Schweizerische Eidgenossenschaft
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30. August 2022

Submission by Switzerland on its views on possible subjects for the Earth Information Day (EID) 2022

Switzerland appreciates the organization of the Earth Information Day in 2022 (EID 2022) event under the Research and Systematic Observation (RSO) SBSTA agenda sub-item. Switzerland furthermore welcomes the opportunity to submit views on possible themes for the next EID 2022.

Switzerland is pleased to suggest the following theme for consideration:

Input from the earth observation community for understanding gaps in systematic Earth observation with regard to tipping points and irreversible changes of the climate system:

As endorsed by the current World Meteorological Organization (WMO) Strategy 2020-2023 and the Global Climate Observation System (GCOS) Implementation Plan, observation and forecasting require an Earth System approach in order to understand the relevant Earth System processes and cycles. The interlinked parts of the Earth system are susceptible to abrupt changes in response to disturbances such as climate change. Tipping points in the climate system refer to thresholds that can occur as a consequence of human-induced climate change, and that lead to changes which are abrupt and often irreversible.

Tipping points are large-scale phenomena with global impacts such as in oceans or the cryosphere. Disruptions in the Amazon rainforest, boreal forests, the Greenland Ice Sheet, the West Antarctic Ice sheet, the Atlantic circulation, permafrost, coral reefs and the West African Monsoon are only few examples that entail irreversible changes on a global scale, impacting economies and societies of all regions of the World.
While the scientific understanding of climate change has significantly grown in the past decades, the scientific knowledge of tipping points remains scattered. A holistic understanding of the Earth System, including climate sensitivities and thresholds for irreversibilities is essential for informing policymakers and guide adequate adaptation measures.

For this purpose, climate models need to be further improved, starting with a more solid data foundation and integrating in-situ and remote sensing systematic observations. Identifying and addressing data gaps such as the deficiency of observations in certain world regions, as stated in the last GCOS Status Report 2021, and exploring the potential of new methods of observation, e.g remote sensing, play a key role in addressing the challenge of tipping points uncertainties. Input from the climate observation community would therefore be most welcome at the next Earth Information Day 2022. Such input could include, inter alia, requirements for better climate models and methods to identify and fill data gaps for further systematic climate observations with regard to tipping points and irreversible changes.