



INTERNATIONAL JOURNAL OF PHYTOFUELS AND ALLIED SCIENCES
(A Journal of the Society for the Conservation of Phytofuels and Sciences)
(<http://www.phytofuelsciences.com>) (ISSN 2354 1784)

Sendarization Driver for Livelihood diversification among Fulani Agro pastoralist Women in Kwara State, Nigeria

¹Dolapo, T. A. ²Ayanwuyi, E., ¹Aderinoye-Abdulwahab, S.A., ¹Belewu, M. A and ²Oladosu, I. O.

¹Department of Agricultural Extension & Rural Development,
University of Ilorin, Ilorin, Kwara State, Nigeria

²Department of Agricultural Extension and Rural Development,
Ladoke Akintola University of Technology, Ogbomosho, Oyo State, Nigeria
Corresponding Author's Email: tawadeen@gmail.com

ABSTRACT

Increasing sedentary nature of Fulani agro-pastoralist households arose as an important strategy applied by vulnerable households to cope and adapt to institutional stress, climatic and environmental changes, resulting in economic shocks. However, the resultant reduction and gradual disappearance of cattle herd size leading to livelihood changes is only partially explored. This study investigates the impact of the sedentary nature of previously highly nomadic pastoralists leading to disappearing herd size on the transition in their livelihood. The study, therefore, assessed the Socio-economic characteristics of the Fulani Agro-Pastoralist Women (FAW) and their recent livelihood (economic) activities in Kwara State, Nigeria. Using data from 394 respondents from all agricultural zones in kwara state. Data on socio-economic characteristics, their current economic activities, and reasons for their choice of recent livelihood activities were collected. Data were analyzed using both descriptive and inferential statistical tools (Multinomial regression Analysis). The results showed that the mean age of the respondents was 42 years. 71% were married; average household size was 7, 97.0% of the respondents engaged in goat rearing as their current economic livestock activity and also 97.5% are involved in rice production as their current economic crop activity while 62.4% of them indicated that the reason for being involved in goat rearing is for income generation only, 54.3% indicated that their involvement in plantain production is for both income and household consumption. In conclusion, the most practiced livestock and crop production among the FAWs is goat rearing and rice cultivation. Based on the changes in the cultural, economic and agricultural activities of agro-pastoralists women, inclusion in programmes, activities, trainings and improved technological innovations made available to the women of the host community should be inclusive of FAWs.

Keywords: *Socio-Economic, Fulani Agro-Pastoralist Women, Economic Activities, Kwara State, Nigeria*

INTRODUCTION

Agro-pastoralism is a system that developed from the pastoralist system and economically is considered to be households that derive more than 50% of their household gross revenue from livestock and 10% - 50% of their income from farming (Msigwa and Mvena, 2014). Conditions of increased frequency and severity of drought, urban expansion, increased land use by arable farmers, short fallow periods and disappearance of grazing reserves due to increased land development, among other challenges, led to changes from their indigenous highly nomadic lifestyle to a semi or totally sedentary nature, in response to adaptation to these challenges (Jobbins, *et al.*, 2021). The agro-pastoralists mainly settle in areas where pasture and water are available for their livestock for longer periods during the year. The sedentary nature of agro-pastoralists into farming communities and semi-urban settlements allows for increased cropping activities and diversification of the Fulani agro-pastoralist women from their indigenous economic activities (sales of milk and its products) which results due to changes in the environment, reduction in herd size, consumer needs of the people in the present community and also, cultural and economic changes happening to the settled agro-pastoralists as a result of day to day interactions with members of their host community (Dérioz, *et al.*, 2014.).

