

*Original Research Article***Coping strategies among female farmers in Ondo State, Nigeria during recent economic recession: What factors matter?**Mmaduabuchukwu **Mkpado**, Opeyemi Ebenezer **Omowole***Department of Agricultural Economics and Extension, Federal University Oye-Ekiti, Nigeria***Correspondence to:****M. Mkpado**, Department of Agricultural Economics and Extension Federal University Oye-Ekiti, Nigeria, e-mail: mmaduabuchukwu.mkpado@fuoye.edu.ng; mkpado@gmail.com**Abstract**

Economic recession often exacerbates the effects of poverty on agrarian communities in Nigeria. This paper examined the effects of economic recession on female farmers and coping strategies they employed. It explored the effects of the crisis on their income, farm size, livelihood and welfare aspects such as feeding, schooling of their children and health care. The study was conducted in Ondo State, Nigeria. Primary data were used. A multi-stage sampling technique was used to administer 100 copies of the questionnaires on females in rural agrarian households in the study area. The obtained data were analysed using descriptive statistics, Chi-square and Likert scale analysis. The findings showed that the economic recession resulted in poor health care, inadequate feeding, poor income and school dropouts. Major factors that helped the women to cope were land ownership security/access to land, introduction of new crops, marital status and educational status. These factors are crucial as their Chi-square values and Likelihood Ratios were significant at one percent probability level ($P < 0.01$). The research concludes that educated females as well as married women and women possessing secured land tenure coped better in times of economic crisis. The paper thus recommends increased investments by governments in the agricultural sector to help curtail the inflation in food prices and increasing women access to land and education.

Keywords: agriculture, gender; education, land tenure; adaptation; welfare.**INTRODUCTION**

Economic growth in Africa has continued below expectations as individuals, communities and states adjust to global, regional and national or internal shocks or headwinds; popularly known as economics, financial and food crises (Padayachee, 2010; Mkpado, 2012a). Upheavals in the business cycle are often inevitable but natural resource endowment, strategic planning and investments as well as capacities of individuals, communities and states help them cope with such crisis (Igbokwe and Mkpado, 2011). The majority of countries in Africa embarked on programs for economic growth and diversification with huge investments in the manufacturing and mining sector but often with little commitment on the agricultural sector. This has led many sub-Saharan African countries especially Nigeria to remain largely a mono commodity dependent economy susceptible to all sort of economic shocks (Mkpado, 2013). The prices of commodities fall during 2015/2016 made export revenues especially from crude oil of many countries to decline; such countries thus suffered shortfalls in budget allocations

for food production and food importation as well as infrastructure like energy supply, educational and health-care facilities (Igberaharha, 2017; United Nations, 2016).

Economic recession is a significant decline in economic activity such as profit and or output spread across the economy for a considerable period. Economic recession can also be viewed as a negative real gross domestic product (GDP) growth rate for two consecutive quarters such as first and second quarters (NBS 2016; Zulu, 2011). Based on the above definition Nigeria was experiencing economic recession since her first and second quarter growth rates in 2016 were -1.7% and -2.06%, respectively (NBS 2016; Osalor, 2016). It is sad to say that Nigeria in less than forty years had experienced incessant recessions and these had negative implications to human welfare and national economic recovery for attainment of a good global economic rating. The gross domestic product (GDP) decline rate may not show the severity of economic recession on the households and even the gender dimension of the stress and coping strategies during

the crises. It can be recalled that during the global financial, economic and food crises of 2007/2008; poor welfare indicators such as high food prices, poverty and increased malnutrition as well as higher school dropouts was reported (Mkpado, 2012b).

