

**Public perceptions on
Climate change
and adaptation
in Sri Lanka**

Centre for Environmental Justice

Contents of this research report may be cited with proper acknowledgement to the report and the publishers.

An Online edition of this publication is available at www.ejustice.lk

February 2009

Photographs: Hemantha Withanage, Dilena Pathragoda, Chamali Liyanage **Copy Editing:** D. G. W. Piyasena
Design and Layout: Hemantha Withanage
Printing: Sithru Graphics

Published by

Centre for Environmental Justice
No 20A, Kuruppu Road, Colombo 08, Sri Lanka

Tel/Fax: 0094-112-683282

Email: info@ejustice.lk

Website: www.ejustice.lk

Public perceptions on Climate change and adaptation in Sri Lanka

Hemantha Withanage
Chamali Liyanage
Dilena Pathragoda

February 2009



Centre for Environmental Justice



Public perceptions on Climate change and adaptation in Sri Lanka

Silt in Kothmale Reservoir shows the
level of annual siltation

Acknowledgments

We wish to acknowledge over 1000 people, farmers, fisher folk, women, community leaders, priests, CSO leaders who took part in this survey. We also wish to acknowledge, Ms. Nilmal Wickramasinghe, Mr. Muditha Udayakantha, Mr. Trini Ryan, Mr. Sajeewa Dias, Mr. W.Dayasiri De Silwa, Mr. Nandasena Ganahewa and Mr. Cyril Premaratne who participated in the survey team and assisted us in identifying suitable areas and people for the survey. We acknowledge Dr. Avilash Roul, India for his guidance in conceptualizing this research and report. We thank the Board of Directors of the Centre for Environmental Justice for their cooperation with the survey team.



“Previous dry months have been converted to rainy months. Agricultural activities are done doubtfully. Now we face the adverse climatic changes with difficulty. If this continues, we have to move to a job which has less environmental impacts”

S.H.Tikiri Kumarihamy, Mahiyanganaya

Foreword

Climate change is a recent environmental problem that affects all living beings and natural systems across the globe. No one on the earth is able to escape from this reality. This is caused mainly due to the increase of Carbon Dioxide released by burning fossil fuel. Rich nations are mostly responsible for this man-made disaster. Unfortunately, poor are more vulnerable for its impacts. This unequal distribution of the negative impacts has led the people to fight for climate justice.

The environmental space is intertwined and interconnected. Water and air connected across borders. Melting of glaciers in the Arctic or in Himalayas has impacts on us. Burning of coal in India, China or in the United States has severe impacts on us too. As a developing island nation Sri Lanka is more susceptible to the climate impacts. Yet, researchers, academics, policy planners or politicians have taken minimum or no steps to bring this to a major dialogue in the scientific and political arenas. Only few are aware of the impacts and the reasons. For some reason they try to keep this out of the public domain.

The survey conducted by the Centre for Environmental Justice is an attempt to bring this issue to the public notice and initiate a discussion in the society on the issues, impacts, solutions and actions. We expect this outcome will generate and accelerate a dialogue in all levels. With this report, we expect policy makers to bring the public to the climate change discussions and make themselves involve in decisions and actions. Such democratization of the climate change decisions is vital to respond to this man-made disaster.

Hemantha Withanage

Executive Director, Centre for Environmental Justice

4th February 2009



"Climate has changed. It was good when we were small children. Living has become difficult"

"Very Good uncle", Girandurukotte

"Life has become very difficult. Adverse climate changes have to be stopped if not the money which is for development will have to be spent to overcome climate affects"

Ms. Wimala De Silva, Gallella



"Insect diseases have increased in agriculture. We do not know the reasons for the climate change. But there is a significant change. The government has to find the reasons and help us. If not all have to die as we supply food for people in the towns"

Mr. Samaneri, Horowpathana



Coastal Erosion in Ulhithiyawa, Wennappuwa, 2003

1

Introduction

Climate change has been the most debated environmental issue in the political ecology arena in the last two decades. After initiating global discussions in 1992 United Nations Conference on Environment and Development in Rio, the United Nations established the Framework Convention in 1994 on climate change (UNFCCC). Subsequently, the Kyoto protocol was signed by nations in 1997 except the United States. Many rounds of negotiations have been going on to combat climate change since then.

Climate change is considered as a major reason for most of the present environmental problems. During the past few decades, the causes for Climate Change were mainly anthropogenic activities other than the natural incidents, but the majority of the people who are affected or vulnerable to this climate change are still unaware of this.

“Melting of ice caps and glaciers, sea level rise, spread of Malaria and other vector borne diseases, acidification of the oceans, loss of yield, are some known impacts”

The UN appointed Intergovernmental Panel on Climate Change (IPCCC) concluded in its assessment reports that human activities are responsible for climate change. The current consumption of fossil fuel which releases CO₂, among other greenhouse gases (GHG), is the main culprit of these unprecedented global environmental changes.

Melting of ice caps and glaciers, sea level rise, spread of Malaria and other vector borne diseases, acidification of the oceans, loss of yield, loss of biodiversity, increased intensity of cyclones(hurricanes/typhoons) and floods are some known negative impacts.

Current GHG concentration of 350ppm in the atmosphere will lead to the increase in world temperature and increase the sea level by 40 cm. Further emission of CO₂ will gradually raise the sea level to more than 2 meters.

