



Indo-Global  
Social Service Society

CLIMATE  
CHANGE  
YOUTH GUIDE  
TO ACTION:  
**A Trainer's Manual**



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# Foreword



Climate change is used casually by many of us to indicate any unpleasant or devastating climatic impacts that we experience or hear every day. It is a cluttered words now for many of us. It definitely requires lucid explanation for the common people, especially to the youth who are the future bastion of this planet. Several reports (national and international) has proved that Climate change is the largest issue that the world at large is facing which in fact will negatively affect all the other developmental indicators. But these warnings appear to be falling on deaf ears of many nations and states, with governments who seek to maintain short term economic growth rather than invest in the long term. It is now falling to local governments, non-profit organisations, companies, institutions, think tanks, thought leadership groups and youth leaders to push the agenda forward, from a region levels right down to local communities and groups. This requires knowledge of climate change as IGSSS believes strongly that Knowledge is Power. Knowledge should be in simple language so that people, especially the youth, may acquire information, knowledge, idea and become conscious to take action in their own capacity to influence local to global communities to take appropriate action on the issue of climate change.

This manual provides a valuable window on information related to climate change and covers the necessary components from Weather, Climate to greenhouse effect and global warming. It tries to explain in a very lucid manner the definition of Climate Change and goes to clear the concept of adaptation and mitigation. It goes beyond the concept clearance and in module four it tries to motivate the readers to take actions that will make a difference.

Beside this it also gives a global picture of the different climate initiatives. The challenges in getting correct information and in a simple way are both difficult and interesting. IGSSS with the support of Gayatri Mahar and young people from Baljitnagar slums of Delhi came up with this manual to reach out to more and more young people with a hope to make them aware on the issues of climate change. There are people in IGSSS and its partners along with the community who are all working at the field level with great enthusiasm, tenacity, and dedication to develop new methods of interventions and provide new solutions to keep up with the ever-changing threats of climate change. In this new age of global interconnectivity and interdependence, it is necessary to provide such literature on climate change to both professionals and community, with the hope that one day climate change will not be a threat to human kind. This manual is a good step in that direction.

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# About the Manual

Climate change and global warming are terminologies that are now being used in our everyday lives because it poses a threat to the human beings and other species on the Earth. The challenges in terms of devastating floods, recurrent drought, water scarcity, food and livelihood insecurity, displacement of population and many more is due to changing climate and these impacts will be more intense in future.

Human activity is the main cause of climate change – our ambition that turned into greed has led to us damaging our environment and it has been done to such an extent that we have made sustenance difficult for ourselves. It is ironical how the actions we performed in the name of development have led to our destruction. Ironically, more often than not, the people whose contributions to climate change are negligible are the ones that are at the receiving front of the backlash. These are groups that do not have the resources to counter the effects of climate change. These are groups that just bear the consequences with no resolve.

Climate change is happening here and happening now! It is high time we need to unite to combat climate change for our planet, for ourselves. The beginning of any action starts from its knowledge and information sharing of the subject matter. Then it creates an opportunity to involve people to work for their climate system. Youth – as agent of change can play important role to influence and outreach to the wider mass. This emphasizes the strong need of resource material to feed youth on the knowledge matter.

Realizing this, the idea of developing a climate change training module evolved. This module will help the development practitioners to learn about climate change in an interactive way and would facilitate them to develop linkages of climate change with Sustainable Livelihood, Urban Poverty, DRR, Gender and Youth Development.

The purpose of this manual is

- To raise awareness of climate change and the role of climate education in developing and maintaining safe and sustainable communities and earth
- To assist facilitators in implementing a participatory teaching approach to engage target groups
- To promote ideas and facilitate target groups to take actions on ground for adaptation and mitigation

The primary targets of the tool kit are the development practitioners and trainers who will take the opportunity in facilitating climate change education to the youth.



Know the terms weather, season and climate  
 Know the difference between weather, season and climate

## What is the difference between weather, climate and season?

**Weather** is the current atmospheric conditions of a place at a specified time. In other words, weather is a day to day state of atmosphere in terms of temperature, moisture content and air movements. **So when we talk about daily atmospheric conditions, we use the word weather.**



**Climate** on the other hand is the average weather conditions of a place over a given period of time. So when we talk about climate in a way that signals towards a long period of time (30 years generally).



The difference between weather and climate is a measurement in the given time. Weather can be directly perceived by people but climate cannot. There are different types of climatic condition in the Earth. Himalayan region has cold climate, desert have warm climate. For e.g. during winter (November to February), the climate is cold. We expect cold at winter and we wear warm cloths accordingly. That is climate of that place at the time. Even in winter we get rainfall or sunny days. These are the weather conditions what we get.

## Season

Seasons are patterns in weather during a specific part of the year. Most parts of the world follow a pattern of a spring, summer, autumn and winter season each year. This pattern repeats every year, but the specific weather may change.



Summer season



Winter season

## Note for the facilitators

- Don't jump into the climate change at first. Encourage participants to share their life story, what places they like to visit – cold, hot, coastal or which weather and season they like the most
- You can take the example of your area to make it easy to understand
- You can use the pictures
- You can make the exercise funny through role play or asking rapid fire questions related to weather, climate and season
- Avoid use of complicated words



Provide concept of greenhouse effect and source of greenhouse gases  
Relate Green House effect and global warming  
Make aware about the unprecedented warming rate of the Earth



Flooding



Heat stroke



Diseases



Drought



Water scarcity



Cyclone



Urban Heat island



Migration



Human trafficking

## DO YOU KNOW?

- The annual average temperature of the earth is increasing
- Glaciers and polar ice is melting at rapid rate
- Sea level is rising
- Natural disasters and extreme events are more frequent and intense

