



Permafrost Thawing

Climate Catastrophe in Waiting and Its Politics

Priyanka Gautam

Key messages >>>

- According to scientists, all the existing permafrost holds double the amount of greenhouse gases present in the atmosphere currently.
- The thawing of permafrost will not only release carbon dioxide and methane in the atmosphere but will also release mercury into the water as the Arctic is the biggest source of mercury.
- Russia stands to capitalize on the benefits in terms of habitable land as well as ivory from the woolly mammoth which is preserved in the permafrost in Russia's Yakutia region.
- The heating of area will be the cause for more and more wildfires and eventually climatic collapse. Anthrax has already made a comeback in Siberia due to spores released by the melting ice into the water cycle.
- The horrifying pictures of wildfire in the cold places like Arctic, suggests that climate emergency should be officially declared by all countries, more so by the United Nations at the global level.

While global warming has impacted every aspect of human life and ecological form, the thawing of permafrost presents the most catastrophic scenario in context of climate change, or rather the climate crisis. This is because the permafrost that we see has existed since the cold **glacial periods**, including the **Halocene period which began approximately 11,700 years ago**. In terms of definition, it is the ground that has remained at **or below 0°C for at least two consecutive years** and can be **three feet to 4,900 feet thick**. It is because of the permafrost layer that the earth is also capable of storing

carbon-based remains of plants and animals before decomposition.

Permafrost thaw and its impact on climate change

According to scientists, all the permafrost that exists currently holds double the amount of carbon present in the atmosphere currently, which is approximately **1,500 billion tons**. With the melting of the permafrost ice due to warming by greenhouse gases, all the **carbon dioxide, along with methane** will be released into the atmosphere. In addition, such developments will have severe

effects on the lifestyles of the locals, for instance, changes in the **traditional travel and hunting patterns in the North**, damage to costly **infrastructure** and so on, thereby making the process of achieving the emission targets even more difficult, which is already derailed by the disagreements among nations primarily on the economic interests.

Not only is the **thawing of the permafrost happening faster than anticipated**, it also has the capacity to exponentially multiply the effects of carbon release because of the feedback loop associated with it. Greenhouse gas models have so far assumed that the thawing of the permafrost is a gradual process, but they undermined the fact that frozen **soil physically holds the landscape together**. So, when the ice thaws, **the soil collapses in pockets**, thus releasing carbon dioxide in huge proportions leading to escalating impact. Along with the carbon dioxide, mercury is released into the water as Arctic is the biggest source of mercury. According to the US Geographical Survey, around **1,656,000 tonnes of mercury is trapped in polar ice and permafrost** which is almost double the amount present in other sources on earth. The result is inevitably the contamination and bioaccumulation in the food chain.

The politics on permafrost thaw

Russia, as one of the most powerful countries and encompassing large swathes of Siberia covered with permafrost, is going to be majorly affected by the thawing, and the actions it takes regarding the same is going to have consequential impact on the climate everywhere. However, despite the problems created by rising temperature and increasing natural disasters in the area, Russia is reluctant to contribute in the climate action wholeheartedly, as the thawing will make large parts of Russia **habitable by the late 21st century** bringing anticipated economic benefits. The heating of area will be the cause for more and more wildfires and eventually climatic collapse. Anthrax has already made a comeback in Siberia, thanks to the **spores released by the melting ice into the water cycle**. In spite of being aware of all the

consequences, which the Russian meteorologists reiterated at the G20 Summit in Osaka, Japan, **that Russia is warming at a rate 21/2 faster than the global average**, President Putin has given no sign of a proactive **environmental policy**, as it will have direct implications for its fossil fuel based economy and the huge amount of exports of the same. Which is why, the Russian state controlled media usually refrains from discussing matters of climate change.

Even on the business front, Russia stands to capitalize on the woolly **mammoth ivory preserved in the permafrost in Russia's Yakutia region**. Although these are an extinct species since 10,000 years, an international organization has decided to consider a proposal to **give protected status to the species under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)** for endangered species so as to thwart its trade which makes up as much as £40m each year for Russia in the unregulated market.

Taking note of the gravity of the situation, United Nations Environment Programme released a report, titled "Policy Implications of Warming Permafrost", which urged the **Intergovernmental Panel on Climate Change to create a separate, national permafrost-monitoring network, to standardize and expand the monitoring of permafrost emissions**. It further pressed for the consideration of these additional emissions from **permafrost in international negotiations on emission targets and climate change policy**. Implementation of these changes on the ground will require investment and the creation of a whole new infrastructure, which is again a contentious issue among nations, bringing back the debate on technology transfer and funding.

From climate emergency towards a green economy

Thawing permafrost indicates towards the fact that we have very little time in our hands to address the future of the planet. The horrifying pictures of wildfire in the cold places like Arctic, suggests that climate emergency should be officially declared by all countries, more so by the United Nations at the global level. The voluntary nature of climate action

taken by countries as per their commitments in the Paris Agreement has collectively not yielded enough, despite the fact a few countries have managed to fulfill their commitments and even beyond.

While the current wave of protests has put some pressure on the governments to act, nonetheless, these actions do not stand enough in front of a problem as gigantic as a climate crisis. A major factor that underlies all sorts of climate inaction is

the fact that world economy runs on fossil fuels and the idea of development is primarily consumption driven which indirectly relates to fossil fuel consumption. What the world needs is the revamping of global economy on principles of green development. Environment losses are yet not fully incorporated into the indicators of development. Only when this idea officially becomes the basis of development, countries would consider re-engineering their economies towards a nature friendly existence.

Photo credits: Images available via [Canva](#)

Analytical Brief on Climate Ambition and Sustainability Action

The analytical brief series, brought out jointly by the World Sustainable Development Forum and the Protect our Planet Movement, seeks to highlight a topical issue relevant to the realization of the sustainable development goals and ambitious climate actions.

About WSDF

The World Sustainable Development Forum (WSDF) is a not-for-profit organization incorporated separately in Europe, Norway and the U.S. Its North American arm WSDF-NA, headquartered in Washington, DC carries 501c3 tax exempt status. WSDF is a global initiative to promote and mobilize global action for effective implementation of both the Paris agreement on climate change and the Sustainable Development Goals (SDGs) adopted by the UN General Assembly. WSDF's relevance and role lies in acting as a facilitator for helping with implementation of actions required under these two sets of agreements.

About POP Movement

Protect our Planet (POP) Movement believes that the impacts of climate change will not affect a single country but the planet, in its entirety. POP believes that the power of the youth of the world will unite and to address this challenge. POP believes that the time to act is now and that knowledge is the true currency of changing the future.



www.worldsdf.org



www.thepopmovement.org