Project acronym: COMICS-G

Project title: Effects of Climate change On Microbial Community of Soil in Greenland

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Discipline: Earth Sciences & Environment

Station(s): GINR (Greenland)

Scientific and public interest in Greenland is rapidly increasing as it is one of the key regions in the Arctic that might be severely affected by Climate Change. The trend of warmer temperatures could cause, in fact, several environmental changes, including changes in soil microbial biodiversity. Little is known about the structure and diversity of the terrestrial microbial communities in ice-free areas in West Greenland, compared to researches carried out in other Arctic regions.

The aim of this study is to characterize the soil microbial communities of different biotopes in West Greenland and to understand how the biodiversity of these communities would respond to global warming. Characterization of prokaryotic and eukaryotic soil component will be performed by Denaturing Gradient Gel Electrophoresis (DGGE), Next Generation Sequencing and q-PCR approaches. Isolation, identification and characterization of fungal component will be performed by cultivation and molecular methods.

The final goal of the project is to give preliminary data, basing on a multidisciplinary approach (biological and climatic studies), on the structure of West Greenland soil communities, which is still poor, and give clues for monitoring and predicting any future variation due to Climate Change.