PERCEPTIONS OF LIBYANS TOWARDS CLIMATE CHANGE

Fatma Köprülü[1*], Osama Abduljalil Mohammad Hamad[2*], Aşkın Kiraz[3*]

[1]Near East University, Education Management Department, Nicosia, Northern Cyprus;*
[2]Libyan Authority for Scientific Research, Benghazi, Libya;*
[3]Near East University, Environmental Education Department, Nicosia, Northern Cyprus;*

[*]Corresponding Authors Fatma Köprülü, Osama Abduljalil Mohammad Hamad, Aşkın Kiraz,
e-mail: fatma.koprulu@neu.edu.tr; osamaabdli387@gmail.com; askin.kiraz@neu.edu.tr;

Received December 2022; Accepted January 2023; Published February 2023;

DOI: https://doi.org/10.31407/ijees13.205

ABSTRACT

Climate change is a gradual process that occurs with changes to the natural climatic conditions. Climate change is a global phenomenon that poses a crucial challenge to the world, and it has been reported to be a difficult phenomenon for tracking on individual levels of experience, which is a very significant factor in adequate climate change mitigation; individual contributions of environmental sustainability. Individual level of climate change mitigation is a process that is only possible with adequate knowledge and perception of climate change. This study carries out an investigation into the perceptions of Libyans with respect to climate change, the causes of climate change, the impacts of climate change in Libya, and the methods they feel can be efficient in the mitigation of climate change in Libya. This study carried out an analysis of a survey interview of Libyans and has found all the interviewed individuals agree climate change is an important global and Libyan phenomenon. Their responses to the causes, how they can be mitigated, and the responsibility of who it is to mitigate climate change however differs.

Keywords: climate change, climate change mitigation, Libyan, perceptions of climate change.

INTRODUCTION

The current state of climate and environmental deterioration has been at the forefront of global issues in recent times, annual data trends show a steady decline in the state of the environment and climate globally since the industrial age of human civilization. Climate change is primarily caused by human activity such as industrial activities and human unsustainable practices of living (Karimi et al., 2018). Human and artificial activities are constantly impacting the climate and the environment in negative ways, some of the main contributors to climate change and environmental deterioration are mining activities, unsustainable agricultural practices, unsustainable construction practices, and significant fossil fuel consumption (Arora, 2019).
Significant efforts are being made across the world to combat climate change, however, the significant efforts being made are primarily in the developed nations of the world, and the underdeveloped world is yet to actively join the movement of mitigating climate change (Huong et al., 2019). Global efforts made to combat climate change require significant adaptive measures to be implemented at macro and micro levels globally beyond the significant changes in industrial policies around the world (Sanderson et al., 2021). Studies have shown active and adequate mitigation

of climate change needs to start with the right perception among the citizens of the world, to enable them to understand the criticality of the issue, its risks, and the best ways to mitigate the issue efficiently (Hunt et al., 2020). Climate change and its perceptions are shaped by factors such as its existence as a phenomenon, its severity or extent, factors accounting for variability in individual beliefs, the perceived phenomenon, and the varying degrees of urgency relative to local environments among other such factors (Lee et al., 2020). The extent of the severity of climate change is a strong determinant and factor among individual perceptions of climate change around the world, this is used in scientific endeavors of long-term strategic planning and decision for climate change mitigation (Moore et al.,2019). Climate change existence and extent of severity can also be used to carry out individual-level and household-level strategic planning and decision-making toward climate change mitigation (Singh, 2020).

Problem Statement

Climate change is a real and critical global phenomenon that is at the forefront of global challenges. Several initiatives are being taken by governments, international organizations, and other such bodies in policy design and direct action initiatives. Also, one of the most effective methods of mitigating climate change is through direct individual-level methods and techniques, and such methods of climate change require an adequate perception of the climate change phenomenon and its challenges. Climate change and its individual perceptions are influenced by several factors that may hinder the adequate perception of the phenomenon at an individual level.

Research Questions

This research was carried out to evaluate the perception of Libyans on the subject of climate change, and their attitudes and actions towards the issue of climate change to contribute to the global efforts being made to combat climate change and environmental deterioration. The aims and objectives of this research are to find the answers to the following research questions:

How important is the issue of climate change to you?
What is the main cause of climate change?
What impacts if any do you think climate change has on Libya?
What are the measures you think can be done to tackle climate change in Libya?
Have you ever taken any actions to combat climate change in Libya?
Who do you think should be responsible for the mitigation of climate change in Libya?

