Cultivating Climate-Ready Minds: Agro-Trainees Awareness and Perception toward Climate Change in South-West Nigeria

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Abstract: The awareness and perception of agro-trainees with respect to climate change is paramount in shaping the future of agriculture in South-West Nigeria. While progress has been made, there is still a need for improved climate education, policy support and practical training to equip future farmers with the skills to combat climate challenges. The study therefore, examined the awareness and perception of agro-trainees to climate change in South-West Nigeria. A multi-stage sampling procedure was used to select 600 Farm Practical Year (FPY) students for the study. A structured questionnaire was used to obtain data from the respondents and analyzed using frequency counts, percentages, means, standard deviation, Chi-square, and Pearson Product Moment Correlation (PPMC). Results reveal that 52.0% of the respondents were female, 61.3% were Christian, 92.0% were single and 86.0% live off-campus with an average age, CGPA, household size and monthly allowance of 23 years, 3.69, 5 persons and ₦18,266.67 respectively. Internet (90.7%), television (86.0%) and school (84.7%) were the major sources of information on climate change reported by the respondents. The major causes of climate changed identified by the respondents were ozone depletion (83.3%), bush burning (82.7%) and natural cause (81.3%). The results show that 94.0% of the respondents were aware of climate change as they reported that climate is dynamic over time ($\bar{x}$=3.54), not the same thing as weather ($\bar{x}$=3.43) and that damage to the ozone layer also causes climate change ($\bar{x}$=3.37). The majority (94.0%) of the respondents had favourable perception of climate change because they perceived the climate to be changing ($\bar{x}$=4.55) as there are observed changes in temperature ($\bar{x}$=4.25) and shift in raining seasons ($\bar{x}$=4.19). Respondents perceived planting of new crops ($\bar{x}$=3.55), water management to prevent water logging and erosion ($\bar{x}$=3.55) as well as construction of drainage channels ($\bar{x}$=3.21) as effective climate change adaptation strategies. The chi-square results revealed that there is a significant (p<0.05) association between religion (χ^2=6.71) and the perception of respondents on climate change. Correlation results revealed a positive and significant (p<0.05) relationship between age (r =0.21), CGPA (r =0.30), awareness on climate change (r=0.27) and perception of respondents on climate change. The study concluded that the respondents are aware of climate change and its adaptation strategies. Therefore, agro-trainees should be provided with hands-on trainings and capacity building on climate-smart agriculture.

Keywords: Adaption strategies, Agro-trainees, Awareness, Climate change, Perception

Introduction

Agriculture is one of the most important areas that contribute significantly to the economy of most African countries, and climate change is the world's greatest environmental problem facing agriculture as its effects are already being seen, particularly in the agricultural sector, where it has had a considerable influence on productivity in most developing nations (Elum *et al*., 2017) and makes most inhabitants of these countries vulnerable to food insecurity.

Climate change is a reality and this is supported by the slew of climate change conferences, campaigns, studies, and research during the last two decades (Agenda 21 of the Rio Declaration in Rio de Janeiro, 1992; IPCC, 2001; COP 12 in Nairobi, 2006; COP 15 in Copenhagen, 2009; COP 16 in Mexico 2010; COP 17 in Durban 2011; COP 18 in Doha

2012; COP 20 in Lima 2014; COP 26 in Glasgow, 2021; COP 27 in Egypt 2022; COP 28 in Dubai 2023, COP 29 in Azerbaijan 2024), to name a few. Climate change is described as a shift in the earth's atmospheric process, and its origin is mostly ascribed to human actions such as gas flaring, deforestation, and other anthropogenic activities that result in an increase and pollution of greenhouse gases in the atmosphere (IPCC, 2021).

Climate change continues to threaten agricultural productivity by altering temperature and precipitation patterns and increasing the frequency of extreme weather events like drought and flooding. These changes significantly affect crop yields and soil fertility. According to Okona et al. (2021), there has been a noticeable rise in temperature and extreme rainfall patterns across various regions of Nigeria in the past decade, contributing to widespread agricultural disruptions and reduced crop output, especially in vulnerable and unprepared communities.

The devastating conditions of climate change are undoubtedly intensifying. Poor soil fertility, high insect population occurrences, inconsistency in rainfall patterns leading to drought, crop failures, and water shortages for irrigation are all becoming increasingly common (Adewale et al., 2023) and they are anticipated to worsen especially in Nigeria as the country is exacerbated by a low level of adaptation and mitigation as environmental concerns are not prioritized in policy discussions. As future stewards of our food systems, the awareness and attitude of agricultural students are critical factors in shaping our ability to combat the impacts of climate change in the years ahead.

Education plays a foundational role in building climate change awareness. UNESCO (2022) reiterates that enhancing awareness through education fosters informed decision-making and strengthens the adaptive capacities of communities. Hence, integrating climate change education into school curricula is not just beneficial, it is essential. Punzalan (2020) study reveals that senior secondary students exhibit limited awareness of climate change and hold a generally low attitude toward this issue. Similarly, research conducted by Joshua and Christopher (2019) among selected Senior High Students in the Philippines similarly indicates that students possess minimal awareness and attitude regarding climate change.

The assessment of students' awareness and attitude towards environmental concerns serves as a means to gauge their scientific literacy, a valuable asset for nurturing responsible decision-makers who will champion sustainable development in the future (Singh and Qasim, 2023). However, research by Eze et al. (2022) observed that many educators lack the knowledge of how to effectively convey information about climate change to their students. Prashant (2023) found persistent misconceptions and a general lack of understanding about climate change among students. Consequently, these factors hinder students from developing a high awareness and a positive attitude towards climate change.