Agro-pastoralists in Nigeria are typically Fulani, they are traditionally known to be highly nomadic moving constantly in search of water and pasture, by tradition they keep large herd and depend on milk and dairy products for their sustenance (Ducrotoy, *et al.*, 2016). Fulani agro-pastoralists are dispersed across sub-Saharan Africa. Their migration and settlement into various areas of the sub-region had occurred at different times

over a long period and they have undergone different stages of transformation. These changes occurred as a result of the risks and challenges in the socio-economic, political, and ecological conditions facing their livelihood. Due to the risks their production system faces, they have been settling down permanently in communities outside their original place of abode (Jobbins, *et al.*, 2021). These settled Fulani however practice livestock production and peasant farming and live at some considerable distance from urban centers and are largely settled among traditional communities. Their increased settlement in other agro-ecological zones of Nigeria has been further enhanced by less incidence of tsetse fly (*Glossina*) a vector of the deadly disease known as trypanosomiasis, due to the depopulation of wildlife that harbours trypanosomes, the successful tsetse fly eradication programme by the Federal Government of Nigeria, seasonal bush burning and deforestation and also the abundantly available pasture for cattle for at least five- eight months in these ecological zones of the country has seriously encouraged their sedentary nature in such communities (Ayantunde, *et al.*, 2010). Also, from an economic point of view, the challenges crippling their indigenous livelihood has also being an additional factor. (Shine and Dunford, 2016).

The concept of sedentarization among the pastoralists has opened doors for the occurrence of some sociological processes such as adaptation, acculturation, and assimilation in response to the multiple changing human-environmental stressors (such as climate change, population growth, urban expansion, expansion of areas under cultivation, and disappearance of grazing route) (Mortiz, 2010). Agro-pastoralists set their work functions along age and gender roles; hence Fulani Agro-pastoralist women

have distinct roles and functions within the household differing from that of the men. It is therefore, important that distinct economic spheres of men and women be recognized; hence, the outcome of changing economic and cultural traits of the Fulani agro-pastoralist women under this sedentary system demands for attention.

Notably, Fulani agro-pastoralists women are constrained with so many factors, which serve as a source of risk or shock to their livelihoods. They are excluded from legal title to land, Naseku, *et al.*, (2017) reported that a large percentage of land entitlements are in the hands of men, that the situation is not different from the discrimination faced by women farmers in sub-Saharan Africa where land is usually registered in the name of male household head regardless of who actually own the farm land. The exclusion of women from access to land can set in, chain of events in such a way that women's work burden not only increased substantially, but in effect would be turned to marginal producers denied any ownership or control of assets (Gitungwa, *et al.*, 2021). Women agro-pastoralist's entitlement to milk is linked to their household provision and responsibilities. They are responsible for the processing of milk products and marketing of dairy products (Joeke and Pointing, 1991). It has been argued across Africa that, female agro-pastoralists gain support, dignity and even some measures of authority from their involvement in milk production (FAO, 2017). Whereas, for poor pastoralist women, lack of milk is not only a material deprivation, but make them feel intimidated and socially inferior (Mishkin, *et al.*, 2018).

The sedentary nature of the Fulani agro-pastoralists household had led to some changes in their indigenous cultural and

economic activities. This implies loss of indigenous traits and way of live of this group of people. The diversification of the economic activities of the Fulani agro-pastoralist Women involves crop production and other non-native economic activities. This has also gradually eroded indigenous livelihood of the Fulani agro-pastoralist women whose indigenous economic activity is attached to milk processing and marketing of dairy products. Livestock is still seen as valued property by the Fulani agro-pastoralists, but their herd size is usually smaller than that of other pastoral systems because livestock is grazed on a range of land closer to their settlement, (Turne and Schlecht, 2019). A reduction in herd size has automatically led to a reduction in milk quantity available for household consumption, sales and invariably income of the Fulani agro-pastoralist women. This has consequently encouraged the diversification of their economic activities into non-indigenous areas. Crop production is one of the major areas of income diversification available to agro-pastoralists and ironically one of the most important competitors to the pastoralist way of life.