**Why these events are happening? Does it make you scared? Worried?**



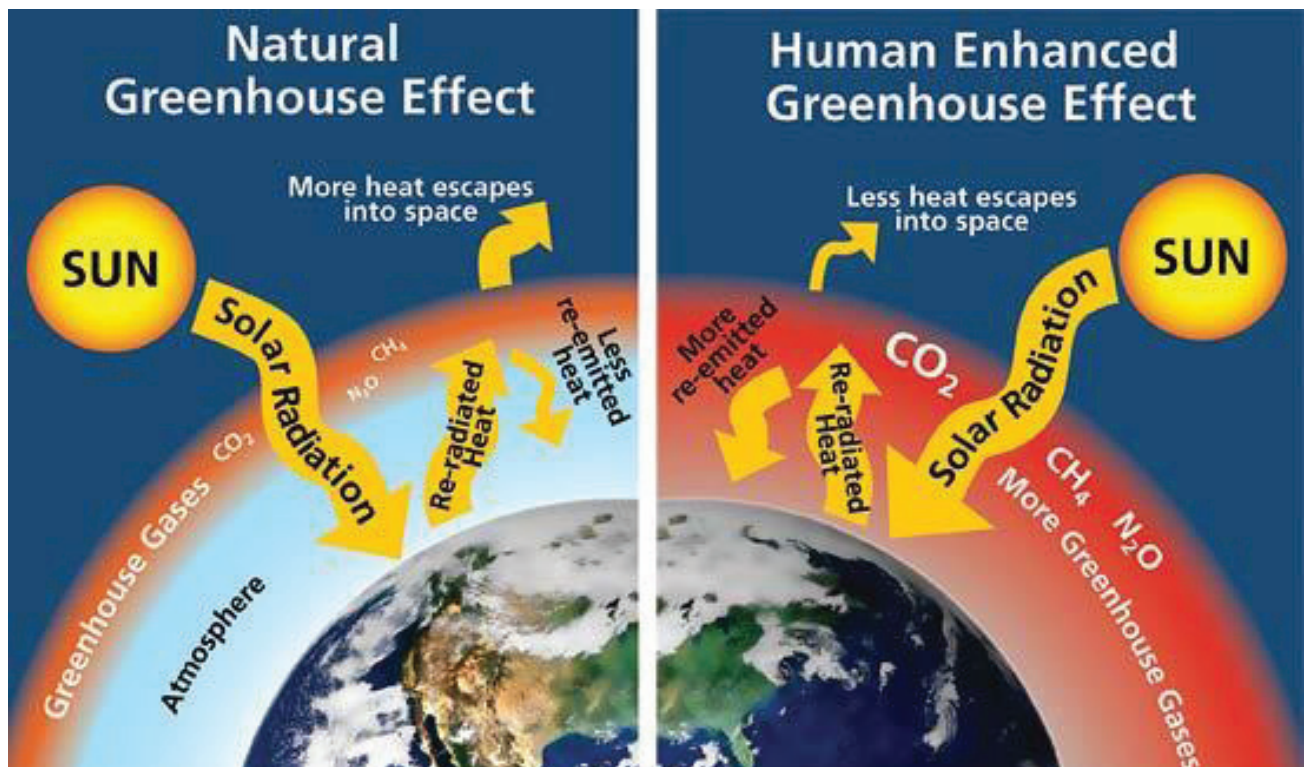
## Do you observe these more frequently?

### What is greenhouse effect?

#### The Earth

Earth has its own control system. The oceans, the land, the air, the plants and animals, and the energy from the Sun all affect each other to make everything work in harmony. There are Green House Gases (Carbon di-oxide, Methane, Nitrous Oxide, Ozone, water vapor, Chlorofluorocarbon) in the atmosphere and capture heat from the sun. So when the rays of the light hit the surface of the earth, not all of these rays are reflected back. Some are trapped by these gases to keep the earth warm which is necessary for life on earth. This overall system is called Greenhouse effect. Without Green House gases, all of the earth's energy would escape into space and causing the Earth's temperature below the freezing point – where no life is possible.

But now-a-days, due to various human activities the concentration/amount of these gases in the atmosphere is increasing than the Earth requires. So due to excess of these gases more heat is being trapped in the atmosphere. This is what warms up the earth, increasing the global temperature which has resulted in global warming. **Global warming** is the increase in the average temperature of the Earth. The temperature is increasing mainly due to enhanced greenhouse effect.



Not only was 2016 the warmest year on record, but eight of the 12 months that make up the year — from January through September, with the exception of June — were the warmest on record for those respective months.

## CAUSES OF GLOBAL WARMING -WHERE DO GREENHOUSE GASES COME FROM?



### Deforestation

When the forests are degraded, the amount of carbon that it used to absorb will be released to the atmosphere, thus, contributing to additional greenhouse gases in the atmosphere. On the other hand, various types of gases including CO<sub>2</sub> are released when fires take place.



### Burning of fossil fuels (coal, gas and Oil)- mostly for electricity generation

Air pollutants are also a contributor to the greenhouse effect. Its scope is from local to regional level. The release of harmful gases, especially the greenhouse gases in the atmosphere through different sources like industries, vehicles etc. is accelerating the greenhouse effect.



### Waste decomposition

When the wastes are decomposed in absence of air (oxygen), methane gas is produced. Methane is 21 times more potential in causing Green House Effect than Carbon Dioxide.

That means, 1 Methane = 21 Carbon Dioxide



### Agriculture

Before reaching our plates, our food is produced, stored, processed, packaged, transported, prepared, and served. At every stage, food provisioning releases greenhouse gases into the atmosphere. Farming operations emits methane and nitrous oxide. Rice cultivation covers 11 % of the Earth's arable land, consumes one-third of irrigation water. Flooded rice fields emit methane and around 1.5 percent of total global greenhouse gas emissions

## DID YOU KNOW?

- Up until about 150 years ago, we human were very nature friendly and human activity did not produce many greenhouse gases.
- CO<sub>2</sub> has increased from 300 ppm to 410 ppm as of mid-2018



### Livestock

Around 1.6-2.7 billion tonnes of greenhouse gases each year, mostly methane, are produced from livestock digestion. Another 1.3-2.0 billion tonnes of nitrous oxide come from producing feed for livestock. And the final 1.6 billion tonnes comes from land use changes, such as clearing for animal pastures.



