

CLIMATE CHANGE MATRIX TOOL & CLIMATE ACTION PLAN

A module to identify & address climate change effects
in urban poor community



**Indo-Global
Social Service Society**
Celebrating the Spirit of Humanity

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WHAT IS ENVIRONMENT?

The surroundings or conditions in which a person, animal, or plant lives or operates.

Parts of Environment

1. Biotic Components - living things in the environment.

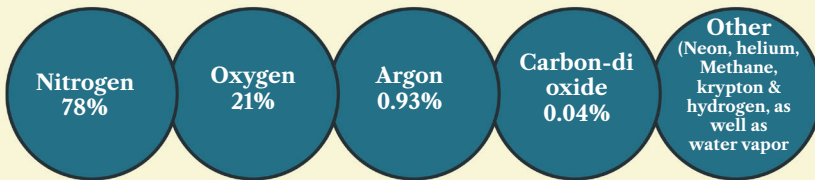


2. Abiotic Components - non living things in the environment



WHAT IS ATMOSPHERE?

The envelope of gases surrounding the earth or another planet.

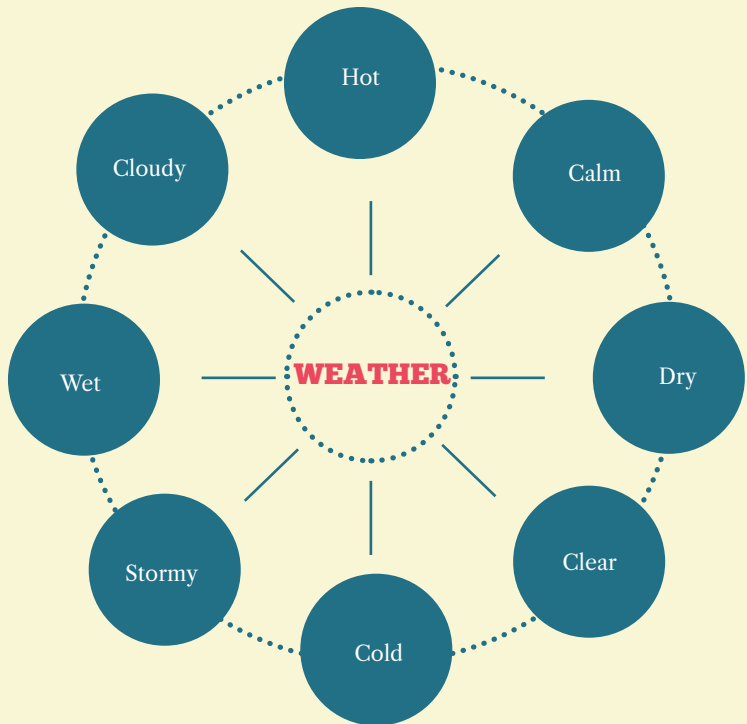


Earth Surrounded by Gases



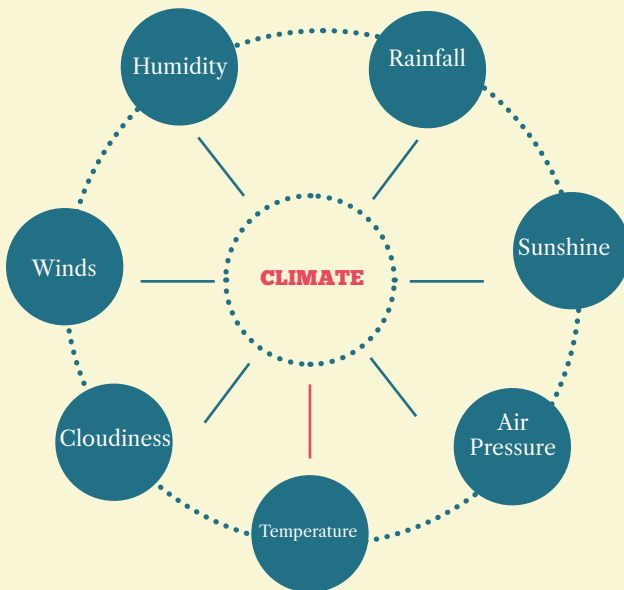
WHAT IS WEATHER?