Importance of the Study

This article is an investigation into the perception of Libyans on the phenomenon of climate change. Hence, this research provides valuable resourceful insight with respect to climate change within the Libyan society context, which can be used as a contributing body of literature for policies and initiatives targeted at the mitigation of climate change and also for research purposes.

MATERIAL AND METHOD

Methodology

Based on the research aims and objectives this research is designed as a qualitative approach study and investigation. The study is designed to study Libya as a case study with a sampling of the local citizens using open-ended survey questions to collect primary data. The survey questions were designed as a survey interview form distributed to local citizens using a convenience sampling technique, items in the survey question are designed using theoretical framework questions adapted from relevant studies as shown in Table 1 for each item in the interview form. Data collected from the interview forms were analyzed and evaluated for reliability, and all response data collected from the interview forms are validated for relevance and subjectivity toward the context of the study (Story & Tait, 2019).

The collected primary data are then analyzed using open-ended questionnaire analysis methods of thematic coding and statistical frequency of content analysis. The analyzed data are then used to make findings from the study.

Table 1. Questionnaire items

Item	Reference
How important is the issue of climate change to you?	Karimi et al., 2018
What is the main cause of climate change?	Arora, 2019
According to you what are the impacts of climate change on Libya?	Hunt et al., 2020
According to you what kind of precautions can be done to tackle climate change in Libya?	Huong et al., 2019
Have you ever taken any actions to combat climate change in Libya?	Huong et al., 2019
Who do you think should be responsible for the mitigation of climate change in Libya?	Karimi et al., 2018

Study Sample

The successful collection of survey data through the designed open-ended questionnaire of the study has the following frequency of respondents. The total number of respondents in this study was 12, and the demography analysis of the study indicated 90% of the survey respondents were males, and only 10% were female. Age distribution analysis of the respondents showed two age groups had equal numbers of respondents with 31 - 35 years, and 26 - years age group each having 40% of respondents, figure 1 illustrates the age demographic distribution of our survey data. Demographic analysis of the respondents' highest educational qualification also showed 80% of the survey respondents had a postgraduate degree, The chart in Figure 2 illustrates the distribution of the education level of the respondents. Analysis of the distribution of respondents' occupation showed the majority of our survey respondents were students with 40% as shown in figure 3. Survey respondents were also coded for ease of data analysis and data privacy ethical concerns; the respondents were labeled LC1 to LC10 for all interviewed individuals.

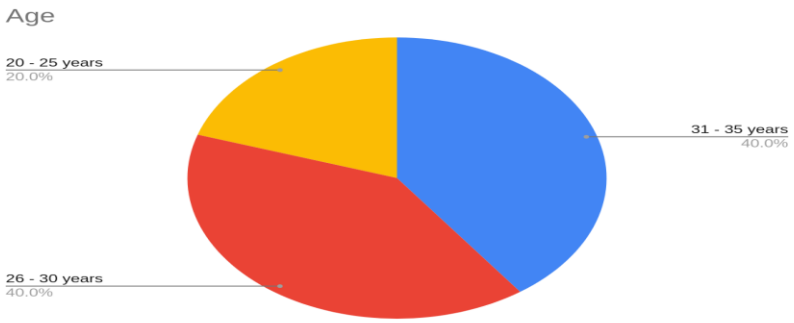

Figure 1. Distribution of survey age groups

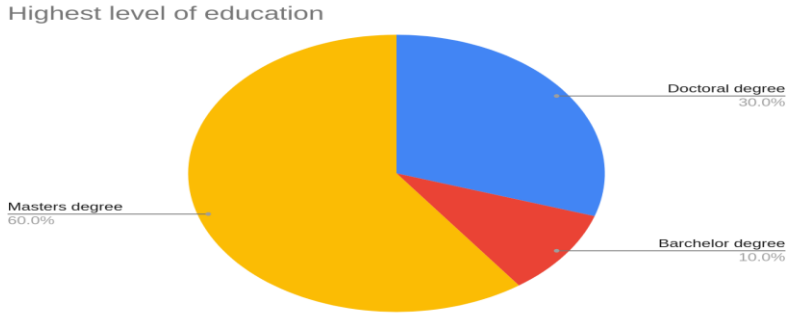

Figure 2. Distribution of respondent level of education.