### Transport

Electricity and transportation (cars, trucks and planes) are responsible for almost 60 percent of carbon dioxide emissions. The rest comes from agriculture, industry, such as factories that make products we use, and from energy we use in our homes and businesses.



### Unsustainable farming practices

Usage of chemical pesticides, herbicides, fungicides and fertilizers release greenhouse gases in the atmosphere.

### Most common types of GHGs

**Carbon Dioxide (CO<sub>2</sub>):** Carbon dioxide enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), solid waste, deforestation (trees and wood products), and as a result of other chemical reactions such as making cement.

**Methane (CH<sub>4</sub>):** Methane is emitted during **Rice cultivation, cattle & sheep ranching, decay from landfills, mining**

**Nitrous Oxide (N<sub>2</sub>O):** Nitrous oxide is emitted during agricultural and industrial activities- **Industry and agriculture (fertilizers)**, as well as during combustion of fossil fuels and solid waste.



Know how and why climate is changing  
Learn about the consequences of Climate Change  
Learn about who are most vulnerable and why

## Climate change

Climate change is a natural phenomenon, but uncommon and rapid rate of changing climate in these last few decades is purely Anthropogenic (human induced) as a result causing Global Warming due to emission of large quantity of Greenhouse gases.

**Any change in climate overtime, whether due to natural variability or as result of human activities is the Climate Change.** It can be a change in the average weather or a change in the distribution of weather events around an average (for example, greater or fewer extreme weather events). Climate change may be limited to a specific region, or may occur across the whole Earth.

### Note for the facilitators

- Ask them if they have heard about the changes in their locality, village or country from their parents or grandparents over a period of time. For e.g., change in rainfall pattern, the type of crops that used to be harvested, agricultural calendar (cropping time etc.)
- Ask each group to collect information from their home and locality. Then ask them to develop a story of their own based on the information they heard or seen regarding changes in the climate.
- Hear stories from them next time.

## Consequences of Climate Change

### Temperature Rise

Heat Waves resulted from the high temperature can kill many people. It also accelerates snow melting reducing the fresh water sources and bringing water scarcity. High temperature also leads to high prevalence of diseases in human and animals.

### Variation in precipitation

Excess precipitation results in floods thereby resulting landslide, erosion whereas deficit or no rainfall result in very dry condition drought, water scarcity etc.

### Snow melting and Sea Level Rise

Melting of snow is shrinking the snow cover in the mountains reducing the source of fresh water. It also brings impacts like Glacial lake Outburst Flood. Rapid pouring of snow melting from the snowline is accelerating sea level rise. Sea level rise possesses instant threat to some of the island countries which are in danger to submerge.

## Extreme Weather events

Climate change increases the frequency and intensity of the extreme weather events like cyclone, hurricane are recorded more in a shorter period of times in a more intense form. All these consequences can lead to a huge disaster. Examples are below:

### Extreme rainfall and floods



#### Too much water- Floods, Flash Floods and Landslide

In last 64 years (between 1953-2017) 107,487 people died due to heavy rains and flood across India

Year/Places	Intensity	Impact
2018 Kerala floods	37 percent more rainfall than normal	164 dead and 150,000 people displaced
2017 Mumbai floods	468 mm of rainfall in twelve hours.	INR 30,000 crore
2015 Chennai floods	1,049 mm of rainfall in November	500 people and over 18 lakh people were displaced
2014 J& K Floods	558 mm rains in Sept first week	2000 house damaged in Jammu, Srinagar submerged Death toll 5700 5700 cr 300000 ha
2013 Uttarakhand Floods	385.1 mm rain in 18 days (highest in last 80 years)	16 lakh people affected Death toll 5700 Economic loss of INR 1000 cr 753711 ha agricultural land affected
2010 Ladhak Floods	250 mm rains in one hr	71 village affected Death toll 248 Economic loss of INR 204 cr 1400 ha agricultural land affected
2009 Aila cyclone	The sunderbans Island indulated (6.1 m of water)	2.2 million people displaced Death toll 149 Economic loss of INR 1500 cr 50,000 ha agricultural land affected
2005 Mumbai floods	994 mm rains in 24 hrs	20 million affected Death toll 5000 Economic loss of INR 5000 cr 550,000 ha agricultural land affected

### Note for the facilitator

Ask following question and facilitate the discussion

- Have you heard about these events?
- Do you think it affected you or someone you know?
- Who do you think are the most affected?
- What can be done to prevent the losses?

## Drought

Drought or drought – like situations, is becoming more common in India. Change in monsoon patterns causing water shortages and severe droughts. India faced recurrent drought in three consecutive years recently (2013-14 and 2015).



Too Less water- Drought, water scarcity, low water table

### Note for the facilitator

Ask following question and facilitate the discussion

- Have you heard about these events?
- Do you think it affected you or someone you know?
- Who do you think are the most affected?
- What can be done to prevent the losses?

## Cyclone

Cyclones are strong spiraling winds characterized by a low pressure and numerous thunderstorms. India has long coast line of 7516 kms. Four States (Andhra Pradesh, Odisha, Tamil Nadu and West Bengal) and one UT (Pondicherry) on the East Coast, one State (Gujarat) on the West Coast and two islands i.e. Andaman and Nicobar and Lakshdweep are more vulnerable to cyclone disasters. 40% of the total population lives within 100 km of coastline. Recurring cyclones cause for large number of deaths, loss of livelihood opportunities, loss of public and private property and severe damage to infrastructure. Nearly 32 crore people, which accounts for almost third of the country's total population, are vulnerable to cyclone related hazards. Climate change and its resultant sea-level rises can significantly increase the vulnerability of coastal population.

