

Green House Effect

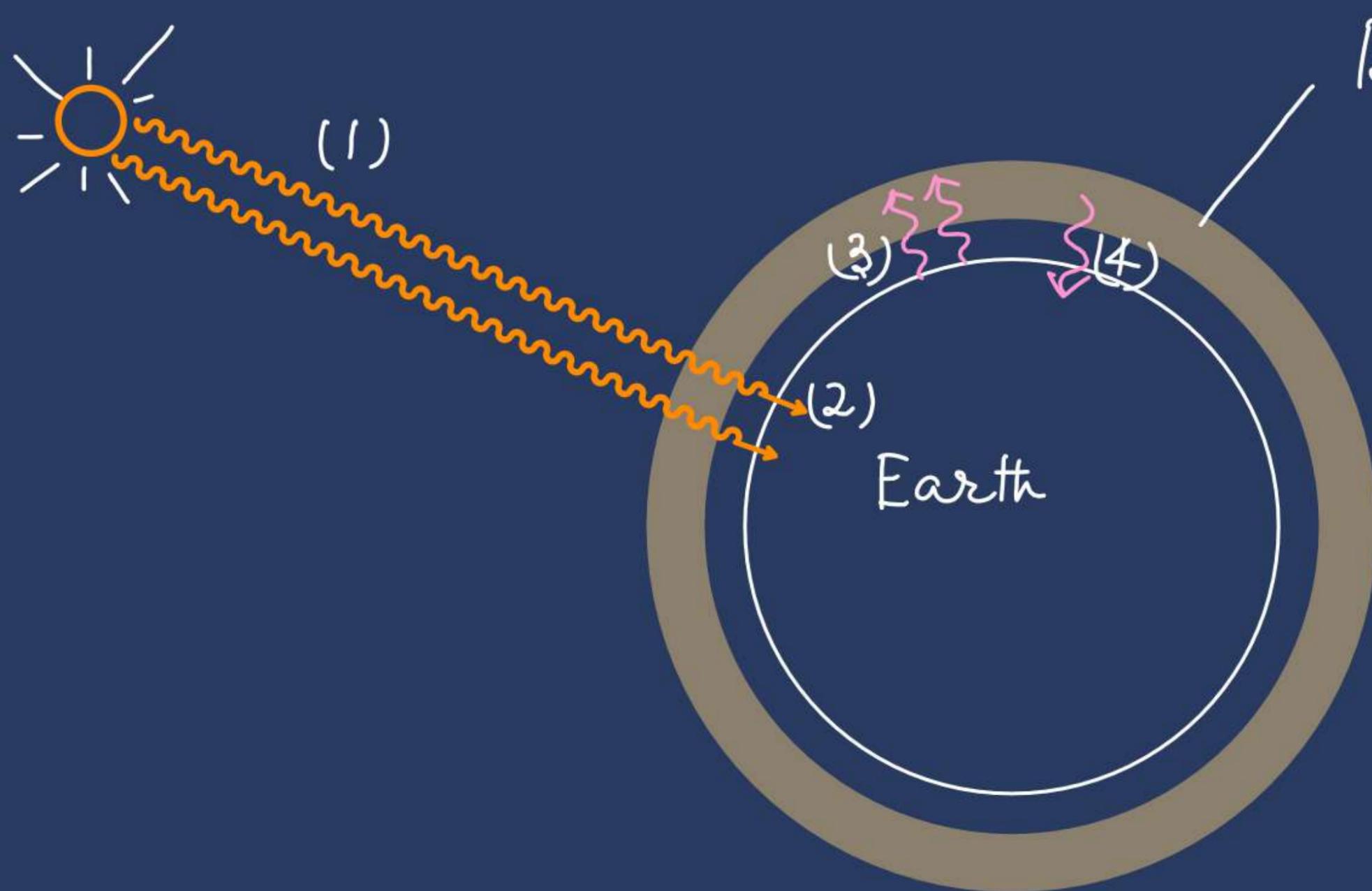
Global warming

Climate Change

Core Terminology

Greenhouse effect GHE

- Heat entrapment effect
- Works near the earth's surface
(in Troposphere)
- Heat released out from the warm earth does not fully escape the troposphere
∴ Rise in temperature



Blanket of GreenHouse Gases

- H₂O
- CO₂
- CH₄
- N₂O
- SF₆
- PFC
- HFC

- (1) Earth receives shorter wavelength light from Sun.
- (2) Warming of the earth
- (3) Release of IR radiation from warm earth
- (4) Radiative Forcing*

Radiative forcing

A certain of IR released by warm earth is re-radiated towards the earth by the green house gases in the troposphere.

