

**IMPACT OF DEFORESTATION ON LIVELIHOOD ACTIVITIES OF RURAL WOMEN IN OGBA-EGBEMA-NDONI AND IKWERRE LOCAL GOVERNMENT AREAS OF RIVERS STATE**

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**ABSTRACT**

This study investigated the impact of deforestation on livelihood activities of rural women in Ogba-Egbema-Ndoni and Ikwerre Local Government Areas of Rivers State. Specifically, the objective were examine the impact of deforestation on crop production, small scale business and crafting activities of rural women in Ogba/Egbema/Ndoni and Ikwerre Local Government Areas. This study adopted a descriptive survey design. The population of this study comprised of rural women in the two Local Government Areas. Multi stage sampling method was used to select respondents for the study.. A self made survey questionnaire was the instrument used for data collection. The instrument was structured in the pattern of Likert 5-point rating scale of agreement. The instrument validated by expert and was subjected to reliability test using Cronbach Alpha reliability Coefficient method. The reliability coefficient established was 82. Mean and Standard Deviation were used to answer the research questions while z-test statistical tool was used to test the hypotheses. Criterion Mean value of 3.00 was the minimum for acceptance. It was found that rural women livelihood activities ranges from petty trading, crop farming, weaving among others; it was further found that deforestation exposes crop to high temperature which affects its yield, result in flooding that damages crops, results in scarcity of raw material, over dependence on goods importation due to scarcity of foods, reduces number of women involved in crafting, dwindles women passion for crafting due to lack of raw materials, affects the interest for crafting due to lack of materials and equipment among others. It was recommended among others that government should encourage rural women on tree planting in order to mitigate the effects of deforestation so that rural women can be able to produce crop as expected.

**Keywords:** Impact, Deforestation, Livelihood Activities & Rural Women

## **INTRODUCTION**

Like any other developing nation, there are usually two distinct areas-the urban and the rural areas. This scenario is created due to some factors ranging from population, livelihood activities and presence or absence of basic infrastructure. The concept "rural" or "rural area" does not have universal definition, because it is described based on individual country. Ekong (2010) in Nnodim and Ochogba (2018) described a rural area in Nigeria as settlement with 20,000 persons or less whose occupations are mainly agrarian. According to Ekong in Nnodim and Ochogba (2018), apart from describing rural area based on population, rural areas are usually associated with lack of, or inadequate basic infrastructure or amenities such as pipe-borne water, electricity, hospitals, good road network, industries, modern banking services, commercial/civic centres, recreational facilities and quality food. People who reside in the above described area could be regarded as rural dwellers.

Consequently, rural women could be described as women who reside in areas where their major occupation is agriculture. Women make essential contributions to the agricultural and rural economies in all developing countries. Ahmadpour, Alizadeh and Moumenihelali (2015) noted that women are one of the effective groups in the society as they do 40% of the work in the area of agriculture and 90% of the work in the area of handicrafts. In most developed nations, the role of women is more noticeable and evident in the area of agriculture. Women also manage complex household chores and pursue multiple livelihood strategies. Rural women livelihood activities typically include producing crops, tending animals, processing and preparing food, working for wages in agricultural or other rural enterprises and engaging in trade and marketing (Mossie & Yousuf, 2015).

Ifeanyi and Njoku (2014) mentioned that apart from farming, rural women are also involved in petty trading, craft, weaving, pottery and other primary industries within their reach. In the bid to carrying out some of these activities, rural women in collaboration with their male counterpart are sometimes found to be involved in cutting down trees and other vegetations, known as deforestation. Deforestation is the conversion of forest to an alternative permanent non-forested land use, such as agriculture, grazing or urban development (van Kooten & Bulte, 2000). Furthermore, Nzeh, Eboh and Nweze (2015) described deforestation as the process of clearing and removal of forest trees and the conversion of such land to other types of activities for non-forest use. Like the conversion of forest reserves areas to residential or industrial areas, removing of forest trees as a result of road or rail construction, conversion for agricultural purposes and cutting down of forest trees for domestics and industrial use, like fire-woods, timbers, paper and charcoal production. Deforestation could be simply described as the felling of tress.

