Determinants of Coping Strategies to Conflicts Situations among Farmers in Nasarawa State, Nigeria

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Abstract: Armed conflicts in Nassarawa State usually give rise to a change or an increase in “needs”. In this case, “needs” refers to the immediate requirements for survival or recovery from the calamities. The use of coping strategies portends varying implications for agricultural production as well as the farmers. This study was therefore designed to assess the impacts of rural households’ vulnerability to conflicts on agricultural production; and determine coping strategies to conflicts situations among farmers.

Data used for this study were obtained from a total of 179 households through a three-stage sampling technique. The first stage was the purposive selection of 10 crisis prone local government areas. Second stage was the selection of one village each from each crises prone local government areas. The third stage was random selection of 25 households. Major tools of analysis for this study included descriptive statistics, likert-type scale and step wise regression.

Farming households had a loss of 2467.25 Kg (grain eq.), which constitutes 36% of total output per annum to, the conflicts. The coping strategies adopted by the rural household during conflict included relying on less preferred food as first, and borrowing of food as fifth. Correlation analysis also revealed that 100% increase in output will lead to 16% increase in vulnerability to conflicts among rural households.

It can therefore be concluded that rural households in Nasarawa State are negatively impacted due to conflicts. It is therefore recommended that farmers should be trained and supported on the use of improved varieties to increase yield without increasing the size of land to avoid vulnerability to conflicts.

Keywords: Coping Strategies for Conflicts, Conflict Situation, Farmers, Nasarawa State, Rural Nigeria

Background of the Study
Nigeria, in the last four years, has witnessed a dramatic increase in conflicts across all the geopolitical zones of the country. The concomitant effect of the conflicts which is a recurring disaster has been the distortion of the development prospect of the country. While it has been consuming human beings and properties like a tsunami disaster across the country, the North exhibited a high incidence of the conflicts than any other region in the country and has rendered the region highly unstable for effective farming (Olusola, 2004). Nassarawa in particular has experienced considerable episodes of agricultural and natural resources related clashes. Since the beginnings of the 1990s, clashes between farmers and pastoralists especially in rural areas where the dwellers are predominantly small scale farmers have become issues of particular concern in the state (Blench, 2004).

Objectives of the Study
The main objective of this study is to examine the effects of conflicts on rural livelihood among small-scale farmers in Nasarawa State, Nigeria.

The specific objectives are to:

• assess the impact of rural households’ vulnerability to conflicts on agricultural production; and
• Determine coping strategies to conflicts situations among farmers.

Justification for the Study
In an attempt to increase food production in Nigeria, every effort should be made to assess the contribution of conflict to reduction in agricultural production. Therefore, effect of the conflict relating to the major rampaging agricultural problem is the point of focus of this study. Thus, the relevance will actively reflect the effect of the conflict on rural livelihood of small scale farmers. This will relatively interpose a remark into a conversational issue in various disciplinary levels and among other researchers for sustainable development.

Impact of Conflicts on Agricultural Production
Conflict can affect agriculture and food security in many ways, in areas that specialize in labour-intensive export crops, war will have an impact on foreign exchange earnings, which may have severe implications for development and food security. If the rural population consists of net food purchasers, who perhaps provide wage labour for commercial farms, the disruption of incomes and
marketing networks will expose people to greater food insecurity than if there is a preponderance of subsistence food production. In cases where commercial farming areas depend, at least partly, on labour migration, war can interrupt established flows of seasonal labour migration and, therefore, damage productivity on commercial farms. This disruption also reduces income in areas that are not directly affected by war but that send migrant labourers to conflict zones (Messer et al., 1998).

**Coping Strategies to Conflicts Situations among Farmers**

A good knowledge of the various survival strategies available to households is fundamental for any efficient system of prevention and protection against food insecurity in conflict-prone areas. Farmers use problem oriented coping strategies to conflict situation. These include alternative occupations, purchasing of food items, increasing of farm size, early harvesting and farm relocation were the most widely used problem-oriented strategies among the farmers. The use of these strategies portends varying implications for agricultural production as well as the farmers. For instance, the pursuance of alternative occupations could introduce additional fund for farming, but could also imply less time and attention for farming among the concerned farmers. Although ‘farm relocation’, ‘multiple farm plots’, and ‘increasing farm size’ were considered as conflict coping strategies by farmers, when these are not properly carried out, especially when done without adequate consideration for herdsman’s stock routes, there could be further problems with herdsman. Early harvesting as a coping strategy also introduces the need for adequate storage and processing techniques and expenses. This means that the more the farmers perceived the conflict as ‘loss’, the more they used problem-oriented and emotion-oriented coping mechanisms (Adisa, 2011).

