



Evaluation of Women's Participation in National (Special) Programme for Food Security in Niger State, Nigeria

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Abstract

The study investigated the evaluation of women's participation in National Special Programme for Food Security (NSPFS) in three project sites of Niger State, Nigeria. A structured questionnaire accompanied by interview schedule was employed to obtain information from the respondents who were randomly selected from the 3 project sites of the NSPFS. Data collected were analyzed using descriptive and inferential statistics such as frequency distribution tables, percentages, three point Likert Scale, probit regression estimate and t-test. The result of the analyses shows that majority (71%) of the women participants were of middle age and still active in agricultural production. The mean age of the respondents was 37.4 years. Greater percentages (97.4%) of the women were married and participated more in crop production. In addition, there was a change in the literacy level of the respondents in the study area. The estimate of probit regression analysis shows that a significant relationship exists between respondents' age ($p < 0.001$), level of education ($p < 0.05$) and household size ($p < 0.005$). However, probit regression analysis showed that level of participation is being influenced by these factors. T-test result revealed significant increase in the farm size, output and income of the participants after the programme and were all significant at 1% level. Furthermore, the beneficiaries found to be were involved in the programme implementation. In conclusion, women participated immensely to NSPFS programme and contribute immensely to ensure food security in the country. The programme has given them more access to loans and other benefits. It was recommended that sufficient inputs at the right time be made available to them among others.

Key words: Women, Programme, Food Security and Niger State.

Introduction

Background to the Study

Food security is a state of affairs when all people at all times have physical and economic access to sufficient, safe, palatable and nutritious food to meet their dietary needs and food preferences for an active and healthy life (Nyam, 2005). According to Wibberley (2005), food security at household level, village, national and International levels requires availability of adequate quantity and quality of locally grown agriculture produces; accessibility of supplies for urban and land-remote areas (food attainable and affordable); appreciation of the close link between nutrition and health for work and enjoyment; avoidance of undue risk through livelihood vulnerability, hazards and shock (appropriate reserves).

Over the past 20 years, Nigeria has witnessed a decline in growth in the agricultural sector with its share of the Gross Domestic Product (GDP) declining from over 60 percent in the pre-oil period to about 30 percent in 2005 (NGSG, 2003). Growth in the sector has been slow and has resulted in rising food imports and falling levels of national food self sufficiency, self - reliant and increasing rural poverty. In Nigeria, two-thirds of the population lives below poverty line and household food security is inadequate (Dauda and AJayi, 2009). Nigeria is gripped by both income and food poverty, and poor access to the means of supporting rural development being among the causative factors (FGN/WHO, 2004). Nworgu (2006) states that in Nigeria, food security which goes with food self-sufficiency and sustainability is still elusive.

This is because the agricultural sector has not been able to deal effectively with the problem of food security for the Nigerian people when viewed from the stand points of the nutritional status of Nigerians, household food security and food prices (Vision 2010). In an effort to reverse these trends, the Federal Government of Nigeria (FGN) has renewed its commitment to promoting growth in the agricultural sector and prepared the National Economic Empowerment and Development Strategy (NEEDS). The country now faces the challenges of translating the agricultural growth objectives of NEEDS into feasible and well-coordinated interventions that will raise farm-level productivity, diversify production, strengthen rural market networks, stimulate the emergency of profitable value – adding agro-industries, and link producers and processors to domestic, regional and international markets (ADF, 2006).

In an attempt to achieving these vital objectives, the FGN with assistance from FAO implemented the Special Programme for Food Security (SPFS) as a pilot programme in Kano State, with the objective of identifying, adapting, testing and promoting intervention packages that promote growth in the agricultural sector. The SPFS was further up-scaled into a five-year nationwide National Programme for Food Security (NPFSS) between 2002 and 2006, covering the 36 states of the country (at 109 sites), with a total programme cost of USD 45.2 million entirely funded from National sources (Mero, 2001). Nigeria wants to feed its citizens adequately; hence it embarks on the promotion of food security for the country through the instrumentality of policies, projects and various initiatives during the past four decades. Unfortunately, the objectives have not been realized (Oyeshola *et al.* 2009). Generally, the aim of the NPFSS was therefore, to offer a practical vehicle for piloting and eventually extending the application of innovative low cost approaches both technical and institutional to improving the productivity and sustainability of agricultural system with the ultimate objective of contributing to better livelihoods for poor farmers on sustainable basis (FGN/FAO, 2001).