However, extensive tropical deforestation is a relatively modern event that gained momentum in the 20th century and particularly in the last half of the 20th century (Anon, 2010). Deforestation is primarily a concern for the developing countries of the tropics as it is shrinking areas of the tropical forests causing loss of biodiversity and enhancing the greenhouse which causes global warming (Barraclough & Ghimire, 2000). Nigeria is not exempted from the global issue of deforestation. Food and Agricultural Organization in Ibrahim, Bila and Sulumbe (2016) reported that between 1990 and 2000, Nigeria lost an average of 4,097 hectares of forest every year, equal to an average annual deforestation rate of 3.8 percent. Between 2000 and 2005, Nigeria lost 5.7 percent of its primary forest as a result of deforestation and the rate continues to increase by 3.8 percent, which is equivalent to 4,000 hectares per annum. Based on these figures, Nigeria was ranked the country with the highest rate of deforestation in the world.

Deforestation is triggered by several factors. Logging activities, population, poverty, livestock rearing, population density, infrastructural development are some of the factors that account for 40 percent of Nigeria's deforestation (Udofia, Jacob, Owuah & Samuel, 2011). Chakravarty, Ghosh, Suresh, Dey and Shukla (2012) opined that deforestation is caused by the expansion of agricultural land. This is because agricultural land expansion is generally viewed as the main source of deforestation contributing around 60 per cent of total tropical deforestation. In line with the above, Ibrahim et al (2016) observed that the rate fuel wood consumption and the conversion of forests to agricultural land was enormous, among the rural people who cultivate land to support themselves. Other causes of deforestation include: desertification, poverty, urbanization, industrialization, bush burning, over grazing, mining, tourism and corruption/political factors (Ogundele, Oladipo & Adebisi, 2015). Expanding cities and towns require land to establish the infrastructure necessary to support growing population which is done by clearing the forests (Sands, 2005). The construction of roads, railways, bridges, and airports opens up the land to development and brings increasing numbers of people to the forest frontier.

However, deforestation has been noted to have adverse effect on human, plant, animal and the ecosystem. Deforestation results to the increase in carbon dioxide in the atmosphere. Deforestation affects wind flows, water vapour flows and absorption of solar energy, thus clearly influencing local and global climate (Chomitz, Buys, Luca, Thomas, & Wertz-Kanounnikoff, 2007). Deforestation disrupts normal weather patterns creating hotter and drier weather, thus increasing drought and desertification, crop failures, melting of the polar ice caps, coastal flooding and displacement of major vegetation regimes. Nzeh Eboh and Nweze (2015) categorized the effect of deforestation into economic, social and health. It could also lead to decreased biodiversity and habitat loss, loss of water and soil resources, and economic losses (Ogundele, Oladipo & Adebisi, 2015).

Therefore, deforestation is a major problem that can lead to global warming, nutrient loss, accelerated soil erosion, desertification and siltation. All these contribute to loss in agricultural productivity, which has the potential future impacts on income, employment and food security to Nigerians. Aggregate data for major crops showed decline in agricultural productivity by 25% between 1990 and 2010, the yield level were far below level required for global competitiveness in agriculture (Anna, 2013). This led to disruption of nutrient cycling mechanism as a result of the removal of deep-rooted trees, which has a serious effect on organic and nutrient content affecting agricultural productivity (Sambe, Adeofun & Dachung, 2018). With these effects, the potential benefit of agricultural sector in terms of income and employment for majority of Nigerian will disappear as a result of deforestation (Ibrahim, et al, 2016). More so, Legesse (2003) opined that deforestation results in the loss of a large number of forest products, declines in land productivity and exacerbates misery and poverty of the rural people as a result of lack of goods for marketing and for production of local products.

However, deforestation has over the years generated so much concern as regards to its impact on human activities, especially in rural areas. Basically, this study examined the impact of deforestation on the livelihood of rural women in Ogba/Egbema/ Ndoni Local Government Area and Ikwerre Local Government Area in Rivers State.

