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# Determinants of Poverty Coping Strategies among Women Farmers in Yola South Local Government Area of Adamawa State, Nigeria

A. A. Girei<sup>1\*</sup>, A. Abdullahi<sup>2</sup> and G. Ismaila<sup>3</sup>

<sup>1</sup>Department of Agricultural Economics and Extension, Nasarawa State University, Keffi, Nigeria. <sup>2</sup>Department of Agricultural Economics and Extension, Modibbo Adama University of Technology, P.M.B. 2076, Yola, Nigeria.

<sup>3</sup>Department of Agricultural Education, Adamawa State Collage of Education, Hong, Nigeria.

#### Authors' contributions

This work was carried out in collaboration between all authors. All authors read and approved the final manuscript.

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#### **ABSTRACT**

The study examined the determinants of poverty coping strategies among women farmers in Yola-South Local Government Area of Adamawa State, Nigeria. A purposive and random sampling technique was employed to select 140 women for the study. Data were collected through the use of structured questionnaire. Both descriptive statistics and inferential statistics were used to analyse the data. The findings revealed that 87.9% of the respondents were within the ages of 20-40 years, educated 89.3% and married 81.4% with household sizes of less than 10 persons (82.2%). Most of the respondents (66.4%) had above 11 years of farming experience. Selling of farm waste, farming, on farm crop processing and fish farming were the poverty coping strategies commonly adopted by the respondents in the study area. The coefficient of determination (R²) was estimated at 0.554 and this indicated that 55.4% of variation of the dependent variable in the model were explained by explanatory variables (age, marital status, household size, level of education, farm size, farming experience, membership of women groups and extension contact). The t-values of the significant

variables namely; level of education  $(X_4)$ , farm size  $(X_5)$ , farming experience  $(X_6)$  and membership of women group  $(X_7)$  are 6.306529, 2.947541, 2.747442 and 6.030350 respectively. These were all significant at 1% probability level. Among the constraints faced by the respondents include: lack of access to market 27.3%, Women access to fund 24.2%, and poor and crude storage / processing equipment 21.5% and type of crop grown 10.8% were foremost among the constraints. It is recommended that government and other NGOs should come up with policy framework that is targeted at reducing or obliterating the bureaucratic principles that create barriers to women access to bank credit or any source is germane.

Keywords: Determinants; coping strategies; poverty; women farmers; Adamawa State; Local Government.

#### 1. INTRODUCTION

Poverty has become one of the most famous phenomena imposing various challenges to women involvement in agricultural and nonagricultural activities in developing countries. Poverty can be defined as a factor that deprives an individual from attaining his/her well-being. In other words, poverty refers to lack of physical necessities, assets and income. It consists of the condition of deprivation dimensions include social inferiority, isolation, physical weakness, vulnerability, seasonality, powerlessness and humiliation [1]. Poverty is a reality and spreading rapidly in recent times especially in developing countries. Also not in disputation is the worldwide outrage on poverty as many people in the world are reportedly living in absolute poverty and suffer from chronic hunger [2]. The rural areas seem to be the worst hit going by the report of that about 3.1 billion people (55%) in rural areas are poor with about 1.4 billion living on less than US \$1.25 [3] stated that the proportion of the population living below the poverty line has continued to increase.

When women lag behind in their expected positive role as it is the case of Nigeria today, the society suffers greatly in terms of achieving profound peace, order, stability, growth and sustainable development. No wonder, Nigeria is currently militated by perpetual crisis as characterized by chains of social milieu ranging from corruption, to ethno-religious conflict and terrorism, all threatening the very foundation of the corporate existence of the country as political entity [4].

Many institutions have been created by government and non-governmental organizations to address the poverty status of women and Nigeria at large. The creation of programs which include: national land development authority (NALDA), better life programme (BLP), national

directorate for employment (NDE) are among the many other good examples [5]. However, all these initiatives made little or no much impact in addressing the issues associated with poverty and its impact on the livelihood activities of women farmers in the country. Thus, this development calls for immediate attention of institutions of concern. It is against this background that this paper seeks to analyze the challenges of poverty faced by women in this study area.

Majority of the recent research works that have been done on the issues related to poverty reduction was very general and consider the problem from national or regional point of view [6,7]. However, despite the increasing global and national concern of mitigating food insecurity, the challenges faced by women farmers in the study area is not much felt by the authorities concern and documented. It is on the strength of this that the study seeks to find out ways through which the poor rural women have improved on their livelihood and reduce poverty in the area of study.

