

Demographic Variables of Farmers, Fishermen and Teachers: An Insight into their Climate Change Awareness Levels in South-South Region of Nigeria

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Abstract

This study investigated climate change awareness levels of farmers, fishermen and teachers in South-South region of Nigeria based on their location and gender. The cross sectional survey research design was adopted for the study. The instrument for data collection was a structured questionnaire designed by the researchers. 561 respondents were used for the study. Simple random and purposive sampling techniques were used to select the states, local government areas, communities and respondents. Cronbach's Coefficient Alpha was used to test the internal consistency of the instrument which gave 0.87. Frequencies and percentage was used to answer the research questions while chi square was used to test the null hypotheses which were accepted at $p > .05$. The results obtained revealed amongst others that awareness of climate change among farmers were significantly low while awareness of climate change among teachers was significantly high and the awareness of climate change among fishermen was a bit high but it was not statistically significant. It was recommended that regular seminars and workshops should be organised by climate change unit in the Federal Ministry of Environment to create awareness on climate change for farmers, fishermen and teachers in South-South region of Nigeria.

Keywords: climate, change, farmers, fishermen, teachers

Introduction

Climate change refers to long term shifts in climate variables such as wind, precipitation, temperature, sunshine and weather patterns. It is any significant change in the state of the climate that can be recognized by changes in the mean or the changeability of its properties (Intergovernmental Panel on Climate Change, IPCC, 2013). In other words, it is the change in climate over a long period of time. These long term shifts in climate variables may be natural, such as variations in solar energy reaching the earth's surface. But of recent, human activities have been the major drivers of climate change. This is primarily due to cutting and burning of forest, burning of fossil fuels like coal, oil and gas (Cook et al., 2013). Climate change is viewed as the most capacious and worldwide environmental, economic and political problems facing humanity right now (UNDP, 2016). Climate change is altering nearly every constant index in climatic variables. This makes it difficult if not impossible for stakeholders in climate change discourse such as farmers, fishermen

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and teachers to predict when rainy and dry seasons set in, and other manifestations of climate change such as rising temperatures, droughts, heavy precipitation, cyclones, hurricanes, flood and rising sea levels which have destroyed farmlands, school buildings/facilities, homes and have not only accelerated damage on endangered plant and animal species but also adversely affected aquatic organisms in South-South region of Nigeria. Therefore, it is important for these stakeholders to understand this interdependence of climate variables with their occupation to enable them fully appreciate what climate change is all about. Milfont (2014) in a study on the link between nearness to coast and climate change belief maintained that distance from the coast considerably reduced the certainty of climate change and diminish the support levels for carbon emissions. These assertions are further buttressed by Spence et al. (2011) that proximity to the coast absolutely permits more than a few likely ways in which awareness and belief in climate change may possibly rise.

The process of becoming sensitive to what is happening in and to the environment is called awareness. It is the ability of sensing favourable and unfavourable conditions in the surroundings. In simple terms, climate change awareness is the capacity to factor climate related matters into daily decision-making. It is essential for countries of the world not to only promote, encourage and facilitate public awareness and education on climate change but also support sustainable development goal 13 that aims to take urgent action and tackle climate change and its impacts. Awareness of climate change is critical since farmers, fishermen and teachers live and interact in and with the environment. Rahman et al. (2014) assert that such awareness is indispensable to guide farmers, fishermen and teachers' behaviour towards ameliorating the adversity of climate change.

A farmer cultivates crops and rear birds/animals for human consumption. The farmers' job is agricultural in nature. Agriculture is one of the most susceptible sectors to climate change. This is due to the fact that this primary production activity is highly linked with the natural resources and the environment that are climate sensitive. Farming is a major occupation of the people of South-South Nigeria. Farming in particular releases significant amounts of methane and nitrous oxide (greenhouse gases) to the atmosphere through burning of forest for cultivation of crops. Also, during decomposition of cut down trees and by-products from the farm, greenhouse gases are released. These gases are culprits in climate change discourse.

