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## Effect of North East Food Security and Livelihood Emergency Support Project (NEFSLESP) on Women Farmers' Output in Fika Local Government Area of Yobe State, Nigeria

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### **Abstract:**

*This study examines the effect of North East Food Security and Livelihood Emergency Support Project on Women Farmers' Livelihoods in Fika LGA of Yobe State, Nigeria. Specifically, the study examines socio-economic characteristics of women farmers and the effect of farm inputs on women farmers' output in Fika LGA of Yobe State. Data for this study were obtained through the use of structured questionnaire. The questionnaire were administered to 121 women farmers, all were duly filled and returned. The reason behind 100% return rate of the questionnaire is that the number of women beneficiaries of NEFSLESP is not large enough. This allows researchers with the help of research assistants to consult everyone of them. The study considered all population (121) of women beneficiaries in the project due to the fact that the population is not large enough to adopt any sampling technique. Data collected were analyzed using descriptive statistics and inferential statistics. Results of the study shows that mean age of the participants was 36 years, majority (72.7%) were married and the mean household size was 6.0 persons. The participants spent an average of about 9.0 years in formal schooling and only 9.1% had tertiary education. About 50% acquired agricultural land through freehold and 95% of them engaged in livestock production. The average farm size of the participants was 0.6 hectare and the mean farming experience was 7.0 years. The average number of dependents per household were 5.3 persons and majority (65.3%) of the participants had extension visits. The study also revealed that the mean farm income for the participants was ₦175,137.7686 and most participants had more than one source of income. The paired samples t-tests showed that the project had significant effect on output. The study recommends that NFDP should encourage women to participate in crop production. Yobe State in particular and Federal Government of Nigeria should formulate and implement a policy on land tenure system that will give women adequate access to farmlands.*

**Keywords:** Food security, livelihood and support project

### **1. Introduction**

Insurgency or conflict the world over has taken a heavy toll on the quality and quantity of food that people require for nourishment<sup>20</sup>. The African continent is riddled with conflicts of various kinds. These conflicts include election disputes, resource and environmental challenges, civil wars, armed insurgency, religious intolerance, ethnic friction, community and boundary conflicts between countries. Some of these conflicts have sadly led to a massive loss of lives and property and to environmental destruction with dire consequences for agricultural production and food shortages. The severe food crisis or insecurity in several parts of the continent is partly due to these very costly wars<sup>12</sup>.

<sup>26</sup>reported that due to the Boko Haram insurgency more than 5.2 million people in north-eastern Nigeria suffered from severe food insecurity and some 54,000 faced famine. The food insecurity crisis is massive in this conflict prone region of Nigeria. Over 15 million people were food insecure of whom over 5.2 million were severely food insecure. As a result of Boko-Haram insurgency, many of the internally displaced people in the north-eastern part of Nigeria face enormous difficulties in meeting their food and non-food needs. Assessments in late 2014 alone, following interviews with key informants in Borno, Yobe and Adamawa states, revealed that vast areas of southern Yobe, Borno and northern Adamawa states were under-cultivated and/or not harvested during the May to December main farming season as a result of attacks and conflict-related fears orchestrated by the Boko Haram insurgency in the area. Off-season farming and fishing activities in the first half of 2015 were lower than before, thereby affecting agriculture and fish farming activities. As a result, many households in the affected areas in Borno, Yobe and Adamawa were left with significantly below-average food stocks in 2015.

However, Fika Local Government is one of the Local Government Areas located in southern part of Yobe State affected by Boko Haram insurgency in the North Eastern part of Nigeria. The commonest livelihood activities in the area are crop and livestock production. These economic activities of the area were affected by insurgency. By the time the activities of the insurgents were curtailed in the area, the people needed help to revitalize their livelihood sources

(agriculture) in order to contribute to their food needs rather than depending all together on food assistance alone from donor agencies. The communities requested support to rehabilitate some basic infrastructures such as water supply and access roads to farms as well as supply of basic agricultural inputs to enable the households go back to farming business especially in the area of crop and livestock production. It was based on this demand that the National Fadama Development Project Federal Ministry of Agriculture and Rural Development under its Fadama III Second Additional Financing introduced and executed 4 years (2016-2019) North East Food Security and Livelihood Emergency Support Project (NEFSLESP) in Fika Local Government Area<sup>15</sup>.

