



## ASSESSING PARTICIPATION OF WOMEN IN POULTRY PRODUCTION AS A SUSTAINABLE LIVELIHOOD CHOICE IN OYO STATE, NIGERIA

B. O. Adisa and J.A. Akinkunmi

Department of Agric. Extension & Rural Development, Faculty of Agriculture,

Obafemi Awolowo University, Ile-Ife

Email: [Banjiolalere@yahoo.com](mailto:Banjiolalere@yahoo.com)

**ABSTRACT:** This study assessed the participation of rural women in commercial poultry production activities in Oyo state, Nigeria. A multi-stage procedure was used to select the Two hundred and forty four (244) women poultry producers involved in the study. A structured questionnaire duly pre-tested and validated was used to elicit information from the respondents. Data collected were analyzed using descriptive statistical tools like frequency counts, percentages, means, standard deviation and ranking while chi-square ( $\chi^2$ ) and correlation analysis were used to test the hypothesis. The results showed that women participates more in production (94.5%) and marketing activities (95.9%) but participated less in processing (27.4%). The results also revealed that most women that participated in commercial poultry production are literate (71.2%), fell within 31-40 years of age (46.6%) and of high income status (87.7% received above ₦300, 000 per year. The test of association showed positive and significant relationship between participation and each of socio-economic characteristics of age ( $r = 0.289$ ), marital status ( $r = 0.362$ ), educational level ( $r = 0.310$ ), years of experience ( $r = 0.256$ ), household size ( $r = 0.392$ ), number of employees ( $r = 0.283$ ) and type of birds ( $r = 0.479$ ) at 0.01 significant level. The study concluded that the extent of participation of women in commercial poultry activities in the study area was low. This might be because most women assigned certain poultry operations that are tedious to their attendants or casual staff. Some of the recommendations made include provision of better extension services for effective performance, provision of credit facilities in form of loans to women, quality control of poultry input by government.

**Keywords:** Participation, Rural women, Commercial, Poultry Production, Empowerment.

### INTRODUCTION

The majority of the world's food producers are women. The United Nations <sup>(1)</sup> estimates indicated that they provide 60 to 80 percent of the agricultural labour in Africa and Asia and 40 percent in Latin America. [11] estimated half of the world's food as grown by women. In Africa they produce most of the food their families consume, while in Asia and Latin America women carry out key stages of production and processing of crops and are the main producers of vegetables, poultry and livestock for the household. Women's knowledge of local soil conditions and growing make them central also in conservation. This perspective, born of everyday experience, often differs from priorities laid out by environmental groups [11].

[2] asserted that women's contribution to agricultural development is enormous. He categorized women's contribution as producers, distributors, processors, storers and marketers of agricultural products. In fisheries and other agricultural activities, they put in as many or more hours than men. In his own contribution, <sup>(3)</sup> indicated that women play an important role in farming and carry out many farm operations particularly planting weeding harvesting, transporting, shelling, processing as well as keeping livestock. They are also traditionally involved in various types of food processing activities and in selling of agricultural commodities. They tend to all types of livestock; process foods for home consumption and for market; manage natural resources through efficient use of water and fuel for their crop and animal activities, and market their products at the local regional and national levels [11].

An estimation given by [13] indicated that 95 percent of the Nigeria farmers who are actually feeding the nation are women. [17] discussed the role of women in Nigeria agriculture in his assessment of “Better life for rural women programme”. He indicated that women dominate the production, processing and marketing initiatives and activities in this sector of rural economy. [9] gave a fair assessment of their performance stating that they are a force to reckon with in rural small scale agriculture as they contribute about 80 percent of the food in Africa.

While acknowledging the role of women in various agricultural operations such as land clearing, crop planting fertilizer application, weeding and pruning, spraying crops, harvesting, crop processing, transporting farm produce and marketing, <sup>(10)</sup>, stressed that the extent of involvement of women in each of these agricultural activities varies with different cultures, economic systems and socio- economic milieu.