The state of the atmosphere at a particular place and time is called weather. Weather is measured over very short time periods such as days, weeks or months. The daily atmospheric conditions are also known as weather. Conditions like the brightness of the sun, visibility, humidity, cloudiness etc measure the weather.



WHAT IS CLIMATE?

Climate is the average weather in a given area over a longer period of time. The average climate conditions of an area over decades is called its climate. The factors that are measured here are the average temperatures, solar radiation, amount and frequency of rainfall, wind, atmospheric pressure etc, these are factors that are measured over a minimum of 30 years.



WHAT IS CLIMATE CHANGE?

Climate change refers to the major changes in the usual climate of earth like in the wind, temperature, and precipitation that are caused by human activities. For example, concretization, deforestation, emissions from factories, cars, fossil fuels etc.

WHAT IS GREENHOUSE EFFECT ?

Gases that trap heat in the atmosphere are called greenhouse gases. For example carbon di oxide, methane, nitrous oxide, fluorinated gases. The greenhouse effect is a natural process that warms the Earth's surface. When the Sun's energy reaches the Earth's atmosphere, some of it is reflected back to space and the rest is absorbed and re-radiated by greenhouse gases. The absorbed energy warms the atmosphere and the surface of the Earth. This process maintains the Earth's temperature at around 33 degrees Celsius warmer than it would otherwise be, allowing life on Earth to exist. The problem we now face is that human activities, particularly burning fossil fuels, emissions from factories, transportation etc are increasing the concentrations of greenhouse gases. This is the enhanced greenhouse effect, which is contributing to warming of the Earth.

ADVERSE EFFECTS OF CLIMATE CHANGE

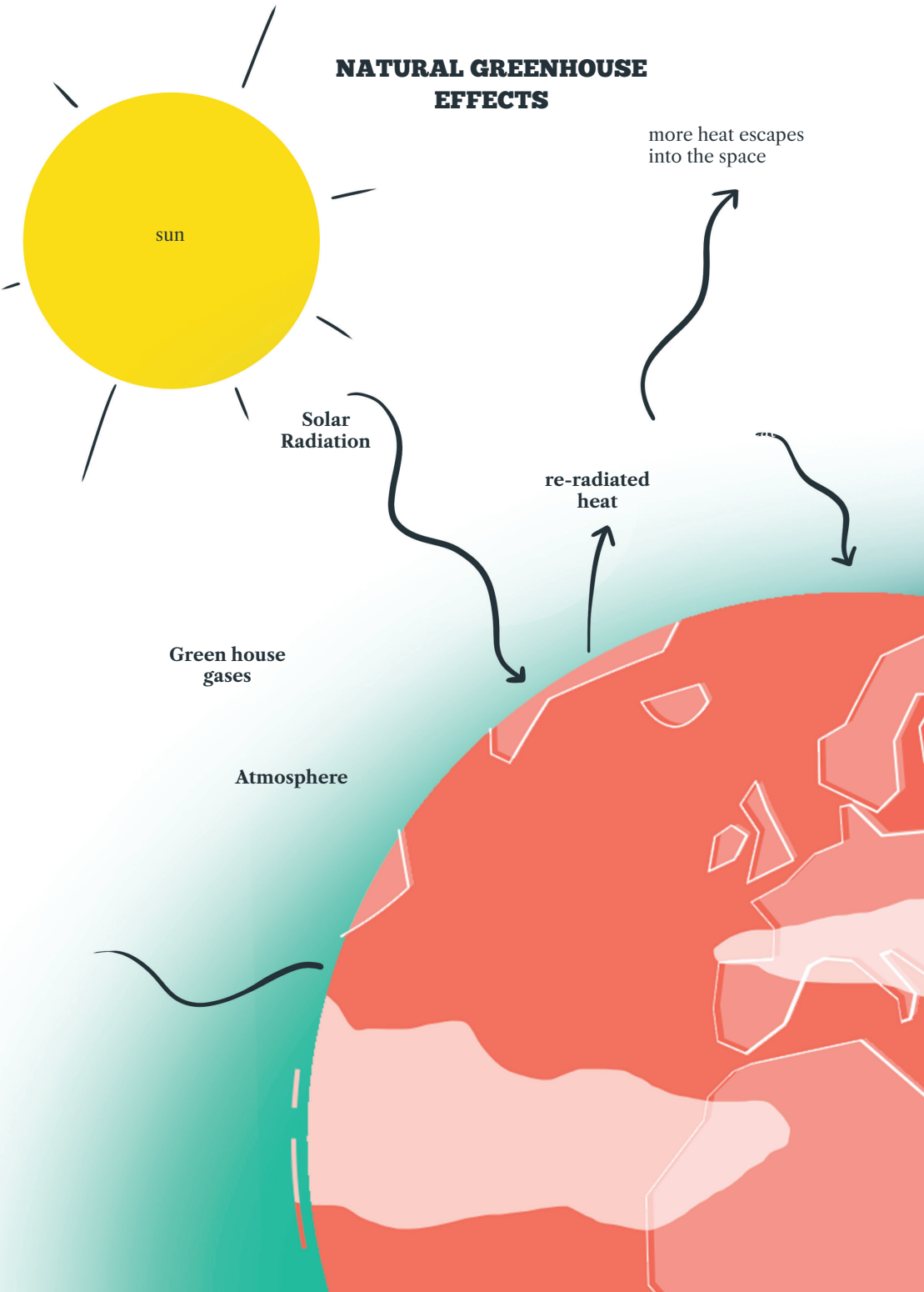
Some of the adverse effects of climate change is very common in urban poor community.