Women constitute half of the worlds' population and about 565 million of them reside in rural areas in developing countries where they perform increasingly indispensable roles in agricultural and national development (Akpabio, 2005). Studies have shown that rural women

farmers perform about 70% or more of Agricultural production activities, 100% of food processing and utilization activities and over 50% of storage and marketing operations (Kawani and Pernia, 2002). According to Saito (1992), women tend to contribute more towards agricultural production which constitutes an important aspect of national development. Women put in more hours in agricultural and non-agricultural activities than men. This notwithstanding, empirical findings revealed that although women perform nearly two-third of the world's work, they receive only one-tenth of the world's income and own less than one hundredth of the world's property (World Bank, 2002). Lending credence to this assertion, Ndanitsa, (2012) also revealed that though most tedious agricultural activities are carried out by women from the rural economies, they are more vulnerable to poverty. It has also been revealed that less than 3 percent of extension officials are women, and that in the whole of the United Nations System, only 4 percent of programmes benefit women (World Bank, 2002). In essence, women priorities are rarely reflected in agricultural, rural or national development research or policies. For instance, during the World Bank mission to the south-east Agricultural Development Programmes (ADPs), it was observed that the activities of women in the field of agriculture were not adequately covered by the extension services, in spite of their individual and collective efforts. Very little improved agricultural technologies were reaching the women folk, resulting in their ineffective utilization of farm production and related technologies. The World Bank (2002) reported that marginalization of women in general and rural women in particular were tantamount to stifling their potentials and denying the nation or rural communities the rewards inherent in such potentials.

In Niger State, the NSPFS commenced in 2002 with 3 sites: one in each of the 3 agricultural zones. The question now relates to the extent of women participation in the programme since its inception. It is against this background that the following research questions emanates:

- What are the socio-economic characteristics of the respondents?
- What are the various project which women participate in?

Methodology

The study area

Niger State is located in the North-central Nigeria. The State Capital is Minna, and other major cities are Bida, Kontagora and Suleja.

The state has a population of 3,954,772 people (NPC, 2006). The state is bordered on the north by Zamfara State, to the east by Kebbi state and Federal Capital Territory (FCT) bordered the state at both north-east and south-east. The state shares a common (international) boundary with the Republic of Benin, in Borgu Local Government Area (ADP, 2008). The state lies in the Guinea Savannah vegetation of the country with favourable climate. It has between latitude 8°35' to 11°30' north and longitude 3°30' to 7°20' east. The state has a total land area of 7million hectares (92,800km²) of agricultural land, which is about 10 percent of the total land area of the country, and in which 33percent is under cultivation. The state potential for *Fadama* development is also enormous and the *Fadama*

area of the state is 682,000 hectares of irrigable land with only 3.9 percent currently under irrigation farming (NSADP, 2012).

Sampling technique and data collection

NSPFS has three (3) sites in Niger State namely Nasarawa (Zone I), Gidan Mangoro (Zone II), and Lioji (Zone III). Each site was stratified into two (2) on the basis of gender, and the female strata which is the focal point of the study was selected for the study. Similarly, each site has 3 female groups with its membership ranging from 15 to 20. A scale of 60% was used to select the number of respondents based on the information sourced from NSADP (that provided the sampling frame). In Nasarawa site, 12, 12 and 10 respondents respectively, were randomly selected. In Gidan Mangoro site, 12, 11 and 12 respondents respectively were randomly selected. In Lioji site, 10, 12 and 12 respondents respectively, were randomly selected. A total sample size of One hundred and three (103) respondents was selected for the study. The sample design is presented in Table 1.