**Methodology**

**Study Area**

This study was carried out in Nasarawa State. The state is situated in the Middle Belt region of Nigeria. Otherwise referred to as north-central Nigeria, the Middle Belt consists of Plateau, Nasarawa, Benue, Niger, Kogi, Taraba, Adamawa, Kwara, Abuja (Federal Capital Territory- FCT), and to some extent Southern Kaduna (Ayih, 2003). This geographical sphere coincides virtually, but not identically, with what is known as the North-Central zone in the contemporary Nigerian Federation. Nasarawa State was created on October 1st, 1996. It was severed from the old Plateau State. Nasarawa State is composed of thirteen (13) Local Government Areas. Its capital is Lafia, a fast-urbanizing town along the Northern Benue valley. Spread across these Local Government Areas are a number of chiefdoms and emirates. Nasarawa State is a home to an amalgam of ethnic nationalities. Prominent among these are the Eggon, Hausa-Fulani, Tiv, Jukun, Gbagyi, Egbura, Doma, Alago, Milgili, Kambari/Kanuri, and so on. There is also a pronounced presence of settlers (non-natives) from the different parts of the country in the state. Nasarawa State lies within the Savanna grassland region of central Nigeria (Ayih, 2003).

The predominant vegetation of the state is undulating grassland with sparse forests along the Tire river valleys. The topography of the state is largely low lying but for the high lands around Mada hills and NasarawaEggon mountains, which hosts NasarawaEggon, Akwanga and Wamba Local Government Areas. Agriculture is traditionally the main occupation of the people of Nasarawa State. Important food crops grown in the state include yam, maize, guinea corn, rice, sugarcane, beans, soya beans, groundnuts, and assorted fruits and vegetables. The state is also a harbour of important solid minerals, namely granite, limestone, salt and sundry precious stones. Fishing and herding are also flourishing agricultural activities in the state. Demographically, Nasarawa State is characterized by a mean but ‘prodigiously’ increasing population. According to the 2006 census, the state has a total population of 1,863,275 people, making it the smallest in the North-central geopolitical zone. It is, however, estimated that the population of the state has since geometrically increased to the figure of 2.6million people at present (Adogi, 2013).

Nasarawa State lies in a geographical or ecological belt characterized by sparse habitation. In effect, the state’s population density is low and dispersed. This characteristic makes the state favourable to grazing and other agricultural activities. The vast arable land and relatively thin population which used to be a dominant attribute of the state, made struggle for farmland virtually unknown in the past. This advantage, however, has been overtaken in the recent years by the trend of massive agrarian migration into the state, which has resulted in stiff competition for the increasingly scarce land resources, leading to confrontations and violent conflicts (Ayih, 2003).

Nassarawa state is divided into three Zones. This classification is in consonance with agro-ecological and cultural characteristics of the areas. The zones comprise the following: Zone A: Karu, Keffi, Kokona, Nassarawa and Toto LGAs; Zone B: Akwanga, Nassarawa, Egon and Wamba LGAs; Zone C: Awe, Doma, Kaena, Lafia and Obi LGAs. The map of Nassarawa State is as shown in Figure 2.
Sampling Technique
A three-stage simple random sampling technique was employed for this study. The first stage was purposive selection of crisis prone local government areas. Second stage was purposive selection of 1 village each from each crises prone local government and the third stage was random selection of 25 households. A total of 250 rural households were selected for this study out of which responses from only 179 household was valid for the analysis of this study.

Method of Data Collection
Data used for this study were collected over a period of two months. This ranges between March 2016 and April 2016. This enabled the researcher obtain information on the vulnerability of rural households to conflict. The main data for this study were generated through primary sources. This was obtained through the use of a structured questionnaire (Appendix 1) administered by trained enumerators. Data relating to the socio-economic and demographic characteristics of the rural households, effect of conflict on agricultural production, income, and food expenditure consumption was obtained.