Awareness about climate change is the cornerstone of effective adaptation. Agricultural students need to be well-versed in the science of climate change, its consequences for agriculture, and the pressing need for mitigation and adaptation measures because awareness helps students acknowledge the vulnerabilities of agriculture to climate-related stresses like extreme weather events, shifting growing seasons, and the spread of pests and diseases. Once students understand the challenges, they are more likely to appreciate the importance of adopting climate-resilient agricultural practices and sustainable farming methods. While awareness is the first step, a positive attitude is what propels agricultural students to take action in adapting to climate change. A proactive and optimistic mindset is crucial for addressing the complexities of a changing climate as a positive attitude encourages students to explore innovative techniques and technologies that can make agriculture more resilient. They become more receptive to change and experimentation (Singh and Qasim, 2023).

Okona et al. (2021) held the belief that Nigeria's future depends on the active involvement of young people in agriculture and their empowerment. Agricultural students are the future custodians of our food systems, and their awareness and attitude play a pivotal role in the fight against climate change. Hence, by equipping them with a strong foundation of climate knowledge, a receptive attitude toward change, and a sense of responsibility for sustainable farming, we empower them to become leaders in climate adaptation efforts. These students will be instrumental in securing our food supply and building resilient agricultural systems for generations to come.

Punzalan (2020) pointed out that schools need new strategies and resources to address young people's lack of knowledge about the world. Hence, agricultural colleges in Nigeria have adopted Farm Practical Year (FPY) mostly for students in the 400-level. It is typically a one-year training period that comes after students have completed their coursework and theoretical learning in various agricultural disciplines. During this practical year, students are exposed to real-world farming experiences, research, and farm management, allowing them to apply their knowledge and skills in a practical setting. It exposes undergraduate agricultural students to all facets of agricultural production, encompassing crops, livestock, fisheries and forestry. Instead of merely studying farming theories, fourth-year

agricultural students engage in active participation through FPY. The knowledge they acquire and build through this practical experience is not only more meaningful but also more enduring. However, little is known about their awareness and attitude toward climate change as they were exposed to real-world farming experiences. Therefore, this study explored the significance of awareness and attitude among agricultural students in the context of climate change. Specifically, the study described the personal characteristics of the respondents, ascertained the sources of information on climate change of the respondents, determined the level of awareness of the respondents regarding climate change adaptation, determined the level of perception of the respondents on climate change adaptation and identified the perceived climate change adaptation strategies.

Based on the objectives, the following null hypotheses were tested.

H_{01}: There is no significant relationship between the respondents' personal characteristics and their perception on climate change.

H_{02}: There is no significant relationship between the respondents' sources of information on climate change and their perception on climate change.

H_{03}: There is no significant relationship between the respondents' personal characteristics and their perception on climate change.

Research Methodology

This study was carried out in Southwest, Nigeria. The population of the study area are all Agro-trainees of Federal and State Universities in Southwest Nigeria. Two-stage sampling procedure was used for selection of respondents. Stage 1 involved the simple random selection of two Federal (Federal University of Agriculture, Abeokuta and University of Ibadan) and State (Lagos State University and Olabisi Onabanjo University) tertiary institutions. Stage two involved purposive selection of 150 Farm Practical Year (FPY) students in each of the selected Universities in Stage one above. Data were sourced primarily with the use of a structured questionnaire. Perception on Climate Change was measured by adapting 14 statements of Aphunu and Nwabeze (2012). It was rated on a five point Likert type rating scale of Strongly Agree (SA= 5), Agree (A= 4), Undecided (U=3), Disagree (D= 2) and Strongly Disagree (SD= 1). It was further categorised into favourable (43-70) and unfavourable perception (14-42) to determine the level of respondents' perception on climate change. Awareness on Climate Change was measured by adapting 14-item of Lopez and Malay (2019) using a four (4) point rating scale of "not aware=1", "slightly aware=2", "moderately aware=3", and "extremely aware=4". It was further categorised into high (46-75) and low (15-45) to determine the level of respondents' awareness on climate change. Perceived Climate Change Adaptation Strategies It was measured by adapting 18-item of Adeleke and Omoboyeje (2016) using a four (4) point rating scale of Highly Effective (4); Partially Effective (3); Effective (2); and Not Effective (1). Data were analysed using descriptive and inferential statistical techniques. The analytical package to be used is SPSS 25.0 (Statistical Package for Social Sciences). Descriptive statistics such as frequency counts, percentages, means and standard deviations was used to explain the objectives of the study. The inferential statistics used were: Chi-square and Pearson Product Moment Correlation (PPMC).

Results and Discussion

Personal Characteristics of the Respondents

Table 1 presents the personal characteristics of the respondents. The results indicated that majority (82.0%) of the respondents were below 25 years, while 18.0% are above 25 years with a mean age of 23 years. This implied that the respondents could have little experience regarding climate change and variability. Furthermore, this range of agro-trainees are young and expected to be energetic to carry out their farming duties effectively. According to Gbegeh and Akubuilo (2012), age of a farmer may positively or negatively influence their decision to adopt new technologies. Nucciteli (2016), reported a rising climate change generation gap in America. Americans who deny the existence of climate change were mostly adults, while those who accept it were the youth. Bugge-Henriksen and Harker-Schuch (2013) reported that high school students from Austria and Denmark, 16-17 years old, are knowledgeable enough about climate change. On a more recent study, millennial show more concern about climate change than other generations (Maibach, 2016).

