

Public Perceptions on Climate Change and Adaptation Special Reference to Periyakulama Area

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Abstract: *Climate Change is a long – term shift or alteration in the climate of a specific location a region or the entire planet. The most profound impacts of climate change in Sri Lanka will be in agriculture and food security, water and coastal resources, biodiversity changes, and human health. Main objective of this study is to identify public perceptions on climate change and adaptation in periyakulama area. This study carried out using both primary and secondary data sources such as questionnaire survey, direct observations and group discussions. Through the questionnaire survey we were able to get some detail in quantitative manner. Generally it is relatively quick to collect information using a questionnaire. Therefore nine questionnaires were used for this study. The majority response is that the people who engage in natural resource related employment for a long period of time are very well aware of climate variations. Any change in climate affects their day to day lives. Although some respondents are aware of climate change to a minimum extent, most of them are unaware of the major reasons that lead to climate change. Majority of the people who are aware of climate change have identified deforestation as the major cause for climate variations. We got to know that impacts of climate change. Some distinct information is highlighted as follow, Pattern of Rainfall, Intensity of Rainfall, Changing seasons, Flood. Adaptation is a need of changes for the survival of the living beings in order to respond to the natural changes. Based on this there are some adaptations for climate change in Periyakulama area Reforestation, Growing Trees, Forest Farming Programmes and Using Agro well.*

Keywords: Climate Change, Adaptation, Cascade system, Public Perception

1. Introduction

Climate change is a significant and lasting change in the statistical distribution of weather patterns over periods ranging from decades to millions of years.

Climate change is defined as: “a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods, (UNFCCC) [United Nations Framework Convention on Climate Change (UNFCCC)]. Climate Change is a long – term shift or alteration in the climate of a specific location a region or the entire planet. Extreme climatic events such as high intensity precipitation events, floods, droughts, heat waves, typhoons, cyclones and tornadoes form important components of the short term climate variability. However, evidence is emerging that environmental processes leading to long-term climate change are likely to have contributed to an increasing frequency of extreme climatic events.

The most profound impacts of climate change in Sri Lanka will be in agriculture and food security, water and coastal resources, biodiversity changes, and human health.

Adaptation must focus on the needs of the people most affected by climate change impacts and aim to secure their livelihoods and reduce the most significant hazards they face.

2. Research Objectives

Main objective

Identify the Public Perceptions on Climate Change and Adaptation in Periyakulama area

Sub objectives

- To observe the tank components and identify the cascade system in Periyakulama area
- To find out and observe Reasons of climate change in Periyakulama area
- To Identify the impacts of climate change in Periyakulama area
- To Analysis the adaptation methods for climate change in Periyakulama area

3. Methodology

This study was based on a primary questionnaire survey conducted in periyakulama area in Anuradhapura. And also there was some group discussion with questionnaire survey.

In order to achieve the research objectives and to better understand the Public Perceptions on Climate Change and Adaptation in Periyakulama area, the study used a number of data collection methods. These included questionnaires, group discussions, and direct observations. Primary and secondary data collection method used for this study.

Questionnaire survey and group discussion were used under the primary data collection method. Through the questionnaire survey we were able to get some detail in quantitative manner. The responses are gathered in a standardized way, so questionnaires are more objective.

Generally it is relatively quick to collect information using a questionnaire. Therefore nine questionnaires were used for this study. Data were collected by use of questionnaires from selected people in study area.

Data analyses method

The research study utilized both Qualitative and Quantitative

data. The primary data was largely gathered through observation, and Questionnaire. The main form of data analysis was content analysis using the quantitative and qualitative data analysis methods. The collected data during the questionnaire survey was summarized by using simple statistical methods. The data gathered from group discussions and observation was separately represented.

Quantitative data was interpreted bar chart, pie chart etc. For the interpreting of the data collected through the questionnaires, the software packages such as Microsoft package were used. Qualitative data which was collected through group discussion was interpreted descriptively.

