

# Young researcher report: Can we imagine a World without Ice? Economic, Social and Political Consequences

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Can you imagine telling your kids and grandkids about a world where there used to be Ice? Ice is bad. It makes us shiver. Okay, but are we aware that 25% of the human race is dependent for their water supply on the melting of mountain glaciers? Ice is not only to be found at the poles of our planet- up to the current time, it has also been present in high mountain areas all over the planet. This high altitude ice is beginning to disappear, and the trend is very disturbing. If it all disappears, one quarter of the human race will wait in vain for the rivers to fill with snowmelt in the spring to water their crops. No water, no crops, no food. That is the chain of causality that promises to starve a quarter of the human race when ice goes away. How do you feel about ice now, maybe it's not so bad?

The first speaker is Professor Helgi Björnsson (Institute of Earth Sciences, University of Iceland) he speaks about "Climate change: Impacts on glaciers". He give the important information about sea-ice from models: 5 cm sea-level rise from melting in Greenland during the 21st century; Greenland may almost completely melt during the next 1,000 years (starting melting rapidly by 2100). Also he observed impacts of glacier retreat on: Hydrology (Seasonal runoff changes etc.), societal matters, regional planning, geoengineering, Ecosystems (Animal, Bird, and Fish Habitat Loss etc.), Oceans (sea level rise, etc.).

The second speaker is Professor Matthias Finger (EPFL - the Ecole Polytechnique Fédérale de Lausanne, Switzerland) he presents - The «State» of the Arctic or who will save the climate? ... changed given the circumstances" . For challenges for industrial society over time he detects 3 phases: Phase I: planification; Phase II: Globalization; Phase III: limits. We are now in Phase III: input and output limits. The presenter advice: 1. Back to the beginning: we know we must act now; 2. We now also know that everyday we do not act will force us to become more reactive, there will be less options, control will be taken out of our hands; 3. We could start in the Arctic by "leaving-it-in-the-ground".

The third speaker is Dr. Astrid Ogilvie (CICERO, Centre for International Climate and Environmental Research, Oslo). In her presentation she discussed Sea ice as enemy and friend: the case of Iceland and Labrador. She emphasizes that “for many years the covering of pack ice was seen mainly as a danger and an obstacle to trade. We now know that the sea ice not only dominates the polar regions and is important to global ocean circulation and climate patterns, but that the ice itself, and the humans and animals dependent upon it is now endangered. As the ice becomes more treacherous in areas like Labrador, perhaps it will be viewed more as an “enemy” and perhaps as it melts, Iceland will see new opportunities and regard this as a friendly gesture on the part of the ice!”