<b>Cyclone Ockhi – 2017</b>	Ockhi from the Arabian Sea affected mainland India along with coastal areas of Kerala, Tamil Nadu and Gujarat.
<b>Cyclone Vardah – 2016</b>	Cyclone Vardah brought heavy rainfall to Andaman and Nicobar Islands then crossed the eastern coast of India and affected Chennai, Kancheepuram and Visakhapatnam.
<b>Cyclone Hudhud – 2014</b>	Cyclone Hudhud was a strong tropical cyclone, done damage to Visakhapatnam city of Andhra Pradesh. Visakhapatnam or Vizag along with Odisha was mostly affected by Hudhud.

<b>Cyclone Phailin – 2013</b>	Cyclone Phailin was second strongest tropical cyclone in India since the 1999 Odisha cyclone, resulted heavy rainfall in Odisha, Andhra Pradesh, Jharkhand as well as other Indian states.
<b>Cyclone Helen – 2013</b>	Cyclone Helen brought heavy rainfalls in eastern India and became a Severe Cyclonic Storm in India. Cyclonic Storm Helen formed in the Bay of Bengal Region and affected Andhra Pradesh.
<b>Cyclone Nilam – 2012</b>	Cyclone Nilam was the deadliest tropical cyclone in India, Originating from an area of Bay of Bengal in South India. The heavy rains and strong winds by Cyclone Nilam affected Chennai Port of Tamil Nadu and New Port railway station in Kakinada in Andhra Pradesh.
<b>Cyclone Phyan – 2009</b>	Cyclone Phyan emerged into the Arabian Sea and caused heavy rainfall in Tamil Nadu, Maharashtra and Gujarat. Phyan was one of the wettest cyclone in India and brought extremely heavy rainfall of over the coasts of Karnataka, Goa and Maharashtra.
<b>Odisha Cyclone – 1999 – Strongest</b>	<p>The Orissa cyclone in the year of 1999 was the strongest storm to hit the Indian coast and also the strongest tropical cyclones that affected India, Here is the list of strong tropical cyclones that affected India.</p> <p>Cyclone Maarutha – 2017  Gujarat Cyclone – 2015  Cyclone Viyaru – 2013  Cyclone Laila – 2010  Cyclone Bijli – 2009  Cyclone Nisha – 2008</p>



## Note for the facilitator

Ask following question and facilitate the discussion

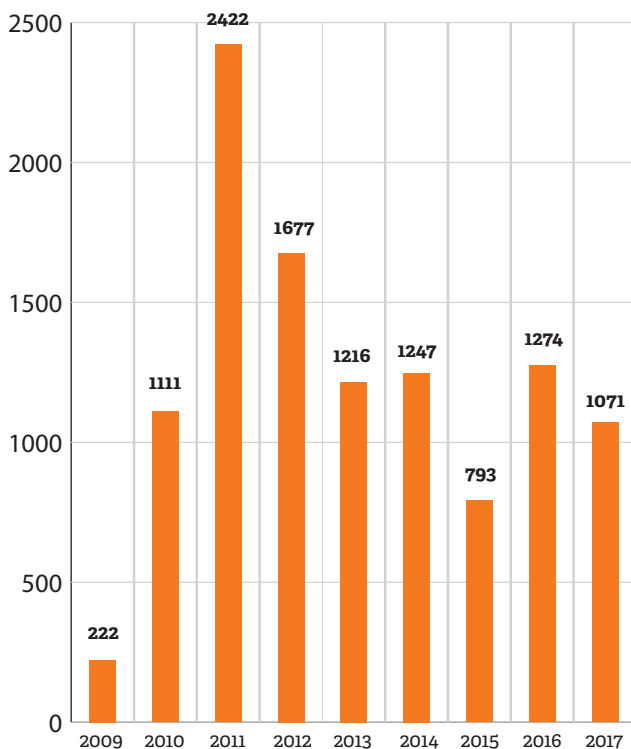
- Have you heard about these events?
- Do you think it affected you or someone you know?
- Who do you think are the most affected?
- What can be done to prevent the losses?

## Heat Waves

**Heat waves** are long periods of time with above-normal temperature occurs during the summer season in the North-Western parts of India. Heat Waves typically occur between March and June. As the Earth warms, more areas will be at risk for hotter and more frequent extreme heat waves. The health impacts of Heat Waves typically involve dehydration, heat cramps, heat exhaustion and/or heat stroke. Since 1992, about 25,000 Indians are estimated to have died because of heat waves.



Heat wave is the third biggest natural killer in the country with 2,040 people dying of it in 2015



### Note for the facilitator

Ask following question and facilitate the discussion

- Have you faced the extreme heat in your area?
- Do you think it affected you or someone you know?
- Who do you think are the most affected?
- What can be done to prevent the loss?

## Impact on water resources

Water resources are under increasing pressure from climate change, population growth, economic development, industrialization, urbanization and inefficient water use. Rising global temperatures is/will lead to uncertainties in the rainfall (too much or too less or no rains or untimely) causing risks of more extreme and frequent floods and drought. This has severe impacts on fresh water supply for drinking and depletion of ground water level. About 80% of the country's drinking water needs are met by groundwater. 54 percent of country's total area is facing high to extremely high stress



The situation is critical for urban India where 48% of water supply comes from ground water for commercial and domestic use. Further urban population is expected to rise from 377 to 590 million – 21 Indian cities will run out of groundwater by 2020 (NITI Aayog, Government of India). The water sector is not only affected with the change in climate but also contributing to GHG emission. Large amount of energy requirement produced mainly by burning coal, natural gas, oil and other fossil fuels to treat and move public water supplies.

### Note for the facilitator

Ask following question and facilitate the discussion

- Have you faced the water scarcity in your area? If yes, in which months?
- What do you or your family does in the situation? Who is responsible in your family for managing the water?
- Who do you think are the most affected?
- What can be done to address the need of water?