This will have many negative impacts including making more than 120 million people become climate refugees by 2100 in South Asia only. (source: Greenpeace)

Current solutions vary from Mitigation to Adaptation. While southern countries expect developed countries to reduce its emissions it is the least popular approach. Among other proposals such as switching to Renewable energy, Clean Development Mechanism (CDM), Carbon Trading, Forest Carbon Sinks, Reducing Emissions from Deforestation and Forest Degradation are more popular approaches.

“The Government of Sri Lanka is not very progressive in the climate talks. Nevertheless Sri Lanka as an Island nation, is suffering from all severe climate impacts.”

Meanwhile, Adaptation to the climate change is a heavily discussed option. While mitigation is the most suitable solution, adaptation is necessary since we are not able to reduce negative climate impacts any sooner. This is a

vast area that has not been studied or approached properly around the world.

The Government of Sri Lanka is not very progressive in the climate talks. Since Sri Lanka is not within the Island Nations category or Least Developed Country Category we have limited opportunities so far in the UNFCCC discussions. Nevertheless, Sri Lanka as an Island nation, is suffering from all severe climate negative impacts.

While the Ministry of Environment has a global division to engage in climate negotiations, it has appointed academics to produce the second communication under the Kyoto protocol. The First communication was submitted in 2001. It has little or no communication with the communities affected by the negative impacts or even with the Civil Society Organizations that engage in environmental issues.

The Centre for Environmental Justice (CEJ) initiated this research to bring the people’s voice to the climate discussion forum starting in October 2008. The Civil Society Groups interested in climate change are now in a process to organize themselves to fill the education gap.



Survey team in Morawewa, Horowpothana

2 Research objectives and methodology

Although global climate change is addressed widely, the evidence and the impact of the climate change within the country is less studied. This particular study mainly focuses to get the basic information about the evidences of climatic changes in Sri Lanka during the last three decades and how people, communities experienced and adapted to these changing conditions. The objectives include to identify the significant climatic variations in Sri Lanka through public perceptions; to identify the alterations in lifestyles as a result of these climatic changes and to gather various suggestions and mitigating measures as used, managed and proposed by the public.

The study was carried out in all climatic regions of the country. Within a specific climatic region, multiple locations were selected which are significant geologically, ecologically, commercially and culturally. According to the objectives of the project, Hambantota, Anuradhapura, Badulla, Nuwara Eliya, Ratnapura, Mahiyanganaya and Galle were surveyed during the study duration. Altogether the survey was carried out in seven locations. The questionnaire survey was conducted from September to December, 2008 to gather information.

Mainly two types of methodologies were used to gather information from people in the selected sites. A structured questionnaire survey was carried out to collect data from the participants residing in a particular location. The questionnaire was prepared by considering the significance of every location. It was addressed to observe changes in the climatic pattern relevant to the specific region, changes of lifestyle, possible impacts on the people and their livelihoods depending on natural resources and their suggestions towards mitigation and adaptation.

The questionnaire was prepared in simple language that could be understood clearly by the common man. The respondents were to be helped by the interviewers by discussing all questions in the survey sheet. The participants were selected from various strata of the population considering gender equality.

The project addressed climate change in the past 30 years or more. The age limit of the respondents is a unique factor, for fulfilment of which selected participants are more than 50 years old so that they could explain the changes in the climate as seen/experienced by them which is a part of public perception. Information regarding the climatic conditions about 30 yrs ago and what they experience now is deduced by drawing inferences from people who come under the above age category.

The views and perceptions of the religious leaders, village leaders and people who have been living in the area for a longer period of time were given priority. Through the **questionnaire survey** information gathered from each site was a minimum of 50 responses and altogether there are 397 responses from the seven sites. ¹

In each location, a few **general discussions** were conducted. Here, participants covering all strata of the population, including government and private sector, farmers, school children and unemployed were taken. Through general discussions of the global and regional climate change and its affects, the participants' views and ideas and their suggestions were gathered. The people were motivated to respond after watching short films regarding the global climate change and its impacts. As the participants were selected from all age groups, we were able to collect data which shows a significant change in the climate in their region. Finally, a list of climate variation occurrences and the way they affected their lifestyles and their suggestions were gathered.

We also conducted in-depth studies in some locations. These were conducted separately from the above two steps. Community leaders, religious leaders, people who have an extensive experience in environmental changes of the area were selected and interviewed.

The collected data during the questionnaire survey was summarized by using simple statistical methods. The data gathered from general discussions and in depth interviews were separately represented.

¹ *The prepared questionnaire is in Annex 1*



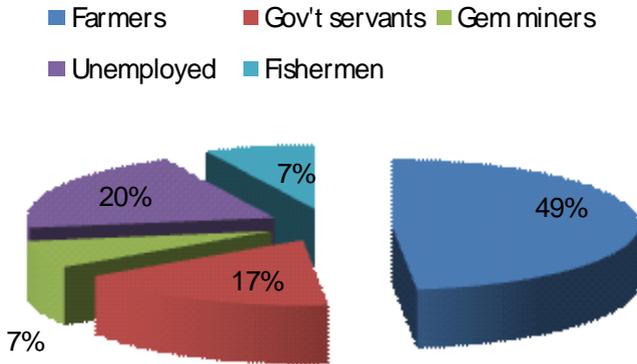
Survey team in Mahakanadarawa Wewa, Mihinthale

3

Research findings

By considering the objectives and aspects of the project, 397 people were interviewed according to the stated criteria. Among them 248 people (63%) were depending on natural resources for their livelihood (eg. fishermen, farmers, gem miners etc).