4. Results and Discussions

Tank Components and Cascade System in Periyakulama Area

- There are thousands of tanks in the dry and intermediate zones of Sri Lanka.
- Brought prosperity to the country and supported peoples livelihood
- Paddy cultivation is considered the key activity

Cascade system in Periya Kulama area

Gasgambana area

- Controlling the wind speed to the tank
- Reducing evaporate
- 10-15 % surface is covered by the Gasganbana Tress.
- Eg: GambuKasveval Tree Species

Kattakaduva strips

- The strips between the Paddy land & Bund
- Controlling the salt water to the paddy land
- Eg: Thal, Palmara

Perahena

- It is situated under the Dasgamuna area.
- Controlling the sediment flowing to the catchment area
- Eg: - Small Bushes - Kaila Bushes, Med Grasses

Reasons of Climate Change in Periyakulama area

The majority response is that the people who engage in natural resource related employment for a long period of time are very well aware of climate variations. Any change in climate affects their day to day lives.

Although some respondents are aware of climate change to a minimum extent, most of them are unaware of the major reasons that lead to climate change. Majority of the people who are aware of climate change have identified deforestation as the major cause for climate variations.

- Unsustainable Land Use System
- Deforestation
- Change the Traditional Tank System

Deforestation occurs for many reasons trees are cut down to be used or sold as fuel or timber. It has adverse impact on bio sequestration of atmospheric carbon dioxide.

Impacts of Climate Change in Periyakulama Area

When going through the questionnaire survey at general

discussions, we got to know that impacts of climate change. Some distinct information is highlighted as follow,

- Pattern of Rainfall
- Intensity of Rainfall
- Changing seasons
- Flood
- Drought
- Winds
- Diseases
- Ground water level
- Changing lifestyle
- Loss of houses
- Loss of Biodiversity

Rainfall intensity

People stated that the rainfall intensity has decreased severely in the recent few decades. More than 50% of the people stated that the rainfall intensity has decreased.

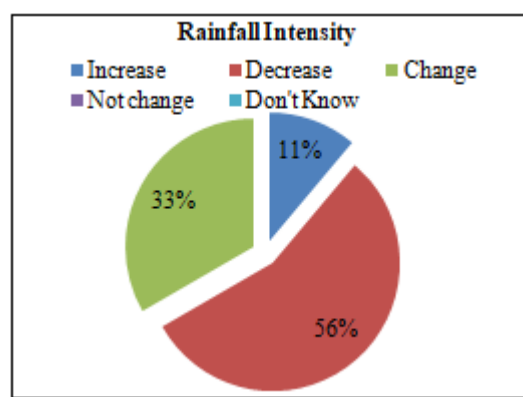


Figure 1

Source: Field visit, 2019

Seasonal Change

About 60% respondents said that the dry season has increased and also that there is above 50% respondents said that the wet season has increased. During the past there was a distinct dry and wet period and people adapted to the lifestyle according to that pattern. But now they are facing this in critical condition.

Unexpected Natural Disasters

Natural disasters such as cyclones, drought, and floods have increased when compared with the past and their impacts have severely affected the households, property and the ecosystems. Climate has changed.

Unexpected Natural disaster in Periyakulama Area

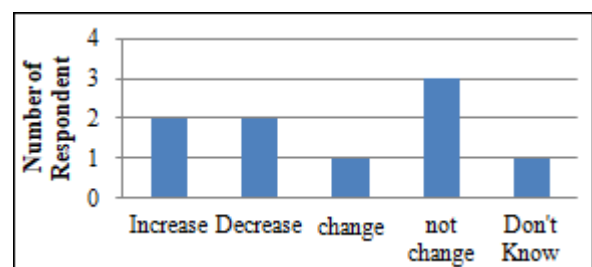


Figure 2

Source: Field visit, 2019

Change in air Temperature

There is a remarkable increase in air temperature and more than 56% respondents clearly stated that the air temperature has increased. Only 11% respondents said that air temperature has decreased.

Ground Water Level Change

There is a remarkable change in ground water level and 67% stated that the ground water level has decreased. Even after a heavy rain also the level of the water in wells go down within a few days of dry weather.

Loss of Houses/ Lands /Property

Damages due to the climatic variations have increased severely in the recent decades. Houses were damaged partly or completely by some natural disasters. About 22% of respondents stated that the threats to the households and property from climatic variation have been increased.