Did the recent economic recession of 2016 in Nigeria affect people the way the global financial, economic and food crises of 2007/2008 did? For instance, Oreuja et al. (2007) and Mkpado (2012) have noted that rural farming households who have secured land tenure coped better in times of financial difficulties/crisis with revenue from permanent tree crops like oil palm. How did the females who are often claimed to have less opportunities and more susceptibility to crises cope? Are women who are married and staying with their spouses coping better with crises? Answers to these questions are necessary for a better societal outlook and designing interventions aimed at helping people cope with crises. It is because the society and economy are experiencing a pragmatic use of gender in analysing issues, attracting attention and seeking for development. Many times females have exacerbated the concept or issue of gender by making it to be synonymous with women marginalisation or emancipation with dear consequences to the society. This may have led many researchers to concentrate on female-headed households (FHHs) at the expense of those who are neither widows nor divorcees but often the majority of the feminine folk. In fact, an increasing and erratic trend of female-headed households had been observed in many parts of the World and Africa in particular. The International Fund for Agricultural Development, IFAD (1999) noted that 25% to 60% of rural households in Eastern and Southern Africa regions were headed by women and factors accounting for this included: husbands' migration, death of husbands, civil conflicts and wars, single parenthood, family disruption, divorce and separations (Kabeer, 2003; Zhan and Sherraden, 2003; Joshi, 2004). However, Nigeria has been experiencing lower records of FHHs as shown by National Bureau of Statistics, NBS (2012) and Census and Economic Information Center, CEIC (2019). Leveraging on World Bank data (CEIC, 2019) showed that Nigeria had 19.30% of FHHs in 2008, 18.50% for December 2013 and 14.60% in December 2015. It suffices to say that studies examining issues on welfare of females in Nigeria but concentrated only on FHHs may not have covered up 19.4% of households. Such studies may not be robust enough to present issues affecting the feminine gender.

There is ample evidence and claims that women relative to men are disadvantaged in their access to land, assets, credit, employment, and education; these can constitute factors/conditions or situations which make them more vulnerable to economic shocks

(UNDP, 1995; United Nations, 1996; World Bank, 2001; Joshi, 2004, citing Folbre, 1991;). But how do these factors help women cope with the economic shock that arises in Nigeria? Nigerian economy has been facing numerous setbacks and economic crises (Mkpado, 2012b; Okoroafor et al., 2012). The economy experienced the economic crisis of the less developed economies during 1984/1985 which lead to adoption of structural adjustment programs in 1986; she had a good share of the global economic, financial and food crises of 2007/2008 as well as the recent 2016/2017 Nigerian economic recession. These challenges to resource management have brought to fore critical issues facing all sectors of the economy and the households in particular. Recession is usually characterised with a decline in certain macroeconomic indicators such as GDP, employment, investment spending, capacity utilisation, household income, business income, and inflation, with its attendant increase in the rate of unemployment (CBN, 2012). Chinguwo and Blewit (2012) have noted that economic recession, financial crisis and climate change problems all work together to make life more difficult for many people and their families. This is especially applicable to farming families as their livelihood depends more on rain-fed agriculture which is heavily affected by the climate change via irregular rainfall, hotter weather, flooding and induced pests and diseases. Economic recession most often involves or results in inflation (Oyesiku, 2009). This is one critical factor which in recession affects households' welfare as they struggle to obtain daily necessities of life.

The aim of this study was to identify factors that helped female farmers cope with recent economic recession in Nigeria and provide adequate information that can be used to prepare households to cope with economic and financial upheavals in future and recommend options for improving the livelihood of the female farmers in Nigeria. The research question for the study was has marital status, educational attainment and land tenure security helped females to cope with the recent economic recession in Nigeria? And the hypotheses that guided the study were:

- Educational status helped females cope with financial and economic crisis.
- Land tenure security helped female farmers cope with financial and economic crisis.
- Marriage helped females cope with financial and economic crisis.

Some facts on access to resources and poverty among female-headed households

According to IFAD (1999), poverty among FHHs results from women's limited access to land, livestock, other assets, and credit, education, health care and extension services. It has been noted that women have less access

to more lucrative jobs and more access to lower earning jobs and in many cultures gender stereotyping limits female access to land as a major productive resource. This is very significant as access to land can influence wealth of FHHs in the study area. It is desirable to achieve gender equity in resource allocation as women access to these resources have been reported to significantly improved child welfare (IFAD, 2009; Buvinic and Gupta, 1997). It is also noted that in paternal inheritance societies, women who are married often have the same security of land tenure with their husbands and other social status that makes marriage desirable in such societies (Mkpado and Arene, 2003).

Barros et al. (1997) showed that female-headed households had more poverty indicators in terms of social and economic features like income or wealth when compared with male-headed households in Brazil. However, a contrary report was noted by Senada and Sergio (2007) in Bosnia and Herzegovina who investigated whether female-headed households were more vulnerable to poverty using *per capita* consumption expenditure. But Appleton (1996) illustrated that female-headed households in Uganda were poorer than male-headed counterparts. The Fuwa (2000) report showed that in Panama, widows and female-heads as unmarried individuals were disadvantaged in both income and non-income dimensions of poverty compared to male-headed households. Swarup and Rajput (1994) showed that limited access to family property and assets as well as micro-credit facilities contributed to the poverty experienced by female-headed households in India.