Specifically, the objectives are to:

- Describe the demographic and endowment characteristics of respondents;
- ii. Identify the poverty coping strategies,
- iii. Identify the influence of socio-economic variables on poverty coping strategies of women farmers
- iv. Identify the challenges faced by the respondents.

#### 2. METHODOLOGY

#### 2.1 The Study Area

The study was conducted in Yola South Local Government Area of Adamawa State. The study

area lies between Latitude 9°14' North of the equator and Longitude 12°28' East of the Greenwich Meridian, having an average elevation of about 192 m [8]. The area falls within the Northern Guinea Savannah Zone and has a tropical wet and dry climate. Dry season lasts for a minimum of five months (November – March) while the wet season spans from April to October. Mean annual rainfall is about 700 m [9]. The area has a land mass of 2,310.05/km² and a population of 101,362 inhabitants [10]. The area is bounded by Girei to the North, Fufore to the East and Demsa to the west (Fig. 1).

The major economic activity of the inhabitants is agriculture (Crop and Livestock production). There are also civil servants and small-scale traders among them. The major crops grown in

the area include; Rice, maize, sorghum, cowpea, millet and groundnut. Fishing activities is mostly carried out by residents along the Benue River Bank and Lake Njuwa, while the Fulani are mostly cattle rearers [11]. The dominant ethnic groups in the area are Fulani, Batta, Verre, Hausa and Laka [12]. Similarly, other ethnic groups from different parts of Nigeria and other countries are also residing in the area.

#### 2.2 Sample Size and Sample Techniques

Data for this study were obtained mainly from primary source using structured questionnaire. The data were mainly collected from Yola South welfare office. The first stage involved purposive selection of wards that constituted the study area (Adarawo, Bako, Namtari, Yolde-kohi, Makama,

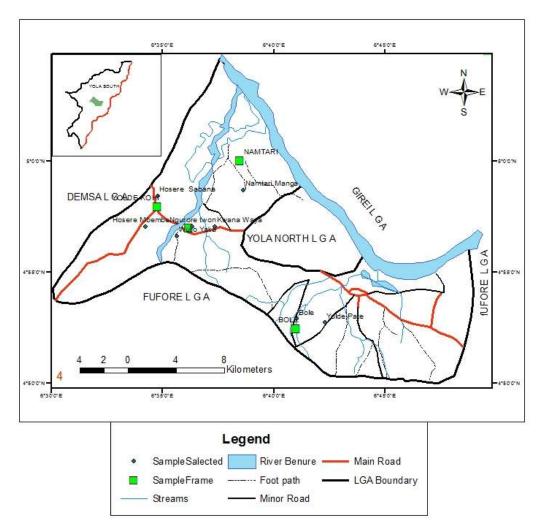


Fig. 1. Map of Yola South Local Government area showing study area Produce @ GIS Laboratory, Geography Department MAUTECH Yola 2016

Toungo, Mbamoi and Yolde). Eight wards were randomly selected because of the access to women that involves in various poverty coping strategies. The second stage involved the identification of 140 respondents using proportionality factors to serve as the sample size for the study. Finally, a total of 140 respondents were randomly selected using proportionality factor adopted by [13].

$$S = \frac{\rho}{p} \cdot \frac{Q}{1} \tag{1}$$

Where:

S = Total number of respondents sampled

p = Number of registered women in each ward

P = Total population of women in the study area

Q = Total number of questionnaire administered

#### 2.3 Analytical Techniques

Both descriptive and inferential statistics were used to analyse the data. Descriptive statistics (frequency distribution, percentage and mean) were used to achieve objective i and iv,a 4-point likert rating applied to analyse objective ii and inferential statistics (multiple regression) was employed to achieve objective iii.