## **STATEMENT OF THE PROBLEM**

Tree is one creature that could be found more in rural areas, and has contributed so much to the satisfaction of human wants. Trees are processed into wood to be used in the industries for the production of furniture and other construction materials like bridge and roads, among others. Apart from these, trees serve medicinal purposes, especially in the rural areas where such practice is common, maybe as a result of lack of medical facilities. Presently, due to the need for wood in industries and for construction purposes, there is high practice of tree felling without replanting in the World including Nigeria. Food and Agricultural Organization (2015) global forest assessment reported that Nigeria's forests and woodlands, which currently cover about 9.6 million hectares, have been dwindling rapidly over the past decades. It stated that the country's current deforestation rate is estimated at 3.7% and one of the highest in the world. It further stated that between 1990 and 2015, Nigeria lost about 35% of its remaining forest resources and over 50% of another wooded land. The issue with deforestation is that it results in loss of a large number of forest products, drought, flooding, interrupts water flow, declines in land productivity and exacerbates misery and poverty of the rural people as a result of lack of goods for marketing (Legesse, 2003). This means that deforestation affects soil productivity and the production of agricultural produce. However, considering the fact that rural peoples' livelihood depends majorly on agriculture related occupation, trading of agricultural produce and local craft whose raw material is gotten from the bush, an increase in deforestation may have very severe impact

on rural women source of living and if this is not checked, it could lead to a situation whereby rural women may not be able to take care of their daily needs as the economy of the region may be affected. Basically, it is based on this assumption that the researcher deemed it fit to investigate the impact of deforestation on livelihood activities of rural women in Ogba-Egbema-Ndoni and Ikwerre local government areas of Rivers State.

### **PURPOSE OF THE STUDY**

The purpose of this study is to examine the impact of deforestation on livelihood activities of rural women in Ogba-Egbema-Ndoni Local Government Area (ONELGA) and Ikwerre Local Government Area of Rivers State. Specifically, the objectives of the study were to:

1. determine the livelihood activities of rural women in ONELGA and Ikwerre Local Government Area of Rivers State.
2. examine the impact of deforestation on crop production of rural women in ONELGA and Ikwerre Local Government Area of Rivers State of Rivers State.
3. ascertain the impact of deforestation on small scale businesses of rural women in ONELGA and Ikwerre Local Government Area of Rivers State of Rivers State.
4. investigate the impact of deforestation on local craft activities of rural women in ONELGA and Ikwerre Local Government Area of Rivers State of Rivers State.

### **RESEARCH QUESTIONS**

1. What are the livelihood activities of rural women in ONELGA and Ikwerre Local Government Area of Rivers State?
2. What is the impact of deforestation on crop production of rural women in ONELGA and Ikwerre Local Government Area of Rivers State of Rivers State?
3. What is the impact of deforestation on small scale businesses of rural women in ONELGA and Ikwerre Local Government Area of Rivers State of Rivers State?
4. What is the impact of deforestation on local craft activities of rural women in ONELGA and Ikwerre Local Government Area of Rivers State of Rivers State?

### **HYPOTHESES**

The following null hypotheses were tested at a .05 level of significance:

1. There is no significant difference in the mean responses of rural women in Ogba/Egbema/Ndoni and Ikwerre Local Government Areas of Rivers State on the livelihood activities of rural women in ONELGA and Ikwerre Local Government Area of Rivers State.

2. There is no significant difference in the mean responses of rural women in Ogba/Egbema/Ndoni and Ikwerre Local Government Areas of Rivers State on the impact of deforestation on crop production of rural women in ONELGA and Ikwerre Local Government Area of Rivers State of Rivers State.
3. There is no significant difference in the mean responses of rural women in Ogba/Egbema/Ndoni and Ikwerre Local Government Areas of Rivers State on the impact of deforestation on small scale businesses of rural women in ONELGA and Ikwerre Local Government Area of Rivers State of Rivers State.
4. There is no significant difference in the mean responses of rural women in Ogba/Egbema/Ndoni and Ikwerre Local Government Areas of Rivers State on the impact of deforestation on local craft activities of rural women in ONELGA and Ikwerre Local Government Area of Rivers State of Rivers State.