Over half (52.0%) of the respondents were female compared to 48.0% who were male in the study area. This implies that female are getting interested in agriculture. On the research conducted by UNICEF (2011), female students in Montenegro have higher level of knowledge about climate change unlike the less familiar male students. Females have more positive attitudes toward environmental issues and are more concerned about the environment than their male counterparts (Leppanen *et al.*, 2012). Gender is a crucial issue in climate change because it is important in

influencing and raising general climate change awareness in the family (Ajuang *et al.*, 2016). Furthermore, majority (61.3%) of the respondents were Christian. Religion could affect agro-trainees' perception of climate change as some may see it as the will of God. Results also revealed that majority (92.0%) of the respondents were single. This is expected because they are agricultural students still in tertiary institution.

Furthermore, 49.3% of the respondents had CGPA within 3.50-4.49 (second class upper) and 36.0% had between 2.50-3.49GPA (second class lower). CGPA may have effects on the awareness and perception of climate change as the brilliant ones could read wide on the topic. Also, slightly more than half (52.0%) of the respondents had household size of 5-6 members with a mean household size of 5 members. This is an indication that larger percentage of the respondents had large household which is usually associated with a higher labour endowment as one of the important materials necessary for adaptation to climate change. Yirga (2007) opined that large household size is one of the important resources needed for adaptation. Adaptation to climate change is costly which could be reduced through intensive labour use. Thus, if farmers do not have sufficient family labour or the financial means to hire labour, they might not be able to adapt climate change strategies. Although, Fakoya *et al.,* (2010) observed that the larger the household size, the more food needed to maintain adequate food security.

Most (74.0%) of the respondents received a monthly allowance below ₦20,000.00 with an average allowance of ₦18,266.67. This implies that the students have considerable amount of money. This could have effects on their concentration, commitment, and engagement to field work. Most (86.0%) of the respondents lived off-campus while only 14% lived on-campus. This implies that agro-trainees earned good amount of money

Table 1: Frequency Distribution of Respondents Personal Characteristics (n=150)

Variables	Frequency	Percentage (%)	Mean	Std. d.
Age			23.46	2.36
≤ 23	344	57.3		
24 – 25	148	24.7		
26 – 27	64	10.7		
28+	44	7.3		
Gender				
Male	288	48		
Female	312	52		
Religion				
Christianity	368	61.3		
Islam	224	37.3		
Traditional	8	1.3		
Marital status				
Single	552	92		
Married	48	8		
CGPA			3.69	0.62
≤ 2.49	8	1.3		
2.50 - 3.49	216	36		
3.50 - 4.49	296	49.3		
4.50 - 5.00	80	13.3		
Household size			5.10	1.51
≤ 4	200	33.3		
5-6	312	52		
7+	88	14.7		
Monthly allowance			18266.67	12276.69
≤ 10000	240	34		
10001 – 20000	204	40		

20001 – 30000	84	14
30001+	72	12
Accommodation		
On-campus	84	14
Off-campus	516	86

Source: Field Survey, 2022

Sources of Information on Climate Change

Figure 1 presents the sources of information on climate change. Most of the respondents reported internet (90.7%), television (86.0%) and school (84.7%) as the major sources of information on climate change. In addition, newspaper (75.3%), books (74.0%) and radio (72.0%) were other sources of information on climate change. This implies that school is one of the major sources of information on climate change. The result of the study agrees with the study of Westerman *et al*. (2014) that social media is the first information source used by students when it comes to climate change. Internet and online technologies offer new ways for knowledge sharing and allows the public to engage with climate-change discourse (Newell and Dale 2015). Television as well as other media like films, newspapers, and magazines contribute to information about climate change for students (Filho, 2010). These findings imply that information about climate change is accessible through various platform and can be shared to others. Akin to mobility, raising awareness and promoting positive attitude towards climate change is now easier and broader.

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Figure 1: Sources of Information on Climate Change

