Ecology of microzooplankton in the Arctic Fjord Kongsfjorden and comparison with major ecosystems

The Kongsfjorden marine ecosystem functions under the balance of influx of Atlantic and Arctic waters, and as a consequence, the pelagic food web is composed of both Boreal and the Arctic species. Studies conducted during the summer monsoon on the two size classes of planktonic components viz. micro- and mesozooplankton (20-200µM and 200µM to 20mm) for years 2015 & 2016 revealed inter-annual variability in community as well as composition. The significance of microzooplankton mediated food web in the Kongsfjorden was elucidated for the summer season, with significant top - down controls on ciliates by the Copepods, which is envisaged as a factor to be considered while defining the planktonic food web. Among the ciliates, Parafavella sp. which dominated the microzooplankton community was observed in both years. A comprehensive understanding on the different size class of plankton (pico to mesozooplankton) will provide an overview on the effects of environmental variability on ecosystem structure. The high degree of seasonality in environmental conditions are key elements that determine the diversity of organisms in the Arctic and plankters being the drifters in the ocean and due to their rapid response to environmental changes can be considered as proxy to understand such changes. The latitudinal gradient in ciliate diversity was also assessed, in defining the functional role of ciliates, and was found to be discrete for different ecosystems. These studies can form the basis for understanding the foreseen changes in the Arctic fjords with warming trends which is expected to have direct and indirect effects on species life cycles and prey-predator interactions.