Analytical Techniques
Descriptive statistics such as measures of central tendencies, which comprise mean, mode, standard deviation, frequency distribution and percentages, was used to describe the socio-economic and demographic characteristics of the rural households in the study area. Other tools of analysis employed to be used in this study will include: Vulnerability Index, Descriptive statistics, Correlation analysis, Likert type scale, and stepwise regression analysis.

\[ Y = f(B_{X_1}, c) \]

Where:
- \( Y \) = level of Vulnerability (%)
- \( B \) = The coefficient
- \( X_1 \) = The vector of socioeconomic characteristics
  Where:
  - \( X_1 \) = Total household income
Following Madu, (2012) and Gutu (2013), level of vulnerability to conflict was determined by rating the vulnerability indicators of the rural households which include sources of income, access to credit, period of food satisfaction, housing facility, and highest education, source of fuel, water and toilet. This was carried out as follows:

Source of income: Access to other non-agricultural income sources = 1, 2 otherwise; Access to Credit = 1, 2 otherwise;
Source of water: Use of pump and borehole = 1, 2 otherwise;
Source of fuel: Use of charcoal and stove = 1, 2 otherwise;
Source of toilet: Use of flush toilet = 1, 2 otherwise;
Highest education qualification of household head: Tertiary = 1, 2, 3 otherwise;
Period of food in satisfaction less than 6 months: 1, 2 otherwise.

Results and Discussions
Coping Strategies to Conflicts Situations among Farmers

Table 1: Distribution of rural household according to Coping Strategies to Conflict Situation

<table>
<thead>
<tr>
<th>Coping Strategies (n-179)</th>
<th>Freq</th>
<th>Percentage</th>
<th>Mean</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rely on Less preferred Food</td>
<td>2.299363</td>
<td>1st</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Used regularly</td>
<td>78</td>
<td>43.57</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sometimes</td>
<td>76</td>
<td>42.46</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not used</td>
<td>25</td>
<td>13.96</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Borrow Food</td>
<td>1.66879</td>
<td>5th</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Used regularly</td>
<td>46</td>
<td>25.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sometimes</td>
<td>35</td>
<td>19.55</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not used</td>
<td>98</td>
<td>54.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Help from Friends and Relatives</td>
<td>2.152866</td>
<td>2nd</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Used regularly</td>
<td>58</td>
<td>32.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sometimes</td>
<td>77</td>
<td>43.01</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not used</td>
<td>4</td>
<td>2.23</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Limit Portion of Meal</td>
<td>1.866242</td>
<td>3rd</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Used regularly</td>
<td>43</td>
<td>24.02</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sometimes</td>
<td>79</td>
<td>44.13</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not used</td>
<td>54</td>
<td>30.17</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Restrict Consumption by Adults</td>
<td>1.853503</td>
<td>4th</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Used regularly</td>
<td>26</td>
<td>14.53</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sometimes</td>
<td>94</td>
<td>52.51</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not used</td>
<td>59</td>
<td>32.96</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The rural household have experienced different types of personal sufferings which include, death of children, destruction of housing facilities, Discontinuation of education, Inadequate food to eat, Livestock death and losses, post-harvest losses, sickness and diseases. In order to reduce the vulnerability level of rural household due to the implication of the personal suffering, the rural household has derived some coping strategy to conflict situation as indicated in Table 5. The most rated coping strategies (1st) is reliance on less preferred food while borrowing food with 5th position. Reliance on help from friends and relatives, limiting portion sizes of meal per time and restricting consumption by adults are rated 2nd, 3rd and 4th respectively.
It is therefore inferred that the coping strategies among the farmers are just short term temporary strategies thereby increasing their risk of vulnerability to conflict situation, there is need to establish a long term plan on coping strategies and also a well pronounced and all-encompassing government policy on the conflict situation in the study area.

The finding of this study is similar to the one found by Ibrahim and Umar (2007) who found that the major strategies utilised by the poor farming households in coping with conflict situation include skipping of meals (26.50%), engaging in wage labour (22.4%) and reduction in the quantity of meals consumed (20.04).

**Impact of Rural Households’ Vulnerability to Conflicts on Agricultural Production**

Correlation analysis indicated that the rural household output significantly affect the rural households’ vulnerability to conflict in the study area as this could result from the losses due to prevalent of the farmers/herdsmen conflict which majorly affect the farmers and indirectly agricultural production. Thus, the higher the conflict, the lower the output.

Correlation analysis estimates suggest that the more conflict experienced the lesser the production output of farmers. Conflict will decrease the output by 36%. Further analysis was carried out to determine the relationship existing between vulnerability to conflict and crop production. This is as presented in Table 8.