## **METHODOLOGY**

This study was carried out in Ogba/Egbema/Ndoni and Ikwerre Local Government Areas in Rivers State. The population of this study comprised all rural women in the two Local Government Areas under study. As at the time of this study, the marginal estimate of rural women in the study area is 62, 029 consist of 30,011 rural women in ONELGA and 32, 018 rural women in Ikwerre Local Government Area respectively (NPL,2006). Multi stage sampling method was used to select respondents for this study. Cluster sampling method was used to group rural women into clans in the two local government areas. From these clans, 112 and 122 rural women were purposively selected in ONELGA and Ikwerre Local Government Area, respectively. The purpose for selection was to select rural women who are involved in crop production small scale businesses and craft activity. A self made survey questionnaire titled "Impact of Deforestation on Livelihood Activities" (IDLA) served as the instrument for data collection. The instrument was partitioned into four sections (A, B, C & D) that were structured in the pattern of Likert 5-point rating scale of agreement. The face validity of the instrument was ascertained by two experts in the Department of Vocational and Technology Education, Rivers State University. More so, the instrument was subjected to test of reliability using Cronbach Alpha reliability Coefficient method. The reliability coefficient established was .82. Copies of the instrument were administered and retrieved by the researcher on the spot. Mean and Standard Deviation were used to answer the research questions while z-test statistical tool was used to test the hypotheses. Mean values  $<3.00$  were rejected while Mean scores  $\geq 3.00$  were accepted, based on the criterion mean value of 3.00.

Hypothesis tested is rejected when the z-value calculated is greater than z-critical otherwise accept.



**RESULTS AND DISCUSSIONS**

**Table 1: Mean Response on the are the Livelihood Activities of Rural Women in ONELGA and Ikwerre Local Government Area of Rivers State**

S/ N	Livelihood activities	ONELGA (n=112)		Ikwerre Remarks	Ikwerre (n=122)		Remarks
		M	SD		M	SD	
1	Trading	3.17	0.55	Agree	4.50	0.90	Agree
2	Crop farming	4.29	0.91	Agree	4.35	0.30	Agree
3	Weaving	4.43	1.02	Agree	3.06	1.03	Agree
4	Snail rearing	3.11	1.02	Agree	3.56	1.27	Agree
5	Mushroom farming	4.29	0.27	Agree	4.31	0.54	Agree
6	Bead making	3.66	1.37	Agree	3.54	0.66	Agree
7	Firewood gathering	4.50	0.59	Agree	4.50	.90	Agree
8	Fish farming	4.35	0.48	Agree	4.57	0.27	Agree
9	Poultry	4.23	0.79	Agree	3.56	1.27	Agree
10	Pottery	3.43	1.14	Agree	3.43	1.25	Agree
	<b>Total</b>	<b>3.95</b>	<b>0.81</b>		<b>3.94</b>	<b>0.84</b>	

Source: field survey, 2019

Table 1 shows respondents responses on the livelihood activities of rural women. The mean responses of rural women in Ogba/Egbema/Ndoni Local Government Area showed that livelihood activities of rural women as follow: petty trading (3.17), crop farming (4.29), weaving (4.43), snail rearing (3.11), mushroom farming (4.29), bead making (3.66), firewood gathering (4.50) among others. On the other hand, the mean responses of Ikwerre Local Government Areas of Rivers State responses on the livelihood activities were as follow: petty trading (4.50), crop farming (4.35), weaving (3.06), snail rearing (3.56), mushroom farming (4.31), bead making (3.54), firewood gathering (4.50) among others. This present research work is in line with Ifeanyi and Njoku (2014) that opined that apart from farming, rural dwellers are also involved in petty trading, craft, weaving, pottery and other primary industries within their reach.

