

**Melting Glaciers: Challenges and the Road Ahead**  
Seminar by Apeejay School of Management Dwarka New Delhi  
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### **Introduction**

Cyclones, floods, earth quakes and droughts .... The headlines in media have become the order of the day in India and abroad as well, especially the third world nations are the worst sufferers in 21<sup>st</sup> century. According to a world meteorological department report, **China has lost 238 Bn \$** while **India ranks 2<sup>nd</sup> in the world with 87 bn \$ losses** due to extreme weather conditions in the recent past. It is everybody's guess that the Earth is getting heated up and the heating is faster in recent days. And we do face a lot of climate emergencies in the recent years. **2016, 2020 were the warmest years as per NASA records**

### **How do we know that climate is changing?**

Let me take 2021. We have obvious evidence. In India alone we had severe cyclones Gulab in Andhra in September, Yaas in Odhisha during May, Tauktae in Gujrat in May, Maharashtra floods in July, Tamilnadu Floods in November. 87 bn \$ is what is reported, but it may even exceed 100 Bn \$. We the oldies lived in 20<sup>th</sup> Century also and saw several floods & cyclones. The 21<sup>st</sup> century started with a bang by a devastating tsunami. The disasters continue even at a faster rate resulting in loss of human lives and physical assets. Today there is unusual downpour, and everyone has started talking about global warming and climate change. Are we in a climate emergency? The answer is Yes. At this rate the fate of the planet is posing a question mark whether we are nearing the end. **As per NASA, climate did change nearly 7 times in last 650000 years. Climate change is not new.** Man-made change is the real worry, it is suicidal

### **Is doomsday nearing?**

The question lingers on and few of us believe that or even care for it. And seeing disasters, there is also a global debate on whether these disasters are natural or man-made. In fact, even a school student knows that Earth is rotating around the Sun in the solar system and the day it stops or changes its orbit, the disaster will be inevitable. Long back, man believed that the doomsday in its natural process may take millions of years. So, there is no immediate scare during our lifetime. So.. are we complacent and not bothered about this? No.. says the researchers, as the rate of climate change is going faster and DOOMSDAY may fasten, as the globe is getting heated up due to the man-made climate crisis.

### **Do Glaziers melt naturally?**

It is obvious that glaziers melt naturally. When temperature raises during summer, it will result in melting. But as the season changes, the melted portion of glaziers do recoup. This process is going on ever. But if the melting is faster than formation of ice, then the equations mess up. And this is what is happening. This is artificial, Man-made and disastrous. Glaziers are melting at a faster phase all over the globe. It is estimated that **400 Cubic KMs are last during the last few centuries.** Himalayas especially is melting at a faster phase. During the last 40 years, **Himalayan Glaziers have reduced by 10 times comparing last 7 centuries.** The melted ice of Himalayas alone is sufficient to raise the global sea level by 1.38 mm. We need to understand the **carbon connection** in the process.

### **Why it is melting faster?**

**In 1950, CO2 was at 320 ppm and now its 420+ ppm.** Industrial and automobile emissions increase carbon level which leads to greenhouse effect. Trapped planet atmosphere gets warmer resulting in global warming. The absorption of carbon is possible only by forests but we go on indulge in deforestation, forgetting the importance of sustainable development. **We burn biomass and Fossil fuel.** More forests give way to infra projects like road, railways and industries. Global warming leads to climate change. Glaziers melt faster due to increased temperature.

### **Should glaziers melt or not?**

This is another important question. For that we need to look at the landscape. There are thee important regions in the world which are having the maximum percentage of the glaziers, namely North Pole,

South Pole and the **Third pole consisting of the Himalayas and Tien Shan of China**. This third pole is **more vulnerable to faster melting** of glazier since the human activity here is higher than the other polar regions. Nearly **2 billion people** from Afghan to Myanmar including China and India, the most populated countries depend on the melted water which flows into major rivers besides monsoon for survival. Melting is needed to maintain the ecological balance but if it exceeds then it is disaster only. **We have seen cloud-bursting in Kedarnath, several landslides in the Hills including the cloudburst in the hills of Uttarkhand. Nainital was flooded in October.**

It is estimated by scientists that the temperature in the Himalayas will heat up by **4.4 degree Celsius by the turn of the century**. We can assume that the **process will gradually build up to an intolerable level even by 2040**. More melting of ice will lead to flooding and draining out of water in the oceans. The sea levels will increase drastically and may result in submerging of a few low-lying countries including Bangladesh and Singapore even. So there is a need for stopping the melting of glaziers

### **Is there any global action?**

Yes. There is a legally valid global agreement to contain global warming. **Paris accord was signed by 195 global nation including India**. It was agreed unanimously **to limit the global warming by 2 degrees above pre industrialisation levels** and even if it is kept at 1.5 degree, it will be a great step against climate change. Recently Joe Biden also signed the treaty after assuming power to fall in line with the global nations. However, it is also **feared that within another 5 years, the temperature will rise by 1 degree**. So, there is a **climate exigency** to act now. I need to emphasize one important fact here. That is, even if we limit the warming by 1.5 degree as decided in Paris Accord, at that rate also the Himalayan glaziers would have vanished by the year 2100.

### **Are the Scientists correct?**

Who knows? Scientists are also human beings. There are limitations to predictions. The fact that we do not know what will happen in future is also a reason that we must get scared and be prepared. Therefore, without any apprehension, let's be clear that everyone of us need to do our small part. **Think globally and act locally**. Governments and people must take every little step to address the climate change staring at us

1. Minimise energy consumption
2. Conserve nature, control deforestation
3. Reduce emission of greenhouse gases
4. Stop biomass & fossil fuel burning
5. Needed a sustainable development model

Man emits greenhouse gases, it leads to global warming. Warming melts glaziers, melting leads to disasters like floods, increased sea levels and further disasters. So... Lets delay the process,  
Thank you, friends!