#### 2.4 Multiple Regression Analysis

Mathematically, the multiple regression analysis is presented by the formula as expressed below:

$$Y = f(X_1, X_2, X_3, X_4, X_5, X_6, X_7, X_8) + \mu$$
 (2)

Y = Number of poverty coping strategies employed by women

 $X_1 = Age (years)$ 

 $X_2$  = Marital status (Married =1: Single = 0)

 $X_3$  = Household size (No. of persons)

X<sub>4</sub> = Level of education (Number of years spent in school)

 $X_5$  = Farm size (Hectares)

 $X_6$  = Farming Experience (Years)

 $X_7$  = Membership of women group (Yes =1: No = 0)

 $X_8$  = Extension contacts (Number)

 $\mu = Error term$ 

#### 3. RESULTS AND DISCUSSION

## 3.1 Demographic and Endowment Characteristics of Respondents

The socio-economic characteristics considered in this study included; age, marital status, household size, educational attainment, farm size, farming experience membership of cooperatives, membership of women group, source of land and extension contact. Table 1 shows the age of the respondents. The result shows that majority 75.1% of the respondents were within the ages of 21-40 years. This indicates that most of the women within this age range are still young and energetic and could take advantage of been energetic to withstand the pressure imposed on them as a result of been deprived from their social and political needs. In addition, 81.4% of the respondents were married. This implies that early marriage is widespread in study area. This could be due to the fact that most of the family members are very serious about relationship outside marriage life and also derives the benefits of being with their family.

On the household size, the result in Table 1 shows that most of the respondents (58.6%) have household size of 6-10 persons, while about 23.6% have household size of less than 5 persons and 17.8% have household size of above 10 persons. This means there would be availability of household labor for increased coping with poverty activities. This result is consistent with that of [14] in Katsina State, Nigeria who opined that household number is a better advantage to adopt and employ various poverty coping strategies. Table 1 also indicated that majority of the respondents were literate and this implies that the respondents could employ various strategies to address the issues related to poverty. This agrees with the findings of [15] who expressed that respondents' level of literacy and numeracy is good enough to help their enterprises. However. maiority of respondents (84.3%) belongs to one form of group or the other to take advantage of the group to attain economic, social or political motives. While only 15.7% do not take part in any membership group. This implies that majority may use their group associations to cope with poverty; Same cannot be said of cooperative societies. The finding is in conformity with that of [16] who also observed that women can take advantages of associations to cope with their poverty statuses. The farm size still confirms the peasant nature of the study area where majority of the respondents (76.4%) had less than 5 hectares of land for cultivation. While 17.9% had a farm size above 5 hectares and the remaining 5.0% had less than one hectare. This shows that about 76.4% of the respondents are small-scale farmers who usually depend on the use of

energy and crude implements for production activities. This implies that farmers in the study area were small-scale farmers operating at subsistence level. The study further indicates that the respondent's sources of farmland are an important variable in determining the poverty status of the respondents in the study. The Table revealed that majority (65.7%) respondents source of farmland is through their husbands. While 26.7% is personal source and only 7.9% acquire through communal means. This implies that majority of the respondents in the study area do not own farmland sourced mainly from their husbands. This is contrary to the finding of [17] who opined that women frequently source farm land through inheritance. On extension contact, that majority of the respondents 94.3% of the respondents had no contact with extension agents while only 5.7% of the respondents had contact with extension agent. This could be due to the fact the most of the respondents in the study area lack awareness on the role of extension agents in the development and growth of agriculture which translates to the growth in income and welfare of the people in the community. This implies that if extensions services are intensified in many rural communities, farmers will take advantage of their services to mitigate their poverty status.

#### 3.2 Poverty Coping Strategies

The respondents have expressed different opinions regarding to poverty coping strategies women involved in the study area. In an attempt to assess the strategies employed by the respondents in the study area agricultural based coping strategies are adopted. The result of the study revealed that in Table 2 respondents always engage in selling of farm waste (68.6%), farming (52.3%), and on farm crop processing (55.0%). This is as expected because women hardly own land and enough capital to engage in various agricultural commercial activities due to people's culture, religion and tradition in the study area does not allow women to take part in various livelihood earnings. This is immensely followed by strategies occasionally employ by the respondents, selling vegetable's (45%) while women in the study area rarely employ selling of farm waste (53.6%) and hiring of land (46.4) this is due to the fact that most of them source their land through their husbands. However, selling of farm waste was ranked first with (mean = 3.49). This was followed by farming (mean = 3.32), on farm crop processing and fish farming 2<sup>nd</sup>, 3<sup>rd</sup>

and 4<sup>th</sup> respectively. This implies that these agricultural coping strategies are frequently employed by the respondents because there is a favourable weather, profitable in income generation and effective medium via which women alleviate their poverty status. This finding is in agreement with that of [14]. Who opined that farm activities are more profitable in income generation and effective in enabling the respondents cope with poverty.