Past research showed that the agro-pastoralists in Borana communities in Southern Ethiopia are highly involved in crop cultivation as a response to environmental changes, population growth, and changing political conditions. In addition, uncertain climatic conditions, reduced access to grazing land and water, and reduced mobility threaten the sustainability of livestock systems in Ethiopia. As a result, pastoralists look to other sources of income, specifically crop production, to reduce their vulnerability to these new changes (Tilahun, *et al.*, 2017). Given this background this study therefore seeks to examine the level of cultural

assimilation that affect the important determinat of the socio- economic characteristics of immigrants and the recent agricultural and non- agricultural economic activities of the agro-pastoralist Fulani Women based on their Sedentary nature which has allowed for interaction of these women with members of host communities, so as to be able to identify economic areas and programme where they can be from, and extension programme, they can included. This was achieved through the following objective, studying the socio economic characteristics of the Fulani agro-pastoralist women, the current economic activities of these women and the reasons for practicing the current economic activities.

The assimilation theory builds on the approach that builds upon three central features. In the first place, diverse ethnic groups come to share a common culture through a natural process along which they have the same access to socio-economic as native of the host community/country; also this process consists of the gradual disappearance of original cultural and behavioral pattern in favour of new ones. Hence, immigrant groups are expected to melt into the mainstream culture through an inter-generational process of culture, social and economic integration. This view is exemplified by Gordon (1964), who provided a typology of assimilation pattern to capture this process. In Gordon's view immigrants begin their adaptation to their new country through cultural assimilation, or acculturation.

Methodology

Study area

The study was carried out in Kwara State, Nigeria. The State is located between latitudes 7^o 45'N and 9^o 30'N and longitude 2^o

30'E and 6^o 25'E covers a land area of about 36,825sq Km. Kwara State comprise mainly of forest and savanna vegetation constituting 47.78% and 35.04% of the State land mass respectively while, the built up area and water mass of the State constitute 16.73% and 0.44% of the State, with two main distinct seasons; the wet and dry seasons. The wet season lasts between April and October during which there is rain and the dry season with no rains is between November and March. The annual rainfall ranges from 800 mm to 1500 mm per annum while the maximum average temperature ranges between 30^oC and 35^oC. The state is primarily agrarian with great expanse of arable land and rich fertile soil. The state consists largely of great expanse of arable land and rich fertile soil which is used for the cultivation of a wide variety of staple crops like rice, maize, yam, sweet potatoes, cassava, fruits and vegetables (Britanica, 2009;NAERLS, 2012; Britanica, 2023). Agriculture is the main stay of the economy and the principal cash crops are: cotton, cocoa, coffee, kolanut, tobacco, beniseed and palm produce. The study was carried out in all of the four agricultural Zones in the State. The study was carried out in seven out of the sixteen LGAs in the State. The study population consists of all settled Fulani agro-pastoralist women in the chosen LGAs within the State. A multi stage sampling was adopted in selecting the respondents for this study. The first stage involved the random/ proportionate selection of forty percent of the LGAs in each Zone, followed by a random selection of half of the blocks in each of the LGAs making a total of 11 selected blocks, followed by the random selection of twenty percent of circles in each block, making a total of 23 circles. The final stage involved the proportionate selection of Sixty percent of the Fulani agro-pastoralist women in each circle as detailed in Table 1,

giving a population size of 658 and a sample size of 394 women agro-pastoralists who provided the primary data used in this study

Table 1: Table showing the sampling method and sampling frame of the respondents in the state

Zones in the State	LGAs Selected	Blocks selected in each LGAs	Circles selected in each Block	Population size	Sample size
ZONE A	Kaiama L.G.A	1. Kaiama block	a.Kaiama circle	38	23
			b.Venera circle	36	22
		2.Gwarana block	a.Gweria circle	30	18
			b.London circle	23	14
ZONE B	EDU L.G.A	1.Shonga Block	a.Faigi circle	32	19
			b.Dumagi circle	35	21
		2.Tsaragi block	a.Patidzuru circle	30	18
			b.Faedudangi circle	27	16
Zone C	Moro LGA	1.Shao block	a.Shao circle	30	18
			b.Kanbi circle	36	22
	Asa LGA	2.Eyenkorin block	a.Idi emi circle	27	16
			b.Atadare circle	19	11
		3.Ogbondoroko block	a.Otte Circle	25	15
			b.Reke circle	22	13
Zone D	Irepodun LGA	1.Ajase- ipo block	a.OkeIyaipo circle	37	22
			b.Omupo circle	40	24
	Oyun LGA	2.Ilemona block	a.Igbosun circle	30	18
			b.Ipee circle	35	21
	Ifelodun LGA	1.Igbaja block	a.Igbaja circle	27	16
			b.Yaru circle	30	18
		2.Oke Ode block	a.Shagbe circle	32	19
					total 658