Moreover, North East Food Security and Livelihood Emergency Support Project (NEFSLESP) is an agricultural support project introduced in 2016 as part of the post insurgency rehabilitation projects. It was introduced purposely to increase the incomes for users of rural lands and water resources in a sustainable manner and to contribute to the restoration of the livelihoods of conflict affected households in the area. The target beneficiaries of the project were those households (men and women) affected by Boko Haram insurgency. Some women in the study area were involved in farming as well as in NEFSLESP due to the loss of their husbands as a results of Boko Haram insurgency.

However, studies have been done on women empowerment in agricultural production in Yobe State by <sup>14, 19, 10</sup> among others. But none of these studies examined the effect of the project on output of women farmers. Hence, this study has contributed by examining the effect of the project on output of the participating farmers in Fika Local Government Area of Yobe, Nigeria. The research objectives were to examine socio-economic characteristics of women farmers in Fika LGA and examine the effect of the project on women farmers' output in Fika LGA.

## 2. Literature Review

Agricultural Support Project is an organized form of programme by government, international agencies and Non-Governmental Organizations aimed at helping farmers in exploiting agricultural resources. <sup>11</sup>explained that agricultural development programmes are schemes established to increase and improve farmers' standard of living in the area of livelihood, the improvement of their environmental states, farming skills, knowledge and hence improving production and livelihood. <sup>29</sup>maintained that the agricultural support services project aims to develop on a pilot basis organizational structures for producers that represent their needs and interest and improve the institutional capacity and quality of agricultural services delivered by public and private institutions and producer organizations; and improve the flow of information for all stakeholders.

Food security as a condition where everyone has access to sufficient food to live a healthy and productive life<sup>28</sup>. Food security is a complex phenomenon and may be seen as an integration of three core dimensions i.e. food availability, accessibility and utilization<sup>9</sup>. <sup>26</sup>defines it as a situation when everyone has physical, social and economic access to sufficient food to meet their dietary needs, produce and stay healthy. In fact, food security is when there is food sufficiency with no hunger or fear of starvation. Several indicators are associated with food security. These include availability, access, adequate utilization and stability of food supply at all times<sup>7</sup>.

<sup>27</sup>Livelihood is a means of living or supporting life. In a similar vein,<sup>5</sup>maintained that livelihoods are the means that enable people to earn a living. This include the capabilities, assets, income and activities people require in order to ensure that their basic needs are covered. A livelihood is sustainable when it allows people to cope with, and recover from setbacks and stress (such as natural disasters and economic or social upheavals) and improve their welfare and that of future generations without degrading the environment or natural resources base.<sup>23</sup>viewed livelihood as the capacities, assets (including both material and social resources) and activities required for making a living.

### 2.1. Effect of Agricultural Support Programmes on Output

The result of the study by<sup>3</sup>shows the farm production by the respondents before and after participating in the programme. The majority (57.8%) of the respondents cultivated between 0.6 and 1.0 ha of land for maize, 43.3% cultivated between 0.21 and 0.35 ha for cassava and 73% cultivated between 0.36 and 0.50 ha for yam. The output of most of the respondents were 1.1–1.5 tons/annum for maize, 2.1–4.1 tons/annum for cassava, and 3.1–4.5 tons/annum for yam, and this was obtained by 73.5%, 41.6%, and 73.0% of the respondents, respectively. After the Fadama III intervention, the majority (96.8%) of the farmers cultivated between 1.1 and 20 ha of maize farmland with an output of about 2.1– 3.0 tons/annum (by 96.2% of the respondents). Also, 81.6% of the respondents cultivated between 1.1 and 1.5 ha of yam with an output between 6.2 and 9.2 tons/annum (for 68.1% of the respondents).

