

9 Thawing of permafrost in Arctic and Antarctic regions pose serious threats to the world
Examine (200 words).

Permafrost :- Permafrost is ground that remains completely frozen at 0 degrees Celsius or below for at least two years. It is defined solely based on temperature and duration.

- The permanently frozen ground, consisting of soil, sand and rock held together by ice, is believed to have formed during glacial periods.

- These grounds are known to be below 22% of the land surface on Earth, mostly in Polar zones and regions with high mountains.

- They are spread 55% of the landmass in Russia & Canada, 85% in the US state of Alaska. permafrost is found at high altitude locations like Alps and Tibetan Plateau.

Effect of Climate Change :-

- The earth's polar and high altitude regions its principal permafrost reservoirs - are the most threatened by climate change.

- Acc to USA's National oceanic and Atmospheric Administration, Arctic regions are warming twice as fast compared to rest of the planet. Its current rate of change in temperature is highest in 2000 years
- A study has shown that every 1 degree Celsius rise in temperature can degrade up to 39 lakh square kilometre due to thawing.
- Threat to Infrastructure:-

Thawing permafrost is also harmful for manmade structures.
- In may when the Russian oil leak occurred the Copernicus Climate Change service recorded temperatures in Siberia at more than 10 degree Celsius above average.
- As temperature rise, the binding ice in permafrost melts, making the ground unstable and leading to massive potholes, landslides and floods.

The sinking effect causes damage to infrastructure such as roads, railways, lines, buildings, powerlines and pipe lines that serve 3.5 crore people that live in permafrost regions.

- Greenhouse effect.

Permafrost contains large quantities of organic leftover from thousands of year prior - dead remains of plants, animals and microorganisms that get frozen before they could rot. It also holds a massive trove of pathogens.

When microbes start decomposing this carbon matter releasing greenhouse gases like methane and carbon dioxide.

Along with greenhouses these grounds could also release ancient bacteria and virus into the atmosphere as they unfreeze.

To look into this ~~there~~ ~~is~~ ~~no~~ ~~need~~ to matter all the countries has to come together and find the long term solution regarding climate change.