Source: Kwara State Agricultural Development Project (KwADP)

RESULTS AND DISCUSSION

Socio-economic characteristics of the respondents

The result of socio-economic characteristics of agro-pastoralists from Table 2, reveals that

44.9% of the Fulani agro-pastoralist women were within the age group of 20-39years

while 42.4% of the FAW were within the age group of 40- 59years, with a mean age of 42 years. This indicates that a large number of the FAW were within the active economic and productive age. This is the age range where the responsibilities of family life and care for the children, dependents create the need for sources of income that will help take care of such responsibilities. This is in line with Suleiman, *et. al.* (2018) whose finding showed that 44.62% of agro-pastoralists in North-west Nigeria fall within the active age range where they are presumed to be physically skillful and more mentally vigilant and experienced in learning new technology and imbibing or have imbibed host's cultural and economic experiences. Living in the host community and the need to meet up with required household essentials allows for high interactions with host community members to achieve sales, marketing and where needed the diversification of economic activities which encourages assimilation. Majority (71.1%) of the respondents were married, while 19.0% were divorced and 1.3% were single. Also 63.2% of the respondents had a household size of 6 -9 persons. The large household size could be associated with their religious teaching, which supports large household sizes through procreation.

Furthermore, 95.2% of the respondents had their spouses belonging to the Fulani tribe while 1.7% and 1.3% had Yoruba, Nupe and Baruba as the tribe of their spouses respectively. This shows a high indication that a large number of the Fulani tribe still tends to marry within their ethnic group, thus practicing more of endogamy than exogamy and though inter-marriage may not be common, but it is not totally an absent practice and according to past studies inter-marriage fosters cultural assimilation among immigrants. This is in line with Weiss and

Stecklov, 2020, who established that marital assimilation is a type of structural assimilation, which facilitates entry and high level of interaction with members of the spouse's ethnic group and thus facilitates assimilation to the host culture. An above average percentage of the respondents (57.4%) had no formal education, while 17% of the FAWs had secondary education, and majority (94.9%) of the FAW indicated that their children were attending schools in the host community. This shows a change in attitude towards education and this would in turn help facilitate assimilation and thus encourage economic interaction of the respondents. Low quality education can hold entire communities back from economic advancement. More unequal societies may have more unequal education systems, effectively excluding the poor – especially women – from getting the skills needed to access more lucrative paying jobs (Gebbisa and Mulatu, 2017).

Table 2 also shows that 47.9% of the respondents belong to thrift societies, with 33.7% of them belonging to farmers' associations and 18.4% of them belonging to cooperative societies. Notably (79.7%) of the respondents have spent more than ten (10) years in their host communities. Prolonged duration of stay encourages assimilation of culture and economic activities; also sixty – three percent (63.2%) of the FAW do not know their generational status, which implies that they have lost count of the ancestors before them in their host communities. This allows for the dilution of their culture and native livelihood activities. This is in line with Adekola et al. (2021) who's findings showed the mean year of settlement of the pastoralists was 6.45 years, which suggests that agro pastoralists have been in the host 3communities for substantial period of time.