The study by<sup>25</sup> revealed that the calculated Z-statistic was 10.17 but at 0.05 level of significance, the critical table value of Z is  $\pm 1.96$ . Since the calculated Z-value (10.07) is greater than the Z critical or Z- tabulated value, it implied that there was significant difference in the mean output level of participants and non-participants in WIA Programme. Also, the estimated mean output of participants was much higher than that of non-participants, (688.06 Kg) as against (139.91Kg). Hence WIA participants declared a higher level of output from their agricultural enterprises than non WIA participants. Hence the impressive difference in the farmers mean output levels were largely attributable to farmers' participation in WIA programme. In a similar vein, <sup>24</sup>in their study reported that participation in farmer support programmes leads to better agricultural output. Also, <sup>13</sup>reported that significant relationship exists between Agricultural Services and Training Centre project and the output of tomato farmers' in Plateau State, Nigeria.

<sup>22</sup>conducted a study on Concern Worldwide Rwanda livelihoods programme: Farming for Impact – A Case Study of Smallholder Agriculture in Rwanda with the application of impact chain methodology. The result shows that some participants were able to create surplus output from agriculture through new techniques. *'What I gained most from the programme is the training on new techniques for agriculture, now I can harvest more, I can sell some, and I can*

*consumesome.*' (Female participant, HIV positive). Also, <sup>18</sup>reported that the productivity and output for beneficiaries and non – beneficiaries of poverty alleviation programmes in Ikwuano LGA, Abia State revealed a remarkable scenario. The results showed that the rural development programmes which had poverty alleviation objectives impacted significantly on productivity and output at 5 percent level of probability. The study reported that the mean difference in the productivity and output of farmer beneficiaries and non - beneficiaries of poverty alleviation programmes was 0.32 (with a high t – value of 3.17), the result is statistically significant at 5.0 percent probability level.

### 3. Methodology

Fika Local Government is one of the 17 Local Government Areas of Yobe State. It has a total land area of 2208 km square and has the total population of 136,895 people out of which 67,561 were female<sup>16</sup>. The headquarters of Fika local government area is situated at Fika town which is 156 kilometres away from Damaturu, the state capital. The climate of the area provide the annual rainfall between 600 – 1000mm with average temperature ranging from 35 – 38°C and the vegetation is identified as Sudan Savanna. Fika Local Government Area shares common boundaries with Nangere and Potiskum Local Governments Areas to the north, Fune and Gujba Local Government Areas to the east, Bauchi state to the west and Gombe state to the south. Farming is the major economic activity of the people in the area.

Primary data were used for the study. The data were generated from women farmers participating in the North East Food Security and Livelihood Emergency Support Project through the administration of well-structured questionnaire by trained enumerators under the supervision of the researchers. Data were collected on socioeconomic characteristics of the participants such as age, farm income, educational level, marital status, household size, farm size, extension visit and other sources of income. Data were also collected on output from production process before and after the project intervention.

The North East Food Security and Livelihood Emergency Support Project covering seven communities affected by Boko Haram insurgency (Fika, Ngalda, Dumbulwa, Tadangara, Gantsa, Koromchi and Siminti). Beneficiaries in the insurgency affected communities were grouped into eleven (11) Community Action Plans (CAPs) including; Korori, Bogaru in Fika town, Ngalda A, Ngalda B in Ngalda, Tadangara A, Tadangara B, Tadangara C in Tadangara village, Dumbulwa village, Gantsa village, Koromchi and Siminti village CAPs. In each CAP, 40 households were selected as direct beneficiaries of the programme given rise to 440 households, out of which 121 were female while others were male<sup>15</sup>.

This study therefore, does not embark on any sampling technique. It considered the total population of one hundred and twenty-one (121) women farmers benefiting from the project without necessarily putting any selection criteria in place due to the fact that the population of women participants in the project is not large enough to adopt any selection criteria. Primary data were used for the study. The data were generated from women farmers participating in the North East Food Security and Livelihood Emergency Support Project through the administration of well-structured questionnaire by trained enumerators under the supervision of the researchers. Data were analysed using descriptive statistics such as frequency, mean and percentage and paired samples t- test.