### Impact on agriculture and food security

Indian agriculture is rainfed and 60% Indians have farming as the main livelihood. Change in rainfall pattern brought a decline in the agricultural production. Similarly the fluctuations in the temperature, decline in the soil moisture content, wind events and hailstorm have also affected our traditional mode of agricultural system. Floods and drought also reduces the fertility of the soil because of which the agricultural yield decreases. These factors have consequences on food and nutrition security of the country.

### Note for the facilitator

Ask following question and facilitate the discussion

- Do you familiar with the agricultural crisis in the country
- Who do you think are the most affected? Why?
- How the agricultural crisis may affect you? Directly or indirectly?
- What can be done to address the issue?

### Impact on health

Climate change is a significant and emerging threat to public health, and changes the way we must look at protecting vulnerable populations. The health status of millions of people is being affected. Disease and injury due to heat waves, cold waves, floods, storms, fires and droughts are increased as the increase in climate induced disasters. Moreover, in hot areas, the diseases become highly prone to break out. Skin, respiratory and other infectious diseases becomes very prone.

## Note for the facilitator

Ask following question and facilitate the discussion

- What health related challenges you observe due to environmental degradation or climatic event?
- What is the cause of environmental degradation?
- What can be done to address the issue?

## Impact on forests and biodiversity

Forest fires, deforestation, extinction of tree species are the dangers to forest and biodiversity. Forest holds high significance ecologically and economically. They act as Carbon Sink as they intake carbon dioxide during photosynthesis thus contributing in reducing climate change impacts to some extent. Forests are the habitat of different varieties of Flora and fauna. The massive deforestation that occurred after 1950s has greatly reduced the biodiversity and local economy of the inhabitants dependent on the forests. This has created loss and even extinction of species.

## Who is Most Vulnerable to Climate Change

Vulnerable groups include people living in poverty, outdoor workers, and people with disabilities, women, children and elderly and people living diseases.

Those living in cities, coastal areas, island and mountain regions

- Those families or individuals who have low income, earning just enough or not enough to fulfill basic needs. These people lives in katcha house and cannot afford health, education and proper sanitation facilities
- Those families or individuals who are less connected with the social structures- they not part of any activities or organization. For example, a person suffering from mental illness.
- Individual or families living in vulnerable areas to natural disasters
- People who are affected to any type of physical weakness

## DID YOU KNOW?

- India lost \$80 billion from natural disasters in 20 years, ranks 4th in the world for economic losses
- Between 1998 and 2017 climate-related and other (earthquakes and tsunamis) disasters killed 1.3 million people and left a further 4.4 billion injured, homeless, displaced or in need of emergency assistance.
- 91% of all disasters were caused by floods, storms, droughts, heat waves and other extreme weather events.
- India is embarking on one of the fastest rural-to-urban transitions in human history, with 200 million more city dwellers expected by 2030, all using new buildings, roads and cars.

Climate change impacts	Impacts on vulnerable groups
<b>Crop failure</b>	Food insecurity at household, increase work load on women, malnourishment in children and women, farmer suicide
<b>Fuel shortage</b>	More time for fuel collection, work load in women , school drop out of girl child
<b>Water scarcity</b>	Contaminated water, more time for water collection, work load in women, school drop out of girl child
<b>Heat waves</b>	Those who spends their days on road like rickshaw puller, street vendors, homeless
<b>Natural disasters</b>	More death of women as compared in men
<b>Disease</b>	Lack of access to health care, women's burden as care givers and impact on animals
<b>Displacement</b>	Forced migration, work load on women- Produce food despite environmental challenges
<b>Conflicts</b>	Loss of life, violence against women and children

## Note for the facilitator

- Ask the participant who do they think are vulnerable individual/groups in their locality and why
- Ask the participant to share their views on who are at most risk in case of heat stroke, floods, water logging, extreme winter, outbreak of diseases and why
- Ask the participants why the cities like Delhi have many migrant populations- from where they come?



Provide conceptual basis on adaptation and mitigation approaches  
Know how these approaches are important for India

Climate change is a global issue, and its effects are already been felt all the countries and the peoples. We are in “emergency situation” hence all of us must take urgent action to address it. If we act today, we can prevent the dangerous effects of climate change which has been projected by the scientist. There are two approaches to address the climate change:

## Mitigation

To reduce the greenhouse gas emissions responsible for climate change. By choosing cleaner ways to power our homes, offices, and cars, and being more efficient and less wasteful, we can produce fewer greenhouse gas emissions.

## Adaptation

Adaptation is to prepare for life in a changing climate or, any adjustments in human activities that makes us less vulnerable to climate change threats.

### Note for the facilitator

- Give students a situation “a city with air pollution, major air pollution sources being the vehicles”,
- Ask them what they would do to deal with the pollution (say vehicular or industrial pollution)
- Also make them to categorize which action is adaptation and which one is mitigation with reasons.
- Precede the discussion
- Hear from the students.





Find out the ideas and information how you can help to combat climate change

Share learning with your family, friends and community

**Why?**

Climate change has impact in each aspect of our life by impacting every sector on which we depends. Its impact is going to last for long. We are already in the tipping point of climate change though we are not in the point of NO RETURN. We can bring the change.

**Who?**

Each individual from their side can contribute in making our environment sustainable and livable for our future generations. Youths and children can make a huge difference in this long run.