**Table 2: Mean Response on the Impact of Deforestation on Crop Production of Rural Women in ONELGA and Ikwerre Local Government Areas of Rivers State**

S/N	Impact of deforestation on crop production	ONELGA (n=112)		Ikwerre Remarks	Ikwerre (n=122)		Remarks
		M	SD		M	SD	
1	Exposes crop to high temperature which affects its yield	4.57	0.27	Agree	4.23	.79	Agree
2	Result in flooding that damages crops	3.43	1.14	Agree	4.35	.30	Agree
3	Leads to erosion that washes away top soil	4.43	1.02	Agree	4.50	.59	Agree
4	Leads to desertification	4.29	0.91	Agree	4.35	.48	Agree
5	Disruption of the water cycle	4.29	0.27	Agree	4.31	.54	Agree
6	Loss of biodiversity	3.43	1.25	Agree	3.54	.66	Agree
7	Loss of soil fertility	4.57	0.91	Agree	4.50	.90	Agree
	<b>Total</b>	<b>4.18</b>	<b>0.76</b>		<b>4.21</b>	<b>.60</b>	

Source: field survey, 2019

Table 2 shows rural women in Ogba/Egbema/Ndoni and Ikwerre Local Government Areas of Rivers State responses on the impact of deforestation on crop production. The mean responses of rural women in Ogba/Egbema/Ndoni Local Government Area show that deforestation has impact on crop production of rural women based on the following: exposes crop to high temperature which affects its yield (4.57), result in flooding that damages crops (3.43), leads to erosion that washes away top soil (4.43), leads to desertification (4.29), disruption of the water cycle (4.29), loss of biodiversity (3.43) and loss of soil fertility (4.57). On the other hand, the mean responses of rural women in Ogba/Egbema/Ndoni Local Government Area shows that deforestation has impact on crop production of rural women based on the following: exposes crop to high temperature which affects its yield (4.23), result in flooding that damages crops (4.35), leads to erosion that washes away top soil (4.50), leads to desertification (4.35), disruption of the water cycle (4.31), loss of biodiversity (3.54) and loss of soil fertility (4.50). This finding is in line with Gilmour and Lamb (2005) which states that water resources affected by deforestation include drinking water, fisheries and aquatic habitats, flood/drought control, waterways and dams affected by siltation, less appealing water-related recreation, and damage to crops and irrigation systems from erosion and turbidity. In the dry forest zones, land degradation has become an increasingly serious problem resulting in extreme cases in desertification (Dregne, 1983).



**Table 3: Mean Response on the Impact of Deforestation on Small Scale Businesses of Rural Women in ONELGA and Ikwerre Local Government Areas of Rivers State**

S/N	Impact of deforestation on small scale businesses	ONELGA (n=112)		Ikwerre Remarks	Ikwerre (n=122)		Remarks
		M	SD		M	SD	
9	Reduces the number of goods for marketing	3.74	1.23	Agree	3.61	1.34	Agree
10	Results in scarcity of raw material	3.66	1.37	Agree	3.64	1.33	Agree
11	Over dependence on goods importation due to scarcity of food	4.00	1.05	Agree	3.55	1.19	Agree
12	Leads to inflation as a result of damages on crops	3.52	1.30	Agree	3.56	1.27	Agree
13	Makes it difficult for rural entrepreneurs to find shelter for business since trees that serves as shades are felled	3.83	1.29	Agree	3.80	1.25	Agree
<b>Total</b>		<b>3.75</b>	<b>1.25</b>		<b>3.63</b>	<b>1.28</b>	

Source: field survey, 2019

Table 3 shows rural women in Ogba/Egbema/Ndoni and Ikwerre Local Government Areas of Rivers State responses on the impact of deforestation on small scale businesses. The mean responses of rural women in Ogba/Egbema/Ndoni Local Government Area show that deforestation has impact on small scale businesses of rural women based on the following: reduces the number of goods for marketing (3.74), results in scarcity of raw material (3.66), over dependence on goods importation due to scarcity of foods (4.00), leads to inflation as a result of damages on crops (3.52) and makes it difficult for rural entrepreneurs to find shelter for business since trees that serves as shades are felled (3.83). On the other Hand, the mean responses of rural women in Ogba/Egbema/Ndoni Local Government Area show that deforestation has impact on small scale businesses of rural women based on the following: reduces the number of goods for marketing (3.61), results in scarcity of raw material (3.64), over dependence on goods importation due to scarcity of foods (3.55), leads to inflation as a result of damages on crops (3.56) and and makes it difficult for rural entrepreneurs to find shelter for business since trees that serves as shades are felled (3.80). This is in consonance with Legesse (2003) that opined that deforestation results in the loss of a large number of forest products, drought, flooding, interrupts water flow, declines in land productivity and exacerbates misery and poverty of the rural people as a result of lack of goods for marketing.