Profile of Respondents

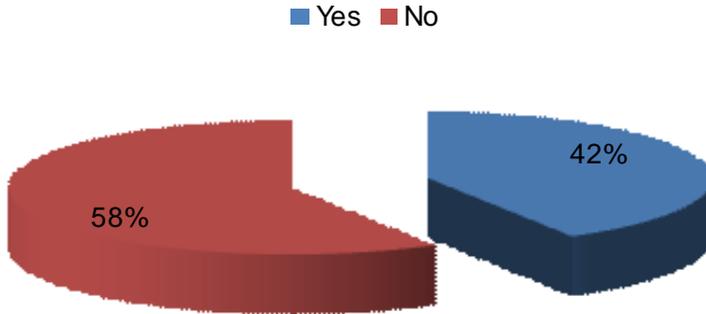


The majority response is that the people who engage in natural resource related employment for a long period of time are very well aware of climate variations. Any change in climate affects their day to day lives and therefore they are an excellent data source for such qualitative information.

Another 149 people who represented a broad section of the public including religious leaders, village leaders and other reputed professionals were selected.

However, the majority of the public (more than 58%) are still unaware of the concept of global climate change and its possible causes and impacts.

Profile of awareness on climate change



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 and development activities such as use of vehicles, rapid urbanization, agricultural practices, and natural disasters like forest fires, tsunami etc.

“There is a change in climate. But we do not experience it much as we have enough water from ‘Mahaweli Ela’

**.Ms. K.M.Keesa Kumari
hami, Gemunu Pura**

Most of the people were confused of seasonal variation in weather and catastrophic climatic variations. For example some people responded ‘transformation from dry season to wet season’ as climatic change.

According to the public following are some reasons for climate change?

- “Drought” or dry seasons
- “Natural changes”
- “Time”
- “Reducing the orbital elevation of the sun”
- “God”
- “Depressions in the Bay of Bengal”
- “Consumption of meat”

When going through the questionnaire survey at general discussions, we got to know that almost all the people were highly sensitive and aware of the catastrophic climatic variations in their region though they were not aware of the scientific reasons.

The variations in environment, ecosystem and lifestyle during the past 30 years were gathered and some distinct information is highlighted as follows:

Indicators of change in climatic pattern

Alteration in rainfall

-Rainfall intensity

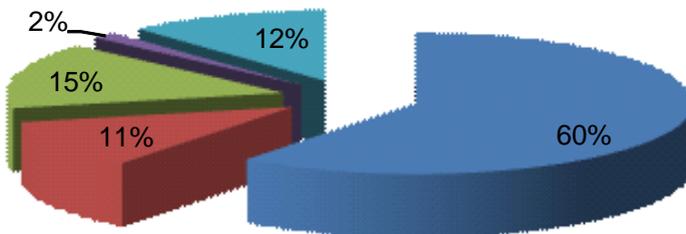
The rainfall intensity of the country has increased when compared with the past. More than 60% of the people stated that the rainfall intensity has increased severely in the recent few decades.

“Droughts, storms and floods have increased. It is difficult to face them. Continuous attention towards the climatic variations and storage of additional food to use in adverse conditions will help to overcome climatic variations”

Mr. D.K.H Abeyratne, Badulla

Profile of variation in rainfall intensity

■ Increased ■ Changed ■ Decreased ■ Not changed ■ Don't know





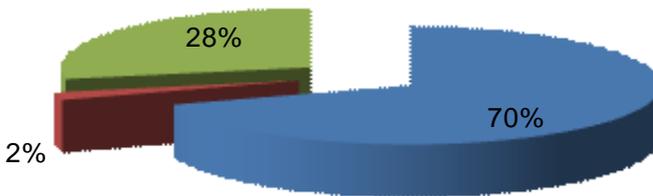
Survey team in Anuradhapura

Rainfall pattern

More than 70% of people stated that the rainfall pattern has changed and the on setting of the monsoon has shifted backwards. This phenomenon is similar to the shifting of dry season.

Profile of variation of rainfall pattern

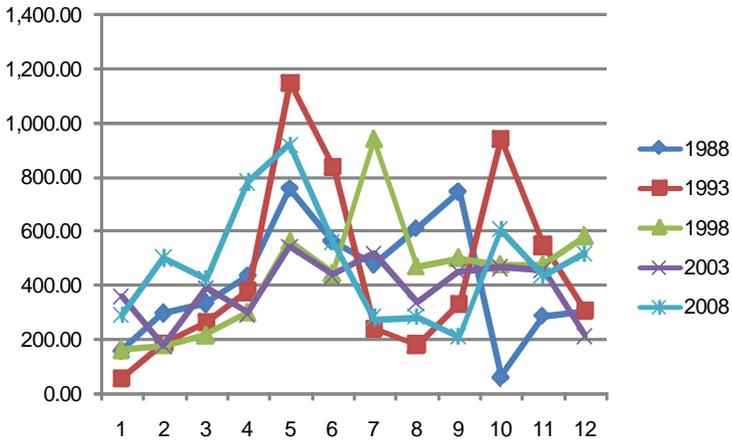
■ Changed ■ Not changed ■ Don't know



Floods along the Southern Highway - 2007

As the regular pattern has changed the climatic changes cannot be predicted. In the past the variation of the dry and wet season could be easily predicted and according to it the agricultural practices were carried out. Due to the unbalanced climatic variations the agriculture pattern and its dependent life has become more difficult.