Source	Value
School	84.7
Books	74
Television	86
Newspapers	75.3
Magazine	60.7
Radio	72
Relatives	58
Friends	69.3
Internet	90.7
Movies	68.7
Flyers/brochures	57.3
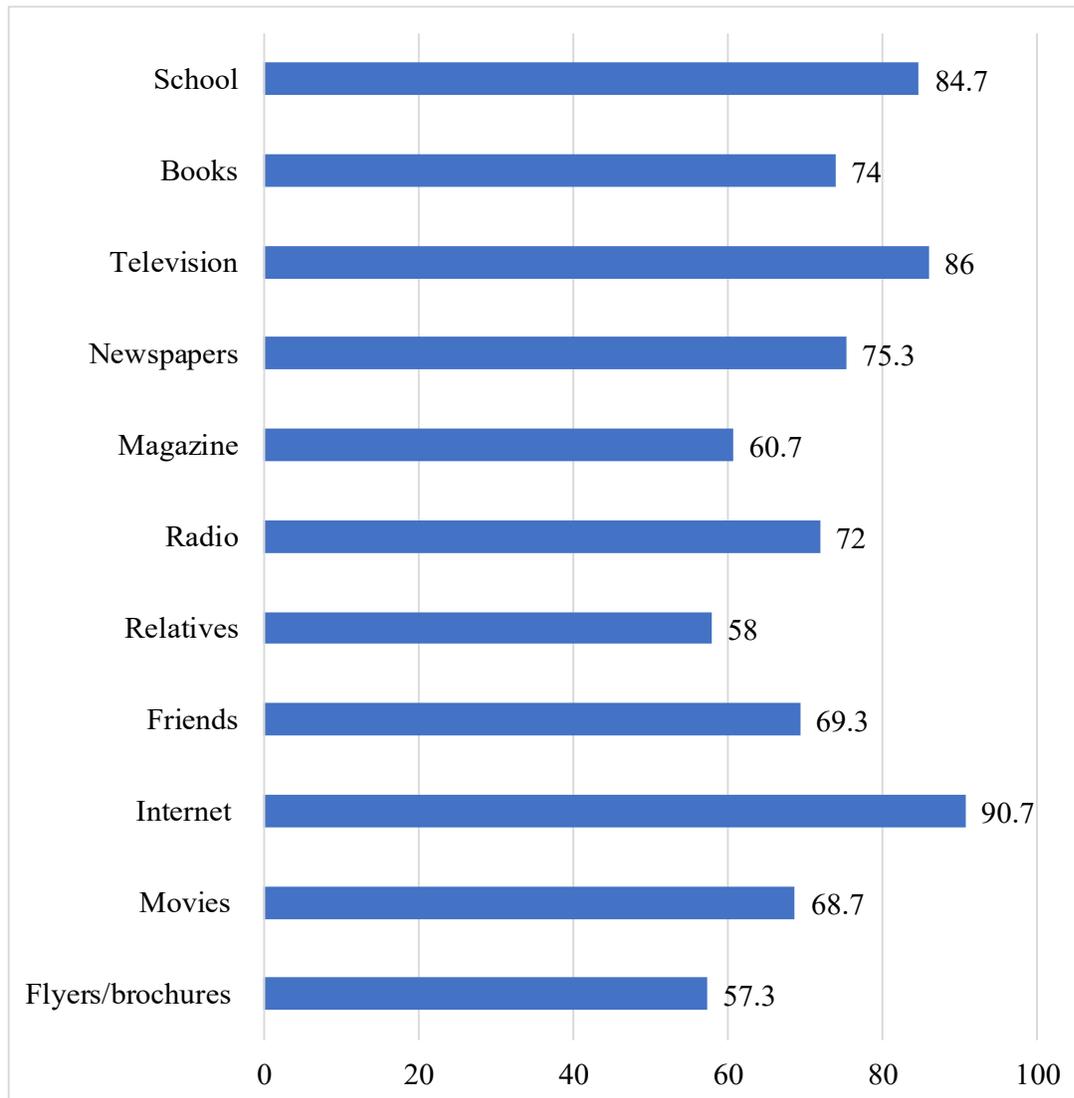
Perceived Causes of Climate Change

Respondents perceived causes of climate change are presented in Figure 1. The major causes of climate change perceived by the respondents were: ozone depletion (83.3%), bush burning (82.7%), natural cause (81.3%), burning of fossil fuel (78.7%), deforestation (78.7%), and God (68.0%). This is consistent with Falaki *et al.* (2013) who asserted bush burning, tree cutting and burning of fossil fuel as the main causes of climate change. The result was also buttressed by IPCC (2007) who opined that the main cause of climate change was attributed to human activities.

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Figure 2: Causes of Climate Change
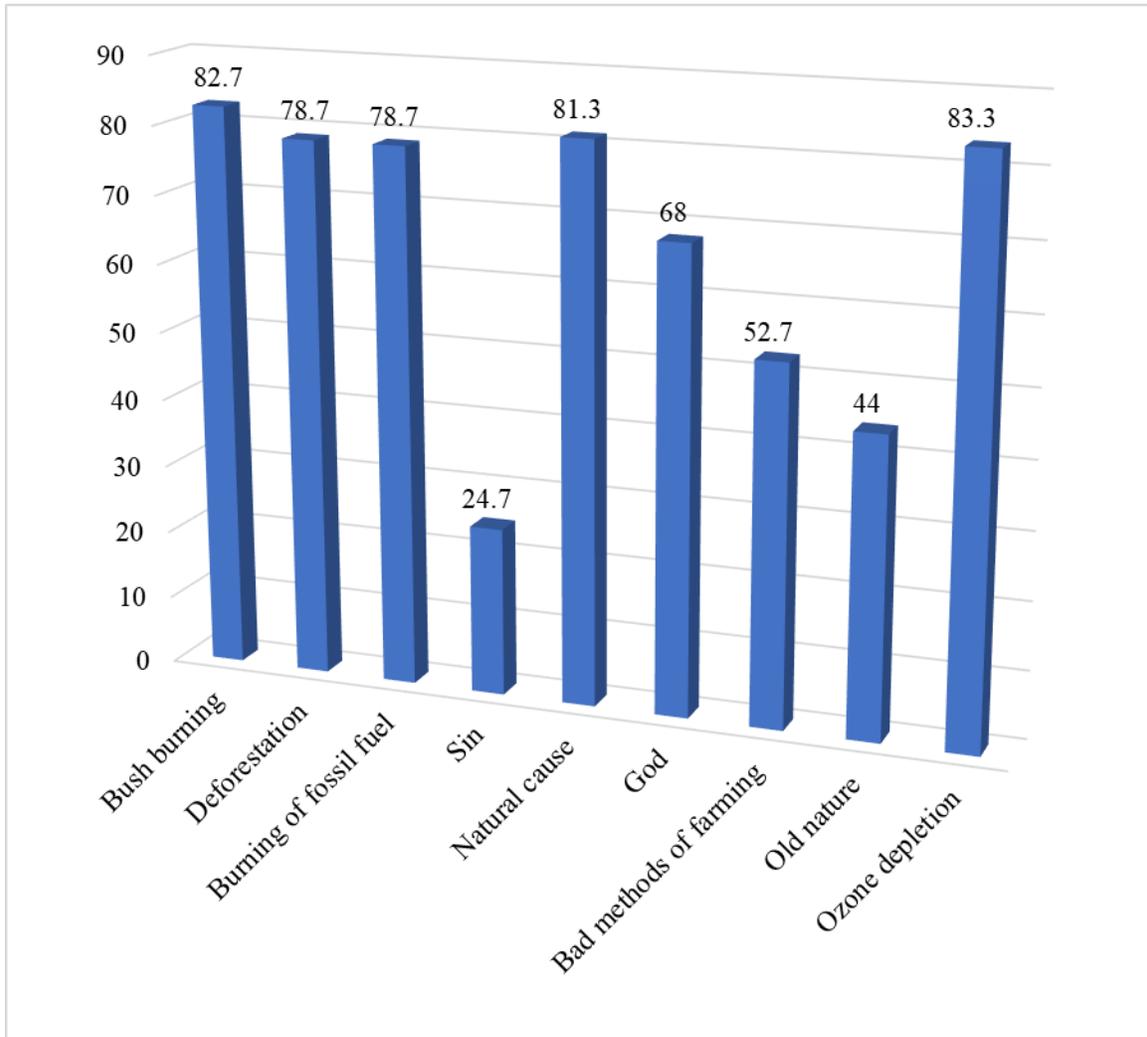
Awareness Level of Respondents on Climate Change