A fisherman is someone who catches fish and other aquatic organisms for human consumption. There are areas around the globe that are more disposed to the impacts of climate change. One of such areas is the coastal region. Coastal regions are more prone to the impacts of climate change than the hinterlands (Shyam et al., 2015). Fishing being one of the primary occupations of the people living around the coast, the fishermen community is the most exposed group to be severely affected by climate change. Fishermen are included in this study because fishing is one of the occupations of the people of South-South Nigeria. Fishes provide a vital source of protein for good health. But climate change is disrupting the complex and interconnected systems that underpin this major source of food. Fish populations around the world have already been affected by climate change and this has implications for fisheries and aquaculture sector in particular and the

economy of South-South region of Nigeria in general.

A teacher is somebody who imparts knowledge or skills to learners by instruction and example. Teachers are seen as the hub of the quality of education which may emerge (Agbor et al., 2017). Teachers play vital roles in the lives of learners in and outside the classrooms. Teaching, guiding, directing and motivating are roles played by teachers in ensuring that learners get the best in school and out of school environment. Teachers are included in this study because they are on the frontline of climate change education in and outside the classroom. Teachers help the learners to understand the causes, consequences and how to tackle climate change impacts.

Climate change is not gender-neutral, it affects women and men differently (UNDP, 2016). Gender is included in this study to understand gender dimensions of climate change awareness in South-South region of Nigeria. Gender is also included as a variable in this study to identify gender dynamics associated with climate change. There are dynamic links between gender and climate change in terms of vulnerability to the adverse impacts of climate change as well as in terms of response to climate change awareness (Dike & Amadi, 2016; Badmos et al., 2018).

The South-South region of Nigeria is particularly susceptible to the effects of climate change in many aspects considering but not limited to the following; its systems of agriculture, soils, energy needs, economic organization, geographical location, weather and climate, vegetation cover, population and settlement. As a developing nation also, Nigeria is particularly vulnerable to changes in climate because a huge share of its economy is dependent on natural resources that are climate sensitive (FGN, 2017). It is against this backdrop that this study seeks farmers', fishermen's and teachers' awareness of climate change in South-South region of Nigeria based on their demographic variables such as location and gender.

Research questions

1. What is the level of association between farmers', fishermen's and teachers' awareness of climate change in South-South region of Nigeria and their location?
2. What is the level of association between farmers', fishermen's and teachers' awareness of climate change in South-South region of Nigeria and their gender?
3. What is the level of association between farmers', fishermen's and teachers' awareness of climate change in South-South region of Nigeria and their gender?

Hypotheses

Ho1: There is no significant association between farmers', fishermen's and teachers' level of awareness of climate change in South-South region of Nigeria and their location. There is no significant association between farmers', fishermen's and teachers' level of awareness of climate change and their location in South-South region of Nigeria.

Ho2: There is no significant association between farmers', fishermen's and teachers' level of awareness of climate change in South-South region of Nigeria and their gender.

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Methodology

The design for this study is the cross sectional survey research. Cross sectional survey research design studies characteristics of randomly sampled subjects of different ages, classes or levels from different independent groups contemporaneously or simultaneously and compares the differences or changes across the various ages, classes or levels (Kpolovie, 2010). Cross sectional survey research design is characterized with large representative samples of subjects drawn randomly from different ages or educational levels to be comparatively investigated simultaneously. That is, in this survey design, a number of different groups of individuals who belong to different ages or educational levels, each of which is a cohort, randomly sampled from a specific age or educational levels, are studied at one particular period of time.