Rainfall pattern change in Morapitiya, Agalawatta, in Kalutara district near Sinharaja Rain Forest

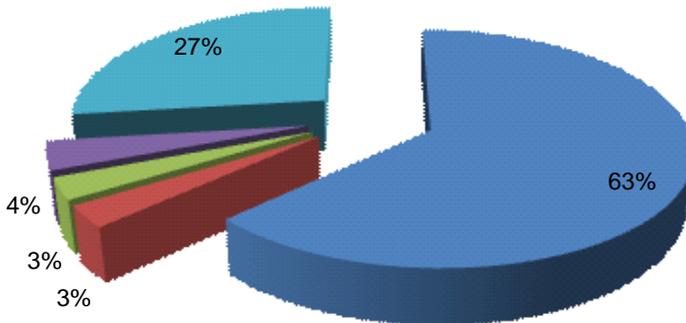


Data Provided by Mr. W. D. Armon, Morapitiya, Agalawatta Sri Lanka

Alteration in dry season

Following is the variation of dry season according to the respondents.

■ Increased ■ Decreased ■ Changed ■ Not Changed ■ Don't know



About 63% respondents said that the dry season has widened and also that there is no distinct dry season as in the past. There are several rains even in the driest month (August) of the dry season. During the past there was a distinct dry and wet period and people adapted to the lifestyle according to that pattern.

As there is no such distinct pattern the people who depend mainly on the environment related jobs are in a critical condition.

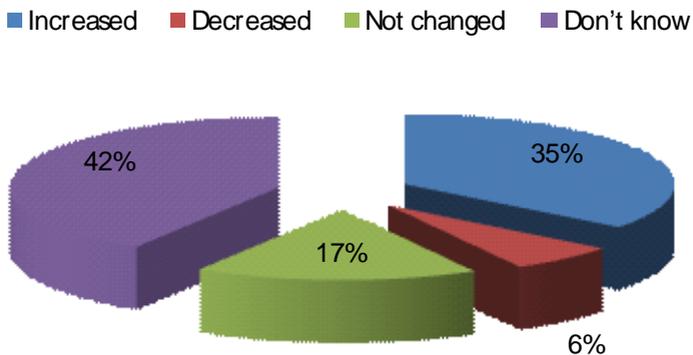
“After the nineteen seventy's it was possible to cultivate only one season. There is no rain during the proper season. How can we exist without paddy cultivation? When there is no rain we work as labourers and also do brick making”

Mr. R.M. Tikiri Banda, Shrawasthipura

Alteration in floods

The frequency of floods has increased, especially in Ratnapura area which leads to deaths & displacement of people. As 35% of the respondents have confirmed the frequency of floods has increased this figure shows that the majority of the respondents are unaware of the variation of floods.

Profile of variation of floods

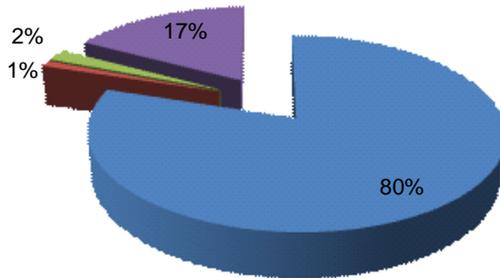


Change in air temperature

There is a remarkable increase in air temperature and more than 80% respondents clearly stated that the air temperature has increased.

Profile on alteration in air temperature

■ Increased ■ Decreased ■ Not Changed ■ Don't know

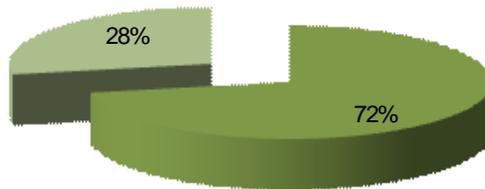


Change in sea level

According to respondents from the coastal region, it is evident that the sea level has risen and due to this the coastal erosion has increased. Some of the respondents have lost their houses partly and some fully due to this.

Change in sea level

■ Increased ■ Decreased



“Emission of toxic gases and use of chemicals have to be reduced. If not climate may become worse. After the Tsunami, the instant soil erosion has increased. These climatic changes have to be controlled if not living will be more difficult”

Mr. P. Rajaratnam, Nuwara Eliya

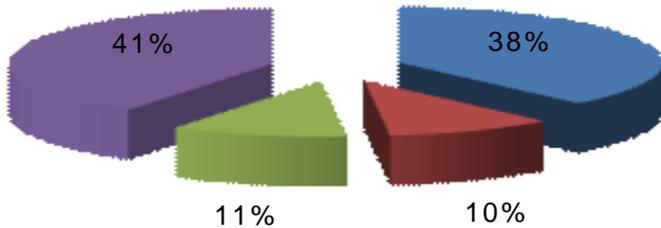


Alteration in ground water level

There is a remarkable change in ground water level and 38% stated that the ground water level has decreased. During the heavy rainy season, the water level has come up and within 3-4 days of normal weather the water level has reduced drastically.