Generally, women in developing countries work longer hours than men in house- keeping, child caring, fetching firewood and water. [15] Estimated 16 hours of work for women in Africa in their diverse and numerous activities. [16] Explained that women’s productive role in agriculture is grossly under valued because no economic value is placed on the work they do in the farm, home and informal enterprises. The contribution of women to agriculture in Nigeria cuts across culture and religious backgrounds. Among the Yoruba ethnic groups in the southern Nigeria, women described as ‘invisible’ worker constitute the greater part of the force in the southern part of Nigeria growing yams, maize, tobacco and cassava. While in Northern Nigeria, [14] noted that despite the confinement of women in purdah because of religious purpose, women are responsible for processing and preservation. In [14] the Eastern part of Nigeria, women are actively participating in agriculture. noted that they are involved in all farm operations ranging from clearing to harvesting and marketing of crops such as growing cassava, cocoyam, melon, castor, beans, maize, okro and vegetable. Every aspect of food processing activities is handled predominantly by women and the degree of involvement of women varies among ethnic groups. [19] noted their sole involvement in fish processing, preservation and marketing.

Participation of women in poultry production can be described as the involvement of women in poultry activities for the purpose of improving their households’ food security, income, social and enhancing gender equity. The purpose of the study therefore was to assess the participation of rural women in poultry production as sustainable livelihood strategy.

### **Objectives of the study**

The general objective of the study was to assess women’s participation in commercial poultry production in Oyo State, Nigeria and state its implication for rural enterprises and economic development. The specific objectives include to:-

- i) investigate the participation of rural women in commercial poultry production activities in the study area,
- ii) examine the personal and selected socio-economic characteristics of women participating in poultry production,
- iii) draw inference from the findings on women empowerment.

### **Hypothesis of the study**

**Ho<sub>1</sub>:** There is no significant relationship between selected personal and socio-economic characteristics of women and their level of participation in commercial poultry production.

### **METHODOLOGY**

The study area was Oyo State of Nigeria. Oyo state has thirty-three local government areas. It has two ecological zones – forest and derived savannah which have implications for food production, fishery and rearing of some animals. Population of the study were rural women participating in commercial poultry production. Production as a sustainable livelihood (See Table 1). The data for this study were collected from respondents using duly validated and pre-tested questionnaire. Descriptive statistics used in presenting the data include frequency counts, percentages, means, pie charts and standard deviation.

Also the relationship that exist between the dependent variable and the independent variables were examined using inferential statistics such as Pearson's product moment Correlation Coefficient.(PPMC) and Chi-square ( $\chi^2$ ).

**Table 1: Distribution of respondents by location**

S/N	Zones	No of registered women with PAN	20% of selected registered women with PAN	No of non-members of PAN registered with OSADEP	20% Selected of non -members of PAN registered with OSADEP	Total selected per zone
1.	Ibadan/Ibarapa	183	37	507	101	138
2.	Oyo	74	15	204	41	56
3.	Ogbomosho	39	8	105	21	29
4.	Shaki	27	5	80	16	21
	Total	323	65	896	179	244

Source:- PAN, Oyo state chapter and Oyo State Agricultural Development Project (OYSADEP), Annual report, 2011.

## RESULTS AND DISCUSSION

### Participation in Poultry Production Activities

**Preparation for the brooding activities:** Majority (94.5%) of the respondents in Table 2 participated in preparation for the brooding activities which included cleaning, washing and disinfecting of the brooding room, arrangement of feeders and setting of lighting, spreading of litters and acquisition of feeds and drugs. Most of the respondents indicated that this operation required thorough handling, skilful and careful planning. Therefore, most women preferred to handle this operation by themselves.

**Sourcing and collecting of Day-Old-Chick:** The results in Table 2 showed that majority (95.9%) preferred to source and collect their DOC by themselves. The respondents indicated that most of the existing hatcheries have no standard control hence they sell out sub-standard and unhealthy DOC to ignorant farmers causing enormous losses. To prevent this problem, most women source and collect their DOC by themselves using reliable technical information from farmers' association, friends and extension agents.

