

## **GROZA - IMPACT OF CLIMATE-INDUCED GEOHAZARDS ON GREENLANDIC COASTAL ENVIRONMENTS - CASE STUDY OF DISKO BAY, WESTERN GREENLAND**

Melting of glaciers, thawing of permafrost and decrease of sea ice cover are one of the most spectacular effects of ongoing climatic changes. As a result of the operation of those processes, Arctic landscape experiences rapid transformation, with a particular degradation affecting coastal zones. It is widely accepted, that coasts are areas where the negative effects of Arctic environmental changes observed on land and seas accumulates. In many cases, those recently exposed from ice or thawed coastal zones are transformed by extreme processes including such geohazards as floodings, landslides and landslide-triggered tsunamis, or more and more frequent storms. Here, it is important to note, that most of human activity in Arctic region concentrates along narrow coastal stripe.

The **GROZA** project aims to face those polar hazards and fill the gap in our understanding of their role in the transformation of Arctic landscape and how to prepare Arctic coastal communities to mitigate their effects? Knowing its particular sensitivity to climatic changes we have selected the coastal region of western Greenland for our case study. As you may know, the meltwaters from this area play an important role in observed sea-level rise. What is more, only recently western Greenland has been hit by two large tsunami waves triggered by landslides.

Using the combination of interdisciplinary methods i.e. geomorphological methods, remote sensing techniques, GIS analyses and environmental risk assessment methods we will answer the following questions:

- 1. What environmental hazards have the strongest influence on safety and development of the coastal communities in Disko Bay?*
- 2. Which geomorphological changes associated with arctic warming could be identified in the vicinity of Grenlandic coastal settlements?*
- 3. How we can improve the protection of Greenlandic coastal communities from extreme coastal changes and improve the wider awareness of Arctic geohazards to secure sustainable and safe development in the Arctic region?*

We are aware that the task is difficult, but not impossible. The Greenlandic coasts await for the recognition of the processes threatening their stability and future development!