigenous Knowledge of Rural Women in Agro-Ecological Practices

Rural women in the investigated areas have acquired many skills especially in plant cultivation and animal husbandry as well as plant and animal preservation. The method of land preparation includes

the slash and burn method. Use of inorganic fertilizer is mostly limited and biocides which constitute pollutants to the environment rather, organic manure from animals are mostly used. Reasons for these are lack of financial ability to purchase them. The fact is that farm practices embarked upon (crop rotation system and planting of cover crops), greatly enhanced the use of organic manure. Plants in cultivation by rural women are mostly food crops (yam, cassava, cocoyam, etc.) which will sustain their family needs and nourishment while the remains are sold for incomes. Remains of plant materials are equally preserved to feed livestock such as goats, sheep, and poultry etc. These livestock also provide some of the nourishment needed and serve as source of income.

About 80% of the women worked between the hours of 8:00 a.m. to 7:00 p.m. When asked of their sources of knowledge, respondents showed that over the years they have acquired knowledge about plant preservation (about 77%) while about 67% have acquired knowledge about animal preservation. Sources of knowledge include parental inheritance (71.4%), husbands (14.3%) and 14.3% for other sources. This data revealed that average rural woman works for 8-12 hours per day gathering firewood, growing food, collecting fodder, harvesting from water and wild forest and tending domestic animals. These activities have enhanced them with more affinity to nature than their male counterparts. It is important to know that women's experience not their biology equips them with ecological harmony. The forest provides more than firewood to a rural woman (Brouwers, 1993). She has interacted a lot with many living resources and this has endowed her with many indigenous knowledge and technology. They know some medicinal uses for a lot of forest species, but this traditional knowledge will die out along with the forest unless efforts are made to spare both.

Rural women have acquired many skills due to their functional interactions with the ecosystem; they are skillful in biodiversity conservation and are not degraders of the habitats. They are endowed with different indigenous knowledge on sustainable ecology and agriculture. For instance 86% of the rural women in Tonkere village in Ife central local government (southwestern Nigeria) are herb sellers, the farming activities in the upland regions is majorly the 'slash and burnt' type of bush clearing. Of particular interest is that women have their indigenous means of detecting the viability of seeds by selecting the sinking ones soaked in a standing pot of water. In the moistly forest of Famia (still in Ife central local government), rural women in the area are mainly snail farmers. They cover many snails with decayed litter, and cover the whole with ventilated locally constructed baskets. These are the methods that have been used to breed snails and the overall productions provide substantial productivity and market values for the people and its subordinates. This is quite commendable, for knowing that they can produce instead of exploiting. They are educated to identify the sexes for crossing few species together instead of lumping everything together. The introduction of an ancient method of agricultural technology of adding ash organic matter to surround newly planted crops. This is also worthy to mention among rural women in Abata-Egba (Ife south local government in southwestern Nigeria). Crop productions have been positively enhanced with this approach.

Conclusion

With the results obtained from this study, it is obvious that there is serious need for the integration of rural women into sustainable ecology and agricultural production. It is equally necessary that they should be educated more in sustainable agricultural practices and environmental conservation. They should not be labeled as environmental degraders. State and national policies should encourage rural women to alleviate their poverty condition.

Acknowledgement

This project is funded through the Claude Ake African-American award grant of the Ford Foundation.

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