- Depletion of ground water tables and water scarcity
- Deterioration of water quality
- Scattered & irregular rainfall
- Emergence of unknown infectious diseases
- Extreme heat wave
- Cyclones and thunderstorms

WHAT WE LEARNED?

- What is environment and its components
- What is atmosphere and how it is composed of
- Difference between weather & climate
- What is climate change and its adverse effects
- What is green houses gases and how they are responsible for global warming

NATURAL GREENHOUSE EFFECTS



sun

Solar
Radiation

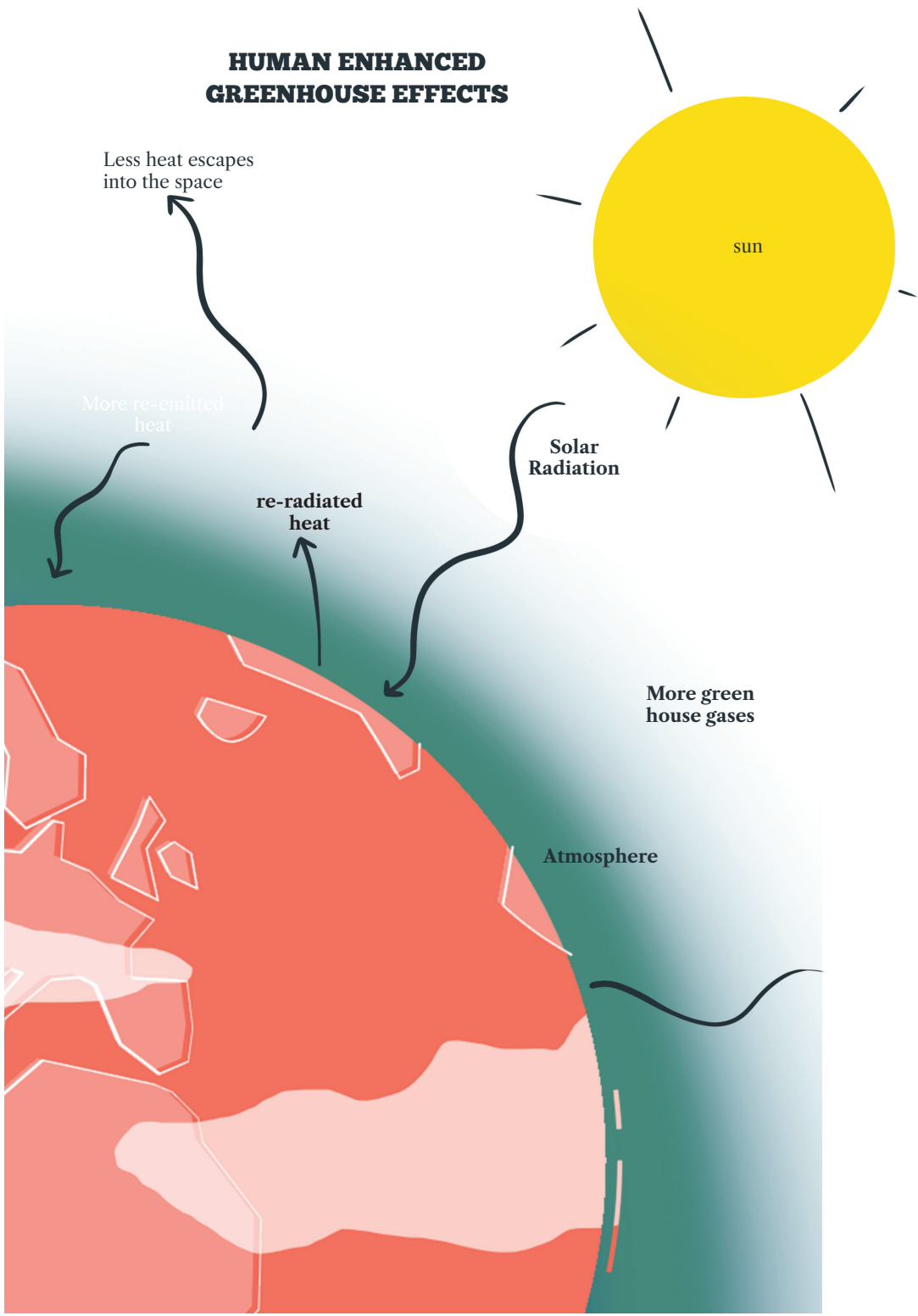
Green house
gases

Atmosphere

re-radiated
heat

more heat escapes
into the space

HUMAN ENHANCED GREENHOUSE EFFECTS



HOW TO DRAW A CLIMATE CHANGE MATRIX ?

- A focus group discussion with ten to twelve person from the same habitat will be organised in the community under the leadership with youth members in a transit point of the habitat. Out of the participants three to four persons must be elderly and have traditional knowledge on the habitat.
- The youth members will initiate the discussion on climate, environment & surroundings and mobilise elderly persons to share their experiences / testimonies due to the change in climate factors in the past decades.
- Apart from the elderly, the women and other weaker sections must be in priority in the discussion
