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# Global Warming Awareness on Causes, Consequences and Control among Students of Modibbo Adama University of Technology, Yola

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**Abstract:** *Global warming has turn out to be as one of the most environmental issues ever to confront humanity. Awareness about global warming plays a significant role if students are to adopt conservation behavior or Pro-environmental. Effects of this global warming are the social changes causes and ecological changes by rising in the global temperatures. Even though people, are more exposed to consequences of global warming, where they may not react strongly because global warming and its consequences are often portrayed in statistical and abstract manner (Weber, 2006). For the purpose of the study, 120 questionnaires were administered with 5 each purposively allocated within the six faculties of MAUTECH where students were randomly selected at all levels. Descriptive statistics was employed in the analysis of the data. This study revealed that, students are aware of the issue of global warming and its seriousness. However, they do not have a clear understanding of the causes and impacts of this environmental issue and what they can do to control global warming. It was concluded that, it is pertinent to strengthen institutional mechanisms that will foster more advocacy and participatory-oriented channels for tackling global warming issues.*

**Keywords:** *Global warming, Causes, Consequences, Environment, Control*

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## 1.0 Introduction

The problem on global warming awareness is a current phenomenon tracing its origin to the earth summit (held in Rio de Janeiro in 1992) where the United Nations called for a time bound stabilization of greenhouse gasses (GHG) to address climate change. Global warming has turn out to be as one of the most environmental issues ever to confront humanity. The concern of the change in the atmospheric climate arises from the fact that our daily activities may be resulting to changes in the earth's atmosphere and it will significantly alter the radiation and heat balance (Aerts and Botzen, 2011). Contemporary report of intergovernmental panel in climate change (IPCC) stated that global warming is resulting to rise in temperature than ever expected. Global warming is the rising average temperature of earth atmosphere and oceans since the late 19<sup>th</sup>

century and its predictable continuation since the early 20<sup>th</sup> century (Cherif, 1995). Earth normal surface temperature has risen by about 0.80°C (1.4 °F) with about two-third of the increase occurring as 1980 (Weber, 2006). Scientists are more than 90% assured that most of it is caused by increasing concentrations of gases by major industrialized countries, and warming of the climate system is unequivocal. However, global warming is merely one of the consequences of climate change, the word global warming is being used generally in public and media discourse to refer to all impact of climate change.

In 1997, Kyoto protocols seek to minimize global warming via GHG cutbacks by developed nations regarding specific target. The Kyoto protocols categorized countries into three categories in relation to their development economic levels. Develop countries, are expected to reduce GHG emission by the year 2012 to an average of 5.2% lower levels of these gas emissions in 1990. The greenhouse effect is the process by which absorption and emission of inflated radiation by gases in the atmosphere warm a planets lower atmosphere and surface of the earth. It was proposed by Joseph Fourier (1824) and was first investigated quantitative by many philosophers.

Global warming has indeed been a threat to all lifeforms on earth. At this juncture it is deemed pertinent to enlighten all and sundary to ensure that the rather worrisome situation is attacked from all quarters not just the professionals and academia. Enlightenment and sensitization campaigns have been taken to the streets in some countries regarding the dangers of global warming and how anyone can help salvage the situation (Hungerford and Ben, 1980). In Africa and asia for example market places, schools and religious bodies have been visited as a push for the sensitization against global warming campaign (Jeronen and Kaikkonen, 2002; Rao, 2011). This study therefore intends to understand the extent of awareness of global warming by students of Moddibo Adama University of Technology (MAUTECH) especially knowledge of the possible control measures. With the view of fostering global awareness for mitigating the threat, this study will be an avenue for providing social-control-driven frontiers and ambassadors for the campaign.

## **2.0 Literature Review**

### **2.1 Awareness and knowledge of global warming**

The importance of global environmental awareness for addressing environmental issues like global warming has been highlighted by several researchers. In the early 1990 people's understanding of the issue of global warming was nascent. People linked the hole in the ozone layer with global warming, although both are distinct phenomena, which have separate causes, effects, and solutions (Ungar, 2000). According to Saunders, (1999) and Vega (2005) Saunders and Al Gore are researchers that are very interested with saving our earth's planet. Al Gore created a campaign to raise awareness and to address global warming matters. Furthermore, Saunders and Al Gore are concerned about the rising levels of carbon dioxide in the atmosphere, the rising sea level and climate change. The Researchers both accepted that greenhouse gases remain due to human activities and have started affecting the earth since during 1700's. Deforestation, burning fossil fuels, rubbish decaying is all enhancing the greenhouse gases. In the result of this, we have witnessed changes in global precipitation, temperature, and the change in sea level with weather extremes. However, Jeronen (2002) and Malkus (1997) study the relationships between children's environmental concern. These researchers agreed that children have particular knowledge on global warming, but need to build more knowledge on mitigation

measures. Malkus and Musser (1997) discovered that younger children were more concerned with the environment than older children. Some children who are concerned with the environment are looking to help save their planet and make their close relative know about global warming well.