Even after a heavy rain also the level of the water in wells go down within a few days of dry weather and people have to run searching for drinking water.

■ Decreased ■ Increased ■ Changed ■ Don't know

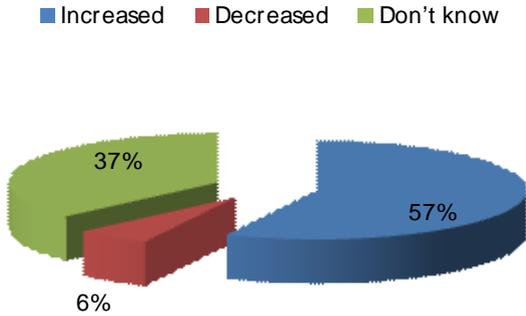


Alteration in natural disasters

Natural disasters such as cyclones, landslides, floods, hurricanes have increased when compared with the past and their impacts have severely affected the households, property and the ecosystems. For example the pears plantations in Nuwara Eliya had been completely damaged due to the winds in 1970's.

The majority of the people from the coastal region stated that the fish harvesting period has been reduced. During the traditional fishing season, there are numerous difficulties specially the natural hazards that create unfavourable conditions for fishing.

Following is the variation of natural disasters profile.

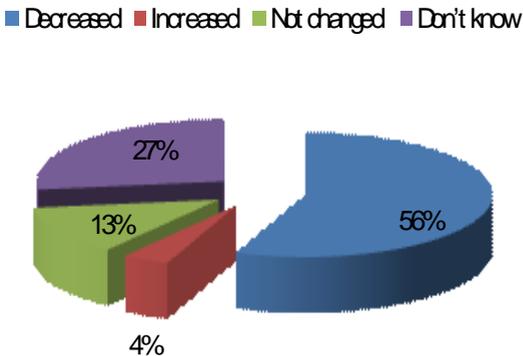


Changes in lifestyle

Alteration in environmental related employment

The environmental related jobs have been reduced according to the climatic conditions.

Variation of environment related jobs

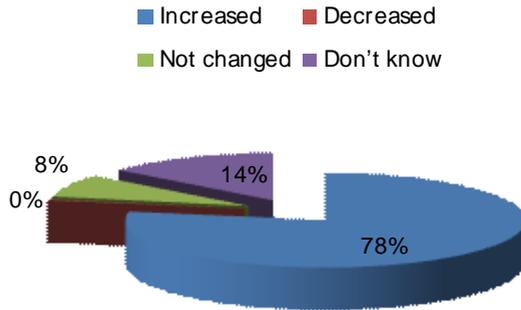


“It is very difficult to adapt to the changing climate. But we cannot stop these changes as these are natural phenomena”

T.M.Sudumenika,
Mahiyanganaya

Only about 13% of the respondents stated that there is no alteration in employment due to the climatic variations. After analyzing these figures it was revealed that these respondents get water for their cultivations from Mahaweli Diversions and they do not have any shortage of water throughout the year even, during the seasonal variations.

Out of the commercial agricultural areas in the dry zone only one season is harvested at present due to the erratic rainfall. The lifestyle is also changed and the farmers move to alternative jobs such as labour work during the harsh environmental conditions.



Majority of the cultivated lands have been reduced or altered during the past few decades. As a result of high rainfall or lack of water in the appropriate time several areas have been abandoned and in some areas crop cultivation has changed, from paddy to vegetables.

Alteration of threats to household and property

Damages due to the climatic variations have increased severely in the recent decades. Houses were damaged partly or completely by winds and people moved to higher areas for protection from floods. About 43% of respondents stated that the threats to the households and property from climatic variation have been increased.

“Decrease in rainy period, increase in temperature. During the past it was not so. Living conditions were good. About 30 years ago frost fall at Kandapola was about 1 inch thick. It is not so now. Climate behaviors have changed completely. It is difficult to forecast what the future will be”

**Mr. H. M. Milton Dias,
Kandapola**



Alteration of climate linked diseases

Due to the increase of air temperature, diseases such as skin irritations, rashes and burning sensations have increased in all parts of the country. More than 78% of the respondents have that experience.

The burning sensation is very frequent in cold areas such as Nuwara-Eliya even in the nights.

“Small waterways have run dry. There are periods when it is very dry and the temperature increases. Instances of stormy weather have increased. There is also increase in fly and mosquito population”

Ms. Philomina Ryan, Nuwara Eliya



Changes in eco systems

Alteration in springs, streams and other natural water ways.

The changes in the ecosystems are a distinct factor. Most of the small springs and streams in the country have dried up within the last few years. Also the amount of water in some waterfalls and rivers has reduced significantly.

Listed below are some of the examples that we identified during the field survey.