Another very important factor determining level of poverty is education. Males who are more educated tend to have more opportunities than their female counterparts. Oxaal (1997) aptly noted that intra-household discrimination against girls in education has often resulted in girls possessing lesser skills and having fewer opportunities than boys. As the society is dynamic the trend of surrogate motherhood is on the increase and many culture react differently to this; evidence showed that such motherhood has low social capital. This can explain many poverty indicators associated with such female heads (Chen and Dreze, 1992; Bhan 2001; Meenakshi and Ray 2002).

MATERIAL AND METHODS

Study area

The study was carried out in Ondo State, Nigeria. Its capital is in Akure. The State lies between latitude 5°45' and 8°15' North and longitude 4°45' and 6° East of the Greenwich Meridian (NBS 2010). The tropical climate of the State is broadly of two seasons: rainy season (April–October) and dry season (November–

March). The State is located in the southern geo-political zone of Nigeria and bounded in the north by Ekiti and Kogi States, in the east by Edo State, in the west by Osun and Ogun States. It occupies an area of approximately 15,500 square kilometres with a population of 3,460,887 according to the 2006 population census (NBS, 2006). The people of Ondo State are predominantly subsistence farmers, fishermen and traders. In addition, there are some people who are carpenters, blacksmiths, shoemakers, tailors, goldsmiths, teachers, bricklayers and hunters.

Method of data collection

In this study, both primary and secondary data were used to obtain the necessary information required. The primary data were collected from the field by the use of a set of questionnaire designed in a simple format which was administered to the respondents in the study area to get their views of the effect of this recession and try to see the way they adapt to this change while the secondary data were obtained information from National Bureau of Statistics (NBS), Central Bank of Nigeria (CBN), published journals, libraries, internet facilities, past projects and other sources relevant to it. The well-structured questionnaire sought out information on the personal features of the respondents such as gender, age, marital status, size of household and many more.

Sampling techniques

A three-stage random sampling was used in this study; the first stage was purposive selection of ten (10) Local Government Areas (LGAs) out of the 18 local Governments in Ondo State based on population and existence of prominent agricultural activities. Second was purposive selection of one (1) rural agrarian community from each of the ten LGAs that were previously selected. Third was random selection of 10 female respondents from a list generated from each community using random selection. This gave a total of one hundred (100) respondents. Hence, the target population was the females getting their views on the effect of recession at their various dwellings places were sort.

Method of data analysis

Descriptive statistics techniques were used throughout this research work to analyse the data collected. The descriptive statistics such as frequency, tables and percentages were used to present information from data collected. Statistical Package for Social Sciences (SPSS) was used for data analysis. Chi-square (χ^2) test was used to test the hypotheses like effects of certain factors like marital status, land access and education status on coping with recession. Likert scale was used to assess the opinion of respondents on how the recession affected their welfare.

The Chi-square (χ^2) formula is given by:

$$\chi^2 = \sum_{i=1}^r \sum_{j=1}^c \frac{(O_{i,j} - E_{i,j})^2}{E_{i,j}}$$

with (r-1)*(c-1) degree of freedom (df) at one percent (1%) probability level ($P < 0.01$).

Where:

O Observed frequency;

E expected frequency;

r number of rows stating from i;

c number of columns stating from j

If the calculated Chi-square (χ^2) value is greater than the tabulated value at the stated degree of freedom, it is considered significant.

While the following information was used to calculate the five points Likert scale:

SA – Strongly Agreed, A – Agreed, U – Undecided, D – Disagreed, SD – Strongly Disagreed

SA = 5 points, A = 4 points, U = 3 points, D = 2 points, SD = 1 point

The Likert scale mean value is given by:

$$\{(5*1 + 4*1 + 3*1 + 2*1 + 1*1) = 15/5 = 3 \text{ OR} \\ (5 + 4 + 3 + 2 + 1 \div 5) = 3\}$$

Key: score at 3 = undecided, score less than 3 can be approximately 2 = disagreed; or approximately 1 = strongly disagreed, score greater than 3 can be approximately 4 = agreed; or approximately 5 = strongly agreed