**How?**

Each of our choices can make a difference, either going Green or ignoring it. It is a must to do situation because we are in the tipping point

**WHAT CAN WE DO?**



**Carbon footprint is your contribution to the carbon emissions in the atmosphere.**

**There are various activities in your daily lives that add more carbon to the environment.**

**For example, driving your personal vehicle to work. You will alone be releasing a lot of carbon in the air thus polluting it further.**

<p><b>Learn about climate change</b></p>	<ul style="list-style-type: none"> <li>• Learn yourself first and then talk what you have learnt to your friends, family about climate change</li> <li>• Start what you can do, from today</li> </ul>
<p><b>Save energy</b></p>	<ul style="list-style-type: none"> <li>• Turn it off when not in use! Turn off your TV, DVD player and electronic appliances. You can save the energy and money too.</li> <li>• Choose energy efficient bulbs and materials</li> <li>• You can save energy by taking the bus, riding a bicycle, or walking</li> </ul>

<b>Smart cooking</b>	<ul style="list-style-type: none"> <li>• Cook efficiently, reuse hot water, put lids on pots, have dishes simmer rather than boil</li> </ul>
<b>Go Green</b>	<ul style="list-style-type: none"> <li>• Rain water harvesting at your home and school</li> <li>• Start composting</li> <li>• Go solar! Use the sun's rays to heat your water. It's free and it will provide most of your households hot water needs.</li> </ul>
<b>Plant and save trees</b>	<ul style="list-style-type: none"> <li>• Trees absorb carbon dioxide, a Greenhouse gas, from the air. They provide fresh air and shelter to the wildlife.</li> </ul>
<b>Reduce Reuse Recycle</b>	<p><b>You can Reduce</b></p> <ul style="list-style-type: none"> <li>• Carry a big bag while going for shopping and ignore extra Polythene</li> <li>• Avoid unnecessary consumption</li> </ul> <p><b>You can Reuse</b></p> <ul style="list-style-type: none"> <li>• When you recycle, you send less trash to the landfill and you help save natural resources, like trees, oil, and elements such as aluminum.</li> <li>• Buy items that are reusable and reuse them</li> </ul> <p><b>Recycle</b></p> <ul style="list-style-type: none"> <li>• Recycling reduces landfill and saves resources.</li> </ul>
<b>Reduce your carbon footprint</b>	<ul style="list-style-type: none"> <li>• Walk where possible</li> <li>• Pedal your cycle</li> <li>• Use Electric vehicles</li> </ul>
<b>Change your consumption pattern</b>	<ul style="list-style-type: none"> <li>• Use organic food, organic materials because they are biodegradable and are nature friendly</li> <li>• Promote and buy local products</li> <li>• Refill your bottle instead of buying a new one every time</li> <li>• Plastic is difficult to dispose of and ruins our environment. Choose furnishings and household items that will last and can be recycled.</li> </ul>
<b>Raise Your Voice</b>	<ul style="list-style-type: none"> <li>• Against the Environmental degradation</li> <li>• Along with your family, friends and your community</li> <li>• For a better future for us and next generation</li> </ul>

•	Invite ideas from the participants how they can help the planet?
•	Ask them to write slogans to sensitize the people?
•	Ask what they can do (smaller actions they take in their locality)

## Task

### So you've got a great idea

- What is your solution and what makes it unique?
- How does your solution reduce greenhouse gas emissions?
- How will the solution improve your community?
- How will your solution engage young people?
- How does your solution address equity disparities?
- How will your solution be implemented and approximately how much does it cost to do so?
- Can your solution expand, be replicated, or serve as a model for others to follow? If so, how?
- What evidence or research supports your climate solution?

## Show your message creatively

You can choose any of the following option

**Art:** Create a piece of art either by hand or digitally to reflect or symbolize your climate solution. Handmade art examples include drawing, painting, and sculpture. Digital art examples include photography, graphic design, data visualization, and blueprints.

**Music and Spoken Word:** Record yourself singing a description of your proposal or a song related to your solution. (Max 2 mins).

**Creative Writing Project:** Produce a piece of poetry or a personal narrative reflecting the purpose and details of your proposal. (Max 500 words).

**Video:** Record a short campaign video, commercial, or other video format describing your proposal. The video needs to be uploaded to Youtube. (2 min max).

**Opinion Piece:** Write and publish a short opinion news piece connecting the solution to your own story and a current event.





Provide information on the Global Climate Change Efforts

Know about the climate change initiatives at National and local level

Climate change is a global issue that has its impact on everyone and everywhere. We all are citizen of the globe. It becomes our responsibility to act for the Climate Solutions. Feeling the necessity and urgency, initiatives have already started at Global, National and local level.

## India and Climate change

India, accounts for 4.1 percent of global emissions and is the third largest carbon-emitting country in the world. India play important role in climate negotiations. In 2015 Paris Climate Change Agreement has come with the aim of limiting increase of global temperature to a 2 degree Celsius. The agreement is signed by 196 counties across the world including India. Being a signatory India has committed for:

1. To promote healthy and sustainable way of living based on traditions and value of conservation
2. To adopt a climate friendly and cleaner solutions
3. To reduce its carbon emission intensity of its GDP by 33 – 35% by 2030 from 2005 level
4. To ensure that at least 40 per cent of its energy in 2030 would be generated from non-fossil fuel sources, like solar, wind or bio-fuels.
5. Rapidly increase its forest cover so that an additional carbon sink equivalent to 2.5 to 3 billion tonnes of carbon dioxide is created by the year 2030.
6. Enhancing investment to better adapt with climate change in different sector such as agriculture, water, health, disaster management, conservation of Himalayan region and coastal regions.
7. Mobilise fund for adaptation and mitigation
8. Build capacity of all the stakeholders to achieve the above

## Global Initiatives

United Nations has already started the initiatives at the global level. Following are the 20 years of Effort and Achievement- Key Milestones in the Evolution of International Climate Policy

**November 1988:**  
IPCC Established

World Meteorological Organization (WMO) and UN Environment Programme - UNEP establish the Intergovernmental Panel on Climate Change IPCC. IPCC provide an insight of global climate change and ways to manage the risk of extreme events and disasters.