**Brooding of Day-Old-Chick (DOC):** About 94 percent of the women participated in the brooding of DOC. The respondents considered brooding of DOC as the beginning of eventual success or failure because it requires in-depth understanding of the chick's behaviour, high hygienic practice and full concentration.

**Routine medication and vaccination programme:** The data presented in Table 2 showed that 86.3 percent of the respondents were involved in medication and vaccination of their birds. Most of the women reported that they learned this operation one time or the other from friends and veterinarian. This operation also requires calculation of drugs, skillful handing of tools and understanding of the disease symptoms.

**Feed milling operation:** Table 2 revealed that 89.1 percent of the respondents participated in the feed milling operations. The reason adduced by the respondents was that they derived considerable reduction in the feed cost while maintaining better quality of output than the ready-made commercial feeds in the market. As a result of this, most women desire to increase their profit margin by reducing their cost of production in term of feeds.

**Feeding of birds:** Majority (75.4%) of the respondents participated regularly in feeding the birds. The respondents opined that they participated in this operation to ensure proper quantity is consumed daily and at the same time observe the performance of each of the birds in the flock. The present findings support the findings of [7] that the feeding and management of poultry was fully in the domain of women.

**Disposal and replacement of poultry litters:** The results showed that 35.6 percent of the population were regularly involved in disposal and replacement of poultry litters. Most women indicated that they engaged their attendants or juvenile labours to perform this tedious task for them.

**Culling of birds:** This operation requires major decision of the farmer. The results revealed that all (100%) the women preferred to take this decision and carry it out whenever they deemed fit.

**Daily records keeping:** Most of the women (95.9%) kept their daily records in their farm. These include production record, inventory record, sales and purchases records. From the oral interview, the respondents stated that they preferred to keep all their records regularly in order to evaluate their performance and minimize frauds by workers and intruders.

**Dressing of birds:** The results showed that just 27.4 percent of the women participated in the dressing of birds. Further probe revealed that only the women rearing table birds (broilers) were involved in dressing. Most women preferred to sell their birds live because, dressing is a difficult operation and sometimes risky especially when there is sudden outage of electricity used in freezing the birds.

**Packaging and weighing of dressed birds:** Just about 21.9 percent participated in packaging and weighing of dressed birds. This is carried out in order to put the appropriate price on each bird.

**Storage of dressed birds in cold-room/freezers for freezing:** The results showed that 26.0 percent of the respondents actually participated in storage of dressed birds in cold room or deep freezers to freeze. This is an important processing operation for those involved in the production processing and marketing of table-birds.

**Collection, cleaning, sorting and grading of eggs:** The results revealed that 79.5 percent of the women were involved in collection, cleaning, sorting and grading of eggs. All the women reported that they relied on their manual/visual grading of eggs in placing the prices but they were aware of automated electronic grader in the market, cost of which they cannot afford.

**Transportation:** The results showed that majority (58.9%) of the women participated in the transportation of their poultry products to the market. It was indicated by some of the women that they have vehicles used in conveying their products to the market while some others employed the services of professional vehicle operators at a fee to the market.

**Placing of prices on poultry products:** All (100%) of the respondents were responsible for placing appropriate prices on their products. Further probe interview revealed that most women relied on information from poultry association, friends and the prevailing prices in the local market to take the decision.

**Marketing of poultry products:** The women's participation in marketing of poultry products was very high (95.9%). This is similar to the finding of Adeokun (2000) on the involvement of women in marketing of fish in Lagos State, Nigeria.

From the foregoing, it was obvious that poultry production requires essentially the participation of women in most of the activities in the business. However, most tedious tasks were assigned to their attendants from time to time. There were also some operations that they required the services of veterinary consultants.

### **Level of participation in poultry activities**

The level of participation of women in poultry activities were determined based on their performance of the sixteen major operations identified as essential in poultry production.

% Data in Fig. 1 indicated that majority (60.3%) of the respondents were in low level in terms of their participation. This result indicated that more than half of the women were partly and rarely involved in all the poultry operations regularly. They either assigned their attendants or veterinary consultants to perform most of the operations.