RESULTS AND DISCUSSION

Overview of the recent economic crisis as deduced/mined from NBS (2016): The proportion of the Gross Domestic Product (GDP) attributed to agriculture holds between 30% and 40%. Between the years 2012 and 2013, agricultural value addition rose by an average of 5% each year; for the period from year 2012 to 2013, agriculture value addition (AVA) represented US \$16.64 billion and accounted for 22.9% of GDP in year 2014. The growth rate fell to 5.54% in 2015 as against 6.23% recorded in previous year 2014. Inflation was on a downward trend and was estimated at 8.5% at the end of year 2013 compared to prior year (2012) estimated value at 12.2%. It rose to 9.0% in 2015 and 15.7% in 2016. It was observed that the source of the upward pressure came from the devaluation of the Naira, which occurred in year 2016. And speculations were likely to put upward pressures on inflation as a result of the pending election. The exchange rate data depict a sharp increase of up to 60% in official market and over 80.0% in parallel market in year 2016 which may have made inflation rate to shift swiftly from 9.0% to 15.7% as high exchange rate will usually pass through to domestic prices causing inflation (Mkpado and Arene, 2012).

The exchange rate of the Naira to United State Dollars (USD) has been on the increase over the years, and this has brought about the devaluation of the Naira against the USD and according to NBS data, the average exchange rate as at year 2012 was ₦ 158.29 per dollar, In year 2013, the average exchange rate fell to ₦ 158.06 per dollar, and then rose again to ₦ 184.50 per dollar in the year 2014 before it inflated drastically to ₦ 249.50 and ₦ 394.50 in 2015 and 2016, respectively. The impact of these were gross depreciation of the Naira which occurred in the year 2016; prices were stabilised as a result of administrative measures by the Central Bank of Nigeria (CBN), in addition to ample food supplies by local farmers when the harvest kicks in early in the second half of the year. The campaign for substitution of costly imported rice with locally produced ones gained significant progress; locally produced foodstuffs such as yam, cocoyam, cassava and legumes became major staples as ban on food importation increased. Thus, the consumer price index (CPI) rose to an average of only 8.13% over the year 2015 to the year 2016 period. It was observed that the prices of agricultural commodities tend to reduce in anticipation of the season and its availability for supply, meanwhile the economic situation of the nation had a significant effect on the prices since fund at hand is limited to the purchasing value of Naira at that time.

Inflation as expected shifts upwards in the year 2015 also due to the lingering effects of the partial removal of the fuel subsidy on food and non-food prices as a result of higher transportation costs. Inflation rates could move even higher if the petrol subsidy was fully or completely removed, as was expected, towards the end of that year. According to NBS (2016) data, it was evident that unemployment rate in Nigeria contributed to the drastic decline of the economy as a whole. It was shown that the rate decreased from 10.6% to 10% and the preceding year amounted to drastic reduction from 10% to 7.83%. In light of the aforementioned, the unemployment rate was on the increase from 9.0% to 13.90% in year 2015 and 2016, respectively.

Socio-economic characteristics of the respondents

This section described the socio-economic characteristics of the respondents in term of their marital status, level of education, age group, primary occupation and household size. The distribution of the respondents based on their age group indicates that 12% fell within the age of 30–39 years, 30% fell within 40–49 years, while the majority (42%) fell between 50–59 years of age and the remaining 16% within the age of 60 and above. Their mean age was 54. This implied that the majority of the respondents were in their most active years or most productive years as opined by Anzanku et al. (2006).

Table 1. Distribution of respondents by socio-economic characteristics

Variables	Response	Frequency	Percentage
Age of respondents	30-39	12	12.0
	40-49	30	30.0
	50-59	42	42.0
Mean age – 54	60 and above	16	16.0
Level of education	No formal	3	3.0
	Primary	17	17.0
	Secondary	69	69.0
	Tertiary	11	11.0
Marital Status	Single	6	6.0
	Married	75	75.0
	Widowed	11	11.0
	Separated	8	8.0
Occupation where over 65 percent of time are spent	Farming	58	58.0
	Trading	27	27.0
	Civil servant	10	10.0
	Others	5	5.0
	Below 3 persons	8	8.0
Household Size	3-5 persons	24	24.0
	6-9 persons	47	47.0
	10 and above	21	21.0
Total		100	100

Source: Field Survey, 2017.

The educational status of the respondents revealed that out of 100 respondents selected, 3% had no formal education, 17% possess primary education, and while only 11% possess tertiary education and majority (69%) possess secondary educational qualifications. The moderate level of literacy among the respondents can indicate a good sense of exposure, ability to manage resources and a positive effect on their productivity and hence, have an effect on their standard of living.