# 3.3 Effect of Socio-economic Characteristics of Farmers on Poverty Coping Strategies of Respondents

The analysis examines the influence of dependent variable and the independent variable. Table 3 shows the dependent variable "Y" is the number of poverty coping strategies employed by the women, while the independent variables  $(X_1-X_8)$  are socio-economic variables which include: Age, marital status, household size, level of education, farm size, farming experience, source of land, membership of women groups and extension contact.

Four functional forms were tried (Linear, exponential, semi-log and double log) Linear model gave the best fit. In Table 3 adjusted R square shows that 55.4% of variation of Y (number of poverty coping strategies employed by women) were explained by explanatory variables (age, marital status, household size, level of education, farm size, farming experience, membership of women groups and extension contact). The significant variables namely: Level of education (X<sub>4</sub>), farm size (X<sub>5</sub>), farming experience (X<sub>6</sub>) and membership of women group (X<sub>7</sub>), all had positive coefficients. The result shows that level of education (X<sub>4</sub>) has a coefficient of 0.303020 and significant at 1%. This entails that as an individual advances in level of education, he or she is more likely to employ various poverty coping strategies and this implies that a positive improvement on educational level would reduce the poverty status of respondents in the study area. It is generally observed that individuals with some level of educational development tends to cope up with situations they finds themselves by quickly adapting to situations and this helps in improving any adverse effect that may likely come his way. Attainment of educational development may also serves as an important determinant for poverty reduction among women farmers in rural areas.

Table 1. Socio-economic characteristics of the respondents (N = 140)

Variable	Frequency	Percentage
Age		
Less than 20	18	12.8
21-30	68	48.6
31-40	37	26.5
41- 50	17	12.1
Total	140	100
Marital status		
Single	12	8.6
Married	114	81.4
Widowed	9	6.4
Divorced	5	3.6
Total	140	100
Household size		
1-5	33	23.6
6-10	82	58.6
11-15	12	8.6
16-20	8	5.7
21-25	5	3.5
Total	140	100
Level of education		
No formal education	15	10.7
Primary education	32	22.9
Secondary education	30	21.4
NCE / Diploma	38	27.1
BSc / HND	25	17.9
Total	140	100
Farm Size (Ha)		
<1	8	5.7
1-5	107	76.4
6-10	25	17.9
Total	140	100.0
Farming		
Experience		
1-5	9	6.4
6-10	48	34.2
11-15	53	37.9
16-20	2	1.4
21-25	38	27.1
Total	140	100
Membership of		
Group		
Yes	118	84.3
No	22	15.7
Total	140	100
Extension Contact		
Had no contact	132	94.3
Had contact	8	5.7
Total	140	100

Source: Field Survey, 2015

The coefficient of farm size  $(X_5)$  is statistically significant at 1% level and has a positive

relationship with poverty coping strategies. Specifically, the probability of employing poverty coping strategies is increased by 0.97E-05 for respondents with large farm size. This suggests that, the welfare level increases with increase in farm size which could be translated to increased output and more income if resources are efficiently used. This is in line with the finding of [6], who opined that farm size increases the output which translates to increase in resources and income of women farmers.

The coefficient of farming experience  $(X_6)$  is statistically significant at 1% level and has a positive relationship with poverty coping strategies. The positive relationship between years of farming experience and poverty coping strategies indicates that if resources are efficiently utilized and it resulted in higher output and income and thus increases the wellbeing of the farmers. This implies that sufficient knowledge with regards to farming increases the chances of obtaining efficient outputs of the women farmers.

Membership of cooperative (X<sub>7</sub>) has a positive coefficient and statistically significant (1%) relationship with poverty coping strategies among women this could be as a result of farmers association or group will help to have access to cheaper input, better market, more committed labour supply and awareness and adoption of modern agricultural technology and all these would result in higher welfare level. This implies that, women contact with various associations will increase the possibility of farmers to take advantages of available opportunities which will result in increased output which translates to better income. While age, marital status, household size and extension contacts were all positive but not statistically significant.