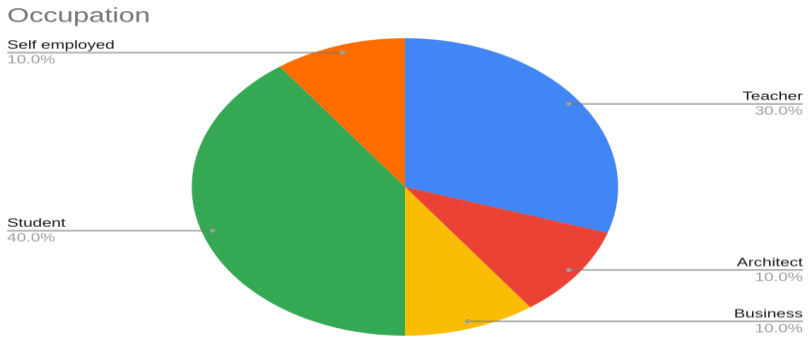

Figure 3. Distribution of respondent occupation.

Findings

Following the design of the proposed methodology, the data was collected and coded according to the individual themes of the study for proper content analysis. Frequency analysis is implemented for all data themes and their respective codes. Table 2 shows the themes, codes, and frequency count of each coded theme of the data.

Table 2. Themes and Codes.

Themes	Codes	Frequency	Percentage
Importance	Very important	10	100%
The Main Cause	Carbon emission	7	70%
	Deforestation	2	20%
	Air pollution	1	10%
Impacts	Extreme weather events	7	70%
	Desertification	2	20%
	Air and water pollution	1	10%
Precautions	Environmental sustainability	6	60%
	Raising awareness	3	30%
	Oil exploration control	1	10%
Actions	No	7	70%
	Yes	3	30%
Responsibility	Government	5	50%
	Government and the people	4	40%
	The people	1	10%

How important is the issue of climate change to you?
Theme: Importance
When respondents were asked if they thought the issue of climate change is important. 100% of the respondents replied yes, climate change is very important. This indicates all the respondents in our study have an awareness of the criticality of climate change as a global phenomenon and its associated risks.

What is the main cause of climate change?
Theme: The Main Cause
Despite all the respondents of this study agreeing that climate change is a very critical and important issue, they had varying answers on their opinion of the cause of climate change globally. 70% of the respondents in the study responded with the answer of carbon emission being the main cause of climate change globally, and 20% of the respondents said deforestation is the main cause of climate change, this perspective is reported in respondents LC6 and LC7, and 10% of the respondents said air pollution is the main cause of climate change; LC1. Figure 4 illustrates the distribution of the perception of the respondents on the causes of climate change.

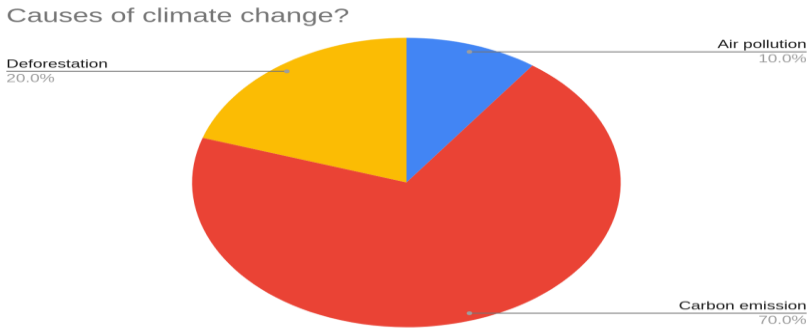

Figure 4. Perceptions of causes of climate change

According to you what are the impacts of climate change in Libya?
Theme: Impacts
The respondents of this study were asked and surveyed on their opinions on the impacts of climate change in their own country; Libya. The majority of the respondents answered extreme weather patterns and extreme weather events are the main visible impacts of climate change in Libya, this is perceived for all respondents except for respondents LC1, LC5, and LC8. Figure 5 illustrates the distribution of the perception of the respondents on the impacts of climate change in Libya.