The result of the marital status of the respondents showed that 6% were single, 75% were married, 11% were widowed and 8% of the respondents were separated or divorced. Majority of the respondents were married and living with their spouse. This implies that a sense of responsibility of married people is capable of prompting them to put more commitment to their business and consequently enhance productivity towards meeting their family needs and obligations.

Result on household size comprising of the head, children and possibly other dependents like aged parents showed that the households were relatively large. Distribution of respondents revealed that majorities of the respondents (47%) were having household size of 6-9 members, 21% had above 10 members, while 8% had below 5 persons and the remaining 24% had between 3-5 persons. This result implies that the households are large for

provision of farm labour. It is because family labours are the cheapest source of labour.

The occupational distribution of the respondents revealed that the majority of respondents (58%) were full-time farmers, at least 10% and 27% were civil servants and traders, respectively, who also were part-time farmers while the remaining 5% engaged in other kind of occupations as well as farming. This further reveals that a total of 42% of respondents were not full-time farmers; it is an indication that farming in the area does not absorb all of the labour available. It can be an indication of labour migration to other sectors which is desirable.

Membership to a number of cooperative societies:

Cooperatives can offer savings opportunities when there is a reserve and borrowing when there is need. Results showed that 29% of the respondents only belonged to one cooperative society, 6% belonged to three cooperative societies while the majority (62%) reported of joining two cooperative societies and the remaining 3% joined more than three (3) societies. It implies that the respondents who joined two cooperatives and less did so in order for them to be committed and be able to secure loans to improve their welfare and enhance the smooth running of their business.

Table 2. A cross tabulation of coping with the recession and types of land access

How are you coping with feeding your households?	Land access types		Total
	Inheritance/purchase	Lease	
Not fairly	13 (13.0)	25 (25.0)	38(38.0)
Fairly	37(37.0)	13(13.0)	50(50.0)
Well	6(6.0)	0(0.0)	6(6.0)
Very well	6(6.0)	0(0.0)	6(6.0)
I am indifferent	6.0%	.0%	6.0%
Total	62(62.0)	38(38.0)	100(100.0)

Pearson Chi-Square Value 22.867**; degrees of freedom 3; Likelihood Ratio value 26.683**; degrees of freedom 3; ** Denotes significant at one percent probability level

Values in parentheses are percentages

Source: Authors computation

Farmland access/ownership:

Farm land ownership is critical to the welfare of farming households. Analysis of how the respondents acquire their farm land showed that 42% make use of inherited land, while a 38% paid rent or lease on an agreed basis for the use of land, and the remaining 20% make use of both inherited and purchased land. Married women often have the same tenure right over their husbands' land; hence marital status tends to reduce the stress women have in gaining access to land (Mkpado and Arene 2003). Similar trend is applicable for maternal inheritance societies for males. For instance, in some parts of Ghana where maternal inheritance upholds males (husbands) often have the same secured tenure with their wife (Mkpado et al., 2016). Level of access to land by farming households can be viewed with respect to security of tenure. The secured tenure can mean more wealth and income as permanent crops which mainly constitute the traditional cash crops can only be farmed on the inherited and purchased lands with optimum tenure security. It can be anticipated that females who have more access to inherited lands or by freehold can cope better than families working on leased land. A cross tabulation of coping with the recession and types of land access showed that females having access to inherited lands were coping better than those having access to land through leasehold (Table 2). The Chi-square test and likelihood ration of this

distribution were significant. The calculated Chi-Square Value (22.867) at 3 degrees of freedom is greater than the tabulated one (11.34) at one percent probability level. Thus, the paper rejects the null hypothesis and accepts the alternate that secured access to land helps women in coping with economic crisis. Also support for validity and application of the result to a larger population can be seen from the significant Likelihood Ratio value (26.683) at the same level of probability. This (Likelihood Ratio) showed that the phenomenon is not a chance occurrence but a persistent pattern of life. A similar trend was noted by Oreuja et al. (2007) who demonstrated that permanent crops were major sources of income and informal insurance among farming households in South Eastern, Nigeria. Permanent crops grown in the study area include cocoa tree (*Theobroma cacao*), plantains and bananas as well as forest trees (timber) which can be owned by a farmer who has secured tenure by inheritance or freehold.