About 23.3 percent participated in poultry activities at medium level. This also revealed that there are some operations that they have either technical disability in doing or that they are physically too strenuous for women to perform on regular basis. However, 16.4 percent of the women were involved in poultry activities at high level (Fig. 1). This indicated that 16.4 percent were primarily involved in poultry production activities.

### **Personal socio-economic characteristics of women in poultry production**

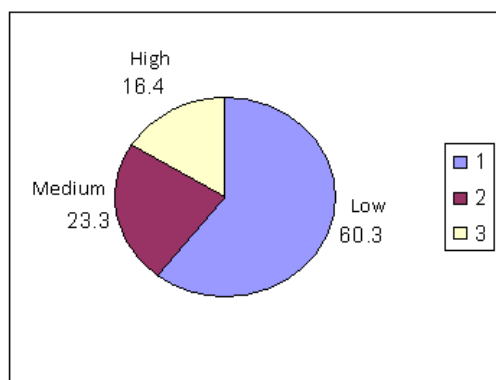
#### **a. Age of respondents**

Most of the women (46.6%) fell within the age category of 31-40 years. This represents a virile age bracket for active participation in poultry operations. About 6.8 percent were less than 30 years of age while 15.1 percent were between 41 and 50 years and just 31.5 percent were above 50 years. This result indicated that a high percentage of the women participating in poultry business were relatively young, active, matured and physically capable of performing rigorous operations involved in commercial poultry business.

**Table II: Distribution of poultry operations participated by women N = 244**

Poultry Activities	Frequency	Percentage
Preparation for the brooding activities	231	94.5
Sourcing and collection of day-old chicks (DOC)	234	95.9
Brooding of day-old chicks (DOC)	231	94.5
Routine medication and vaccination programmes	211	86.3
Feed-milling operations	217	89.1
Feeding of birds	184	75.4
Disposal and replacement of poultry litters	87	35.6
Culling of birds	244	100
Daily record keeping	234	95.9
Dressing of birds	67	27.4
Packaging and weighing of dressed birds	53	21.9
Storage of dressed birds in deep freezer/cold room.	63	26.0
Collection, cleaning, sorting and grading of eggs.	194	79.5
Transportation of poultry products	170	69.9
Placing of prices on poultry products	244	100.0
Marketing of poultry products	234	95.9

Source: Field Survey 2011



Source: Field Survey 2011

**Fig. 1: Distribution of respondents according to their level of participation in poultry activities**

#### b. Marital status

Majority of the women (94.5%) were married and 5.5 percent were single. This indicated that most of the women involved in poultry business are responsible, caring individuals with good mothering ability which is required in maintaining a good managerial standard in poultry work.

**c. Household size**

Data in Table III also indicated that majority (60.3%) of the women had household size between 6-8 people. Also a sizeable proportion (28.8%) had a household size of 2-5 people. The results further showed that 6.8 percent had large household size of 9-12 people while 4.1 percent had more than 12 people in their household. This analysis indicated that most of the women have dependant household members benefiting from the poultry business and may also be contributing their quota in terms of labour to the business

**d. Educational level**

Literacy level among respondents was quite high as all (100%) had some years of schooling in the formal educational system. Majority (71.2%) of the women had as much as tertiary education, 23.3 percent had secondary education while 5.5 percent had only primary education. From the analysis, most of the women involved in the industry were highly educated. The reason for this might not be unconnected with the fact that poultry farming requires high literacy standard and precision for correct administration of drugs, feeds, record keeping and taking of prompt management decisions. Also, good educational background of the respondents can improve and wide their business horizon and enhance creativity and expansion.

**e. Years of poultry farming experience**

Majority (57.5%) of the women had over ten years of experience, 30.1 percent had between 5-10 years of experience while 12.3 percent had less than five years participation in poultry business. This analysis showed that women that participated in poultry industry were individuals with adequate experience in the trade as very few had five years and less in the trade.