The area of the study is South-South region of Nigeria which comprises six states namely: Akwa Ibom State, Bayelsa State, Cross River State, Delta State, Edo State and Rivers State. It is an oil producing region in the country and is located within the Niger-Delta region. It is bordered by South East region and North Central region to the north, Atlantic Ocean to the south, the Republic of Cameroon to the east and South West region to the west. Apart from crude oil found in this region, the states are also rich in agricultural products such as yam, fish, palm oil, cassava to mention just a few. The region is low-lying without remarkable hills and has tropical rain forest vegetation. It is a multi-ethnic region having different customs, languages and culture. Ijaw, Isoko, Urhobo, Itsekiri, Ogoni, Andoni, Eleme, Ibibio, Oron, Efik, Bekwara, Ejagham, Ekpeye and Ikwerre are some of the ethnic groups in the region. The major occupations of the people of South-South region of Nigeria are farming, fishing, palm oil milling, trading, carving, weaving and civil service job.

The population for this study is 64,372 which comprised 53,749 registered farmers, 7,420 registered fishermen and 3,203 government employed senior secondary school teachers in the six states namely: Akwa Ibom State, Bayelsa State, Cross River State, Delta State, Edo State and Rivers State (Source: Department of Planning, Research and Statistics, Ministries of Agriculture and Education, Akwa Ibom State, Cross River State, Delta State and Rivers State, 2021).

The sample size for this study is 576 which comprised 435 farmers, 91 fishermen and 50 teachers. The simple random sampling technique was used to select four states out of the six states in South-South region of Nigeria. This was achieved through balloting without replacement. In drawing the four states using the simple random sampling technique, the names of the six states were written on pieces of paper, folded, put in a container and shuffled. The researchers randomly drew one state at a time from the container without replacement until the four states were selected. The justification for the use of simple random sampling technique was to give each of the states equal chances of being selected. Thereafter, the purposive sampling technique was used to select the following: 3 local government areas (L.G.As) in each of the four states selected, one community each from the selected 3 L.G.As and one public school each from the selected 3 L.G.As. The researchers adopted the purposive sampling technique because it allows the researchers the opportunity to ensure that any sampled community have a public secondary school, a

river/sea and abundance of farmland. Afterwards, the Krejcie and Morgan (1970) sample size method was used to ascertain the sample. The sample size determination method has a table which depicts the desired sample size for any given population. The sample size of this study is supposed to be 382 from the population, based on Krejcie and Morgan (1970) sample size method. However, to account for systemic differences between groups in terms of withdrawals from the study which could lead to incomplete outcome data (attrition bias), the desired sample size was increased by 51% thereby giving a sample size of 576. This is for more accuracy and generalization (Schulz & Grimes, 2002). Also, according to Sara et al. (2016), “increasing the sample size can compensate for some biases”. Thereafter, the purposive sampling technique was still used to sample 576 respondents in the 12 communities and 12 public secondary schools.

The instrument for data collection was a 20-item structured questionnaire designed by the researchers titled Demographic Variables of Farmers, Fishermen and Teachers: An Insight into their Climate Change Awareness Levels Questionnaire. The questionnaire consists of two sections - A and B. Section A was meant to elicit demographic information of respondents while section B was grouped into a cluster. The cluster was to elicit information on climate change awareness levels of farmers, fishermen and teachers in South-South region of Nigeria. The instrument was a four-point rating scale with response options: Very Well (4 points), Not Too Well (3 points), Somehow (2 points) and Not At All (1 point) for all the items.

To ensure the validity of the instruments, a copy of the questionnaire was given to three experts for critiquing and editing. In addition to the instrument, the purposes of the study, research questions and hypotheses were made available to the experts. These experts were requested to examine the instrument on the basis of clarity of language, simplicity of vocabulary, suitability of item format and relevance of items to the study. The corrections and suggestions made by the three experts guided the researchers in the final draft of the questionnaire. The reliability of the questionnaire was estimated after a trial test. Registered farmers, fishermen and government employed senior secondary school teachers in Akure South LGA of Ondo State which are not part of the study sample were used for the trial test. The choice of Akure South LGA of Ondo State is because it shares the same characteristics as the area of study. Twenty-four (24) copies of the questionnaire were administered to 24 respondents (farmers 8, fishermen 8 and teachers 8) from Akure South LGA of Ondo State. The essence was to determine whether the questionnaire is consistent in measuring what it is expected to measure. In order to estimate the internal consistency of the questionnaire, the Cronbach's Coefficient Alpha was used to test the internal consistency of the instrument which gave 0.87.