Marital status can be a means of sharing responsibilities and privileges in the family and society. It essentially indicates access to and control of resources. It is possible that females in rural agrarian households can have more access to resources when they are living with their spouses as efforts of their husbands can complement theirs and *vice versa*. The spouse can provide some needed form of farm labour. In fact, farm resources and labour in farming

Table 3. A cross tabulation of marital status and managing of resources in a recession

How are you coping with managing resources during this time of recession	Marital status				Total
	Single	Married	Separated	Widowed	
Very well	4 (4.0)	4 (4.0)	0(0.0)	0(0.0)	8(8.0)
Well	0 (0.0)	44(0.0)	3(3.0)	9(9.0)	56(56.0)
Poorly	0(0.0)	10(10.0)	2(2.20)	1(1.0)	13(13.0)
Very poorly	2(2.0)	17(17.0)	3(3.0)	1(1.0)	23(23.0)
Total	6(6.0)	75(75.0)	8(8.0)	11(11.0)	100(100.0)

Pearson Chi-Square Value 36.994**; degree of freedom 9; Likelihood Ratio value 26.702**; degree of freedom 9; ** Denotes significant at one percent probability level

Values in parentheses are percentages

Source: Authors computation

Table 4. A cross tabulation of education status and how they cope with farming business

How are you coping with your business?	Educational status			Total
	Primary	secondary	tertiary	
Very well	0(0.0)	8(8.0)	0(0.0)	8(8.0)
Fairly	15(15.0)	30(30.0)	11(11.0)	56(56.0)
Worse	4(4.0)	9(9.0)	0(0.0)	13(13.0)
I am indifferent	1(1.0)	22(22.0)	0(0.0)	23(23.0)
Total	20(20.0)	69(69.0)	11(11.0)	100(100.0)

Pearson Chi-Square Value 20.517**, degree of freedom 6; Likelihood Ratio value 27.097**, degree of freedom 6;

** Denotes significant at one percent probability level

Source: Authors computation

households tend to be a stereotypy by gender. And many of the neglected crops attributed to females like cassava and cocoyam are now crops for money making; such transition is shifting the status of the crops with respect to gender. A cross tabulation of marital status and management of resources in a recession was shown in Table 3. Greater percentage of females living with their husbands (staying married 48%) claim to be managing resources well (44%) and very well (4%) as opposed to those separated and widowed. It is possible that their husbands shield them from some effects or stress caused by the recession and/or generating money from their farming activities. The Chi-square test and likelihood ratio of the distribution were significant. The calculated Chi-square (36.994) value is greater than the tabulated one (21.70) at nine degrees of freedom and at one percent probability level. Thus, the paper rejects the null hypothesis and accepts the alternate that staying married and living with one's spouse helps women in coping with economic crisis. Also, the significant Likelihood Ratio value (26.702) at the same level of probability support the application of the result to a larger population as it showed that the distribution is a persistent fact.

Education can indicate exposure of individuals to facts and a capacity to adapt quickly to changes. Education status affected female farmers' responses with respect to coping with farming during recession amidst climate change threats. A cross tabulation of education status and how they cope with farming business in a recession had a significant Chi-square and

significant likelihood ratio (see Table 4). The calculated Chi-square value which is 20.517 at one percent probability level and at 6 degrees of freedom is greater than the tabulated value which is 16.8. Thus, the paper rejects the null hypothesis and accepts the alternate that high educational qualification helps women in coping with economic crisis. The Likelihood Ratio value which is 27.097 that is significant at one percent probability level, support the application of the result to lager population of females. None of those who had tertiary and secondary education felt worse as opposed to those with only primary school who felt worse under the situation.

Various types of non-permanent crops and livestock cultivated in last two years:

Non-permanent crops are often quick sources of generating income as their maturity can be within few months and thus help households to adjust easily to shocks. Table 5 as presented reveals different crops cultivated and livestock being introduced on the farm in the last two years, and 11% reported of rearing goats, *Capra hircus* (ewure) and sheep, *Ovis* spp. (aguntan), 32% and 3% started cultivating Cassava, *Manihot esculenta* (ege), yam, *Dioscorea* spp. (isu), cocoyam, *Xanthosoma* spp. (koko), and fisheries – catfish (ejaaro) *Clarias gariepinus*, respectively, to earn more income, 2% of the respondents cultivated fruit vegetables like tomatoes; pepper, *Capsicum* spp. (ata rodo); okro, *Abelmoschus esculentus* (ila), and locust bean, *Parkia biglobosa*, while majority (45%) were growing leafy

Table 5. Distribution of respondents by non-permanent Crops and Livestock introduced in last two years

