The Polar Regions are losing ice ... fast!

Ocean Currents Wild Life Indigenous People Many marine animals migrate to the Arctic to feed. "are experiencing problems thanks to global As the Arctic sea ice melts, the influx of freshwater The food chain is based on algae and plankton which warming. As sea ice disappears, this removes a from the melting ice will make seawater at high highway on which locals can ride their snowmobiles is food for whales and fish. Seals feed on the fish and latitudes less salty and hence less dense. This less dense water will not be able to sink and circulate and dog sleds to hunt and visit friends. Disappearing Polar bears feed on the seals when there is enough stable ice means increasing fragmentation of communities through the deep ocean as it does currently. The ice to hunt. The populations of Polar bears and whales, melting of the Arctic sea ice therefore has the potential the top predators of the food chain, are excellent and limits the ability of people to hunt." to disrupt or slow down the Global Ocean Conveyor. indicators of the health of the whole eco-system. Okalik Eegeesiak, chair of the Inuit Circumpolar Council Weather 1) Wind speed varies How can we design a machine to make ice? from a gentle 5ms (this is common) In winter, pump water from below the ice up to a brisk 25ms (uncommon) on top of the ice where it will freeze. to hurricane (very rare) 2) Temperature varies from -50 C to +10 C 3) For significant periods, light levels Move the machine to where the ice is thin Needs to be small are very stable, so in winter it can be The Arctic is huge so each machine must So it can be towed dark all day (polar night), and in spend its time in the most productive position. behind a snowmobile. summer light all day (midnight sun). Needs to be a shelter Needs to be portable Needs to float Needs to be hurricane proof So that maintenance can So it can be moved quickly, as conditions So it can be towed behind a boat. Also, it be carried out in safety. must not sink through the ice in summer. change, to where it is most needed. In the summer Maintenance A business for the Indigenous People It will be difficult to make The machines will need to The sea-ice surface reflects sun light into space thus reducing the temperature of the ice so instead each machine be monitored to ensure they whole earth (the albedo effect). This can be evaluated in terms of carbon credits. could be put to good use as an are working well. They will inside workshop space with Economic opportunity creates employment, improves education levels and develops also need to be repaired and skills. When community values are respected, economic activity can improve the its own electricity generator moved from time to time.

health and well-being of communities, families and individuals.

and battery charging point.