IR
↓
Heating Effect
∴
Radiative forcing
Causes
warming

Why we call it GHE

Green houses : **Transparent** enclosures

to provide warm temp
for plant growth in
colder parts of the world.

Colder



2 types of GHE

✓ Natural

Due to

- CO₂
- CH₄
- N₂O
- H₂O vapour

present because
of natural processes

Accelerated

(Anthropogenic)

↓
CO₂, CH₄, N₂O & F-gases

accumulating
in the atmosphere
due to human activities

} Causing
rapid
Global Warming

HFC | PFC | SF₆

Global Warming

Rise in the mean temp. of



observed in:

- Long term manner
- a steady manner

Climate

Long term average of weather
variables of a place

WMO
30 yrs' average

3 weather variables

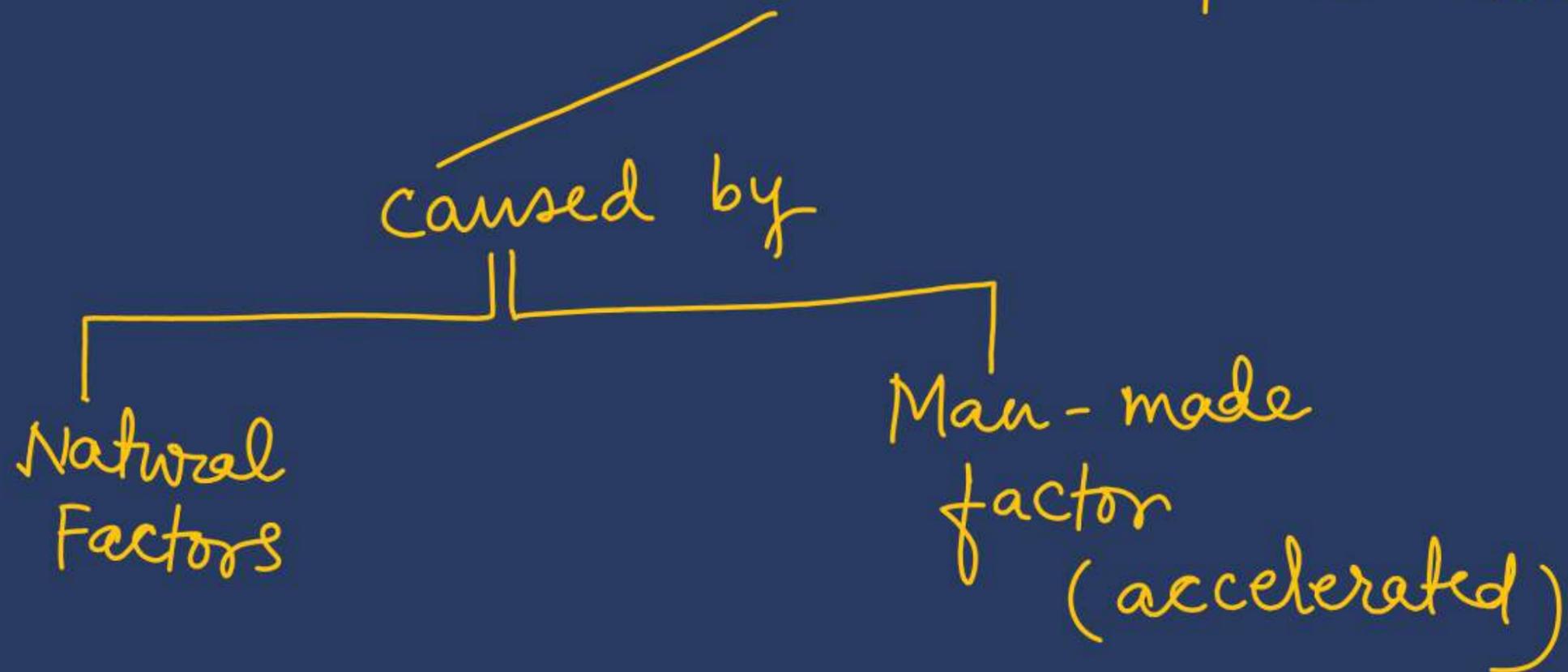
Temperature

Wind

Precipitation

Climate Change

A longterm & steady shift
in the climate of a location



Conclusion

Accelerated
deposition of

certain gases in
atmosphere

→ Green House
Effect

→ Global
Warming

→ Climate Change



Green House Gases

The gases in the troposphere which absorb IR rays released by warm earth & then re-radiate IR back towards earth (Radiative Forcing)

