



WHAT IS
CLIMATE CHANGE?



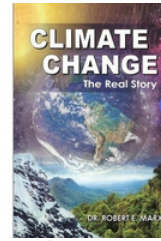
Join Us

Climate change



genesis

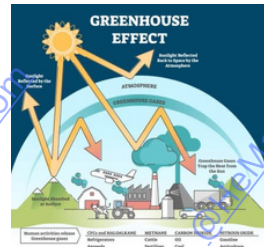
Greenhouse Gases



Reasons.

largest contributors

GHG
 $\leftarrow$ $\begin{matrix} \text{CO}_2 \\ \text{Methane} \\ \text{CFCs} \\ \text{Ozone} \\ \text{Nitrous oxide} \end{matrix}$

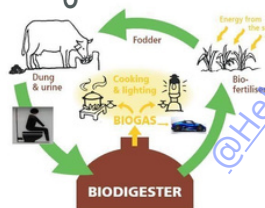


Natural 0.1°C (Total)

Anthropogenic

→ Volcanic Eruption $\rightarrow \begin{matrix} \text{CO}_2 \\ \text{SO}_2 \end{matrix}$
 $\downarrow$
 cloud reflection

→ Bacterial Decomposition of organic matter
 Eg: Wetland $\rightarrow$ largest Methane
 Bio-gas



→ Breaking of Atmospheric Nitrogen $\rightarrow \text{N}_2\text{O}$
 Eg: Rhizobium Bacteria

← Black Carbon $\leftarrow \begin{matrix} \text{Forest fire} \\ \text{Human activities} \end{matrix}$

→ Burning of fossil fuel $\left(\begin{matrix} \text{Coal} \\ \text{Gas} \\ \text{Petrol} \end{matrix} \right)$
 "In India, 59% electricity produced by Thermal Power Plant"

→ Urbanization $\rightarrow \begin{matrix} \text{Power} \\ \text{Transportation} \\ \text{Waste treatment Plants} \end{matrix}$

→ Deforestation $\rightarrow$ release CO_2
 $\downarrow$ Sequestration

→ Industrial Emission $\rightarrow \begin{matrix} \text{Al} - \text{PFCs} \\ \text{Hg} - \text{SF}_6 \end{matrix}$
 → Etes $\rightarrow \begin{matrix} \text{livestock} \\ \text{fertilizer} \end{matrix}$

Industrial Revolution

Mid 18th century

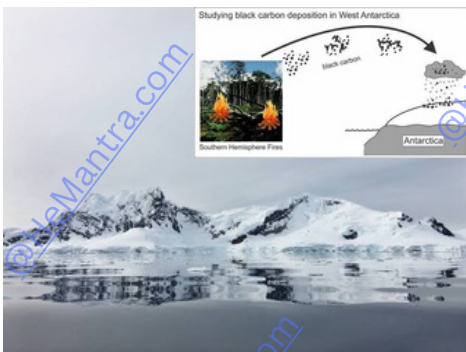
Colonisation

Textile industry (1st modern production)

Dr. Charles David Keeling (1958)



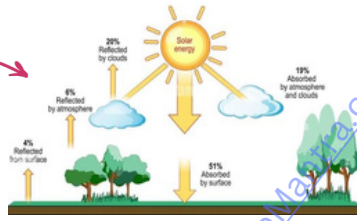
CO_2 level are rising & attribute this rise to the use of fossil fuel.



Strongest absorber of sunlight.



Solar radiation



Solar radiation ↑

1. Plant growth ↓
Kill farmers friends
reduce crop yield

2. Erratic monsoon
Mo Agri → 51% rainfed

→ Drought

Eg: WHO: In 2020, 770 Million people faced hunger, predominantly in Africa and Asia

Eg: PIB, Mo Agri: In the absence of measures, rainfed rice yields in India reduced to 20% by 2050



Danger?? to Marine World.

1. around 8 Billion people
2. Blue economy 3-5% of Global GDP.
3. India → 8% of Global fish production.

Eg: UNICEF By 2040, almost 1 out of 4 children will live in area of extreme high water stress.