Table 2a: Socio-economic distribution of respondents

Socio-economic characteristics	Frequency (n=394)	Percentage	Mean	SD
Age (years)			42	13.4
20 – 39	177	44.9		
40 – 59	167	42.4		
60 and above	50	12.7		
Marital Status				
Single	5	1.3		
Married	280	71.1		
Divorced	75	19.0		
Widowed	34	8.6		
Separated	0	0.0		
Household size (persons)			7	2.2
2 – 5	110	27.9		
6 – 9	249	63.2		
10 and above	35	8.9		
Tribe of husband				
Fulani	375	95.2		
Yoruba	7	1.7		
Baruba.	5	1.3		
Nupe	5	1.3		
Hausa	2	0.5		
Level of education				
No formal education	226	57.4		
Primary education	73	18.5		
Secondary education	67	17.0		
Tertiary education	28	7.1		
Children's education				
Attending	374	94.9		
Not- attending	20	5.1		
Membership of any association				
Member	126	32.0		
Non-member	268	68.0		
Membership of any association that include members of the host community				
Member	98	77.8		
Non- member	28	22.2		
Association joined				
Thrift	47	47.9		
Cooperative	18	18.4		
Farmers association	33	33.7		
Duration of living in host comm.				
Less than 5years	43	10.9		
Five – ten years	37	9.4		
More than 10 years	314	79.7		
Generational status in host comm.				
Immigrant generation	35	8.9		
First generation	42	10.6		
Second generation	68	17.3		

Don't know

249

63.2

Source: Field Survey, 2021

Recent Economic Activities of Fulani Agro-pastoralist Women

The results on the economic activities of the FAW are presented in Table 3, with a multiple response answer showed that under the livestock economic activities of the respondents. Majority (97.0%) indicated that they were into goat rearing, 94.7% were into sheep production. 94.4% were rearing chicken, which are indigenous to their culture, and 95.4% of them have also taken on duck rearing, which is not indigenous to their culture. Traditionally, goats (West African dwarf) were not reared by the Fulani but now a lot of them are being reared within Fulani households and the traditional breed of Fulani chicken, which were known to be bigger and more tolerant than most other local breeds in the host community are getting fewer among the chicken breeds that Fulani agro-pastoralist women now rear. Now, a lot of mixed breeds are seen within the yards of Fulani women, showing that economic adaptation or assimilation has taken place where respondents have taken on rearing of livestock that are not indigenous to their culture. Zanello et al. (2019) found that livestock diversification increased dietary diversity among agro pastoralists throughout the year in Afghanistan, indicating its role in buffering household nutrition during the lean seasons. This also agreed with Ibrahim (2022) who reported that diversification of economic livelihood has been recognized as a strategy applied by vulnerable households to cope with environmental and economic shocks. Similarly, under the crop production activities, majority (97.5%) of the FAW were

into rice production, 97.5% were into production of millet, and 97.0% were into plantain and maize production.

Crops like rice and plantain are not crops indigenous to the culture of Fulani agro-pastoralist women, but their recent cultivation of these crops show changes in indigenous cropping activities of the agro-pastoralist households and thus an indication of assimilation infiltrating their livestock and cropping economic activities, as also indicated by Ayenew et al. (2018) who observed that crop-livestock diversification has a positive effect of on the ability of agro pastoralist households to diversify their dietary options during the post-harvest seasons. Under the merchandise economic activities, 97.7% were involved in cheese production, 97.2% were making fura and nunu, with 97.2% in tailoring and 97.0% of the Fulani agro-pastoralist women diversified to hairdressing and selling of koko and kunu. Also, 96.2% of the respondents are into the sales of firewood and charcoal, 97.5% of them are into the production and sales of soya bean cheese, while 97.0% of them are into the processing of harvested crops like maize shelling, guinea corn and rice de-husking and 97.5% of them are also into taking up farm labour on their own farm plots and also those of their husbands. Some of these are foreign to the traditional income generating activities of Fulani agro-pastoralist women, which further shows the presence of assimilation of economic activities that result from interactions, evidence supported by Ibrahim, (2022).