The questionnaire was administered to the sampled population, out of which 15 copies of the questionnaire were not properly filled by the respondents and were not used for data analysis. The data collected from the respondents through the questionnaire were collated and analysed using descriptive statistics of frequency and percentage for the research questions. Chi square analysis was used to test the hypotheses. Where the probability value was less than .05 level of significance, the null hypothesis was rejected, and where it was greater than .05 level of significance, the null hypothesis was accepted. The range of scores based on the responses for categorising climate change awareness levels is as

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follows – (i) low, 20-35 (25%-44%); (ii) moderate, 36-54 (45%-68%); and (iii) high, 55-80 (69%-100%).

Presentation of results

Research question 1: What is the level of association between farmers’, fishermen’s and teachers’ awareness of climate change in South-South region of Nigeria and their location?

Table 1: Frequency and percentage of farmers’, fishermen’s and teachers’ level of awareness of climate change in South-South region of Nigeria based on their location (N=561).

Occupation	Level	Location		Total F (%)
		Riverine F (%)	Hinterland F (%)	
Farming	Low	59 (81.9)	13 (18.1)	72 (100.0)
	Moderate	223 (63.4)	129 (36.6)	352 (100.0)
	High	0 (0.0)	5 (100.0)	5 (100.0)
	Total	282 (65.7)	147 (34.3)	429 (100.0)
Fishing	Low	5 (50.0)	5 (50.0)	10 (100.0)
	Moderate	30 (60.0)	20 (40.0)	50 (100.0)
	High	10 (45.5)	12 (54.5)	22 (100.0)
	Total	45 (54.9)	37 (45.1)	82 (100.0)
Teaching	Low	2 (100.0)	0 (0.0)	2 (100.0)
	Moderate	12 (42.9)	16 (57.1)	28 (100.0)
	High	6 (30.0)	14 (70.0)	20 (100.0)
	Total	20 (40.0)	30 (60.0)	50 (100.0)
Overall	Low	66 (78.6)	18 (21.4)	84 (100.0)
	Moderate	265 (61.6)	165 (38.4)	430 (100.0)
	High	16 (34.0)	31 (66.0)	47 (100.0)
	Total	347 (61.9)	214 (38.1)	561 (100.0)

The results as presented in table 1 show that out of the 72 farmers who had low level of climate change awareness, 59 of them representing 81.9 percent live in riverine area while 13 of them representing 18.1 percent live in hinterland; out of the 352 farmers who had moderate level of climate change awareness, 223 of them representing 63.4 percent live in riverine area while 129 of them representing 36.6 percent live in the hinterland; on the other hand, all the 5 farmers who had high level of climate change awareness live in the hinterland.

The results further revealed that out of the 10 fishermen who had low level of climate change awareness, 5 of them representing 50.0 percent live in riverine area while the other 5 representing 50.0 percent live in the hinterland; out of the 50 fishermen who had moderate level of climate change awareness, 30 of them representing 60.0 percent live in riverine area while 20 of them representing 40.0 percent live in the hinterland; finally, out of the 22 fishermen who had high level of climate change awareness, 10 of them

representing 45.5 percent live in riverine area while 12 of them representing 54.5 percent live in the hinterland.

Further examination of the results in table 1 revealed that the 2 teachers (representing 100 percent) who had low level of climate change awareness live in riverine area, while out of the 28 teachers who had moderate level of climate change awareness, 12 of them representing 42.9 percent live in riverine area and 16 of them representing 57.1 percent live in hinterland; out of the 20 teachers who had high level of climate change awareness, 6 of them representing 30.0 percent live in riverine area while 14 of them representing 70.0 percent live in the hinterland.