Types of agricultural activities	Frequency	Percent
Leaf Vegetables (<i>Amaranthus hybridus</i> , “efo-tete”, <i>Corchorus olitorus</i> leaves (“ewedu” leaf), water leaf (gbure) scent leaf (efirin)	45	45.0
Fruit vegetables (tomato, pepper (ata rodo), Okro (ila), locust bean (iru))	2	2.0
Cassava (ege), Yam (isu), cocoyam (koko)	32	32.0
Poultry (chicken and turkey), duck (pepeye)	7	7.0
Fisheries – catfish (<i>Ejaaro</i>), <i>Clarias gariepinus</i>	3	3.0
Goats (ewure) and sheep (aguntan)	11	11.0
Total	100	100.0

Source: Field survey, 2017

vegetables (*Amaranth* spp., *Corchorus olitorus* (ewedu), waterleaf, *Talinum fruticosum* (gbure); scent leaf, *Ocimum gratissimum* (efirin) and the remaining 7% were rearing poultry birds (chicken, turkey), and duck. This implies that the various respondents cultivated crops and livestock with the goal of getting additional income and utilising the profit realised from the sales of these produce to meet their welfare needs and also improve their diets as those crops and livestock are part of food staples.

Increase of farm size:

The results showed that the majority (66%) of the respondents did not increase size of their farm for the last two years while 34% increased their farm size. In addition, it was supported by the statement on whether economic recession helps you to increased farming activities which resulted in disagreement as decision reached (see Table 6). Increasing farm size is subject to access to land. When access to land is difficult farmers often intensify their efforts on available land by introducing more crop species and or practicing mixed farming.

Investments on farming:

The result reveals that 13% of the respondents neither increase nor decrease investment from farming, while the majority (68%) reported a decrease in investment and 19% of respondent claimed an increase in farm investment. It can be inferred that the majority who made no more investment on farming was due to the low real profit realised from the sales of their agricultural produce and this quite affected them during the recession period.

Feeding formula:

Food is an essential resource in everyday life; one important adverse effect of recession on the households is reducing the amount of food consumed on a daily basis and during this period. The amount spent on feeding varies among the various households as they allocate their disposable incomes to different foodstuffs and other essential materials for improved welfare. The rate of eating daily and quality of diets are being determined in every household depending on their own resources and convenience. The results on frequency of eating showed that majority (68%) of the respondents eat only twice daily, while just a few (4%) population of the respondents eat only once a day, and the remaining 28% are able to eat three times every day. This implies that most of the respondents eat only twice so as to adjust to the needed changes and utilize their income optimally. And this agrees with the result in the Likert scale (Table 6) which showed us that majority disagreed that recession affected their spending on food. A similar result has been reported by Mkpado (2012a) and Mkpado (2012b) from data on

community based monitoring system in Enugu State, Nigeria.

Schooling of children:

This section examined how households coped with schooling demands of their children during the economic recession. There were children who were still in school and those that were dropouts because of inability of their parents to meet their educational needs and requirements; likewise, the type of institutions the children attended differed as parents were showing preference to less expensive and lower quality education. The result on schooling showed that the majority (93%) of the respondents had children in school, while 7% reported of their children were dropouts. This implies that a large number of the respondents strive to send their children to school not minding the cost and resources it may require, they prefer to invest in the future of their children to make them literates and leaders of tomorrow; this is commendable. The type of school is important as many schools may not have good training facilities. Results also showed that majority (71%) of the respondents have children in public institutions which often have poor reputation with respect to quality of education especially in rural areas, while a small number (22%) reported having children in private institutions. This implies that a large number of the respondents could not afford to send their children to private institutions which are usually more expensive, but could easily meet up with the requirements for public institutions which are cheaper.

Health care:

Health is wealth. There is nothing in our life that is more valuable than good health; without health there is no happiness, no peace and no success. The type of health care they administer in their households is important for their productivity and welfare. Below is the presentation of the distribution of respondents' mode of health care. It was noted that 34% of the respondents were using orthodox medicine to treat themselves, while majority (66%) reported of using herbal medicine to cure illness. It may be that those who use herbal medicine to treat their illness did so because they believed it is more effective and as a result save more by reducing spending on hospital bills. Herbal medicine was usually for treatment of common diseases like malaria, typhoid fever, dysentery, cold and cough. However, there are many limitations to the use of herbal medicine in Nigeria. It is desirable for this health care facility to develop its potentials in improving welfare of the rural populace.