- The youth members start to draw the matrix on the chart paper with marker. The extreme climate factors will be identified & listed down in the first left column. The participants will be asked to assess the reason for extreme climate factors and note it down in the far right column. From the 2nd left column the bar graphs will show the positive or negative effects on the climate factors in the last 50 years, each column will have 10 year intervals
- Drawing of climate change matrix in an unbiased way is the top priority to the youth group members

WHAT IS THE PURPOSE OF CLIMATE CHANGE MATRIX ?

The purpose of the climate matrix tool is as follows

- Developing understanding on climate change
- Identifying climate change effects
- Enhancing climate sensitivity in the urban poor community
- Mobilising the community to address climate change
- Bonding, peace and harmony in the urban poor community through this participatory matrix.

CLIMATE CHANGE MATRIX TOOL WITH BASTI

पर्यावरण	2020	2010	2000	1990	1980	कारण
गर्मी						• वनों की कटाई
बारिश						
ठंडा						• वाहन प्रदूषण
पशु-पक्षी						• मानव उद्योग
रोग						• उचित अपशिष्ट
जलभराव						प्रबंधन नहीं
कोहरे						• स्थिर पानी
कीड़े मकोड़े						
लू						

* This matrix was undertaken by the youth group members with the urban poor community in Raipur

EXERCISE:

The matrix below is an example which we can use with youth group members, elderlies & other weaker section to identify the climate change effects in the urban poor community.