<p><b>November 1990:</b> IPCC and Second World Climate Conference Call for Global Treaty</p>	<p>The IPCC releases the first assessment report saying 'emissions resulting from human activities are substantially increasing the atmospheric concentrations of greenhouse gases' leading to calls by the IPCC and the second World Climate Conference for a global treaty.</p>
<p><b>December 1990:</b> UN General Assembly Negotiations on a Framework Convention Begin</p>	<p>The UN General Assembly establishes the Intergovernmental Negotiating Committee (INC) for a Framework Convention on Climate Change. The INC held five sessions where more than 150 states discussed binding commitments, targets and timetables for emissions reductions, financial mechanisms, technology transfer, and 'common but differentiated' responsibilities of developed and developing countries.</p>
<p><b>May 1992:</b> Convention Adopted</p>	<p>The text of the United Nations Framework Convention on Climate Change is adopted at the United Nations Headquarters in New York.</p>
<p><b>June 1992:</b> UNFCCC Opens for Signature at Rio Earth Summit</p>	<p>The United Nations Framework Convention on Climate Change opens for signature at the Earth Summit in Rio, bringing the world together to curb greenhouse gas emissions and adapt to climate change. The UNFCCC has two sister Conventions also agreed in Rio, the UN Convention on Biological Diversity and the Convention to Combat Desertification.</p>
<p><b>March 21, 1994:</b> UNFCCC Enters into Force</p>	<p>The United Nations Framework Convention on Climate Change, spawned two years earlier in Rio, enters into force. Countries that sign the treaty are known as 'Parties'. With 196 Parties, the UNFCCC has near-universal membership. Parties meet annually at the Conference of the Parties (COP) to negotiate multilateral responses to climate change.</p>
<p><b>April 1995:</b> Berlin</p>	<p>Germany's then environment minister, Angela Merkel, presides over the first Conference of the Parties (COP 1) in Berlin, where Parties agreed that commitments in the Convention were 'inadequate' for meeting Convention objectives. The Berlin Mandate establishes a process to negotiate strengthened commitments for developed countries, thus laying the groundwork for the Kyoto Protocol.</p>
<p><b>August 1996:</b> UNFCCC Secretariat Moves to Bonn</p>	<p>The UNFCCC secretariat relocates from Geneva to its current home in Bonn, paving the way for the city to become an international sustainability hub and home to 18 UN organizations employing around 1,000 staff, of which the UNFCCC is the largest.</p>
<p><b>December 11, 1997:</b> Kyoto Protocol Adopted</p>	<p>The third Conference of the Parties achieves an historical milestone with adoption of the Kyoto Protocol, the world's first greenhouse gas emissions reduction treaty.</p>
<p><b>July 2001:</b> Bonn</p>	<p>A major breakthrough is achieved at the second part of the sixth Conference of the Parties meeting in Bonn, with governments reaching a broad political agreement on the operational rulebook for the 1997 Kyoto Protocol.</p>

<p><b>November 2001:</b> Marrakesh</p>	<p>The seventh Conference of the Parties results in the Marrakesh Accords, setting the stage for ratification of the Kyoto Protocol. This would formalize agreement on operational rules for International Emissions Trading, the Clean Development Mechanism and Joint Implementation along with a compliance regime and accounting procedures.</p>
<p><b>January 2005:</b> EU Emissions Trading Launches</p>	<p>The European Union Emissions Trading Scheme, the first and largest emissions trading scheme in the world, launches as a major pillar of EU climate policy. Installations regulated by the scheme are collectively responsible for close to half of the EU's emissions of CO<sub>2</sub>.</p>
<p><b>February 16, 2005:</b> Kyoto Protocol Enters into Force</p>	<p>History is made when the Russian Federation submitted its instrument of ratification to the Kyoto Protocol, sealing its entry into force.</p>
<p><b>December 2005:</b> Montreal</p>	<p>Following the entry into force of the Kyoto Protocol earlier in the year, the eleventh Conference of the Parties (COP 11) for the first time is held in conjunction with the first Conference of the Parties serving as the Meeting of the Parties (CMP 1).</p>
<p><b>January 2006:</b> Clean Development Mechanism Opens</p>	<p>The Clean Development Mechanism, a key mechanism under the Kyoto Protocol, opens for business.</p>
<p><b>November 2006:</b> Nairobi</p>	<p>At the twelfth Conference of the Parties held in Kenya, the Subsidiary Body for Scientific and Technological Advice SBSTA is mandated to undertake a programme to address impacts, vulnerability and adaptation to climate change – the Nairobi Work Programme NWP activities are ongoing.</p>
<p><b>December 2007:</b> Bali</p>	<p>The thirteenth Conference of the Parties adopts the Bali Road Map, including the Bali Action Plan, charting the course for a new negotiating process to address climate change. The Plan has five main categories: shared vision, mitigation, adaptation, technology and financing.</p>
<p><b>January 2008:</b> Joint Implementation Mechanism Starts</p>	<p>The Kyoto Protocol mechanism 'Joint Implementation' starts. This allows a country with an emission reduction or limitation commitment under the Protocol to earn emission reduction units (ERUs) from an emission-reduction or emission removal project in another country with similar commitments.</p>
<p><b>December 2008:</b> Poznan</p>	<p>The fourteenth Conference of the Parties in Poznan, Poland, delivers important steps towards assisting developing countries, including the launch of the Adaptation Fund under the Kyoto Protocol and the Poznan Strategic Programme on Technology Transfer.</p>