- Amount of water in the Kirindi Oya and Kuda Oya in Hambantota, Amba dandu Oya in Mahiyanganaya, Gerandi falls and Ramboda falls and Hakgala River and Uma Ela in Nuwara Eliya has reduced.
- Lover's Leap in Nuwara Eliya has dried up.
- Nika wewa ulpatha, Bandara ulpatha and Karadiwa ulpatha in Anuradhapura, Kaha Pela ulpatha, Guru kumbura ulpatha, Wewatta ulpatha and Kotuhena ulpatha in Mahiyanganaya have dried up.

Alteration in animal and plant population

Majority of the respondents are little aware of the changes in biological population. According to the responses there is a significant increase in mosquitoes, house flies and many other unknown insect species.

Following are the alteration of plant and animal populations.

-spreading of invasive plant species such as Giant Mimosa, Parthenium, Lantana and Alligator weed.

- decrease in fauna species such as frogs, butterflies, some fish species, snails and some other mammals.
- decrease in flora species such as herbaceous plants and trees that are cut for timber value.

Responses about past natural hazards:

Majority of respondents explained during the survey how they prepared, faced, and managed during the natural disasters and post-disaster periods. These public views are very essential to design the disaster preparedness during the changing climatic pattern.

Following are some of the views:

- "Ran away to save our lives"
- "Altered the paddy cultivation to banana"
- "Dug wells in the river for drinking water"
- "Collected jelly fish and ornamental shells for survival"
- "Nothing to do, just wait"
- "Became indebted, pawned our jewellery and mortgaged our property"
- "moved to higher places with the children"
- "The house collapsed"
- "A tree fell on the roof"

"There is a burning sensation in the skin. The climate has changed a lot. The colours of the flowers have changed and the sizes of the flowers have decreased. Jak trees bear more fruits now"

**Mr. H.M.Wijepala, Hakgala
Garden Labourer**

Following are some of the responses about the future environmental hazards:

- "Do not know what we will have to do"
- "Will face any eventuality"
- "Will have to get used to"
- "If conditions worsen we well have to die"
- "Will do anything as we have to exist"
- "Mind fails"
- "Will have to do anything to survive"
- "Can not face"
- "Nothing will happen. This situation will not worsen"

Following are some of the notable findings obtained from the respondents that realized a change in climate.

- In Nuwara Eliya, the mist has reduced and the cold also reduced. Earlier heavy mist was experienced in November and December and recently the mist is reduced and it shifts to January and early February. People used to wear sweaters even in the day time in the past but presently the nights are also hot.
- There is a remarkable change in insect population. Increase in mosquitoes and flies is experienced in most of the areas. This is more significant in Nuwara Eliya as very few mosquitoes were distributed during the past, at present it has increased considerably.
- During the windy season the speed of the winds has increased and the pattern also changed.
- The temperature of the water in streams and rivers in Nuwara Eliya has increased earlier it was too cold and difficult to drink.
- In Hakgala gardens, the size of the flowers has been reduced and the colours have changed.
- Frost is a rare occurrence nowadays in Nuwara Eliya.
- Snakes were abundant in Nuwara Eliya within the past few decades.
- Avocado, Anoda and Jack trees did not grow well in Nuwara Eliya, but now they grow and fruits are also well produced.
- During the past Banana and Capsicum plants did not produce pods due to the cold climate, but at present they bear fruits and pods.
- Several species of ferns and Orchids have been reduced heavily in Nuwara Eliya.

“The mosquito, fly and snake population has increased. There is no specific rainy season now which was not so earlier when predictions could be made. It is not possible to cultivate and living conditions are very difficult”

Mr.J.A.Jayasooriya, Hakgala



- The size of Apples and Pears have become smaller. According to the respondents 'there were Pears that were the size of husked coconuts'.
- The increase of mosquitoes and house flies has been experienced in other parts of the country.
- August is considered as a dry month of the year, but it has changed as several rains fall in August.
- The dryness has increased and the wetness has been decreased.
- 'Ilmaha wessa', the rain season during November has altered.
- Mist has been reduced in Ratnapura area.

"People have done severe damages to nature. Now nature has started to respond to them. So people have to bear with whatever the adverse conditions that nature gives. We erred at the beginning"

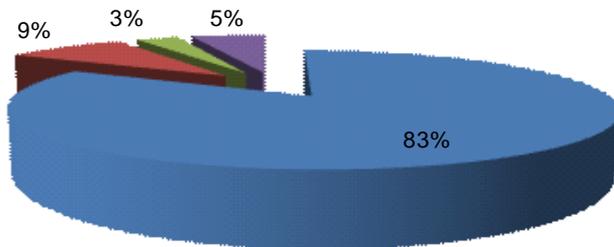
**Ms. M.M.Podri Menike,
Mahiyanganaya**

General

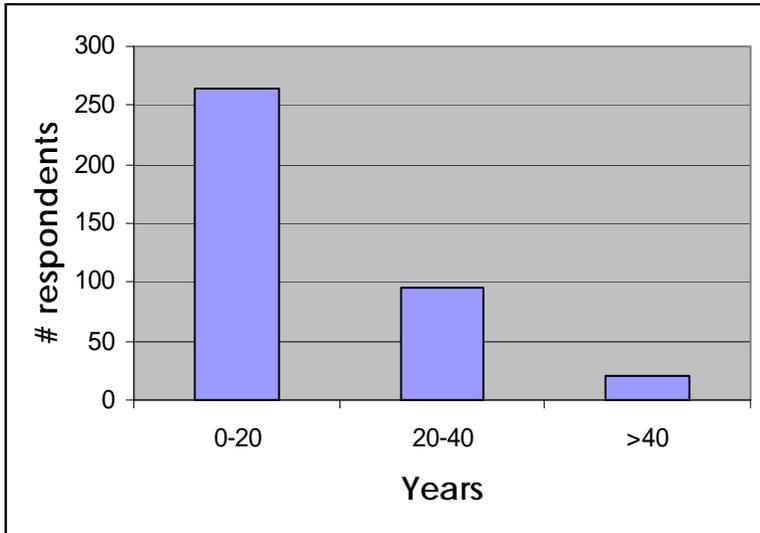
The climate has become worse during the past and it affects the living conditions and income. It was confirmed by more than 83% of the respondents.