Table 3: Distribution of respondents according to their Economic Activities

Activities/occupation	Frequency	Percentage
Livestock activities		
Goat	382	97.0
Sheep	373	94.7
Chicken	372	94.4
Duck	376	95.4
Guinea fowl	381	96.7
Crop farming		
Maize	382	97.0
Cassava	380	96.4
Sorghum	380	96.4
Cowpea	378	95.9
Groundnut	381	96.7
Cocoyam	382	97.0
Plantain	384	97.5
Millet	382	97.0
Rice	384	97.5
Yam	381	96.7
Merchandise		
Cheese production and sale	385	97.7
Selling of <i>Fura</i> and <i>Nunu</i>	383	97.2
Tailoring	383	97.2
Hairdressing	382	97.0
Selling of <i>koko</i> and <i>kunu</i>	382	97.0
Selling of firewood and charcoal	379	96.2
Soya bean cheese	384	97.5
Processing of harvested crops	382	97.0
D. Farm labour	384	97.5

Source: Field Survey 2021* Multiple Responses

Economic activities, cattle ownership and source of farm land of the husbands of the Fulani agro-pastoralist women

The result on Table 4 revealed that 44.7% of the respondents indicated that major economic activity of their husbands was crop production, while 27.9% of them said that their husbands were into cattle rearing. From the result it was observed that, Crop production superseding cattle rearing may not totally be a surprising issue based on the sedentary nature of agro-pastoralists, which limits the land area available to them for cattle grazing thus more investment in crop

farming and a lot more crop variety. This is supported by Kongnso *et al.*, 2021 who stated that the agro-pastoral code is not respected in the Fundong area which is gradually becoming a mixed farming zone, and a good number of them have equally adopted crop cultivation as a means of livelihoods. A large number (41.6%) of the spouses of the FAW indicated that they had no cattle at all, while about thirty – three percent (32.5%) of the respondent's spouse were sole owners of their cattle with 19.8% as shared owners and 6.6% as shared keepers. This shows the declining and gradual disappearance of cattle rearing among the sedentary Fulani agro-

pastoralists which has influenced the diversification of their economic activities, evidence as supported by Adekola *et al.*, (2021) and Karmeback (2015) who indicated that the agro-pastoralists stated that they do not have to migrate with the livestock anymore because they are able to engage in other business activities. About thirty- three percent of the spouses of the FAW have their source of farm land through lease, while 24.1% got their farm land by gift, 23.9% by paying rent on their farm land and 19.5%

indicated inheritance of their farmland. This finding is in disagreement with findings by Adekola *et al.*, (2021) who found agro-pastoralists as having equitable access to land based on their sedentary nature in their host communities, while in line with Sodiya, *et al.*, (2009), indicating that among the land holding rights available to the Fulani settled in Yoruba land, is the leasehold right, which is the most viable option for pastoralists in the area.

Table 4: Economic Activity, Cattle Ownership and Source of Land of the Husbands of the Fulani Agro-pastoralist Women

Variables	Frequency	Percentage
Husband's occupation		
Cattle rearing	110	27.9
Crop farming	176	44.7
Business man	25	6.3
Cattle rearing and crop farming	83	21.1
Ownership of husband cattle		
Sole ownership	126	32.0
Shared ownership	78	19.8
Shared keeper	26	6.6
No cattle at all	164	41.6
Husband's sources of farm land		
Rent	94	23.9
Lease	128	32.5
Land use by gift	95	24.1
Purchase/ownership inheritance	77	19.5

Source: field survey 2021

Reasons for Diversifying Economic Activity among Fulani agro-pastoralist Women

The finding on Table 6 shows the reasons for practicing current economic activities by FAW. The table specifies whether the respondents were engaged in livestock and crop activities for both household consumption and income generation, for household consumption only, or for income generation only. Majority (62.4%) of the respondents said they raise their goats for income generation only, while 34.0% raised

their goats for household consumption and income generation and 48.2% raise their chickens for household consumption only. Also, 63.7% of those raising sheep, 51.5% of those raising chickens, while 96.0% of those raising ducks and 74.9 % of those raising guinea fowls all indicated that they raise their livestock for source of income only. Whereas 34.0%,0.3%,0.3%,0.3% and 15.2% of the respondents raise their goats, sheep, chickens, ducks, and guinea fowls respectively for household consumption and income generation, and

3.5%,36.0%,48.2%,2.8% and 9.9% of the respondents raising goats, sheep, chickens, ducks, and guinea fowls respectively for household consumption only.