<b>December 2009:</b> Copenhagen	World leaders gather for the fifteenth Conference of the Parties in Copenhagen, Denmark, which produced the Copenhagen Accord. Developed countries pledge up to USD 30 billion in fast-start finance for the period 2010-2012.
<b>December 2010:</b> Cancun	The sixteenth Conference of the Parties results in the Cancun Agreements, a comprehensive package by governments to assist developing nations in dealing with climate change. The Green Climate Fund, the Technology Mechanism and the Cancun Adaptation Framework are established.
<b>December 2011:</b> Durban	At the seventeenth Conference of the Parties, governments commit to a new universal climate change agreement by 2015 for the period beyond 2020, leading to the launch of the Ad Hoc Working Group on the Durban Platform for Enhanced Action or ADP.
<b>December 6, 2011:</b> Momentum for Change Launched at COP 17 in Durban, South Africa	Momentum for Change, a special initiative of the UNFCCC, shines a light on innovative and transformative climate action taking place around the world.
<b>December 2012:</b> Doha	At the eighteenth Conference of the Parties, governments agree to speedily work toward a universal climate change agreement by 2015 and to find ways to scale up efforts before 2020 beyond existing pledges to curb emissions. They also adopt the Doha Amendment, launching a second commitment period of the Kyoto Protocol.
<b>September 2013:</b> New Home for UNFCCC Secretariat	The UNFCCC secretariat moves to its new headquarters on the UN Campus in Bonn, next to the former German Parliament building. Following major improvements, the building is now a beacon of environmental performance deploying features like solar power and smart lighting.
<b>September 27, 2013:</b> IPCC Releases 2 <sup>nd</sup> Part of Fifth Assessment Report	The UN Intergovernmental Panel on Climate Change (IPCC) releases the Working Group 1 contribution to its Fifth Assessment Report (AR5), on the science of climate change.
<b>November 2013:</b> Warsaw	The nineteenth Conference of the Parties produces the Warsaw Outcomes, including a rulebook for reducing emissions from deforestation and forest degradation and a mechanism to address loss and damage caused by long-term climate change impacts.
<b>March 2014:</b> 20 <sup>th</sup> Anniversary UNFCCC	The United Nations Framework Convention on Climate Change (UNFCCC) celebrates its 20 <sup>th</sup> anniversary.
<b>November 2015:</b> Paris Agreement opened for signature	Commit a 2 degree C limit on global temperature increase
<b>November 2016:</b> Paris Agreement came into force	Commit a 2 degree C limit on global temperature increase

# Glossary

**Adaptation:** Adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploit beneficial opportunities

**Anthropogenic:** Human induced

**Atmosphere:** It is the gaseous envelope surrounding the Earth. The dry atmosphere consists almost entirely of nitrogen and oxygen, together with trace gases including carbon dioxide and ozone.

**Biodiversity:** The total diversity of all organisms and ecosystems at various spatial scales (from genes to entire biomes)

**Consequences:** It is the concept of a resulting effect

**COP:** Conference of Parties, all the countries who have signed the UNFCCC meet every year in a Conference called COP

**Disaster:** A disaster is the tragedy of a natural or human-made hazard (a hazard is a situation which poses a level of threat to life, health, property, or environment) that negatively affects society or environment. Disasters are seen as the consequence of inappropriately managed risk. These risks are the product of hazards and vulnerability.

**Drought:** The phenomenon that exists when precipitation is significantly below normal recorded levels, causing serious hydrological imbalances that often adversely affect land resources and production systems.

**Ecosystem:** The interactive system formed from all living organisms and their abiotic (physical and chemical) environment within a given area. Ecosystems cover a hierarchy of spatial scales and can comprise the entire globe, biomes at the continental scale or small, well-circumscribed systems such as a small pond.

**Emission:** Flue gas occurring as a result of the combustion of a fuel, an act or instance of emitting

**Erosion:** The process of removal and transport of soil and rock by weathering, mass wasting, and the action of streams, glaciers, waves, winds and underground water.

**Food security:** A situation that exists when people have secure access to sufficient amounts of safe and nutritious food for normal growth, development and an active and healthy life. Food insecurity may be caused by the unavailability of food, insufficient purchasing power, inappropriate distribution, or inadequate use of food at the household level.

**Glacier:** A mass of land ice flowing downhill (by internal deformation and sliding at the base) and constrained by the surrounding topography (e.g., the sides of a valley or surrounding peaks). A glacier is maintained by accumulation of snow at high altitudes, balanced by melting at low altitudes or discharge into the sea.

**Glacial Lake:** A glacial lake is a lake with origins in a melted glacier.

**Habitat:** The locality or natural home in which a particular plant, animal, or group of closely associated organisms lives.

**Heat Wave:** A heat wave is prolonged period of excessively hot weather, which may be accompanied by high humidity.

**Impact:** A high force or shock (mechanics) over a short time period

**Industrialization:** The process of establishing and developing more industries

**Infrastructure:** The basic equipment, utilities, productive enterprises, installations and services essential for the development, operation and growth of an organization, city or nation

**IPCC:** Intergovernmental Panel on Climate Change, A panel consisting of thousands of scientists around the world

**Landslide:** A mass of material that has slipped downhill by gravity, often assisted by water when the material is saturated; the rapid movement of a mass of soil, rock or debris down a slope

**Mitigation:** An anthropogenic intervention to reduce the anthropogenic forcing of the climate system; it includes strategies to reduce greenhouse gas sources and emissions and enhancing greenhouse gas sinks.

**Negotiations:** Negotiation is a dialogue intended to resolve disputes, to produce an agreement upon courses of action, to bargain for individual or collective advantage, or to craft outcomes to satisfy various interests. It is the primary method of alternative dispute resolution.

**Ppm:** Parts per million, one part in a million

**Precipitation:** Various forms of water falling from the sky such as rain, drizzle, sleet, hail, snow and other

**Polar Region:** Earth's Polar Regions are the areas of the globe surrounding the poles also known as frigid zones. The North Pole and South Pole being the centers, these regions are dominated by the polar ice caps, resting respectively on the Arctic Ocean and the continent of Antarctica. Polar sea ice is currently diminishing, possibly as a result of anthropogenic global warming.

**Renewable Energy:** Renewable energy is energy generated from natural resources such as sunlight, wind, rain, tides, and geothermal heat, which are renewable (naturally replenished)

**UNFCCC:** The United Nations Framework Convention on Climate Change (UNFCCC) is an international environmental treaty produced at the Earth Summit, held in Rio de Janeiro in 1992. The objective of the treaty is to stabilize greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system.





**Indo-Global  
Social Service Society**