<table>
<thead>
<tr>
<th>Output (kg grain eq)</th>
<th>Before Conflict Freq</th>
<th>Percentage</th>
<th>After Conflict Freq</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>less than or equal to 2000</td>
<td>1</td>
<td>0.86</td>
<td>12</td>
<td>6.7</td>
</tr>
<tr>
<td>2000 to 3001</td>
<td>3</td>
<td>1.68</td>
<td>28</td>
<td>15.64</td>
</tr>
<tr>
<td>3001 to 4000</td>
<td>7</td>
<td>3.91</td>
<td>62</td>
<td>34.64</td>
</tr>
<tr>
<td>4000 to 5000</td>
<td>23</td>
<td>12.84</td>
<td>30</td>
<td>16.76</td>
</tr>
<tr>
<td>Above 5000</td>
<td>145</td>
<td>81</td>
<td>47</td>
<td>26.26</td>
</tr>
</tbody>
</table>

Output before conflict was estimated at 6699.55±2282.90. The output after 4232.30±1910.04. The output ranged between 700 and 15377.78 Kg (grain eq.) with an average of 4232.30 Kg (grain eq.)±1910.04 after conflict whereas it ranged between 1233.33 and 15133.33 Kg (grain eq.) with an average of 6699.55 Kg (grain eq.) ±2282.90 before conflict. This shows that there was a loss of 2467.25 Kg (grain eq.) which constitute 36% of total output.

Further analysis was carried out on the relationship between output and vulnerability to conflict. This is as presented in Table 9:

<table>
<thead>
<tr>
<th>Output</th>
<th>Vulnerability</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.168*</td>
</tr>
</tbody>
</table>

P value = 0.025
Significant at 5%

The relationship between output and vulnerability to conflict is 16% which implies that 100% increase in output will increase vulnerability by 16%. As shown in the Table 3.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coef</th>
<th>T</th>
<th>sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>60.28</td>
<td>387.11</td>
<td>0</td>
</tr>
<tr>
<td>Output</td>
<td>7.61E-05*</td>
<td>2.269</td>
<td>0.025</td>
</tr>
</tbody>
</table>

$R^2 = 0.028$
Variables sig at 1%

Increase in Crop production increases vulnerability of farmers to conflicts maybe because they need more land in crop production which increases their tendency of coming in contact with herdsmen or other violent situation. So also larger farmland tend to attract herdsmen to feed their cattle therefore this makes the farmers more vulnerable to conflict in situation of cost production. Therefore, the higher the crop production, the higher the vulnerability of farmers to conflict.
Conclusion
Conflict has adverse effect on the rural household in the country. Conflict is a major challenge in agricultural production in Nasarawa State. In view of the agricultural dependent economy of the rural household in the state, conflict has negative implication on agriculture. All the respondents have not only experienced conflict but have been undergone diverse personal sufferings due to conflict. They have come up with some coping strategies; most of the strategies used by the farmers can only be effective for a short period of time, some of which cannot effectively reduce the effect of the conflict. Descriptive evidences indicate that all the rural households experienced conflict at one point over a specified period of four years ranging between 2011 and 2015. Farming as major source of income for majority of the rural household increases the level of vulnerability to conflict in the study area due to the reduction in agricultural production as a result of farmers/herdsmen conflict.

Recommendations
Based on the findings of this study, the following recommendations were made:

- Farmers should be trained and supported on the use of improved varieties of seed to increase yield without increasing the size of land so as to avoid vulnerability to conflicts.
- Also farmers should be empowered through sensitization workshops on the effective strategies for combating conflict situation in the study area as this will help reduce the level of vulnerability of the rural household to conflict.
- More so, the government and the rural household should be provided with adequate basic amenities like water, good road and electricity.
- Better way of livestock management which may include the use of grazing reserve and more awareness on stock route should be created.
- A sustainable means of accessing credit is also very important in reducing the effect of conflict on rural household to help reduce the post conflict effect on the household.
- Farmers should form association and campaign to draw the attention of government and stakeholder to the impact of conflict on agricultural production. Anything done to develop the environment will equally help build up their production and reduces their vulnerability to conflict.
- Finally, adequate security is paramount in crisis zones where there are a lot of farmers and herdsmen which most times engage in clashes like Nasarawa State. However this is the responsibility of both the community leaders’ household and the government.

References