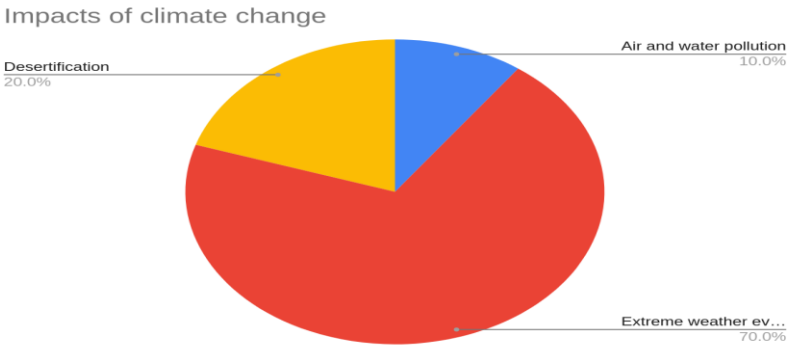

Figure 5. Perceptions of impacts of climate change in Libya

According to you what kind of precautions can be done to tackle climate change in Libya?
Theme: Precautions
When the respondents of this study were asked what they thought will be best for tackling the issue of climate change in Libya, 60% of the respondents in the study mentioned environmental sustainability as the best way to

tackle climate change in Libya. Their response in using environmental sustainability was observed to highlight ensuring there are adequate waste management practices, control of deforestation, and sustainable living using alternative sources of energy. 30% of the respondents believed the best way to tackle climate change in Libya is through the use of awareness and sensitization of people in the country to make them understand the criticality of the issue. Figure 6 illustrates the distribution of the perception of the respondents on how to tackle climate change in Libya.

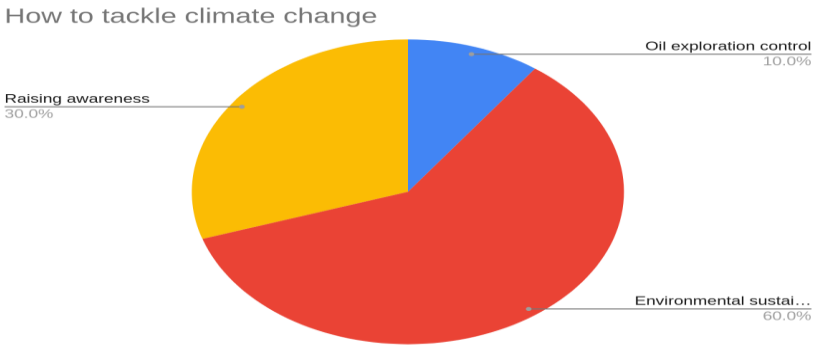

Figure 6. Perceptions of how to tackle climate change in Libya.

Have you ever taken any actions to combat climate change in Libya?
Theme: Actions
The respondents were asked questions on whether they have made active commitments and carried out actions to alleviate the challenges of climate change, unfortunately, the majority of the respondents said NO with 70% of the respondents. 30% of the respondents reported in respondents LC3, LC4, and LC9 answered they have taken actions indicated they did so through raising awareness of their family, friends, and students.

Who do you think should be responsible for the mitigation of climate change in Libya?
Theme: Responsibility
When the respondents were asked who they think is responsible for taking action and mitigating climate change as a critical phenomenon in Libya, LC2, LC4, LC5, LC7, and LC8 which make up 50% of the respondents said it is the sole responsibility of the government of Libya to take action and mitigate climate change in Libya. LC1, LC3, LC9, and LC10 which make up 40% of the respondents replied it is the responsibility of both the government and the people because both are needed to work together to sustainability and alleviate the challenges of climate change in Libya. While 10% of the respondents believed it is the sole responsibility of the people of Libya alone without the government. Figure 7 illustrates the distribution of the perception of the respondents on who is responsible for the mitigation of climate change in Libya.

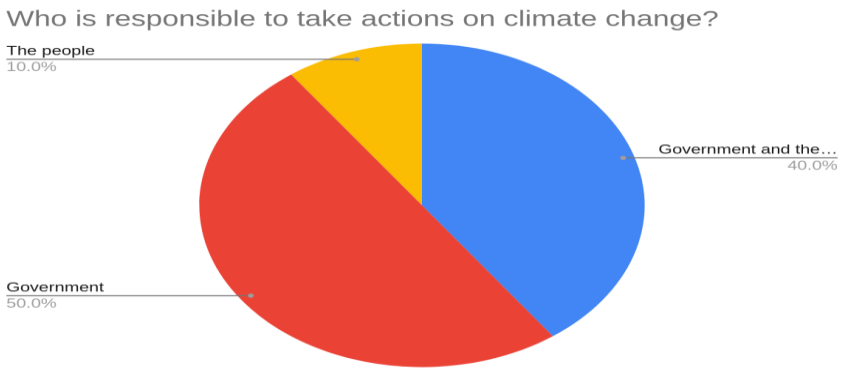

Figure 7. Perceptions of who is responsible for the mitigation of climate change in Libya.