The results also revealed that out of the 84 participants who had low level of climate change awareness, 66 of them representing 78.6 percent live in riverine area while 18 of them representing 21.4 percent live in hinterland; out of the 430 respondents who had moderate level of climate change awareness, 265 of them representing 61.6 percent live in riverine area while 165 of them representing 38.4 percent live in the hinterland. On the other hand, out of the 47 participants who had high level of climate change awareness, 16 of them representing 34.0 percent live in riverine area while 31 of them representing 66.0 percent live in the hinterland.

Ho1: There is no significant association between farmers', fishermen's and teachers' level of awareness of climate change in South-South region of Nigeria and their location.

Table 2: Chi-square analysis of the association between farmers, fishermen and teachers' level of awareness of climate change in South-South region of Nigeria based on their location (N=561).

	Location	Awareness of climate change			Total	χ^2	p-level
		Low	Moderate	High			
Farming	Riverine	59	223	0	282.	18.878*	.000
	Hinterland	13	129	5	147		
	Total	72	352	5	429		
Fishing	Riverine	5	30	10	45	1.415	.493
	Hinterland	5	20	12	37		
	Total	10	50	22	82		
Teaching	Riverine	2	12	6	20	3.929	.140
	Hinterland	0	16	14	30		
	Total	2	28	20	50		
Overall	Riverine	66	265	16	347	25.366*	.000
	Hinterland	18	165	31	214		
	Total	84	430	47	561		

*Significant at $p < .05$; $df=6$.

In testing hypothesis one, the level of awareness of climate change among farmers, fishermen and teachers in South-South region of Nigeria was matched with their location

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to investigate if there is any significant association between them. This hypothesis was tested using Chi-square statistics at .05 level of significance and the result is presented in table 2.

The results of the Chi-square analysis, as presented in table 2 showed that the calculated Chi-square value of 18.878 with a p-value of .000 was obtained for the association between farmers’ level of awareness of climate change and their location while the calculated Chi-square value of 1.415 with a p-value of .493 was obtained for the association between fishermen level of awareness of climate change and their location at 2 degree of freedom, and .05 level of significance. Further examination of the result revealed that the calculated Chi-square value of 3.929 with a p-value of .140 was obtained for the association between teachers’ level of awareness of climate change and their location while the calculated Chi-square value of 25.366 with a p-value of .000 was obtained for the association between the overall respondents’ level of awareness of climate change and their location at 2 degree of freedom, and .05 level of significance.

The results imply that farmers and the overall respondents’ level of awareness of climate change had significant association with their location while fishermen’s and teachers’ level of awareness of climate change did not have significant association with their location. Hence, the null hypothesis which states that there is no significant association between farmers’, fishermen’s and teachers’ level of awareness of climate change and their location in South-South region of Nigeria was rejected as regards farmers and the overall respondents’ location but was accepted as regards fishermen and teachers’ location.

Research question 2: What is the level of association between farmers’, fishermen’s and teachers’ awareness of climate change in South-South region of Nigeria and their gender?

Table 3: Frequency and percentage of farmers’, fishermen’s and teachers’ level of awareness of climate change in South-South region of Nigeria based on gender (N=561).

Occupation	Level	Gender		
		Male F (%)	Female F (%)	Total F (%)
Farming	Low	22 (30.6)	50 (69.4)	72 (100.0)
	Moderate	167 (47.4)	185 (52.6)	352 (100.0)
	High	5 (100.0)	0 (0.0)	5 (100.0)
	Total	194 (45.2)	235 (54.8)	429 (100.0)
Fishing	Low	3 (30.0)	7 (70.0)	10 (100.0)
	Moderate	30 (60.0)	20 (40.0)	50 (100.0)
	High	18 (81.8)	4 (18.2)	22 (100.0)
	Total	51 (62.2)	31 (37.8)	82 (100.0)
Teaching	Low	1 (50.0)	1 (50.0)	2 (100.0)
	Moderate	13 (46.4)	15 (53.6)	28 (100.0)
	High	13 (65.0)	7 (35.0)	20 (100.0)
	Total	27 (54.0)	23 (46.0)	50 (100.0)
Overall	Low	26 (31.0)	58 (69.0)	84 (100.0)

Moderate	210 (48.8)	220 (51.2)	430(100.0)
High	36 (76.6)	11 (23.4)	47 (100.0)
Total	272 (48.5)	289 (51.5)	561 (100.0)

The results as presented in table 3 showed that out of the 72 farmers who had low level of climate change awareness, 22 of them representing 30.6 percent are males while 50 of them representing 69.4 percent are females; out of the 352 farmers who had moderate level of climate change awareness, 167 of them representing 47.4 percent are males while the remaining 185 of them representing 52.6 percent are females. On the other hand, all the 5 farmers who had high level of climate change awareness are males.