**Personal and socio-economic characteristics****Table III: Distribution of respondents according to their personal characteristics N=224**

Personal Characteristics	Frequency (N=244)	Percentage (%)
Age: 20-30 years	17	6.8
31-40 years	114	46.6
41-50 years	37	15.1
51-60 years	53	21.9
61-70 years	10	4.1
above 70 years	13	5.5
Marital Status:		
Single	13	5.5
Married	231	94.5
Household size:		
2-5	70	28.8
6-8	147	60.7
9-12	17	6.8
Above 12	10	4.1
Years of Poultry farming Experience:		
Under 5 years	30	12.3
5-10 years	74	30.1
Over 10 years	140	57.5
Educational Level:		
Primary	13	5.5
Secondary	57	23.3
Tertiary (OND, NCE, H.N.D First Degree etc.)	174	71.2

Source: - Field survey 2011.



**f. Annual income**

Data in Table IV indicated that majority (87.7%) of the women had ₦300,000 and above as their annual income. About 5.5 percent received ₦241, 000 - ₦300, 000 while 6.8 percent received ₦181, 000 - ₦240, 000 as their annual income. This analysis revealed that women participating in poultry business were of high-income class bracket capable of meeting the huge capital outlay required by the business.

**g. Proportion of annual income derived from poultry activities**

The result of the analysis revealed that many of the respondents (47.9%) derived not less than three quarter of their annual income from poultry activities. Also, 39.7 percent derived half of their annual income from poultry business, 1.4 percent indicated that they received their total income from poultry while just 11.0 percent received a quarter of their annual income from poultry activities. These finding revealed that poultry business is capable of providing sustainable income for most of the women in the average income class bracket in Nigeria.

**h. Population of birds reared**

Many of the women (32.9%) had between 600 and 800 birds. About 15.1 percent had flock size of between 800 and 1000 birds. Those that reared very large flock of over 1,600 constituted 16.4 percent, 5.5 percent constituted those that reared 1401-1600 while 4.1 percent reared 1201-1400 birds. Also 4.1 percent reared 1001-1200 birds, about 11.0 percent reared between 401 and 600 birds while 11.0 percent reared between 200 and 400 birds. This analysis indicated that women commercial poultry producers in Oyo State, Nigeria were made up of poultry farmers with small, medium and large flock size. However, majority (78%) of the women stated that they reared between medium flock size of 600 and 1,600.

**i. Type of birds kept**

Majority of the women (82.2%) reared only layers while 5.5 percent constituted those that reared table birds while those that reared table birds and layers constituted 12.3 percent. (Table III) The large number of women that reared layers for egg production indicated that marketability of poultry eggs is higher than table bird's meat because majority of the populace can afford to buy eggs.

**j: Number of people employed**

Majority (63.0%) of the respondents employed between 1 and 4 attendants to work in their poultry farm. About 5.5 percent employed as many as 7-8 people, 1.4 percent employed 5-6 people while 30.1 percent did not employ any body to work for them This analysis indicated that commercial poultry business is labour intensive and with large flock, women entrepreneur need additional labour apart from their household and personal contributions.

**Table IV: Distribution of respondents according to their selected socio-economic characteristics**

S/No	Socio-economic characteristics	Frequency (N=244)	Percentage (%)
i	Annual income		
	N181,000-240,000	17	6.8
	N241,000-300,000	13	5.5
	Above N300,000	214	87.7
ii	Population of birds:		
	Less than 500	27	11.0
	601-800	27	11.0
	501-1000	80	32.9
	1001 - 1500	37	15.1
	Over 1,600	40	16.4
iii	Type of birds kept:		
	Layers	201	82.2
	Table birds	13	5.5
	Both	30	12.3
iv	No of people employed in your poultry		
	Less than 4	154	63.0
	5-6	3	1.4
	7-8	13	5.5
	None	74	30.1

Source: Field survey 2011.

### Test of Hypothesis

**Ho<sub>1</sub>. There is no significant relationship between the personal/socio-economic characteristics of women and their participation in poultry activities.**

From the correlation analysis, positive and significant relationship were recorded between participation and age ( $r = 0.289$ ), family/household size ( $r = 0.392$ ), years of poultry farming experience ( $r = 0.256$ ), proportion of annual income derived from poultry ( $r = 0.348$ ) and the number of employees ( $r = 0.283$ ).