Climatic conditions

■ Unfavourable ■ Favourable ■ Not changed ■ Don't know



A significant change in climate has occurred during the past 20 years and it was confirmed by 70% of the people.



“Rainfall has decreased very much. Wells in this area did not run dry during the early days. The water level decreases now even when there is a short dry period. The level increases when there is a rain but decreases rapidly when there is a dry period of 4-5 days duration. There is no water to drink. People have to go long distances in search water”

**Mr. Jinadasa, Mihindupura,
Kandapola**



Kanthale Tank - 2005



4

Discussion: Adaptation for Sri Lankan communities

Climate change is visible in most parts of Sri Lanka. Majority of the people believe this climate change is unfavourable to living beings and livelihood.

However, local climate changes in certain areas are better compared to 30 years ago. For example, Mahaweli water feeding areas in the dry zone gets more water, are more favourable to people and the environment.

However, local people cannot distinguish these local climate changes from the global climate change. On the other hand some impacts can be explained as the impacts of local environmental changes. For example some water related impacts have direct links to the destruction of forests in the local environment.

These unfavourable conditions are varying from community to community. Most nature dependent livelihoods such as farming, fishing, different types of labour including labour involved in Tea and Rubber industry, natural resources based sustainable livelihoods have negative impacts. There are unfavourable conditions due to the spread of vector borne diseases and also quick weather change including heat.

These communities have made very, very negligible contributions to the GHG emissions except the farmers engaged in slash and burn cultivation or animal husbandry. So they have nothing to mitigate.

“About 30 years ago ice fell here. Now it is very less. The skin dries up. There was a cyclone in 1978. Pears cultivation was ruined. There are no apple fruits now. As farmers it is difficult to adapt to the changing climatic conditions”

Mr. Liyanage, Seetha Eliya



Kothmale reservoir in February 2009

However, the above survey result shows that people especially those engaged in nature based livelihoods are somehow suffering from climate change. They need alternative livelihoods and living conditions and is adapt to the new climatic conditions.

Adaptation is a need of changes for the survival of the living beings in order to respond to the natural changes. This is part of the natural evolution too. However, sudden natural changes due to climatic impacts are detrimental to the other living beings. Many of these species might disappear from the earth before they adapt to the changing climate. As the human species we have a better ability to adapt to the changing situations. Yet, human species also suffer from unexpected cyclones, floods, sea level rise, heat waves etc.

“This area has changed after the Tsunami. August was a rainy month but now it is dry. There is a decrease in the frog and butterfly population. Insects have increased. The favourable conditions at Nuwara Eliya have vanished. Now it is unfavourable. Visitors may not come in the future for pleasure”

Ms. Rupa Iranganie, Hakgala

Building awareness among the civil society is an immediate requirement in Sri Lanka. Meantime those policy planners can learn from the local communities. As we were going through the survey we found that the following areas need adaptation.

The farmers have to adapt to the increased intensity of floods and the dry seasons. Change of the rain pattern has negatively affected farmers, especially those engaged in slash and burn cultivation. This may need moving the cultivation seasons or change of crops and cropping pattern. They will have to consider moving away from chena cultivation to permanent cultivation. It may also need to find plant varieties that suit the changing rainfall pattern. Adaptation to the water conservation, rain water harvesting are also important.

People living in the low lying areas need to adapt to the increased level of flooding. Some affects are due to the lack of climate proofing of the old and newly built infrastructure. For example Kukule Ganga dam has created increased flooding in the low line areas in the downstream. Some people might have to move their houses to the high ground to avoid increased floods in the surroundings of those mega development projects.

Coastal low lying areas face salt water intrusion which destroy the agricultural lands, traditional livestock, grazing lands, and the water table. Fisher folk face loss of coastal houses due to sea level rise or due to heavy erosion by increased size of waves. They also have to face the loss of fish caused due to the destruction of mangrove forests, sea grass beds, acidification, coral degradation or other unknown reasons.

Some water intakes are vulnerable to sea water ingression. This affects water facilities including Kaduwela water intake. As the ground water table is going down in certain areas, the water scarcity is becoming a major problem.

People in general have to adapt themselves to the mosquito menace as it is increasing in the areas that were considered as more cold.

The earth slides have increased in some wet areas due to high rainfall over an extended period. People living in slopes and earth slide prone areas need actions.