Table 2 presents the awareness of respondents on climate change. Respondents reported that climate is dynamic and always changing over time ($\bar{x}$=3.54), due to continuous damage to the ozone layer ($\bar{x}$=3.37) caused by burning fossil fuels ($\bar{x}$=3.28) extended over a period of time ($\bar{x}$=3.29) leading to more floods and drought ($\bar{x}$=3.26). They were also aware that climate change can be reduced by using more renewable energy resources ($\bar{x}$=3.32) and tree planting ($\bar{x}$=3.13). Overall, 94.0% of the respondents have high level of awareness on climate change indicating that respondents are generally aware of climate change.

The quality of climate change awareness is very important as this affects the behaviour, quality of response and reactions of people (Oruonye, 2011). Improving climate literacy and understanding of climate change are vital to promote public engagement, support for climate action and literacy (Lee *et al.*, 2015). Therefore, the role of educational institutions in promoting awareness on climate change is vital. The formative years of high school education is very important as students have the capacity to mould the society into being climate change literate (Raman *et al.*, 2014). However, there are still students who do not have enough knowledge and awareness towards climate change (Bello, 2014).

Table 2: Awareness level of respondents on Climate Change

Statements	$\bar{x}$	Std.d.
Climate is dynamic and is always changing through time	3.54	0.74
Climate does not mean the same thing as weather.	3.43	0.86
Damage to the ozone layer causes climate change.	3.37	0.81
People can help stop climate change by using more renewable resources of energy.	3.32	0.89
Climate in weather condition over an extended period is climate change.	3.29	0.9
Burning fossil fuels causes climate change.	3.28	0.94
Climate change can cause more floods and drought	3.26	0.99
People can help stop climate change by planting more trees	3.13	1.01
Cutting down trees causes climate change.	3.07	1.08
More garbage/waste causes climate change.	3.04	1
Acid rain causes climate change.	3.03	0.95
Climate changed for millions of years.	3.00	1.09
Climate change can cause polar ice caps and glaciers to melt.	2.89	0.99
Climate change comes with rise in sea level.	2.65	1.04
People can help stop climate change by using more electricity.	2.41	1.14

Extremely Aware (EA); Moderately Aware (MA); Slightly Aware (SA); and Not Aware (NA).