Table 1: Study Sample Design for NSPFS Women respondents in Niger State

Site	Groups	Population	Sample size
Nasarwa (Zone I)	Group I	20	12
	Group II	20	12
	Group III	15	10
Gidan Mangoro	Group I	20	12
	Group II	18	11
	Group III	20	12
Lioji (Zone II)	Group I	15	10
	Group II	20	12
	Group III	20	12
Total		168	103

Source: NSADP (2012).

Data for the study were obtained from a combination of both primary and secondary sources. The later was obtained from records and documents of the UNDP, World Bank, FAO, NSADP, NSPFS office, NEEDS, Journals, Proceedings, etc. Primary data were obtained with the aid of a well- structured questionnaire accompanied by interview schedule.

Analytical techniques

Both descriptive and inferential statistics were used to analyze the data obtained between

May – July, 2012. Objectives (i), (ii) and (iv) were achieved using descriptive statistics such as frequency distribution tables, means/averages, percentages etc. 3 point Likert Scale was used to achieve objective (iii). Probit regression model was used to achieve objective (v) and objective (vi) was achieved using student t-test.

Model specification

The T-test is given as:

$$t = \frac{\pi_1 - \pi_2}{\sqrt{\frac{\delta_1^2}{n_1} + \frac{\delta_2^2}{n_2}}} \dots \dots \dots (i)$$

$$\text{But } \hat{\sigma}^2 = \frac{\sum X^2 - (\sum X)^2}{n} \dots\dots\dots (ii)$$

Where $X_1 = \frac{n-1}{X_2}$ = mean value before NSPFS
 = mean value after NSPFS
 $\hat{\sigma}_1^2$ = variance before NSPFS
 $\frac{1}{\hat{\sigma}_2^2}$ = variance after NSPFS
 n_1 = Sample size before NSPFS
 n_2 = Sample size after NSPFS

The expression for the probit regression model is given as:

$$Y = \frac{P_i - P_j}{P_i - P_j} \dots\dots\dots (iii)$$

$$= b_0 + b_1X_1 + b_2X_2 \dots\dots\dots + b_nX_n + U \dots\dots\dots (iv)$$

- Where: Y = level of participation (high = 1, low = 0)
 P_i = highly involved (1)
 1-P_i = lowly involved (0)
 b₀ = intercept/constant
 b_{1-n} = coefficient of the parameters
 X₁ = age (years)
 X₂ = marital status
 X₃ = level of education; (number of years spent in school)
 X₄ = household/family size
 X₅ = occupation
 X₆ = income of the respondent (₦)

Results and Discussion

The result presented in table 2 shows the socio – economic characteristics of women participants in the study area. Variables examined include age, marital status, major occupation, educational level and household size.

Table 2: Distribution of respondents by socio-economic characteristics

Characteristics							Mean
Age range (years)	30 (22.3)	31-35 (18.4)	36-40 (31.1)	41-45 (13.6)	46-50 (11.7)	50 (2.9)	37.4
Marital status	Married (87.4)	Single (1.9)	Widow (10.7)				
Major occupation	Farming (66.0)	Trading (30.0)	Others (3.9)				
Educational level	Adult (3.9)	Islamic/ Qur'anic (11.7)	Primary (8.7)	Secondary (6.8)	Tertiary (8.7)	None (60.2)	
Household size	1-5 (17.5)	6-10 (62.1)	11-15 (17.5)	16-20 (2.9)			8.7

Figures in parenthesis represents respective percentages
 Source: Field survey, 2012

Table 2 depicts that majority of the participants (97.1%) were within the age breakers of <30 – 50 years, and with a mean ages of 37.4 years. This implies that the participants of the programme were within the active and productive age bracket recommended by FAO. This findings corroborates with Adekoya *et al* (2000) as cited by Ayode (2012) who reported that majority of women participants were in the active ages, with children to train and nurture on them, this suggests that most of the women which will impose enormous economic burden are energetic, young and agile to actively participate in the programme and improve their productivity, income as well as poverty reduction. Furthermore, majority of the participants (87.4%) were married couples still staying with their spouses. However, only 12.6% were either single or widowers. This suggests that married women were more involved in the programme. This findings agreed with the findings of Ekong (2003) as cited by Ayoade *et al* (2011) that majority of rural women involved in agricultural productivity were married and are within their productive age. The findings however is contrary to the popular belief about the area that women were not allowed to engage in any socio-economic activities but only to stay at home and cook food for their male counterparts. The findings also mean that child bearing and home responsibility may influence the level of participation in the program. Meanwhile, Ayoade *et al* (2011) reported that the wishes of their husbands influence the extent of their participation in the programme.

