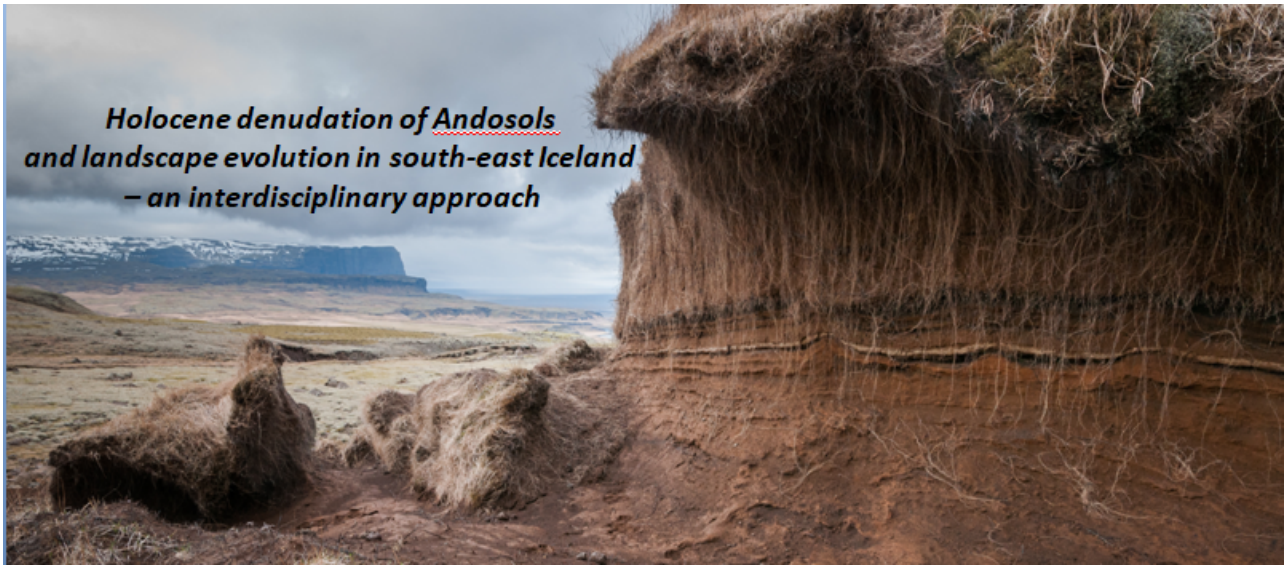

Icelandic landscape was intensively reshaped after glaciers retreat, mainly due to glacial river flood, katabatic winds, and environment decline caused by frequent volcanic tephra fallout. Deforestation and intensive livestock grazing, which started soon after settlement (9th century) and was very strong during Little Ice Age (1570-1900) highly contributed to widespread soil erosion, which was additionally escalated by cold climatic phases.

Andosols are the main soil type in Iceland. They are relatively young soils developed from volcanic ejecta. Their physical and chemical properties bring strong susceptibility to water and wind erosion, especially on slopes, while on the other hand, they are known for upbuilding due to accumulation of wind-blown material and frequent ash fall.

Although **soil erosion is one of the greatest environmental problems in Iceland, the data** about its specific rates (especially from prehistoric times) **are limited** and based usually on sediment accumulation rate (SeAR) what does not count hiatuses that may often occur.

We hypothesized that **erosion rates in Icelandic Andosols overcome accumulation rates,** forced by intensive natural disturbances and human-driven changes. Furthermore, this fact caused a **modification of their evolution and affects phases of soil development**. Moreover, we argue that recent **global changes led to an intensification of soil erosion and catastrophic incidents**, therefore tracking past erosional events and their scale in Andosols will deliver **valuable knowledge to estimate future erosion risk in sensitive volcanic ecosystems**, which is a global importance issue.

We combine **geomorphological, geophysical, pedological, geochemical (meteoric ^{10}Be), and paleobotany tools** as an independent tracer to **identify landscape activity recorded in Andosols** and calculate **denudation rates to track those past events.** Our innovative multiproxy approach will allow to: **(1)** calculate long-term denudation rates, **(2)** identify deterioration events recorded in Andosols and estimate their time scales together with the designation of **(3**) regressive and progressive phases of soil formation on the background of **(4)** reconstructed landscape development after glacier retreating.

Knowing rates of denudation of Andosols is important **as they hold substantial pools of organic matter**, that may be **released by acceleration of erosion** and significantly **contribute to positive carbon feedback**. In further perspective, mostly because of the global warming and frequency of the catastrophic events**, the total soil surface threatened to erosions processes may increase**, therefore knowledge of soil redistribution rates is **crucial in planning restoration/reclamation actions on barren/disturbed landscapes**.