

- Polar regions are remote and complex with sensitive and interconnected bio-diversity.
- The involvement of indigenous people is important in research taking place in the Arctic. The motto needs to be 'Research in the north, for the north and by the people of the north'. The incorporation of traditional knowledge (TK) is vital to successful and valuable research in the north.
- On a global comparison, research in polar regions is minor when compared to the south. Research in polar regions is far more challenging to execute and is very expensive. Polar research could be in the range of five to ten times more expensive to carry out than similar research in the south. Researchers going into polar regions need to be prepared, trained and understand the social, cultural and political complexities of the people living there.
- The mobilization of people to polar regions to assist in emergency response and SAR is the logistics bottleneck. While equipment and supplies can be prepositioned and cached in polar regions without the need for much care and attention, the same cannot be said for trained and qualified personnel who will be the lynchpin in the event of an emergency.
- More effort needs to be carried out at MET institutions with respect to broadening the syllabi and curricula focused on navigation in polar waters. Where appropriate, there is a need to ensure the standardization of training connected with polar navigation.
- Care needs to be given with the development and delivery of simulation training for navigation in ice prone, ice infested and ice covered waters. The accurate simulation of ice forces on a vessel are far more challenging than that of wind and current. Inaccurate simulation of navigation in ice could lead to a false sense of security on the part of the bridge team and prove disastrous.
- There is a huge and growing demand for accurate modelling and forecasting of ice and weather in the short, near and long term. Accurate modelling and forecasting of ice and weather is extremely important in voyage planning and in the prepositioning and location of supporting marine infrastructure in a geographically huge, remote, isolated and harsh Arctic region.
- Further consideration needs to be given in respect to the assimilation and dissemination of data. Data repositories are extremely helpful and needed as is international cooperation and collaboration. Well-developed data repositories dealing with polar research are notoriously lacking.
- The research of oil and oil dispersants in ice and cold water is progressing and showing positive outcomes.