### 4. Results and Discussion

#### 4.1. Socioeconomic Characteristics of Women Farmers in Fika Local Government Area

##### 4.1.1. Age

The results revealed that the mean age for the participants was 36 years as presented in Table 1. This disagrees with the findings of<sup>4</sup> in Southeast, Nigeria that the mean age of the farmers was 44.2 years. The farmers ages could have influence on their labour supply for crop and livestock production. Relatively, younger farmers are stronger and could cultivate larger-farm sizes and raise more animals which increase output than older farmers.

##### 4.1.2. Marital Status

Table 1 shows that 27.3% of the respondents were unmarried while 72.7% were married. This is in line with the findings of<sup>1</sup> on beneficiaries' perception of selected rural women empowerment projects in Ogun State, that about two out of every three (68.35%) of the women were married. This means that more than half of the respondents were married. This implies that participation in development programmes among women is mostly by married ones in the study area. This would increase the level of output.

##### 4.1.3. Household Size

The mean household size of 6.0 persons was obtained for the participants. This is slightly higher than Nigeria's average household size of 5.0 persons per family<sup>17</sup>. This slight variation is probably as a result of polygamous marriage practice in the study area. Increasing family size could increase output. This finding disagrees with the finding of Fada<sup>8</sup> that poultry farmers in Bauchi state had household size of 9.0 persons.

##### 4.1.4. Level of Education

Respondents spent an average of 9.0 years in formal schooling as presented in Table 1. Majority (63.1%) had up to secondary education. This agreed with the finding of<sup>21</sup> in the study on empowerment and participation in development processes in Nsukka LGA, Enugu state that majority of the respondents had secondary school certificate. Educational level of respondents is an important factor which is thought to influence their farm output. The knowledge of the modern agricultural production techniques will go a long way to cause improvement in farm output.

#### 4.2. Land Acquisition

Table 1 reveals that 36.4% of the respondents acquired their farmlands through inheritance, 5.8% by purchase, 7.4% through leasehold and 50.4% through freehold. This means that about half (50.4%) of the respondents acquired their farmlands through freehold. This implies that half of the participants acquired farmlands freely from their husbands and relatives. The system of land ownership has influence on output.

#### 4.3. Farming Practice

Table 1 shows that 95.1% of the respondents were into livestock farming whereas 4.9% were into crop farming. This means that majority of the respondents engaged in livestock farming in the study area. This implies that livestock farming is an important economic activity in the study area. We can therefore deduce that domestication of livestock (mostly sheep and goat) is one of the livelihood activities of women in the study area.

#### 4.4. Farm Size

Mean farm size for the respondents was about 0.6 hectare as presented in Table 1. Farm size is a reflection of output and incomes of farming households. Increase in farm size may result in increased output which ultimately increased the probability of better livelihood. Households farm size, thus, play an important role in influencing output.