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Figure 3: Level of awareness on climate change
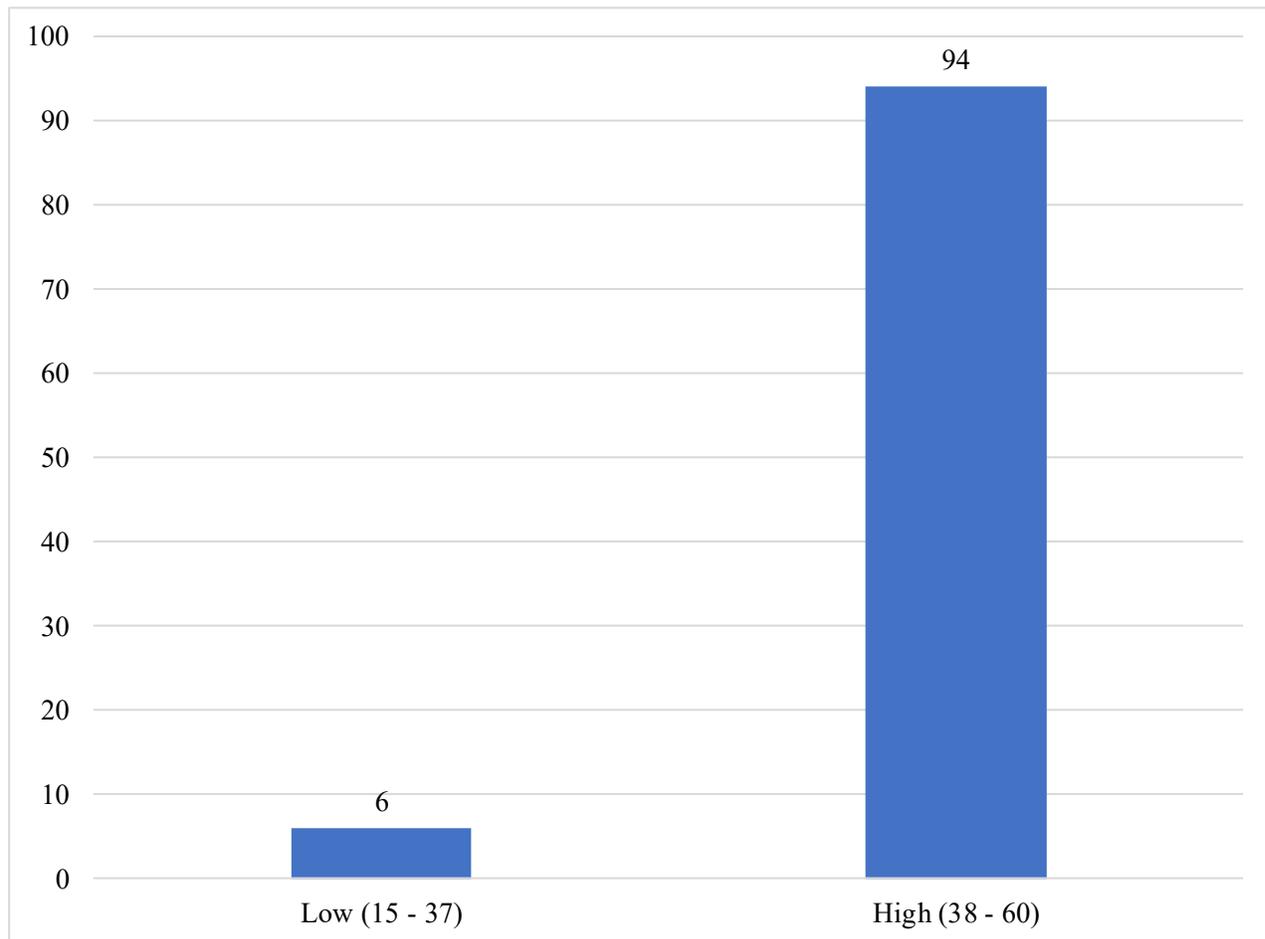
Respondents' Perception on Climate Change

Table 3 shows the perception of respondents on climate change. Results revealed that respondents perceived that the climate is changing ($\bar{x}$=4.55) which is evident in increasing changes in temperature ($\bar{x}$=4.25), shift in raining seasons ($\bar{x}$=4.19) and decrease in the volume of rainfall over the years ($\bar{x}$=4.04) as well as higher occurrence of floods ($\bar{x}$=3.89). This contributed to change in planting dates ($\bar{x}$=4.06), increase in pest and disease outbreak ($\bar{x}$=3.89) in addition to reduction in plant and animal species ($\bar{x}$=3.81). They perceived that flood is more severe than in the past ($\bar{x}$=3.73) due to rise in sea level ($\bar{x}$=3.68). These findings align with those of Bello and Paul (2023), who indicated that farmers in Northern Nigeria perceived decrease in rainfall and that rainfall is more unpredictable, unstable and erratic. Oruonye (2011) also reported rise in temperature in most parts of Nigeria while Ugwuoke (2013) also reported that farmers in Abia State, Nigeria experienced increase in temperature, change in rainfall pattern and poor soil fertility of most soils. High intensity of the sun and unpredictable changes in rainfall patterns were also reported among farmers in Ondo State, Nigeria (Thompson and Oparinde, 2015).

Figure 4 indicate that 94.0% of the respondents had favourable perception of climate change. Understanding the perception of the youth helps in understanding the overall view of the general population (Shahadu, 2012).

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Table 3: Perception on Climate Change

Statements	$\bar{x}$	Std.d.
I perceive that climate is changing	4.55	0.82
There is observed changes in temperature	4.25	0.91
Temperature is rising	4.22	0.94
There is shift in rainy season's months	4.19	0.98
There is change in planting dates due to climate change	4.06	1.08
There is decrease in the volume of rainfall in the last few years	4.04	1.13
There has been higher occurrence of floods	3.89	1.23
There is increase in pest and disease outbreak	3.89	1.1
There is reduction in plant and animal species	3.81	1.19
Flood is more severe than in the past	3.73	1.27
There is rise in sea level	3.68	1.28
There has been an increase in the volume of rainfall	3.54	1.22
Storm is more severe than in the past	3.38	1.28
The volume and duration of rainfall are the same as in the past	3.15	1.43

Strongly Agree (SA); Agree (A); Undecided (U); Disagree (D); and Strongly Disagree (SD).