**Table 4: Mean Response on the Impact of Deforestation on Local Craft Activities of Rural Women in ONELGA and Ikwerre Local Government Areas of Rivers State**

S/N	Impact of deforestation on local craft activities of	ONELGA (n=112)		Ikwerre Remarks	Ikwerre (n=122)		Remarks
		M	SD		M	SD	
14	Lack of raw materials for crafting	3.17	0.55	Agree	3.00	0.98	Agree
15	Affects the efficiency of local craftsmen	3.25	0.72	Agree	3.92	0.99	Agree
16	Reduces number of women involved in crafting	3.11	1.02	Agree	3.79	0.93	Agree
17	Dwindles women passion for crafting due to lack of raw materials	3.06	1.03	Agree	3.01	0.89	Agree
18	Affects the interest for crafting due to lack of materials and equipment	3.03	1.01	Agree	3.02	1.02	Agree
<b>Total</b>		<b>3.12</b>	<b>0.87</b>		<b>3.35</b>	<b>0.96</b>	

Source: field survey, 2019

Table 4 shows rural women in Ogba/Egbema/Ndoni and Ikwerre Local Government Areas of Rivers State responses on the impact of deforestation on craft activities. The mean responses of rural women in Ogba/Egbema/Ndoni Local Government Area show that deforestation has impact on craft activities of rural women based on the following: lack of raw materials for crafting (3.17), lack of local equipment for crafting (3.25), reduces number of women involved in crafting (3.11), dwindles women passion for crafting due to lack of raw materials (3.06) and affects the interest for crafting due to lack of materials and equipment (3.03). On the other hand, the mean responses of rural women in Ogba/Egbema/Ndoni Local Government Area show that deforestation has impact craft activities of rural women based on the following: lack of raw materials for crafting (3.00), lack of local equipment for crafting (3.92), reduces number of women involved in crafting due to ill health as a result of global warming (3.79), dwindles women passion for crafting due to lack of raw materials (3.01) and affects the interest for crafting due to lack of materials and equipment (3.02). This is in conformity with Barraclough and Ghimire (2000) that asserted that deforestation is primarily a concern for the developing countries of the tropics as it is shrinking areas of the tropical forests causing loss of biodiversity and enhancing the greenhouse which causes global warming.

**Hypothesis 1:**

There is no significant difference in the mean responses of rural women in Ogba/Egbema/Ndoni and Ikwerre Local Government Areas of Rivers State on the livelihood activities.

**Table 5: z-Test Responses on Livelihood Activities of Rural Women**

Category	M	SD	N	z-cal	z-crit	Remark
<b>ONELGA Rural Women</b>	<b>3.95</b>	<b>0.81</b>	112			
				0.09	1.96	Accepted
<b>Ikwerre Rural Women</b>	<b>3.94</b>	<b>0.84</b>	122			

Table 5 shows that ONELGA rural women had mean and standard deviation score of 3.95 and .81 respectively, while Ikwerre rural women had mean and standard deviation scores of 3.94 and .84 respectively. The z-cal value was 0.09, while the z-crit was 1.96 at a .05 level of significance for two tailed test. This result shows that z-cal was less than z-crit, which means that the null hypothesis was accepted. Thus, there was no significant difference in the mean responses of rural women in Ogba/Egbema/Ndoni and Ikwerre Local Government Areas of Rivers State on the livelihood activities.