| Variables                         | Frequency | Percentage | Mean       |
|-----------------------------------|-----------|------------|------------|
| <b>Age (years)</b>                |           |            | 36         |
| Less than 25                      | 14        | 11.6       |            |
| 25 - 34                           | 56        | 46.3       |            |
| 35 - 44                           | 29        | 23.9       |            |
| 45-54                             | 13        | 10.7       |            |
| 55 and above                      | 09        | 7.4        |            |
| <b>Marital status</b>             |           |            |            |
| Married                           | 88        | 72.7       |            |
| Single                            | 33        | 27.3       |            |
| <b>Household Size (number)</b>    |           |            | 6.0        |
| Less than 5                       | 27        | 22.3       |            |
| 5- 10                             | 78        | 64.5       |            |
| 11 and above                      | 16        | 13.2       |            |
| <b>Education Level (years)</b>    |           |            | 9.0        |
| Primary (1-6)                     | 47        | 7.8        |            |
| Secondary (7-12)                  | 63        | 52.1       |            |
| Tertiary (13 and above)           | 11        | 9.1        |            |
| <b>Land Acquisition</b>           |           |            |            |
| Inherited                         | 44        | 36.4       |            |
| Purchased                         | 07        | 5.8        |            |
| Leasehold                         | 09        | 7.4        |            |
| Freehold                          | 61        | 50.4       |            |
| <b>Type of Farming Practice</b>   |           |            |            |
| Crop farming                      | 06        | 4.9        |            |
| Livestock farming                 | 115       | 95.0       |            |
| <b>Farm Size (hectare)</b>        |           |            | 0.6        |
| Less than 1                       | 101       | 83.5       |            |
| 1- 2                              | 12        | 9.9        |            |
| Above 2                           | 08        | 6.6        |            |
| <b>Farming Experience (years)</b> |           |            | 7.0        |
| Less than 5                       | 39        | 32.2       |            |
| 5-10                              | 64        | 52.9       |            |
| 11 and above                      | 18        | 14.9       |            |
| <b>Number of Dependents</b>       |           |            | 5.3        |
| Less than 4                       | 23        | 19.0       |            |
| 4-7                               | 52        | 42.9       |            |
| Above 7                           | 46        | 38.0       |            |
| <b>Extension visit</b>            |           |            |            |
| Visited                           | 79        | 65.3       |            |
| Not visited                       | 42        | 34.7       |            |
| <b>Farm Income (₦)</b>            |           |            | 175,137.77 |
| Less than 100,000                 | 20        | 1.65       |            |
| 100,000- 200,000                  | 96        | 79.3       |            |
| Above 200,000                     | 23        | 19.0       |            |
| <b>Other Sources of Income</b>    |           |            |            |
| Petty Trading                     | 27        | 22.3       |            |
| Local Groundnut Oil Milling       | 38        | 31.4       |            |
| Tailoring                         | 11        | 9.1        |            |
| Weaving/Craft                     | 18        | 14.9       |            |
| Barbing/Hair Dressing             | 07        | 5.7        |            |
| Civil Service                     | 09        | 7.4        |            |
| Others Specify                    | 00        | 0.00       |            |

Table 1: Socioeconomic Characteristics of Women Farmers in Fika LGA  
Source: Field Survey, 2019

#### 4.5. Farming Experience

Mean farming experience of households was 7.0 years. This is probably an indication that most women participants in the study area were not into farming prior to Boko Haram insurgency in the area. This implies that increase in farming experience may predispose farmers to acquisition of skills and better farming practices which may increase

output. Increase in output. This may in turn lead to better livelihood. The result is in agreement with the findings of<sup>25</sup> on factors influencing women participation in Women In Agriculture (WIA) Programme in Kaduna State, that more than half (55.40%) of the respondents had less than ten years of experience in their respective economic activities.

#### 4.6. Number of Dependents

Mean number of dependents was 5.3 persons. High number of dependents could add pressure on the level of output. However, if most of the members are not working, the situation may result to low farm output. But if most of the members are working, the more free hands may provide farm labour consequently leading to higher output.

#### 4.7. Extension Visits

Extension service is an important factor in agricultural production because of its roles in the dissemination of information regarding modern techniques of agricultural production. Table 1 revealed that 65.3% of the participants of the North East Food Security and Livelihood Emergency Support Project had extension visits while 34.7% had no extension visits. This implies that greater percentage of the participants had extension visits. This has greater implication on output. For those participants who had no extension visits, it was probably as a result of the extension agents fear of attack by the insurgents especially in areas of Gantsa, Tadangara and Dumbulwa CAPs.

#### 4.8. Farm Income

Table 1 showed farm income of the participants with their participation in the project (NEFSLESP). The mean farm income of the farmers was ₦175,137.77. In addition to this, some participants gained incomes from other sources. This may in turn improve the general livelihoods of their members by meeting the immediate needs of the households. This disagrees with the findings<sup>2</sup> that groundnut farmers' average income in Hong Local Government Area of Adamawa state was ₦85,000. They further reported that farmers' income is a reflection of the size of farm cultivated in the study area. This implies that farmers can improve on their income level with more farm land under cultivation.

#### 4.9. Other Sources of Income

Apart from the on-farm income generating activities, the households also engaged in off-farm income generating activities such as petty trading, local groundnut oil milling, tailoring, weaving/craft, barbing/hair dressing and civil service. The result showed that respondents engaged in the aforementioned off-farm income generating activities respectively.