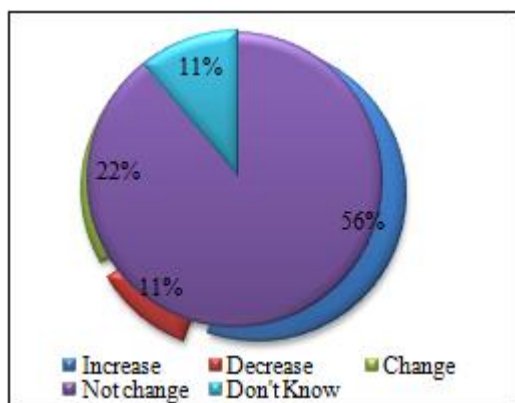


Figure 3: Air Temperature Situation
Source: Field visit, 2019

Impact of Diseases

Due to the increase of air temperature, diseases such as skin irritations, rashes and burning have increased. More than 17% of the respondents have that skin burning in this area. And also there are same percentage represent in Rashes, Crop burning in Periyakulama area.

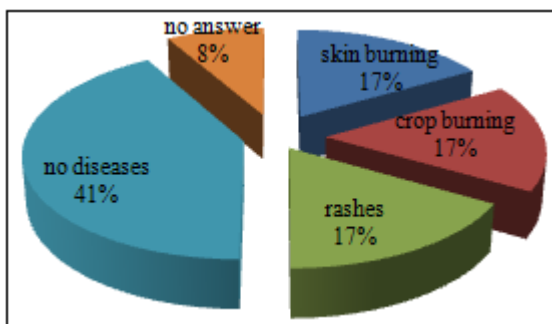


Figure 4: Diseases due to climate complication
Source: Field visit, 2019

Change in Lifestyles of Environment Related Occupation

The environmental related jobs have been reduced according to the climatic conditions. The lifestyle is also changed and the farmers move to alternative jobs such as labor work during the harsh environmental conditions.

Change the Natural Water Ways

The changes in the ecosystems are a distinct factor. Most of the small wells have dried up within the last few years. Also the amount of water of some wells reduced significantly.

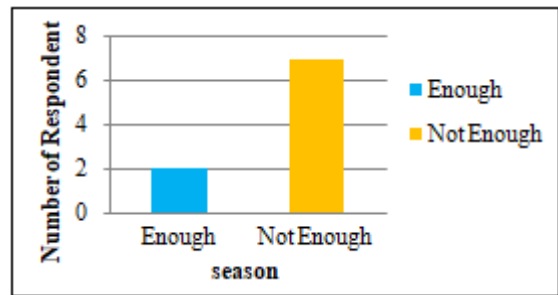


Figure 5: Water for Home Lands
Source: Field visit, 2019

Adaptation Methods for Climate Change in Periyakulama Area

Adaptation refers Adjustment or preparation of Natural or a Human system to a new or changing Environment which moderates harm or exploits beneficial opportunities.

Adaptation is a need of changes for the survival of the living beings in order to respond to the natural changes. Based on this there are some adaptations for climate change in Periyakulama area.

- Reforestation
- Growing Trees
- Forest Farming Programmes
- Using Agro well
- Using deep Wells
- Tolerance seeds
- Adaptation to Bethma system
- Adaptation to the water conservation, rain water harvesting is also important.

Other income generation opportunities

- Refer to Outside Jobs
- Selling Something
- Livestock

Difficulties for the Adaptation

This area people face some difficulties for the adaptation. They told, not enough money (11%), government not support (11%) for their problems. There are 11% of families told adaptation is more expensive and 11% of family no idea about this 11% of family don't know about this. 23% of family no answer about this

Awareness Program (Government/ NGOS)

Periyakulama area people didn't get any awareness programs for climate change adaptation from government. There is 89% of family members told that, they didn't get any awareness for government or NGOs. There is 9% of family members told that, yes. They get awareness about this from a NGO Called "Varindo NGO".

Bringing them to the climate planning will allow them to understand and contribute to the mitigation and adaptation. Therefore, democratizing of climate plans and actions should be done without further delay.

5. Conclusion

Climate change has been the most debated environmental issue in the political ecology area in the last two decades. It is considered as a major reason for most of the present environmental problems.

According to the perception of the respondents the reason for the change in climate has been happening over the past years and mainly due to deforestation. Hence, Climate change is caused mostly by human actions. Additionally, also identified the negative impact on human health such as skin related diseases has been increasing over the years.

According to our Area, The Adaptation Strategies are The Important oneto the Periyakulama People. Government &NGO's must do the awareness programs for climate change adaptation to the Periyakulama People.

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Author Profile



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