### **Hypothesis 2:**

There is no significant difference in the mean responses of rural women in Ogba/Egbema/Ndoni and Ikwerre Local Government Areas of Rivers State on the impact of deforestation on crop production.

**Table 6: z-Test Responses on the Impact of Deforestation on Crop Production of Rural Women**

Category	M	SD	N	z-cal	z-crit	Remark
<b>ONELGA Rural Women</b>	<b>4.18</b>	<b>0.76</b>	112			
				.34	1.96	Accepted
<b>Ikwerre Rural Women</b>	<b>4.21</b>	<b>0.60</b>	122			

Table 6 shows that ONELGA rural women had mean and standard deviation score of 4.18 and .76 respectively, while Ikwerre rural women had mean and standard deviation scores of 4.21 and .60 respectively. The z-cal value was .34, while the z-crit was 1.96 at a .05 level of significance for two tailed test. This result shows that z-cal was less than z-crit, which means that the null hypothesis was accepted. Thus, there was no significant difference in the mean responses of rural women in Ogba/Egbema/Ndoni and Ikwerre Local Government Areas of Rivers State on the impact of deforestation on crop production.

### **Hypothesis 3:**

There is no significant difference in the mean responses of rural women in Ogba/Egbema/Ndoni and Ikwerre Local Government Areas of Rivers State on the impact of deforestation on small scale businesses.

**Table 7: z-Test Responses on the Impact of Deforestation on Small Scale businesses of Rural Women**

Category	M	SD	N	z-cal	z-crit	Remark
<b>ONELGA Rural Women</b>	<b>3.75</b>	<b>1.25</b>	112	.73	1.96	Accepted
<b>Ikwerre Rural Women</b>	<b>3.63</b>	<b>1.28</b>	122			

Table 7 shows that ONELGA rural women had mean and standard deviation score of 3.75 and 1.25 respectively, while Ikwerre rural women had mean and standard deviation scores of 3.63 and 1.28 respectively. The z-cal value was .73, while the z-crit was 1.96 at a .05 level of significance for two tailed test. This result shows that z-cal was less than z-crit, which means that the null hypothesis was accepted. Thus, there was no significant difference in the mean responses of rural women in Ogba/Egbema/Ndoni and Ikwerre Local Government Areas of Rivers State on the impact of deforestation on small scale businesses.

**Hypothesis 4:**

There is no significant difference in the mean responses of rural women in Ogba/Egbema/Ndoni and Ikwerre Local Government Areas of Rivers State on the impact of deforestation on local craft activities

**Table 8: z-Test Responses on the Impact of Deforestation on Local Craft Activities of Rural Women**

Category	M	SD	N	z-cal	z-crit	Remark
<b>ONELGA Rural Women</b>	<b>3.12</b>	<b>0.87</b>	112	0.26	1.96	Accepted
<b>Ikwerre Rural Women</b>	<b>3.35</b>	<b>0.96</b>	122			

Table 8 shows that ONELGA rural women had mean and standard deviation score of 3.12 and .87 respectively, while Ikwerre rural women had mean and standard deviation scores of 3.35 and .96 respectively. The z-cal value was .26, while the z-crit was 1.96 at a .05 level of significance for two tailed test. This result shows that z-cal was less than z-crit, which means that the null hypothesis was accepted. Thus, there was no significant difference in the mean responses of rural

women in Ogba/Egbema/Ndoni and Ikwerre Local Government Areas of Rivers State on the impact of deforestation on local craft activities.

## **CONCLUSIONS**

The finding of this study established that deforestation of forest across the country is an ongoing problem in most communities, especially the rural areas. The tragedy is seriously crippling rural women livelihood in ONELGA and Ikwerre Local Government Area. Deforestation has negatively impacted on crop production due to flooding, drought, loss of nutrient, biodiversity and others. It also affects small scale businesses of rural women since it reduces the number of agricultural goods for marketing. As well, deforestation affects local craft activities of rural women in the study area.