## **2.2 Effect of global warming and its implication**

Global warming regarded as the change in the earth's global average surface temperature. Effects of this global warming are the social changes causes and ecological changes by rising in the global temperatures. Majority observed increase in global average temperatures since the mid-20<sup>th</sup> century and is very possible due to the studied increase in human greenhouse gas emission. Meanwhile greenhouse effect is the process by which absorption and emission of inflated radiation by gases in the atmosphere warm and lower atmosphere and surface of the earth. In regard of climate change, Vani (2011) agreed that global climate change will have an adverse effect on the agriculture, ecosystem, forest, and marine resources and diseases vector. Some countries has integrated climate change as a major concern in the national policy development planning through a relatively GHG being sustainable growth path which includes diffusion of energy efficiency, renewable energy, environmental education, Forest and water resources management. Even though people, are more exposed to consequences of global warming, where they may not react strongly because global warming and its consequences are often portrayed in statistical and abstract manner (Weber, 2006). According to Chomsky global warming is a major issue and that it's being overlooked. Chomsky accepted that we can possibly face terrible damage if global warming issues continue to be overlooked. Chomsky also emphasizes that the government needs to realize the potential harm that is facing human being and his planet therefore, should take action (Chomsky, 2005).

### **Control measures**

Awareness about global warming plays a significant role if students are to adopt conservation behavior or Pro-environmental. In country like Germany, global warming was often politicized and reduced by government officials to emission reduction targets and projected by the media as a catastrophe that needed immediate act (Weingart, 2000). Ungar, (2000) says climate change is associated by people with events like hurricanes, which are not visible as evidence of an impending hot crisis or global warming. Furthermore, Adler (1992) and Cherif (1995) believes that educators has to design new strategies to incorporate a range of options that include teaching recycling and waste management in schools to ensure recycling behavior and more participation in management of our waste. Both researchers agree that more education will make the difference and that recycling should be a part of the school program as a course. Bord (1998), Cohen (1999) and Lorenzoni (2006) suggested that People should also support GHG mitigation initiatives and understand the scientific basis for such programs and also consider the issue a very serious ecological problem or societal problem or one that affects them generally.

## **3.0 Materials and Methods**

For this study questionnaire was administered to the students of MAUTECH to understand their level of awareness of global warming effects through. The administration was spread throught the six faculties in the institution: Agriculture and Agricultural Technology Faculty (SAAT), Engineering and Engineering School (SEET), Faculty of Environmental Science (SES),

Management and Information Technology School (SMIT), Faculty of Pure and Applied Science (SPAS) and Faculty of Education and Science Technology (STSE). This was given to undergraduate students at all levels (100 Level to 400 Level and 500 Level where applicable). Five questionnaires were purposively allocated for each faculty for which students were randomly selected given a total of 120 questionnaires for the entire study. Descriptive statistics was employed in analysing the data which was displayed in percentages and frequency of response.

#### 4.0 Results and discussion

This section presents analysis of data obtained from respondents gathered through the use of questionnaires administered to respondents in the study area. The questionnaire focuses on the causes, consequences and control of Global Warming among undergraduate student of MAUTECH, Yola.

**Table 1:** Age Distribution of Respondents

Age	Frequency	Percentage
15-19yrs	4	3.3
20-24yrs	60	50
25-30yrs	48	40
30 and above	8	6.7
Total	120	100

Source: Field survey, 2019

Table 1 shows that out of 120 respondents, 60 fall between the age of 20-24years representing 50%, 48 respondents fall between the age of 25-30years represent 40%, 8 respondents fall between the age of 30 and above years representing 6.7% and 4 respondents fall between 15-19years represent 3.3% respectively. Table 4.2 shows that the highest number of respondents in the study area is between the ages of 20-24years, and this age group is school going age; they may have a little knowledge about global warming in their previous academic classes.