This indicated that age had direct effect on the level of participation in poultry activities. This implied that household size, years of poultry farming experience, proportion of income derived from poultry and member of employee were higher with their degree of participation in poultry business. This supported the results of data analysis, which implied that at certain ages (31-60 years) more women participated in poultry activities than other ages. These findings supported the work of <sup>(7)</sup> who found age along with other characteristics such as religion affiliation, cosmopolitaness to be positively related to participation in part-time farming.

This findings also supported the results of <sup>(1)</sup>, <sup>(14)</sup> and <sup>(14)</sup> which reported that there was positive and significant relationship between age, level of education, social and economic status, occupation, place of social organisation in cases that examined both agricultural development programmes/project initiated from within and outside their community.

This result revealed that the null hypothesis Ho was rejected and the alternative hypothesis Ha was accepted, that there was significant relationship between age, family/household size, years of poultry farming experience, proportion of annual income derived from poultry and number of employees while population of birds reared was negatively significant. This implied that the null hypothesis is hereby rejected that there is no significant relationship between participation in poultry activities and population of birds reared. Performance of poultry operations was one. However, annual income was positive but not significant.

**Table V: Results of correlation analysis showing linear relationship between participation of women in poultry activities and socio-economic characteristics in the study area.**

Socio-economic characteristics of respondents	Correlation coefficient (r)	Coefficient of determination ( $r^2$ )	Percentage of contribution	Decision
Age	0.289**	0.084	8.40	S
Family/household size	0.154**	0.392	39.20	S
Farming experience	0.25**	0.066	6.60	S
Annual income	0.41	0.173	17.30	NS
Educational Level	0.096**	0.310	31.0	S
Proportion of annual income derived from poultry	0.348**	0.121	12.10	S
Population of birds	-0.496**	0.246	24.60	S
Number of employees	0.283**	0.080	8.0	S

Source: Field survey 2011.

No of respondents variables	8
No of respondent	244
Degree of freedom df	242
Level of significance	0.01( $P < 0.01$ )
Critical value of "r" at 0.05 and 242 df	= 0.138
Critical value of "r" at 0.10 and 242 df	= 0.181
S	= significant
NS	= not significant
*	Significant at 0.01 level
**	Significant at 0.05 level



## CONCLUSION

The findings of this study indicated that women participated in poultry production in the study area was low though they participated in all the sixteen identified areas of activities in poultry production. The women need to be encouraged, motivated and educated through capacity building programme and empowerment activities. As rightly indicated women played a very significant role in all economic activities at the household level.

## Policy Implication

Agriculture and poverty has close linkage since a majority of the poor live in rural areas and their source of livelihood is farming and or farm related activities. Most rural environment, especially in developing countries like Nigeria have a number of natural resources. Land used for agriculture and food production, grazing land for animals, fresh water features for aquatic production e.t.c. The presences of these natural resources determine what sort of livelihood options the rural inhabitants engage in. Poultry keeping can be used to empower women economically in Nigeria because women perceived poultry keeping as a source of small cash, source of nutritious food to the family at very low cost, useful during celebration of important events, festivals, worship of goddess, and entertaining of important guests and relations. Moreover, there is hardly any household in the rural areas of the country where poultry is not kept and in the peri-urban areas most households keep exotic and/or local fowls. Normally, in all these areas women are mainly responsible for keeping the poultry. Their involvement in poultry keeping stems from the fact that they and their household members derive a lot of benefits from poultry rearing. Poultry meat and egg provides essential protein requirement for the family. It also has better energy and protein conversion ratio per feed supplement fed than many other farm animal species <sup>(14)</sup>. Poultry is also known to be the most prolific of all farm animals being capable of producing up to 300 eggs per year and attaining table weight within 6 weeks. The manure from poultry can be used to replenish soil fertility for sustainability of crop production and soil conservation.