“Rainfall is most affected. There is no rain at a stretch for 4 months. The spring at Bandara has run dry. There is an increase in cyclones and houses have been damaged. Dwelling places have been lost. The atmospheric dryness has increased”

Mr. U.P.Dinapala, Kapugollewa

It is very difficult to exist now. Cultivation is also difficult. There is no ‘1 season rain’ now. The cold season was December then but now it is January, February. August was known as a dry period but now there is rain in that month. Do not know what is happening to the country”

Mr. E,D, Piyaratne, Morawewa



Some houses may need stronger construction to adapt to the increased intensity of winds. Perhaps older structures are more vulnerable. Certain locations might not be suitable for house constructions anymore.

Lack of climate proofing in mega development projects lead people and environment vulnerable to the climate damage.

Most of the infrastructure projects have not considered climate change in designing and implementation.

“All the natural cycles have changed. September was rainy earlier. It was the paddy sowing period. Now it is done in October or November. The main reason for all these is cutting down of trees. There is a heavy rainfall lasting a short period. There is also decrease in the duration of the rainy season”

**Mr. Siriwardane
Senawiratne, Mihinthale**



While some adaptations are part of the learning curve of the local people who have specialized in their locations, some adaptations need proper authority but careful and cautious intervention. As many people engage in environment related livelihoods are loosing the jobs it needs creation of green jobs in the future.

The result shows that climate change is not only a business of the environmental agencies of the government. It needs to be a crosscutting issue for many other authorities including agriculture, water and irrigation, fisheries, meteorological, coastal, disaster mitigation and academics. The research team felt that even the provincial and local authorities have a role to play.

Local communities have lot to contribute to the climate plans. Keeping them out of climate business will create unnecessary damage to life and livelihood as we have seen in some Asian countries in the recent past. 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.

“Human activities have to be changed
to overcome the climate change”

H.P.Petisingho, Ambalantota

“Coastal erosion, floods, storms have increased
massively. Some houses were completely
damaged. Both people and animals have
suffered. This has to be stopped if not people
will have to face severe damages in the next 20-
30 years”

Nandasiri Ganahewa, Ambalantota

“Forest clearance is the main reason for climate
change. Thick forests have become grasslands.
Due to the deforestation, droughts have
increased, animals have decreased, and rainfall
has decreased. This has to be stopped”

H.B.Charlis Silva, Wewatta, Dambana



“It is not like the past. There is less forest
now due to clearing. There are less
animals. There is no rain during the
season. “Nikini” rain is less. Cannot rely on
rain. It is very difficult to live”.

**Uruwarige Sudu Bandiya (A member of
Indegenious People) Dabana,
Mahiyanganaya.**

ANNEX 1

General overview of public conception towards the climate change

Date:

Form No:.....

City/Village:

1). Introduction

- Name
- Age
- Address
- Gender
- Education
- Occupation
- Period of residence in the area

2). Location

1. Urban/Sub urban/Village
2. Dry zone/Wet zone/Intermediate zone/Arid zone
3. Coastal/Highland/Plain area

3). General information

Do you know about the climate change? Y/N

How it happens?

Have you observed the climate change in your area? Y/N

I. Changes in environment

		Increase	Decrease	changed	Not changed	Don' know
Rainfall	Intensity					
	Pattern					
Unexpected	Droughts					
	Floods					
Air temperature						
Sea level						
Instant land slides /soil erosion						
Coastal erosion						
Ground water level						
Variation of	Dry season					
	Wet season					
Winds/cyclones/ hurricanes						
Unexpected natural disasters						

II. Change in lifestyle

	Increased	Decreased	Not changed	Don't know
Environmental related jobs				
Affects to the income				
Loss of houses/lands/property				
Shifting of agricultural lands				
Spreading of new Diseases in cultivated lands				
Income from the fishing				
Maximum fish harvesting period				
Fishing season				
Climate linked diseases-skin irritations/rashes/burning sensations				

III. Changes in ecosystems

Yes No Don't know

Drying of waterfalls/springs/streams

Unusual emerge of water ways

Decrease or loss of animal species

Decrease or loss of plant species

Changes/mutations of animal species

Changes/mutations of plant species

Observed new animal species

Observed new plant species

4). Suggestions

- Has the climate becomes worse/better/not changed/don't know?
- Is the present conditions ok? Y/N
- Why?
- Do you want to stop the climate change? Y/N
- Why?
- What are the identified sources that increase climate change in your area?
- Suggestions to reduce climate change in your area.

5.) Significant changes in climate?0-20/20-40/>40 years

- How did I face?
- Will you be able to adapt future changes/N/Don't Know?
- If "Yes", how?

“Air temperature has increased, ground water level has decreased, and springs have dried up. We are experiencing more disasters.

To overcome this people have to be educated. Therefore responsible people have to initiate this process”

P.H.Mettananda, Girandurukotte

Garandi falls in February 2009



Centre for Environmental Justice (CEJ) is a public interest environmental organisation working towards good governance and environmental justice established in January 2004. CEJ is a member of the Friends of the Earth International, Environmental Law Alliance, NGO Forum on ADB, International POPs Elimination Network and several other international environmental networks.



Kothmale Reservoir in February 2009

CENTRE FOR ENVIRONMENTAL JUSTICE
20A, Kuruppu Road, Colombo 08, SRI LANKA
Tel/Fax: 0094-112683282 email: info@ejjustice.lk
website: www.ejjustice.lk