Under the crop production enterprise, 90.6% indicated that they were involved in crop farming as a source of income and consumption, 7.4% indicated that they were involved in it for consumption alone and 2.0% indicated that they practiced it as a source of income only. This further emphasized the knowledge that livestock production served as a fall back for quick need of financial need within the household and farming basically for consumption within the household and the sale of whatever is excess still underlines the major need for getting involved in crop farming by a large

number of subsistent farmers. Since crop production is an important survival kit for their households, thus the tendency to comply and stay longer in environments where their farming activities are accommodated. This is in line with Oyesola (2008) who indicated in his study that Fulani agro-pastoralist women reared their goat to generate income and that most of their goats and sheep are sold during the festive periods in order to generate income. Also in line with Tilahun, *et al.*, (2017) that pointed out that majority of respondents highlighted that crop cultivation increases the availability of grains and feed source (straw), thereby improving their food security and minimizing morbidity and mortality and also loss of animals during the dry season

Table 5: Distribution of respondents by their Reasons for Involvement in Current Economic (crop and livestock) Activities

Current Economic activities	For sale/source of income only	For sale and house consumption	For household consumption
A. Livestock activities			
Goat	246 (62.4)	134(34.0)	14(3.5)
Sheep	251(63.7)	1(0.3)	142 (36.0)
Chicken	203 (51.5)	1(0.3)	190 (48.2)
Duck	382 (96.9)	1(0.3)	11 (2.8)
Guinea fowl	295 (74.9)	60(15.2)	39 (9.9)
B. Crop farming			
Maize	1(0.3)	0	393(99.7)
Cassava	218 (55.3)	155(39.4)	21 (5.3)
Sorghum	0	81(20.6)	313(79.4)
Cowpea	321(81.5)	6(1.5)	67(17.0)
Groundnut	337 (85.5)	42 (10.7)	15 (3.8)
Cocoyam	239 (60.7)	128(32.5)	27 (6.8)
Plantain	21(5.3)	214(54.3)	159(40.4)
Millet	8(2.0)	357(90.6)	29(7.4)
Rice	8(2.0)	350(88.8)	36(9.1)
Yam	57 (14.5)	294(74.6)	43(10.9)

Source: Field survey, 2021. Note: Values in parenthesis are percentage

CONCLUSION

Irrefutably, sedentary nature of agro-pastoralists is in response to the risks facing their indigenous habitat and livelihood. Some agro-pastoralists therefore settle in farming communities which provides water and pasture for longer period in the year to reduce the risks faced in the rearing of their animals. The sedentary nature creates a problem of reduced herd size which infringes on the income of both male and female within the agro-pastoralist household, thus calling for diversification in the area of economic activities engaged in by the agro-pastoralists. The sedentary nature of agro-pastoralists into farming communities and semi-urban settlements enables increased cropping activities and other areas for diversification by the Fulani agro-pastoralist women away from their indigenous livelihood (sales of milk and its products). Their sedentary state has led to livelihood diversification of indigenous economic activity of the Fulani agro-pastoralist Women. As evidences obtained indicate, reduced or total loss of herd has led to the diversion of the economic activities of the FAWs. Hence, from results obtained in the study it can be established that changes from the indigenous economic activity of the FAWs in both livestock, crop production and merchandise is evident. Thus it is recommended that; agro-pastoralists should be exposed to modern techniques of farming in crop and livestock production to improve agro-pastoralist income generation. Equally, given the reduced herd size and consequent reduction in the milk available to Fulani agro-pastoralist women, the study recommends the introduction of various cattle and livestock that produce more milk per feed consumed to increase and thus divert the attention of agro-pastoralist women back to livestock rearing, milk processing and marketing of dairy products.

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