## REFERENCES

- [1] Abiola, B.O 1994. "Community Development Programme in Ife North local Government Area of Osun State" B. Agric Thesis (unpublished). Obafemi Awolowo University, Ile-Ife, Nigeria Pg 20-35.
- [2] Adeokun A 2000. "Women's Involvement in Fish industry in Lagos State, Nigeria" Unpublished Ph.D Thesis University of Ibadan Nigeria, 253pp.
- [3] Adeyeye. V.A 1986. Relation Economic Efficiency in Farm Organisation: A Comparative Study of Cooperative and Non co-operative Farms in Oyo and Kwara State, Nigeria. Unpublished Ph.D Thesis, University of Ibadan. 1986.
- [4] Adeyeye, V.A 2001. "Impact of village chicken production system Household Food, Security and Gender Equity in Oyo State, Nigeria" In the Proceedings of the Farm Management Association of Nigeria 2001. Pp. 15
- [5] Adisa, B.O. and Okunade, E.O 2005. "Women in Agricultural Extension in Nigeria" In S.F. Adedoyin (Ed) Agricultural Extension in Nigeria. Published by Agricultural Extension Society of Nigeria (AESON). Chp 7: 9-77
- [6] Adisa, B.O. 2001. "Participation of Community-based Organisation in Rural Development Projects in Osun State". Published Ph.D. Thesis, Obafemi Awolowo University, Ile-Ife, Nigeria. Pp 40-73
- [7] Akande, S.O. 1995. Part-time Farming and Socio-economic Characteristics of Its Practitioners. Book of Proceedings of the Nigerian Rural Sociological Association. Pp 133-140.
- [8] Alabi, R.A. and Isah, A.O. 2002. Poultry Production Constraints: The Case of Esan West Local Government Area of Edo State, Nigeria. African Journal of Livestock Extension. Vol. 1: 57-61.

- [9] Babagida, M. 1991. Acceptance Speech at the Africa Prize Ceremony
- [10] Bolade, E.O. 1990. Technological Innovations for Nigeria's Fisheries Development: Issues and Analysis" Nigerian Journal of Agricultural Extensions. Vol. 5 (1 & 2). National Agricultural Extension and Research Liaison Services (NEARLS), Zaza, Nigeria. Pp 30-38
- [11] Corrat, T. And Ranson, P. 2000. "Women and Information for participation and Decision-making in Sustainable Development in Developing Countries". Background Paper for the Workshop on Gender Perspective for Earth Summit 2002". Available at the [www.Earthsummit](http://www.Earthsummit2002.org/workshop) 2002.org/workshop.
- [12] Ekong, E.E.2003. "An Introduction to Rural Sociology". 2nd Edition, Dove Educational Publishers Limited, Ibadan, Nigeria. Pp 389
- [13] Ezejiofor, V.U. 1990. "Overcoming Barriers to Effective Participation of Women in National Development". National Workshop Report of NCEMA, Ibadan, Nigeria. Pp 41-53.
- [14] Ezumah, N. 1985. Women in Agriculture: Neglect of Women's Role` In the seminar paper on Nigeria women development. June 20-21, 1985, University of Ibadan, Nigeria.
- [15] Kalu, R.N. 1989: "Agricultural engineering research and development for industrialisation in Nigeria". Paper presented at the second annual conference of the Nigeria conference of the society of Agricultural engineers, Zaria, Nigeria. 1-7 Oct., 1989 pp120.
- [16] Mtshalli, S.M 1999. "Training and In-service Training of Home Economic Extension Professionals in Rural Areas of Kwazulu Natal". Journal of Family ecology and Consumer Sciences. Vol 2.
- [17] Nwowa F.O.C 2002. The Role of Adult Education in Women Empowerment: An Assessment of Better Life for Rural Women Agriculture. A World Bank learning Module. Pp 4
- [18] United Nations Organization (UNO) 1996. United Nations Organisation. Yearbook Bulletin 1996.
- [19] Williams, S.B. 1988: "Women Participation in the Fish Industry in Nigeria". "A Review" African Notes Journal. No 3 Pp. 45-48.