The results further revealed that out of the 10 fishermen who had low level of climate change awareness, 3 of them representing 30.0 percent are males whereas 7 of them representing 70.0 percent are females; out of the 50 fishermen who had moderate level of climate change awareness, 30 of them representing 60.0 percent are males while the remaining 20 representing 40.0 percent are females. On the high level of climate change awareness category, out of the 22 fishermen in this category, 18 of them representing 81.1 percent are males while the other 4 representing 18.2 percent are females.

Further examination of the results on table 3 revealed that out of the 2 teachers, who had low level of climate change awareness, one of them representing 50.0 percent is a male while the other one representing 50.0 percent is a female. Out of the 28 teachers who had moderate level of climate change awareness, 13 of them representing 46.4 percent are males while 15 of them representing 53.6 percent are females; and out of the 20 teachers who had high level of climate change awareness, 13 of them representing 65.0 percent are males while 7 of them representing 35.0 percent are females.

The results also revealed that out of the 84 respondents who had low level of climate change awareness, 26 of them representing 31.0 percent are males while 58 of them representing 69.0 percent are females; out of the 430 participants who had moderate level of climate change awareness, 210 of them representing 48.8 percent are males while 220 of them representing 51.2 percent are females. On the other hand, out of the 47 respondents who had high level of climate change awareness, 36 of them representing 76.6 percent are males while 11 of them representing 23.4 percent are females.

Ho2: Hypothesis 4: **Ho3:** There is no significant association between farmers', fishermen's and teachers' level of awareness of climate change in South-South region of Nigeria and their gender.

In testing hypothesis two, the level of awareness of climate change among farmers, fishermen and teachers in South-South region of Nigeria was matched with their gender to investigate if there is any significant association between them. This hypothesis was tested using Chi-square statistics at .05 level of significance and the result is presented on table 4. The results of the Chi-square analysis, as presented on table 4 showed that the calculated Chi-square value of 13.010 with a p-value of .001 was obtained for the association between farmers' level of awareness of climate change and their gender while the calculated Chi-square value of 8.114 with a p-value of .017 was obtained for the

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association between fishermen level of awareness of climate change and their gender, at 2 degree of freedom, and .05 level of significance. Further examination of the result revealed that the calculated Chi-square value of 1.633 with a p-value of .442 was obtained for the association between teachers' level of awareness of climate change and their gender while the calculated Chi-square value of 25.229 with a p-value of .000 was obtained for the association between the overall respondents' level of awareness of climate change and their gender at 2 degree of freedom, and .05 level of significance.

Table 4: Chi-square analysis of the association between farmers', fishermen's and teachers' level of awareness of climate change in South-South region of Nigeria based on gender (N=561).

	Gender	Awareness of climate change			Total	χ^2	p-level
		Low	Moderate	High			
Farming	Male	22	167	5	194	13.010*	.001
	Female	50	185	0	235		
	Total	72	352	5	429		
Fishing	Male	3	30	18	51	8.114*	.017
	Female	7	20	4	31		
	Total	10	50	22	82		
Teaching	Male	1	13	13	27	1.633*	.442
	Female	1	15	17	23		
	Total	2	28	20	50		
Overall	Male	26	210	36	272	25.229*	.000
	Female	58	220	11	289		
	Total	84	430	47	561		

*Significant at $p < .05$; $df=6$.

