Extended Abstract
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Paper/Poster Title	**Effect of pastoral-farmer conflict on food security of pastoral and agro-pastoral households in Kwara State, Nigeria**

Abstract	***200 words max***

Inspired by the low food security situation and vulnerability among pastoral and agro-pastoral households, we estimated pastoral-farmer conflict, determined food security status, appraised the outcome of pastoral-farmer conflict on food security and describe the survival game plans adopted by pastoral and agro-pastoral households to alleviate the effect of food insecurity in Kwara state, Nigeria. Purposive and random sampling methods were deployed to choose 120 respondents. The main tools of analysis are descriptive statistics, food safety index and logistic regression. The study showed that 37.2.5% and 62.8% of the respondents were food secure and food insecure respectively. In addition, pastoral-farmer conflict, age, herd size, migration, distance to grazing area, and number of animals sold to alleviate the effect of food insecurity were the important drivers of food security in the area. Moreover, selling of animals, embracing litigation, being industrious, herders' experience, agro-pastoralism, satisfying other parties and seeking for supports from friends, relatives and government are the most effective survival game plans adopted by the respondents to alleviate the effects of conflict. Consequently, government must encourage ranching and adoption of Rural Grazing Area (RUGA) to mitigate pastoral-farmer conflict. Schemes and game plans designed at increasing herd size should be encouraged

Keywords	Conflict, food safety index, pastoralist, RUGA settlement and survival game plans
JEL Code	C. Mathematics and Quantitative Methods

Introduction	***100 – 250 words***

Pastoralism is a process of flocking animals while the pastoralists are those whose main sustenance is livestock flocking (Bhasin, 2011). The Fulanis usually migrate from one part of the country to another hunting for grasses and water for their animals and in the process farmers' plots are damaged leading to conflict between farmers and herders. This conflict was facilitated by increasing population and climatic changes, which have forced farmers to cultivate more lands that are meant for grazing and cattle routes thereby causing more enmity among the users. This has resulted into genuine hatred, bitterness and commotions in most parts of the country. Consequently, losses have been on the increase and the victims are on both sides (Shehu *et al*; 2020).

Food security exists when sufficient, safe, and nutritious food is available to a target population at all times, so that basic nutritive needs for a healthy and active life are met (FAO, 2006). Food

insecurity emerges when there is poor food availability, accessibility and utilization. Food insecurity if left unsolved, could raise susceptibility to diseases and lowers productivity. Food insecurity is a main challenge among pastoral and farming households in Nigeria (Shehu *et al.,* 2020). The incessant conflict between these two agricultural resource-users over rangeland resources, worsen food insecurity situations in the country. Numerous studies have emanated on factors influencing food security of farming households (Salau *et al.*, 2018; Shehu *et al.*, 2020). However, data quantifying the outcome of conflict on food security of pastoral and agro-pastoral households are rare in the literature.

Methodology	***100 – 250 words***

This study was done in Kwara state. Purposive and random sampling techniques was deployed to select 120 respondents. Descriptive statistics, food safety index and logistic regression were used to attain the objectives. Using food security index. households were grouped into food secure and food insecure as:

$$Si = \frac{PFE}{2/3MPFE}$$

[1]

Where:

Si = food safety index
PFE = per capita food expenditure
$MPFE$ = mean per capita food expenditure
If $Si \geq 1$= household is food secured and if $Si < 1$= household is food in secured (Salau *et al.*, 2019).
A binary logistic regression was deployed as shown below:

$$Q = h_o + h_1 p_1 + h_2 p_2 + \cdots + h_k p_k + u$$ [2]

Where
Q= binary outcome of food safety status, where food-secure household takes the value of 1and 0 if otherwise
ho= Constant
$h_1, h_2, \ldots, h_k$ = the regression coefficients, which interpret the effect of p on Q
p= explanatory factors
k = number of explanatory factors
u = error term

The variables are:

p_1 =pastoral- farmer conflict (proxy by total loss due to conflict in Nigerian Naira)
p_2 =value of animals sold to alleviate the outcome of food insecurity (Nigerian Naira)
p_3= herd size (number)
p_4= herding experience of the household head (years)
P_5=household distance to grazing area (km)
P_6=migration (Yes = 1; No = 0)

The survival game plans were estimated using 15 items on a 3 point Likert-type scale. The items include 10 problem-designed survival game plans (PDSGP), 3 feeling-designed survival game plans (FDSGP) and 2 social support seeking survival game plans (SSSGP) (Adisa, 2012).

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Results	100 – 250 words

All (100%) the respondents were males with a mean age 43.3 years. The mean per capita food expenditure (MPCFE) of respondents was estimated to be ₦4001.122, indicating that 37.2% and 62.8% of the pastoral and agro-pastoral households were food secure and food insecure respectively. Pastoral-farmer conflict was positive and significant at 5%, suggesting that the more the conflict, the better the chance of being food secured. The number of animals sold to alleviate the outcome of food insecurity was also important at 1%. This suggests that the more the number of animals sold the more food secured the household. Herd size is positive and important at 5%, indicating that the larger the herd size, the more food secured the household. The possibility of being food secure rises as the households' livestock ownership increases. In fact, their ability to withstand shocks is directly linked to their livestock holdings. The coefficient of age and distance to grazing areas are negative and significant at 10% and 5 % level respectively. This connotes, an increase in age of the household head increases the likelihood of being food secure among households. The negative relationship of distance to grazing areas suggests that the probability of being food secure decreases as the distance to grazing areas increases. The study also indicated that the most productive survival game plans are: selling of animals embracing litigation, being industrious, herders' experience, agro-pastoralism, appeasing other parties, and seeking for supports from friends, government and non-governmental agencies.

Discussion and Conclusion	100 – 250 words

Pastoral-farmer conflict is still prevalent in the country and foretells terrible outcome for food security, growth and rural development. This study quantified pastoral-farmer conflict, measured food security status, examined the outcome of the conflict on food security and describe the survival game plans adopted by respondents to alleviate the outcome of food insecurity. Regrettably, most of the respondents were food insecure. Pastoral-farmer conflict, age, herd size, migration, distance to grazing area, and number of animals sold to alleviate the outcome of food insecurity were the significant drivers of food security in the area. Furthermore, selling of animals, embracing litigation, being industrious, herders' experience, agro-pastoralism, appeasing other parties and seeking for supports from friends, relatives, government and non-governmental agencies are the most effective survival game plans deployed to alleviate the outcomes of food insecurity. Consequently, to mitigate the outcomes of the conflict, government must initiate and encourage the establishment and use of cattle ranching and Rural Grazing Area (RUGA). Herd size was found to be directly related to food security, schemes and game plans towards increasing herd size should be intensified.