Table 1 also showed that the highest percentage (31.4%) of the participants engaged in local groundnut oil milling. This is due to the fact that groundnut production is done in large quantity in Gadaka, Godowoli, Janga and Fusami areas all in the study area. Petty trading has the second highest percentage (22.3%). This is true because in the study area most women also engaged in indoor petty trading like sales of bean cake, groundnut cake, kola nut and the likes.

Households' off-farm income generating activities are also forms of income diversification activities that are key factors to livelihoods in the study area. This implies that the possibility of improved livelihoods among households would increase with intensity in off-farm income generating activities which provide additional incomes to households. With these additional incomes, participants are empowered to meet the immediate family needs and improvement on households' general welfare and farm production inputs.

#### 4.10. Effect of Livelihood Project on Women Farmers' Output in Fika LGA

| Pair                        | Mean  | N   | SD    | Std. Error Mean |
|-----------------------------|-------|-----|-------|-----------------|
| Output Before Intervention: | 7.57  | 115 | 4.488 | 0.419           |
| Output After Intervention:  | 15.37 | 115 | 5.742 | 0.535           |

Table 2: Descriptive Statistics on the Effect of Livelihood Project on Women Farmers' Output in Fika LGA (Paired Samples Statistics) (Objective 2)  
Source: Field Survey, 2019

Table 2 showed the average output of the participants of the North East Food Security and Livelihood Emergency Support Project before and after intervention in the project. The paired sample statistics revealed that the participants had a mean output of 7.57 and 15.37 goats/sheep before and after project intervention respectively.

| Paired Difference                  |       |       |                |         |     |         |
|------------------------------------|-------|-------|----------------|---------|-----|---------|
| Pair                               | Mean  | SD.   | Std. Err. Mean | t-stat  | df  | P-Value |
| Output Before - After Intervention | 7.809 | 4.242 | 0.396          | -19.738 | 114 | 0.000   |

Table 3: Effect of the Project on Output in Fika LGA  
Paired Samples Test- Paired Difference  
Source: Field Survey, 2019

As indicated on Table 3 a paired sample t-test revealed a mean difference of participants' output before and after project intervention. The results show a mean output difference of 7.809 goats/sheep. This indicates that farmers' average output increased by 7.809 goat/sheep after project intervention. Therefore, the project had a significant effect on farmers' output. This is due to the fact that the probability value ( $P = 0.000$ ) is less than alpha ( $\alpha = 0.05$ ) level of significance at t-value (-19.738) and at 114 degree of freedom. This agrees with the findings of Nwachukwu and Ezeh (2007) on the productivity and output for beneficiaries and non-beneficiaries of poverty alleviation programmes in Ikwuano LGA, Abia State, Nigeria that the programmes impacted significantly on productivity and output of beneficiaries at 5 percent level of probability. Meanwhile, the outcome of this study align with the findings of Benjamin *et-al* (2015) that Fadama III programme in Kwara State, Nigeria resulted to better output of the participants and hence better livelihood.

| Pair    | $t^2$ df     | $t^2$ +df | eta <sup>2</sup> (Cohen's Standard) |
|---------|--------------|-----------|-------------------------------------|
| Output: | 389.5886 114 | 503.5886  | 0.773625                            |

Table 4: Degree of the Effect of Project on Output (Effect Size)  
Source: Field Survey, 2019

The eta squared of 0.773625 as indicated on Table 4 shows large effect size on output. Based on the Cohen (1988) standard, the study revealed that the project had large positive effect on farm output in the study area.

## 5. Conclusion

The study concluded that the North East Food Security and Livelihood Emergency Support Project (NEFSLESP) had significant effect on output of women farmers in Fika Local Government Area.

## 6. Recommendations

Based on the findings of the study, the following recommendations are imperative:

NFDP should design its project in a manner that will encourage women to participate in crop production. This is because the highest percentage of participants in this study are livestock farmers as reported by the findings. The study also, identified small land size ownership by women participants mostly less than 1 hectare. The findings revealed that most farmlands are obtained mainly through freehold. However, such agricultural undertakings discourage agricultural production. Therefore, the government of Yobe State in particular and Federal Government of Nigeria should formulate and implement policy on land tenure system that will give women adequate access to farmlands.

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