

Abstract

The general objective of ECCO is to enhance climate adaptation by providing metrics design values for present-day and future climate pathways for heavy precipitation, urban flooding, and compound events leading to urban flooding from a range of impact types.

ECCO emphasises knowledge transfer and has a strong component in meeting user needs within the area of water management for proper planning and infrastructure design in a changing climate.

The project will focus on the following research questions:

- How can we provide robust intensity-duration-frequency (IDF) values for any point in the Nordic-Baltic region (WP2)?
- How can heavy rainfall statistics, antecedent moisture conditions and temporal precipitation sequences be used in urban flood modeling to give more realistic and reliable design flood estimates (WP3)?
- How can we expand our knowledge of the frequency of compound events that cause flooding and further develop methods to estimate the risks and impacts of such events (WP4)?
- And across all of the above, how can we make this information accessible to users through metrics that enable optimal uptake and implementation (WP1)?

ECCO will address subtopics 1.1 (knowledge gaps) and 2.1 (tools) of the call.

Concerning sub-topic 1.1, we will particularly address knowledge gaps associated with compound events (see WP4), but also the complexities associated with extreme precipitation, antecedent moisture conditions and flooding (see WP2 and WP3).

Sub-topic 2.1 will be addressed by both providing a large-scale tool for gridded IDF values, providing design precipitation in arbitrary locations where adequate observational time series are not available (see WP2) and by aiming to deliver end-user friendly compound design metrics.

We will also establish benchmark studies to support the development of a tool for design flood analyses (see WP3).



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► Project partners

- DANISH METEOROLOGICAL INSTITUTE - DENMARK
- KOMMUNERNES LANDSFORENING - DENMARK (SELF-FUNDED)
- LATVIAN ENVIRONMENT, GEOLOGY AND METEOROLOGY CENTRE - LATVIA
- NORWEGIAN WATER RESOURCES & ENERGY DIRECTORATE - NORWAY
- TECHNICAL UNIVERSITY OF DENMARK - DENMARK
- UNIVERSITY OF TARTU - ESTONIA

► Funding organisations

IFD (DENMARK) / LZF (LATVIA) / RCN (NORWAY) / ETAG (ESTONIA)

► Duration

3 years

► Contact

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KEYWORDS