Discussion

Based on the analysis of the interview data of this study, a very crucial aspect of climate change as a phenomenon and its mitigation has seen a positive response among the surveyed individuals, with 100% of all surveyed people agreeing on climate change is a significant and critical phenomenon that needs urgent attention. Perceiving and understanding the critical aspect of climate change and its severity is an important factor in mitigating the phenomenon to avoid further deterioration and devastation to the climate and environmental sustenance (Singh, 2020). Despite the uniform perception of the importance and severity of climate change, there is a variation on other aspects of climate change among Libyans, such as the cause of climate change, its impact on the country, and who should be responsible for the mitigation of climate change and how to do so. The main takeaway message despite the variability of the responses of the surveyed individuals is that all of them mentioned causes of climate change that are critical to the factors contributing to climate change such as carbon emission and deforestation.

The finding of this study with regard to the actions taken by the individuals and the parties responsible for mitigating climate change in Libya indicates a challenge to climate change mitigation in Libya. Where 70% of the respondents said they did not indulge in any active efforts of mitigating climate change despite all the respondents agreeing to the importance of climate change. Also, 50% of the respondents believed the fight against climate change in Libya is the sole responsibility of the government which is not a good indicator for the fight against climate change.

CONCLUSIONS

This study has been carried out to survey and investigate the perceptions of Libyan on their awareness of climate change and its impact. The findings in this result have given insight into how some Libyan view and perceive climate change as a phenomenon. The findings in this study indicate the majority of Libyans believe climate change is a critical issue, and all have indicated they know the major causes of climate change with answers such as carbon emission, deforestation, and unsustainable environmental practices being the main reasons they gave in surveys. The respondents of this study also acknowledge observing the visible impacts of climate change in the country. However, the majority of the respondents indicated they are non-involved in any active climate change sustainable practices, and they also believed fighting climate change in Libya is the responsibility of the government alone.

Recommendation. Based on the findings of this study, we recommend further awareness initiatives among Libyans on the individual responsibilities of ensuring climate change is mitigated adequately globally, the awareness endeavors should emphasize the risks associated with not doing anything as is seen in the majority of the surveyed sample of this study, and also emphasizing on the benefits of individual contribution to the global fight against climate change.

REFERENCES

1. Arora, N. K. (2019). Impact of climate change on agriculture production and its sustainable solutions. *Environmental Sustainability*, *2*(2), 95-96;
2. Hunt, J. R., Celestina, C., & Kirkegaard, J. A. (2020). The realities of climate change, conservation agriculture and soil carbon sequestration. *Global Change Biology*, *26*(6), 3188-3189;
3. Huong, N. T. L., Bo, Y. S., & Fahad, S. (2019). Economic impact of climate change on agriculture using the Ricardian approach: A case of northwest Vietnam. *Journal of the Saudi Society of Agricultural Sciences*, *18*(4), 449-457;
4. Karimi, V., Karami, E., & Keshavarz, M. (2018). Climate change and agriculture: Impacts and adaptive responses in Iran. *Journal of Integrative Agriculture*, *17*(1), 1-15;
5. Lee, K., Gjersoe, N., O'Neill, S., & Barnett, J. (2020). Youth perceptions of climate change: A narrative synthesis. *Wiley Interdisciplinary Reviews: Climate Change*, *11*(3), e641;
6. Moore, F. C., Obradovich, N., Lehner, F., & Baylis, P. (2019). Rapidly declining remarkability of temperature anomalies may obscure public perception of climate change. *Proceedings of the National Academy of Sciences*, *116*(11), 4905-4910;

7. Noureddine, G., Eslamian, S., & Katlane, R. (2018). Status of water resources and Climate change in Maghreb regions (Mauritania, Morocco, Algeria, Tunisia and Libya);
8. Sanderson, R., & Galway, L. P. (2021). Perceptions of climate change and climate action among climate-engaged health professionals in Northern Ontario: A qualitative study. *The Journal of Climate Change and Health, 3*, 100025;
9. Singh, S. (2020). Farmers' perception of climate change and adaptation decisions: A micro-level evidence from Bundelkhand Region, India. *Ecological Indicators, 116*, 106475;
10. Story, D. A., & Tait, A. R. (2019). Survey research. *Anesthesiology, 130* (2), 192-202;