Farming and other agribusiness activities serve as the major activity of the participants, as revealed in Table 2. 66% of the respondents were farmers or farming entrepreneurs, while others were engaged in other activities like trading and artisans. NSPFS provides farming inputs including credits facilities to the programme participants. They equally provide services such as extension education/training programmes to these farmers. In addition, they broaden their scope and encourage them to diversity their agricultural businesses such as going into aquaculture, livestock fattening, apiculture, snailing e.t.c. The argument for this is that it will keep them busy throughout the year by engaging in one economic activity or the other.

The educational level of the participants revealed that most of them (75.6%) lack modern education stitches and only 24.4% had modern education. This result is not surprising about the study area, as the three NSPFS sites were located within the educationally disadvantaged L.GAS in the state. The findings corroborated those of Ayoade (2010) and Ayoade *et al* (2011). However, this result does not have a remarked effect on women's participation in the programme because they were led into basic literacy skill acquisition by the programme facilitator in the area. Household size is another socio-economic characteristic of the participants of NSPFS revealed in Table 2. Majority of the participants (79.6%) had a household size which ranged between 1-10 members. The mean household size was 8.7 members. This finding also agrees with Ndanitsa *et al* (2011). This is a fair average based on FAO recommendation, for a good standard of living. The importance of large family size especially in traditional agriculture was also expressed by Olufe (1988), in his study of resource productivity in food-crop production in Kwara State of Nigeria. According to the researcher, family labour accounted for a significant proportion of the total labour force utilized in traditional agriculture, thereby enabling the cultivation of large hectareage of farm land and reducing the cost of hired labour for farm operations. However, Baba and Wando (1998) explained that the implication of large family size is that family expenditure tends to draw more on family income so that only a meager sum is saved and invested eventually on farming.

Table 3 presents the result of the various projects engaged by the women participating in NSPFS Programme in the state. The result also reveals that most of the women participants in the NSPFS (55.9%) were engaged in crop enterprises. 30percent participated in livestock project while marketing brought the rear (13.7%). The study therefore suggests the need to encourage more women to take into livestock and marketing project as a way of diversifying their incomes and informal insurance against total failure. The level of women participation in the programmed of NSPFS propagated in Niger State is revealed in Table 4.

Table 3 distribution of respondents according to various projects of NSPFS

PROJECTS (ENTERPRISES)	FREQUENCY	PERCENTAGE
Livestock:		
Cattle fattening	21	5.9
Poultry	18	5.0
Goat fattening	51	14.3
Sheep fattening	18	5.0
Crops:		
Vegetable	23	6.4
Yam	9	2.5
Rice	58	16.2
Maize	77	21.5
Groundnut	33	9.3
Agri business:		
Marketing	49	13.9
Total	357*	100.0

Source: field survey, 2012.

*Implies that multiple responses were recorded.

Table 4: distribution of respondents by level of participants in NSPFS

COMPONENTS	HI(2)	MI(L)	LI(O)	WEIGHTED SUM	MEAN	INVOLVEMENT LEVEL
Identification	43	40	20	126	1.2	III
Planning	42	37	24	121	1.2	III
Decision making	38	35	30	111	1.1	III
Implementation	53	33	17	139	1.3	III

III = Highly involved, MI = Moderately involved

LI = Lowly involved

Source: Field survey, 2012

Table 5 reveals the distribution of respondents based on the benefits accrued to the programme participants. Majority of the respondents (22.1%) had access to loans in the form of micro - credit, which was seen as a crucial requirement for the participants to acquire productive inputs and adopt innovations. 22.7% of the participants had access to marketing information. However, all the participants (103 respondents) had access to extension services. This suggests that there is

need to increase access to required resources to enable them participate immensely in the NSPFS programme, because inadequate input has been a major production constraint. Several factors constrained the level of participation of women in the NSPFS programme in the study area. The result of the probit regression model used to determine the influence of these factors on women participation is presented in Table 6. Table 6 shows the maximum Likelihood estimate of the probit model.