**Table 2:** Gender Distribution of Respondents

Gender	Frequency	Percentage
Male	90	75
Female	30	25
Total	120	100

Source: Field survey, 2019

Table 2 shows that, out of 120 respondents, 75 were males representing 75%, while 30 respondents were females representing 25% in this analysis. It is clear that male gender has responded more than females in the study area and also males students are more aware of global warming than females students because of the cultural believe that northerners have on female western education in the past.

**Table 3:** Ethnic Distribution of Respondents

<b>Ethnicity</b>	<b>Frequency</b>	<b>Percentage</b>
Hausa	10	8.3
Igbo	29	24.2
Fulani	21	17.5
Yoruba	31	25.8
Others	29	24.2
Total	120	100

Source: Field survey, 2019

The data from table 3 shows that out of 120 respondents, 31 out of the total respondents are Yoruba representing 25.8%, 29 were Igbo and also 29 are among other ethnic group representing 24.2% each, while, 21 are Fulani which represents 17.5%, 10 respondents are Hausa representing 8.3%, the results shows that the Yoruba and Igbos are the majority students who responded and have knowledge about global warming because of the early western education in the southern region.

**Table: 4:** Students awareness of global warming

<b>Choice</b>	<b>Frequency</b>	<b>Percentage</b>
Yes	94	78.3
No	26	21.7
Total	120	100

Source: Field survey, 2019

Table 4 shows that out of 120 respondents, 94 were aware about global warming representing 78.3%, while 26 respondents were not even aware of global warming and this represent 21.7%, which shows that most of the students who respondent have a knowledge of global warming.

**Table 5:** Causes of global warming

<b>Activities</b>	<b>Frequency</b>		<b>Percentage</b>	
	Agree	Not agree	Agree	Not agree
Fossil fuel burning	102	18	85	15
Leaving electric bulb on unnecessary	47	73	39.2	60.8
Use of brand new cars	48	72	40	60
Use of old or fairly cars	72	48	60	40
Cutting down trees without replanting	97	23	80.8	19.2
Industrial pollution	83	37	69.2	30.8
Burning of waste	106	14	88.3	11.7
Use of generators	76	44	63.3	36.7
Converting rural areas to urban areas	55	65	45.8	54.2

Source: Field survey, 2019

The result from table 5 shows that out of 120 respondents on the causes of global warming fossil fuel burning those that agree are 102 which is 85% while those did not agree are 18 respondent which 15%, leaving electric bulb on unnecessary those that agree has 47 respondent which is 39.2%, while not agree has 73 respondents which is 60.8%, use of brand new cars 48 respondent which is 40%, while not agree has 72 respondent which 60%, use of old or fairly cars has 72 respondent which is 60%, while not agree has 48 respondent, which is 40%, cutting down trees without replanting agree has 97 respondent that is 80%, while not agree 23 respondent which is 19.2%, industrial pollution those that agree are 83 respondent which is 69.2% while not agree is 37 respondent which is 30.8%, burning of waste 106 respondent which is 88.3% while not agree is 14 respondent that is 11.7%, use of generators 76 respondent which is 63.3% and not agree has 44 respondent which 36.7%, converting rural areas to urban areas those that agree is 55 respondent that is 45.8% while not agree has 65 respondent which is 54.2%

**Table 6:** Consequences of global warming

Consequences	Frequency			Percentage		
	yes	No	Not sure	Yes	No	Not sure
skin cancer	93	9	18	77.5	7.5	15
Famine	82	12	26	68.3	10	21.7
Increase in natural resources	4	109	7	3.3	90.8	5.8
Death and illness	69	27	24	57.5	22.5	20
Flooding	60	39	21	50	32.5	17.5
Extreme of weather temperature	72	28	20	60	23.3	16.7
Extinction of animal species	27	69	24	22.5	57.5	20
Land erosion	82	26	12	68.3	21.7	10
Reduced rate of disease infections		102	18		85	15
Reduced rate of mitigation	10	105	5	8.3	87.5	4.2