### 3.4 Constraints Faced by the Respondents

The distribution of constraints faced by respondents is presented in Table 4. Foremost among these constraints were; lack of accessible market (27.3%), women access to fund (24.2), poor and crude storage / processing equipment's (21.5%) and then. The types of crops grown (10.8%). Other constraints faced by the respondents include, cultural issues, and poor leadership. This indicates that most of the

Table 2. Poverty coping strategies

S/No	Variables	Always	Occasionally	Rarely	Never	Total	Mean	Rank
1	Farming	83(52.3)	30(21.4)	17(12.1)	10(7.1)	466	3.32	2
2	Selling of farm waste	96 (68.6)	28 (20.0)	5(3.6)	11(11.4)	489	3.49	1
3	Selling vegetables	-(0)	63 (45.0)	48(34.3)	29(20.7)	314	2.24	11
4	Selling farm waste	16 (11.4)	33 (23.6)	75(53.6)	16(11.2)	329	2.35	10
5	Selling firewood	34 (24.3)	48 (34.3)	38(27.1)	20(14.3)	376	2.68	8
6	Hiring land	18 (12.9)	28 (20.0)	80(57.1)	14(10)	330	2.35	9
7	Fish farming	67 (47.9)	50 (35.7)	13(9.3)	10(7.4)	454	3.24	4
8	Poultry farming	49 (35.0)	1611.4)	65 (46.4)	10(7.1)	384	2.74	6
9	Vegetable farming	77 (55.0)	30 (21.4)	13(9.3)	20(14.3)	444	3.17	5
10	On farm crop processing	65(46.4)	48(34.3)	27(19.3)	-(0)	458	3.27	3
11	Source of farm labour	60(42.9)	19(13.6)	21(15.0)	40(28.6)	379	2.70	7

Source: Field Survey, 2015

Table 3. Relationship between socio-economic characteristics and poverty coping strategies

Variable	Coefficient	Std. error	t-statistic
Age (X <sub>1</sub> )	0.027493	0.026027	1.056324
Marital status (X <sub>2</sub> )	0.347016	0.404452	0.857991
Household size (X <sub>3</sub> )	0.090971	0.074830	1.215710
Level of education (X <sub>4</sub> )	0.303020	0.048049	6.306529 <sup>*</sup>
Farm size (X <sub>5</sub> )	5.97E-05	2.03E-05	2.947541
Farming experience (X <sub>6</sub> )	0.112291	0.040871	2.747442
Membership of women group (X <sub>7</sub> )	2.622589	0.434898	6.030350*
Extension contacts (X <sub>8</sub> )	0.0053	0.19917	0.02676
$R^2 = 0.584252$			
Adjusted $R^2 = 0.554016$			
F- statistic = 19.32293			

Source: Field survey, 2015 \* Significant at 1%

Table 4. Constraints of poverty coping strategies

Constraints	Frequency	Percentage
Mode of land acquisition and inheritance	48	16.2
Types of crops grown	32	10.8
Poor and crude storage / processing equipment's	64	21.5
Women access to fund	72	24.2
Lack of accessible market	81	27.3
Total	297*	100

Source: Field survey, 2015; \*Multiple responses

respondents could have access to poverty coping strategies if at all this constraints were well addressed in the rural areas. As a consequence of these constraints, most of the respondents are into activities with low barriers in term of technical skills and capital and equipment.

#### 4. CONCLUSION AND RECOMMENDA-TION

Results from the findings revealed that respondents in the study area were in their active

and productive age and had acquired one form of formal education or the other. The respondents in the study area employed various poverty copings strategies to improve on their welfare and wellbeing, majority having a household size of 6-10 persons and with farming experience of most of the respondents ranging between 11 and 15 years. Large percentage of the farmers have less access to extension contact, possibly due attributable to the fact that they live in a rural area, where they are confronted with lots of constraints and the role assigned to them by culture and gender makes them more vulnerable and voiceless. In addition, they have to employ a

number of strategies, which are aimed at taking care of their poverty statues. Based on these findings, the following recommendations are proffered:

- Government should come up with policies that will be targeted at reducing the bureaucratic principles that creates barriers to women in having access to bank credit or any other sources.
- ii. Group formation among women population should be encouraged. Similarly, support for inclusive group-based activities should be included in rural development policy. This will reduce conflict within cooperative societies and promote renumerative adoption of various strategies that can take care of poverty.
- iii. Efforts should be intensified in ensuring a good and adequate storage or processing equipment through concerted efforts of extension agents and agricultural agencies to address the issue of glut.

#### **COMPETING INTERESTS**

Authors have declared that no competing interests exist.

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