Table 5: Distribution of Respondents by Programme benefits

Benefits	Frequency	Percentage
Loan (Micro-credit)	86	22.1
Processing facilities	15	3.9
Marketing information	53	13.6
Access to extension service	103	26.5
Fertilizer	53	13.6
Improved Seeds/seedlings	41	10.5
Chemical pesticides	15	3.9
Herbicides	23	5.9
Total	389*	100.0

Source: Field survey, 2012

*Multiple responses were recorded.

Table 6: Distribution of factors influencing the level of participation

Parameter	Estimate	Standard Error	Z	Sig
Age	-0.010	0.009	-4.134	0.007***
Marital status	0.013	0.050	0.251	0.801 ^{NS}
Level of education	0.010	0.030	1.942	0.033**
Household size	-0.047	0.021	-2.273	0.023**
Major occupation	-0.031	0.073	-0.431	0.667 ^{NS}
Income	0.000	0.000	1.235	0.217 ^{NS}
Intercept	-2.297	0.344	-6.682	0.000
Chi-square (X^2)	156.633***			

***Implies 1% level of significance, ** Implies 5% level of significance, NS =Not significant.

Source: Field survey, 2012.

The significance of the X^2 shows that the probit model is fit and appropriate for the analysis. Three (3) out of the seven (7) variables included in the model were found to be significant in determining the level of women participation. The coefficient of the age was negative and significant at ($p < 0.01$). This implies that the aged people do not participate in the NSPFS programme. The coefficient of the level of education was positive and significant at 5%. This implies that the higher the level of education the higher the level of participation. This also implies that there is a change in the literacy level of the participants as a result of the basic literacy skill acquisition introduced by the

programme facilitators. The coefficient of the household size was negative and significant ($P < 0.05\%$). This implies that the higher the household size the lower the level of participation. This is contrary to the past studies which suggest that household size has positive influence on the level of participation. It however concurs with the findings of Baba and Wando (1998), that larger household size has a negative impact on the available resource to be invested in farming.

Table 7 is the result of the t-test analysis on the impact of programme participation on farm size, output and income levels (before and after).

Table 7: Distribution of farm size, output and income level of the responded before and after the programme

T - test	T - values
Farm size before in hectares/farm size after in hectares	-3.542***
Output of crops before in kg/output of crops after in kg	-5.258***
Outputs of livestock before/output of livestock after	-8.121***
Income before/income after	-12.611***

Source: Field survey, 2012

The t-value (-3.542) of the farm size before and after is significant at 1%. This means that there is significant difference in the farm size of the participant before and after the programme. This suggests that farm size or the land holding of respondents increase after participating in the NSPFS programme, i.e cultivation of more hectareage of farm land. The t-value (-5.258) of the output of crops before and after is significant at 1%. This implies that there was an increase in the output levels of the farmer after participating in the programme. Furthermore, the t-value (8.121) of the output of livestock before and after the programme is significant at 1%. This implies that there was increase in the number of livestock after

participating in the NSPFS programme. Also, the t-value (12.611) of the level of income before and after the programme is significant at 1%. This implies that there was increase in the level of income after participation in the programme. It can therefore, be inferred that there was a change in the livelihood status of the participants of the study area after participating in the programme.

Conclusion and Recommendations

The study considered the activities of the NSPFS among the participants in the study area. NSPFS in Niger state witnessed an immense success as the participants were highly involved in the programme.

It is from the findings of this study that leads to the following recommendations: sufficient inputs like, improved seeds, fertilizers, agrochemicals should be made available to the

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- participants at the right time; the programme should enlighten the participants more on the need and importance of family planning, modern food processing methods, etc.
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