Eg: 100 million people ↓ Poverty

change in hydrological cycle

Alter Rainfall

Drought + Flood

Water Scarcity

Glaciers (3rd poles)

India Agriculture largest consumer water → 70% → 1/2 popⁿ
Household → 80% Industries

Eg: UNICEF Everyday over 1000 children under 5 die from diseases linked to inadequate water, sanitation, and hygiene.

Rise in temp → Glacier melting

rise in sea level

Submergence of Land

Infiltration in Ground water (coastal region)

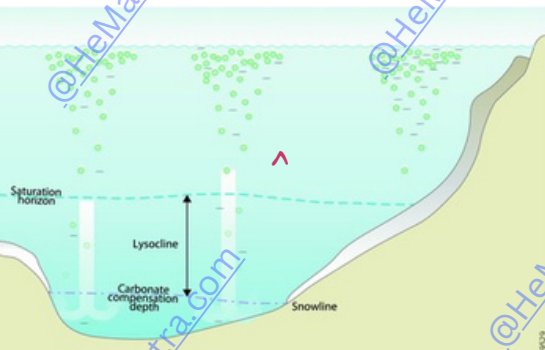
Coastal infra

Climate Refugees

Eg: The Hindu 2011-2020 was the warmest decade with Global temp 1.1°C ↑ pre-industrial levels.

Interⁿ Displacement Monitoring Centre

An annual avg of 21.5 million people were forcibly displaced each year b/w 2008 and 2016



Plankton ← Ocean acidification

Corals ← Saturation horizon

IPCC 6th Ass. Report

By 2100 Ocean will be 150% more acidic.



United Nations
Framework Convention on
Climate Change

Came out from Rio Earth Summit
1992



Conference of Party

Paris Agreement

Targets → Below 2°C to pre-indus
and try to 1.5°C

→ Tech & finance to devel^d
countries

Nationally Determined Con-
tribution (NDC)

International solar Alliance

India NDC (by 2030)

→ Carbon Sink → 2.5 to 3 Billion Tonne

→ Emission intensity → 45% by 2030
from 2005 level

→ 50% Electricity (NON-fossil fuel)

→ Net Zero by 2070

1. Green India mission & N^o Afforestation Program
2. FAME → Electric vehicle, National Green Hydro Mission.
3. Renewable Energy → PM Surya ghar Yojna.
National Solar Mission.

Remedies



National Action plan on
climate change.

1. National Mission for Sustainable
Agriculture (NMSA)

for sustaining domestic food
challenge.

2. ICAR → project

National Innovations in climate
Resilient Agri (NICRA)

to make agri climate resilient.
Eg: Pooja 1801 (millet) Ginnar's 6' (ground nut).

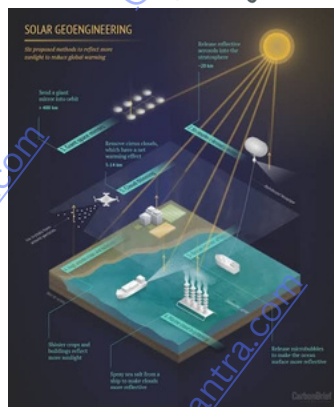
3. National Water Mission

National water policy

increase water use
efficiency by 20%.

- water recycling (u)

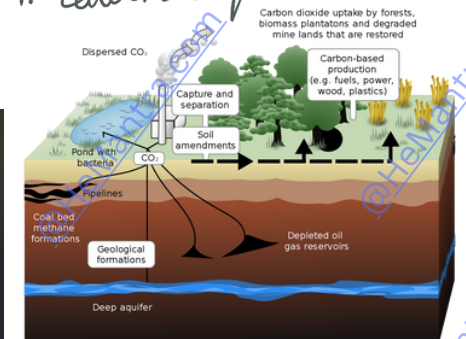
"one drop
more crop"



Life style for Environment.
COP → 26 Glasgow, Switzerland.



1. Carbon Sequestration



2. Geo-Engineering

3. Etc.

- Thank you -

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