Responses to other business activities:

The result showed that majority (70%) of the respondents engaged more in other business

Table 6. Likert scale on the statement of economic recession effects by respondents

Statements/Questions	SA	A	U	D	SD	Respondents	Total Scores	Mean Scores	REMARKS
Economic recession helps you to increase farming activities	10	22	23	39	6	100	291	2.91	Disagreed
Economic recession helps you to make more profit from selling farm produce	7	32	19	32	10	100	294	2.94	Disagreed
Economic recession led to depression?	15	46	21	18	-	100	358	3.58	Agreed
Has recession really brought hypertension to you?	21	63	1	14	1	100	389	3.89	Agreed
Has recession really reduced your spending on feeding?	9	21	21	37	12	100	278	2.78	Disagreed
Did your nominal income reduced during this recession?	5	30	17	30	18	100	274	2.74	Disagreed
Has recession reduced the remittance received from relatives?	15	28	12	36	9	100	304	3.04	Agreed

SA – Strongly Agreed, A – Agreed, U – Undecided, D – Disagreed, SD – Strongly Disagreed
 Source; field survey, 2017

activities, while 5% reported of a drastic decline of business activities, and the remaining 25% reported of not being able to increase or decrease business activities. This implies that a very high percentage of the population ventured into other business opportunities in other to earn more income to improve their well-being and meet other welfare needs.

Responses to statements on how economic recession affected welfare of the female farmers:

A summary of the females’ opinion were evaluated with a set of questions on five-point scale. Table 6 is a summary of the evaluation. The results showed that the recession have affected all aspects of the females’ lives. It has not helped to improve investments on the farm or the profit instead it has led to increased depression and hypertension as increase in prices has caused families to spend more and even with reduced remittance received.

COCNCLUSIONS AND RECOMMENDATIONS

The study examined coping strategies as adopted by females in farming households during recession. It was reported that all the respondents of this research work were females, majority of them were married having ages 50–59 years with household size between 6–9 members with a majority possessing secondary educational qualifications. Further analysis showed a low income earned per household of the respondents, with majority of the respondents being full-time farmers and as they derive income from selling of their farm produce and engage in other business activities to get additional income. The respondents belonged to cooperative societies and are beneficiaries

of the services. The result further revealed that all of the farmers were small scale farmers and majority of the respondents acquired their farmlands through rent, and they cultivated crops which includes leaf Vegetables like *Amaranthus* spp., efotete; jute leaves, *Corchorus olitorus* (ewedu leaf); waterleaf, *Talinum fruticosum* (gbure) scent leaf (efirin) and tuber crops like cassava, *Manihot esculenta* (ege), yam, *Dioscorea* spp. (isu); cocoyam, *Xanthosoma* spp. (koko) as source of food, also majority reported making less profit from sales of farm produce and majority reported no increase in their farm size, results also showed that a high percentage of the respondents ate only twice daily, had their children in public institutions, used herbal medicine for treatment of common diseases like malaria, typhoid fever, dysentery, cold and cough. The majority involved themselves in more business activities which increased their nominal income but their real income decreased and this grossly reduced their welfare as a result of higher inflationary trend, hence the households were greatly affected by economic recession. According to this study, the females in agrarian households in Ondo State were greatly affected by this economic recession, they barely survived to make ends meet, their income, farming activities, profit and yield was not enough to make any significant improvement on their well-being so as to improve their standard of living. From the test of hypotheses, it was observed that staying married, having secured access to land and high education qualification helped women cope with the economic recession in Nigeria.

Evidence from this work has shown that the households were adversely affected by economic recession in the study area. It affected their income, feeding frequency and quality of diets, education

of children and health status. Factors that helped females absorb the shocks include reliance on and making use of marriage arrangement. This is possible as their spouse had been of help. Higher education of females above the basic requirement was beneficial in coping with the crisis as more of the females educated above the primary level felt better than those with just the basic educational qualification. The paper concludes that educated females as well as married women and women possessing secured land tenure coped better in times of economic crisis. And based on the findings of the study, the following recommendations are made:

- Government should invest in social security package like free health care and free education to reduce the effect of recession on the households as they possess limited income to care for these crucial needs.
- Females should be educated and marital union need to be valued as these helped females in agrarian households to cope with recession.
- Since economic recession is a macro-economic issue, the government should invest more in the agricultural sector so as to curtail the inflation of food prices in the country and thus improve the nutritional welfare of the people.

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