Source: Field survey, 2019

The result from table 6 shows that out of 120 respondents on the consequences of the global warming skin cancer those responded to yes are 93 which is 77.5% while no has 9 responded which carry 7.5% and those that are not sure has 19 responded 15%, feminine those responded to yes has 82 respondents which is 68.3% while no has 12 respondents which 10% and those that respondent to not sure has 26 respondents which is 21.7% of the respondents, increase in natural resources those responded to yes has 4 respondent that is 3.3% while no has 109 respondents that is 90.8% for those that are not sure are 7 respondents which 5.8% of all the respondents, death and illness those responded to yes has 69 respondents 57.5% while no has 27 respondents that is 22.5% and those that are not sure 17 are respondents which carry 20%, flooding those responded to yes has 60 respondents which 50% while no has 39 respondents which is 32.5% and those that are not sure are 21 respondents which is 17.%, where as extreme weather temperature yes has 72 respondents that is 60%, no 69 respondents which 23.3% and not sure 24 respondents that result to 16.7%, extinction of animal species those responded to yes are 82 respondents that is 22.5% and those that says No has 26 respondents which is 57.5% and not sure is 26 respondents which is 20%, while for land erosion those responded to yes has 82

respondent 68.3% while no is 26 respondents 21.4% and not sure is 12 respondent that has 10%, reduce rate of disease infection there is nobody that responded to yes which recorded 0% while no has 85 people respondents and is 85% and not sure is 18 respondents that is 15%, reduce rate of mitigation has 10 respondents to yes which is 8.3% while no has 105 respondents which is 87.5% and not sure are 5 respondent which is 4.2%.

**Table 7:** Control of global warming

Control	Frequency			Percentage		
	yes	No	Not sure	Yes	No	Not sure
Use of hybrid	111	7	2	92.5	5.8	1.7
Use of energy efficiently (e.g energy saver bulbs)	79	16	25	65.8	13.3	20.8
Use of fertilizers	60	60		50	50	
Turning off air condition	99	6	15	82.5	5	12.5
Recycling of waste materials	88	7	25	73.3	5.8	20.8
Use of disposable utensils	92	9	19	76.7	7.5	15.8
Planting of trees	114	4	2	95	3.3	1.7
Use of public transportation instead of private	108	6	6	90	5	5
Converting bushes to road	7	109	4	5.8	90.8	3.3
Use of renewable energy (e.g. solar energy)	118		2	98.3		1.7

Source: Field survey, 2019

The result from table 7 shows that out of 120 respondents on the control of the global warming use hybrid those responded to yes are 111 which is 92.5% while no has 7 respondents which carry 5.8% and those that are not sure has 2 responded 1.7%, use of energy efficiently (e.g energy saver bulbs) those responded to yes has 79 respondents which is 65.8% while no has 16 respondents which 13.3% and those that respondent to not sure has 25 respondents which is 20.8% of the respondents, use of fertilizers those responded to yes has 60 respondent that is 50% while no has 60 respondents that is 50% and we have 0 respondents to not sure which 0% of all the respondents, turning off air condition those responded to yes has 99 respondents which is 82.5% while no has 6 respondents that is 5% and those that are not sure are 15 respondents which carry 12.5%, recycling of waste materials those responded to yes has 88 respondents which 73.3% while no has 7 respondents which is 5.8% and those that are not sure are 25 respondents which is 20.8%, where use of disposable utensils those that responded to yes has 92 respondents that is 67.7% while no has 9 respondents which 7.5% and not sure has 19 respondents that result to 15.8%, planting of trees those responded to yes are 114 respondents that is 95% and those that says No are 4 respondents which is 3.3% and not sure is 2 respondents which is 1.7%, use of public transportation instead of private those responded to yes has 108 respondent that is 90% while no is 6 respondents 5% and not sure is also 6 respondent and has 5%, converting bushes to road those that responded to yes are 7 respondents that is 5.8% while no has 109 people respondents and is 90.8% and not sure is 4 respondents that is 3.3%, use of renewable energy (e.g solar energy) those that responded to yes has 118 which is 98.3% while nobody responded to no which is 0% and not sure has 2 respondent which is 1.7%.

## 5.0 Conclusion

From the analysis of these studies, the causes and consequences of global warming have negative impact on the students' performance. The lack of strong and active environmental conservation and citizen groups in Nigeria at large is also a reason for lack of public participation in environmental decision-making and poor environmental awareness. But unlike developed countries, there is no institutionalized mechanism to seek inputs during the policy making process from the public, experts, non-governmental organizations, and interest groups. Policy-making on a holistic issue like global warming; this study shows that, students are aware of the issue of global warming and its seriousness. However, they do not have a clear understanding of the causes and impacts of this environmental issue and what they can do to mitigate global warming.

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