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Figure 4: Level of perception on climate change
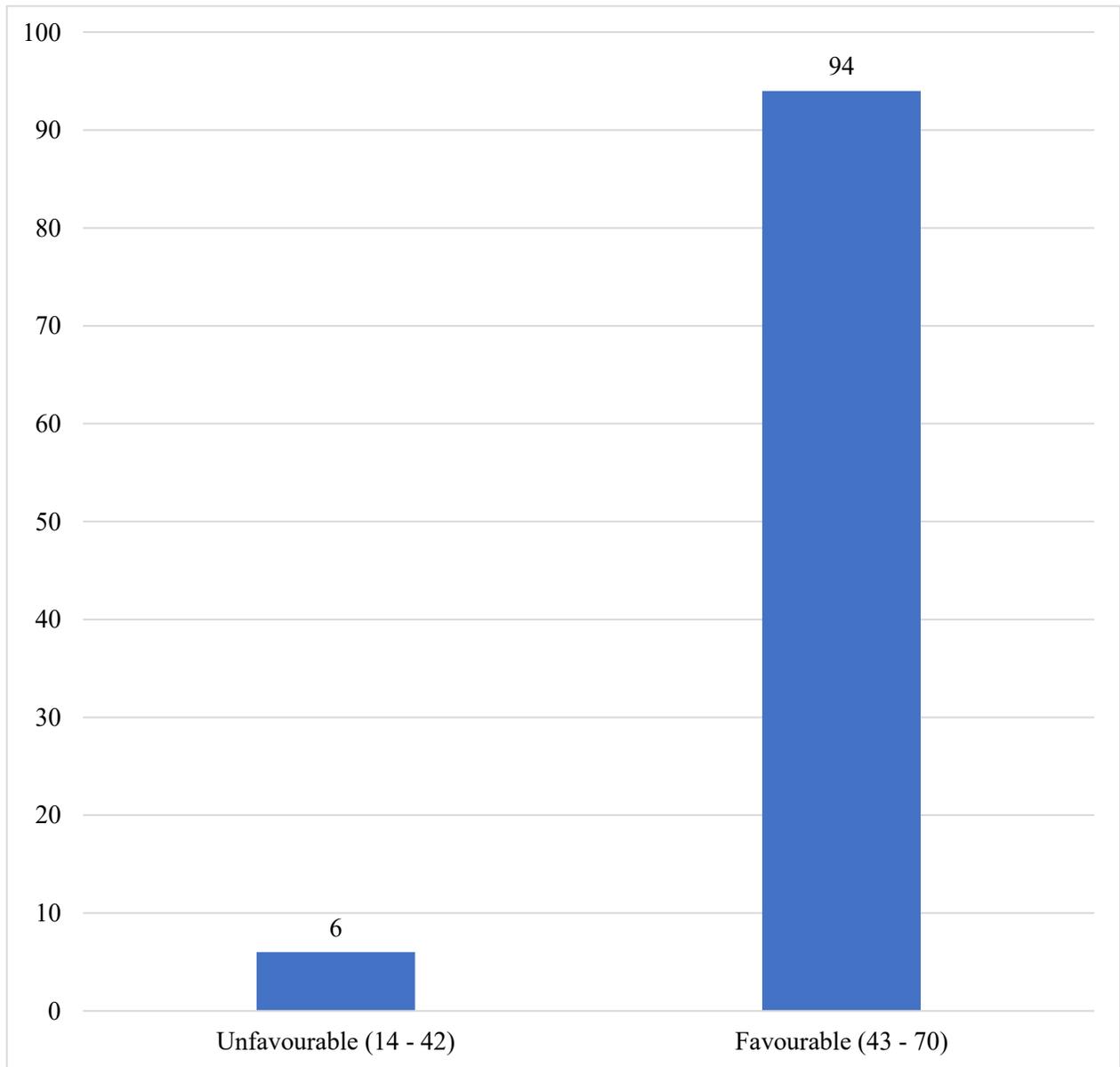
Perceived Climate Change Adaptation Strategies

Table 4 presents perceived climate change adaptation strategies used in the study area. Findings from this study reveal that respondents perceived that planting of new crops ($\bar{x}$=3.56), water management practices ($\bar{x}$=3.29), construction of drainage channels ($\bar{x}$=3.21), use of irrigation or ground water ($\bar{x}$=3.19), planting of trees ($\bar{x}$=3.19), mulching/ use of cover crops ($\bar{x}$=3.17), planting of drought-resistant crops ($\bar{x}$=3.17), planting of different varieties of the same crop/multiple cropping ($\bar{x}$=3.13) and use of weather forecasting ($\bar{x}$=3.12) were the most prevalent adaptation strategies for climate change.

Table 4: Perceived Climate Change Adaptation Strategies

Statements	$\bar{x}$	Std.d.
Planting of new crops	3.56	0.79
Water management to prevent water logging and erosion	3.29	0.90
Construction of drainage channels	3.21	0.91
Use of irrigation or ground water	3.19	1.01
Planting of trees	3.19	1.00
Mulching/ use of cover crops	3.17	0.97
Planting of drought-resistant crops	3.17	0.94
Planting of different varieties of the same crop/multiple cropping	3.13	0.99
Use of weather forecasting	3.12	1.01
Proper preservation of seeds and plants seedlings	3.07	1.04
Increased mechanization of agricultural production	3.05	1.06
Application of inorganic fertilizer	2.99	1.13
Varying planting periods or date	2.98	1.07
Changes in harvesting dates	2.91	1.04
Erection of contour bunds around farmlands	2.89	1.02
Seeking monetary support to diversify farm-based activities	2.81	1.03
Changing from production to marketing of agricultural products	2.77	1.13
Prayer/ ritual	2.46	1.19

Highly Effective (HE); Partially Effective (PE); Effective (E); and Not Effective (NE).