## **RECOMMENDATIONS**

This study recommends the following:

1. Government should encourage rural women on tree planting in order to mitigate the effects of deforestation so that rural women can be able to produce crop as expected.
2. Government should regularly interface with rural women to elicit their concern over small scale trading so that solutions could be proffered.
3. Communities should set up committees to help regulate the felling of trees so that adequate raw materials for local craft activities will be available for local craftsmen.

## **REFERENCES**

- Ahmadpour, A., Alizadeh, M. & Moumenihelali, H. (2015). Identifying factors affecting the rural women's participation in educational-extension programs of the Jihad-agriculture service centers (Case Study: Amol County). *Journal of Research and Rural Planning*, 3(8), 37-49.
- Anna, P. (2013). Annual deforestation rate and growth in gross domestic product in Brazil. *nature of climate change*, 3, 7-9.
- Barracough, S.L. & Ghimire, K.B. (2000). *Agricultural expansion and tropical deforestation: poverty, international trade and land use*. Virginia, USA: Earthscan, Sterling.
- Chakravarty, S., Ghosh, K., Suresh, C.P., Dey, N. & Shukla, G. (2012). Deforestation: Causes, Effects and Control Strategies. Retrieved 20<sup>th</sup> March, 2019 from <http://www.intechopen.com>

- Chomitz, K.M., Buys, P., Luca, G.D., Thomas, T.S. & Wertz-Kanounnikoff, S. (2007). *At loggerheads? Agricultural expansion, poverty reduction and environment in the tropical forests*. World Bank Policy Research Report. World Bank, Washington DC.
- Damisa, M.A. & Yohanna, M. (2007). Role of Rural Women in Farm Management Decision Making Process: Ordered Probit Analysis. *World Journal of Agricultural Sciences*, 3(4), 543-546.
- Food and Agricultural Organization (2015). *Global Forest Resources Assessment 2000*, Rome, Italy; 2015.
- Ibrahim. A., Bila. Y. I., & Sulumbe, M. (2016). Analysis of the impact of deforestation on agricultural productivity in Nigeria: An error correction modeling approach. *Journal of Biology, Agriculture and Healthcare*, 6(19), 1-6
- Ifeanyi-obi, C.C & Njoku, M.E.C. (2014). Socio-economic factors affecting choice of livelihood activities among rural dwellers in southeast Nigeria. *Journal of Agriculture and Veterinary Science*, 7(4), 52-56.
- Legesse N (2003). Environmental Changes of Contemporary Ethiopia and the Indispensable Role of Indigenous Trees. *FSS Consultation Paper on Environment No. 7*.
- Mossie, M., & Yousuf, J. (2015). Analysis of factors influencing rural women participation in performing household farm management practices: the case of Enebsie Sar Midir district, Amhara region, Ethiopia. *Agricultural Science Research Journal*, 5(2), 36-41.
- Nnodim, A.U. & Ochogba, C.O. (2018). Impact of cult activities on the socio-economic wellbeing of rural dwellers in Orashi Region of Rivers State, Nigeria. *International Journal of Innovative Social Sciences & Humanities Research*, 6(1), 56-63.
- Nzeh E., Eboh E and N. J Nweze (2015). State and Trend of Deforestation: An Insight and Lesson From Enugu State, Nigeria. *Net Journal of Agriculture Science*. 3(1), 23-31.
- Ogundele, A. T., Oladipo, M.O. & Adebisi, O.M. (2016). Deforestation in Nigeria: The needs for urgent mitigating measures. *International Journal of Geography and Environmental Management*, 2(1), 15-6.
- Sambe, L.N., Adeofun, C.O & Dachung, G. (2018). The economic and ecological effects of deforestation on the Nigerian environment. *Asian Journal of Advanced Research and Reports*, 1(2), 1-25.



Sands, R. (2005). *Forestry in a Global Context*. USA: CABI Publishing

Udofia, S.I., Jacob, D.E., Owuah, P.W. & Samuel, N.S. (2011). Steaming environmental degradation: the afforestation approach. *Nigerian Journal of Agriculture, Food and Environment*, 7(1), 22-27.

Van Kooten, G.C. & Bulte, E.H. (2000). *The economics of nature: managing biological assets*. Blackwells.