Table 4 showed that farmers, fishermen and overall respondents' level of awareness of climate change had significant association with their gender while teachers' level of awareness of climate change did not have significant association with their gender. Hence, the null hypothesis which stated that there is no significant association of farmers', fishermen's and teachers' level of awareness of climate change in South-South region of Nigeria and their gender was rejected as regards farmers, fishermen and overall respondents' gender but was accepted as regards teachers' gender.

Discussion of the findings

In respect of research question one and the corresponding hypothesis one, the findings of the study indicated that farmers' level of awareness of climate change had significant association with their location while fishermen's and teachers' level of awareness of climate change did not have significant association with their location. In line with this finding, Milfont (2014) in a study on the linked between proximity to coast and climate change belief revealed that distance from the coast significantly reduced the belief levels in climate change and decrease the levels of support for carbon emissions. This is further

buttressed by Spence et al. (2011) who asserted that closeness to the coast definitely permits several likely means in which awareness and belief in climate change could rise.

In respect of research question two and the hypothesis two arising from it, the findings of the study indicated that farmers, fishermen's and overall respondents' level of awareness of climate change had significant association with gender while teachers' level of awareness of climate change did not have significant association with their gender. This finding revealed that a significant association exists between farmers' and fishermen's level of climate change awareness and gender. Dike and Amadi's (2016) study supported this finding and noted that a significant difference exists between males and females in their level of awareness of climate change in the area where their study was conducted. In addition, Badmos et al. (2018) revealed from the result of their study that males (95.2%) compared to females (89.2%) perceived observable and considerable changes in the weather situation.

association between farmers', fishermen' and teachers' level of awareness of climate change and their level of education in South-South Nigeria.level of association between farmers', fishermen' and teachers' awareness of climate change in South-South Nigeria and their level of education level of association between farmers', fishermen' and teachers' awareness of climate change in South-South Nigeria and their level of education association between farmers', fishermen' and teachers' level of awareness of climate change and their level of education in South-South Nigeria association between farmers', fishermen' and teachers' level of awareness of climate change and their level of education in South-South NigeriaConclusion.

This study investigated climate change awareness levels of farmers, fishermen and teachers in South-South region of Nigeria based on their location and gender. The variables involved in this study were awareness of climate change with regards to location and gender. 8.4% of the study population had high level of awareness of climate change; therefore, awareness of climate change in the area of the study is low. Also, the overall respondents' level of awareness of climate change had significant association with gender. This means that awareness of climate change is linked to being a male or female.

Determinants of climate change awareness and adaptation strategies by farmers, fishermen and teachers in South-South Nigeria. The major variables involved in the study were level of awareness of climate change and level of adaptation to climate change with regards to level of education, location and genderdeterminants of climate change awareness and adaptation strategies by farmers, fishermen and teachers in South-South Nigeria. The major variables involved in the study were level of awareness of climate change and level of adaptation to climate change with regards to level of education, location and genderdeterminants of climate change awareness and adaptation strategies by farmers, fishermen and teachers in South-South Nigeria. The major variables involved in the study were level of awareness of climate change and level of adaptation to climate change with regards to level of education, location and genderThis study investigated the determinants of climate change awareness and adaptation strategies by farmers, fishermen and teachers in South-South Nigeria. The major variables involved in the study were level of awareness of climate change and level of adaptation to climate change with regards to

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level of education, location and gender. This study investigated the determinants of climate change awareness and adaptation strategies by farmers, fishermen and teachers in South-South Nigeria. The major variables involved in the study were level of awareness of climate change and level of adaptation to climate change with regards to level of education, location and gender. Implications of the study to education On farmers', fishermen's and teachers' awareness of climate change and gender, the study revealed that the overall respondents' level of awareness of climate change had significant association with gender. The educational implications of this finding is that both gender is aware of climate change thus, gender inequality gaps that used to be in favour of males is closing up.

Recommendation

Regular seminars and workshops should be organised by climate change unit in the Federal Ministry of Environment to create awareness on climate change for farmers, fishermen and teachers in South-South region of Nigeria.

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