Identified Climate Change Effects	Observation (Decades)					Reasons
	2020	2010	2000	1990	1980	
Summer Temperature						<ul style="list-style-type: none"> • Deforestation • Vehicle Pollution • Human Industries • No proper waste management • Stagnant water
Rainfall						
Winter Temperature						
Animal and birds						
Diseases						
Ground Water Table						
Acid Rain						
Hailstorm						
Scattered Rainfall						
Insects						
Loo						
Fog						

* This tool can be customised as per the requirements and circumstances of the urban poor community

GUIDELINES TO USE CLIMATE CHANGE MATRIX TOOL

- Active participation of the community.
- Priority to the elderly persons for sharing their indigenous/traditional experiences and other niche / vulnerable persons in the community.
- Avoid incidences of personal biases, allow everyone in the community for sharing their views.
- Cross checking of the primary data, collected from the community with the data from secondary sources, eg, meteorological dept, local municipal Ward office, disaster management dept etc.
- The role of the person(s) selected to draw the matrix is significant in that s/he will follow the common consensus and drawn up the matrix as reported, directed and prioritized by the community

WHAT WE LEARNED?

- How to draw the climate matrix tool.
- How to identify adverse climate change effects to the urban poor community.



EXERCISE:

CASE STUDY ASSESSMENT

Bismilla Nagar, a fifty year old, registered basti in a metro city, habitat of 132 families, has been declared as the first CORONA free zone in the city and awarded by city administration in December 2020 due to the outstanding initiatives undertaken by basti development committee to control the massive infection of COVID 19. Due to the sudden continuous pre winter rainfall that lasted for 3-4 days, the low-lying basti suffered from water-logging this year. Inadequate & defunct drainage systems and huge concretisation of basti land resulted in very late drainage of rain water, this led to the severe infections of several water borne diseases in the families. In May 2020, the tremendous water scarcity became highlighted in the local newspapers but no preparedness or mitigation measures were undertaken by the basti development committee. Emissions from the neighbouring factories led to a sharp increase in temperature of the basti, heat wave in summer was very common in every year. This year is an exceptional due to the lock down. After a long time the dews become visible when winter starts, the annual rainfall was reported more than the average. In general, the casualty of basti dwellers was very high for crossing the railway track adjacent to the basti due to the dense fog in winter. Despite of the UNLOCK PHASE the fog was not visible and no death case reported yet.

ANSWERS THE QUESTIONS

1. Identify the climate change impacts mentioned in the case study ?
2. Highlight the sentences which reveal a difference in weather & climate from the case study ?
3. Identify the cases which brings climate risks ?
4. Highlight the cases which is climate friendly ?

CLIMATE ACTION BASTI PLAN:

Plan of action by Community	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Focus Group Discussion with different groups to develop an understanding on climate emergency and identify climate risks in the urban settlements												
Awareness campaigns to promote afforestation and caring for seedlings												
Local Campaign for promoting judicious use of water												
Sensitisation events to educate people about waste management services												
Promotion of bird nests, kitchen gardens in bastis to restore biodiversity												
Awareness Campaign to control the usage of single use plastics												

EXERCISE:

Develop a climate action plan for your own settlement to mitigate the adverse effects of climate change.

ABOUT IGSSS

Indo-Global Social Service Society is a non-profit organisation working with the mandate for humane social order used on truth, justice, freedom and equity.

Established in 1960, IGSSS works for development, capacity building and enlightenment of vulnerable communities across the country for the effective participation in development.

With its presence in 25 states and one Union Territory of India, IGSSS has set its thematic focus on promoting sustainable livelihoods, energising the youth as change makers, protecting lives, livelihood and assets from the impact of hazards, advocating for the rights of CityMakers (Urban Poor Residents) and developing a cadre of leaders from the community and civil society organisations. Gender and Youth are underlying themes across all its interventions.



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