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Test of Hypotheses

Hypothesis 1: There is no significant relationship between personal characteristics of the respondents and their perception on climate change

The hypothesis was tested using Chi-square analysis and Pearson Product Moment Correlation. The personal characteristics considered were age, gender, marital status, CGPA, religion, household size, monthly allowance and accommodation and the significance of the relationship was tested at 5% level of significance. Chi-square result in Table 5 revealed that there is no significant ($p>0.05$) association between gender ($\chi^2=2.55$), marital status ($\chi^2=0.83$), accommodation ($\chi^2=2.97$), and perception of respondents on climate change. However, there is significant ($p<0.05$) association between religion and perception of respondents on climate change ($\chi^2=6.71$).

Table 6 further shows result of test of relationship between personal characteristics (age, CGPA, household size, monthly allowance) of respondents and their perception on climate change using Pearson Product Moment Correlation (PPMC). Findings show that there is no significant ($p>0.05$) relationship between age ($r =0.12$), household size ($r =0.10$), monthly allowance ($r =0.12$) and perception of respondents on climate change. However, a positive and significant ($p<0.05$) relationship was found between CGPA ($r =0.30$) and perception of respondents on climate change. This implies that increase in CGPA means increase in perception of respondents on climate change.

Table 5: Test of significant association between the socio-economic characteristics of the respondents and their perception on climate change using Chi square

Variables	χ^2	df	p-Value	Decision
Gender	2.55	1	0.11	NS
Religion	6.71	2	0.04	S
Marital status	0.83	1	0.36	NS
Accommodation	2.97	1	0.09	NS

Source: Field Survey, 2022

Table 6: Test of significant relationship between the socio-economic characteristics of the respondents and their perception on climate change using PPMC

Variables	r	p-Value	Decision
Age	0.12	0.16	NS
CGPA	0.30	0.01	S
Household size	0.10	0.24	NS
Monthly allowance	0.12	0.16	NS

Source: Field Survey, 2022

NS = Not Significant; S = Significant

Hypothesis 2: Test of significant relationship between the sources of information of the respondents on climate change and their perception on climate change

Multiple linear regression analysis was conducted to determine the influence of various information sources on students' awareness or attitude toward climate change (Table 7). The results presented in the table indicate that among all the predictors, only the variable "school" emerged as a statistically significant factor influencing the outcome variable.

Specifically, school-based information sources had a positive and significant ($p<0.05$) effect on their perception of climate change ($\beta = 0.25$). This implies that exposure to climate change information through educational institutions significantly enhances students' perception. The positive coefficient indicates that increased engagement with school-related sources is associated with higher levels of awareness or more positive attitudes.

In contrast, all other sources of information, such as flyers or brochures ($\beta = -0.03$), movies ($\beta = 0.03$), internet ($\beta = 0.03$), friends ($\beta = -0.14$), relatives ($\beta = -0.01$), radio ($\beta = 0.09$), magazines ($\beta = -0.04$), newspapers ($\beta = -0.16$), television ($\beta = -0.06$) and books ($\beta = 0.02$) did not exhibit statistically significant ($p>0.05$) effects.

Table 7: Test of significant relationship between the sources of information of the respondents on climate change and their perception on climate change

Variables	β	Std. E.	t	p-Value
(Constant)	66.84	4.41	15.17	0.00
Flyers/ brochures	-0.03	1.39	-0.31	0.76
Movies	0.03	1.44	0.37	0.71
Internet	0.03	2.40	0.32	0.75
Friends	-0.14	1.50	-1.57	0.12
Relatives	-0.01	1.34	-0.15	0.88
Radio	0.09	1.56	0.98	0.33
Magazine	-0.04	1.43	-0.43	0.67
Newspapers	-0.16	1.63	-1.82	0.07
Television	-0.06	2.00	-0.73	0.47
Books	0.02	1.61	0.27	0.79
School	0.25	1.94	2.83	0.01

Hypothesis Three: There is no significant relationship between the awareness of respondents on climate change and their perception on climate change

The hypothesis was tested using Pearson Product Moment Correlation (PPMC). Table 8 revealed a significant (p<0.05) relationship between the awareness of respondents on climate change and their perception (r =0.27). This implies that the more the agro-trainees are aware of climate change the favourable their perception towards climate change.

Table 8: Test of significant relationship between the awareness of respondents on climate change and their perception on climate change using PPMC

Variables	r	p-Value	Decision
Relationship between the awareness of respondents on climate change and their perception on climate change	0.45	0.00	S

Source: Field Survey, 2022

NS = Not Significant; S = Significant

Conclusion

Most of the respondents had favourable perception of climate change due to observed changes in temperature and shift in rainy season's months. Planting of new crops, water management practices to prevent water logging and erosion, and construction of drainage channels were effective climate change adaptation strategies used by the respondents. Overall, awareness on climate change is related to the perception of respondents on climate change.

Recommendations

1. The curriculum planners should ensure that they put in place core knowledge of, and information about, climate change as part of compulsory education.
2. Teaching of the causes and consequences of climate change, including potential societal impacts, should form part of the core knowledge offered to all students, especially at the primary and secondary levels of education, but also at the university level.
3. As part of the science of climate change, students should learn about the potential impacts of unmanaged climate change, as well as options for adaptation and mitigation, in order to enable a complete and robust understanding. In other words, teaching of climate change impacts should go beyond a basic understanding of how the climate system works.

4. Education about climate change should be made interesting through the use of innovative methods and techniques. Preferably, the discovery method should be employed in order to effectively reinforce the content for students.
5. University lecturers should be financially motivated to carry out research in various fields of knowledge related to climate change, so that innovative research can contribute to practical solutions.

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