

TRANSCEND - Towards Resilient trANSboundary governanCE for Natech disasters with Data-driven insights

Topic ID and Name: HORIZON-CL3-2024-DRS-01-04 Hi-tech capacities for crisis response and recovery after a natural-technological (NaTech) disaster

Call: Disaster-Resilient Society 2024 (HORIZON-CL3-2024-DRS-01)

Increasing incidences of cascading or co-occurring multi-hazard events triggering technical disasters, through major damage to industrial facilities or other critical infrastructures, has revealed notable gaps in societal systemic resilience towards extreme climate events. In light of the expected increase of future Natech risk due to increased climate disaster risk combined with growing global industrialisation, population growth, and urbanisation. Unfortunately, international disaster risk reduction frameworks and chemical accident prevention programs have largely overlooked the specific aspects of Natech risk, resulting in a lack of capacity across industries and authorities alike in dealing with such events. TRANSCEND aims to enhance European resilience towards cascading NaTech disasters, by expanding our capabilities to holistically visualise their impacts on critical assets, communicate, utilise, and exchange state-of-the-art data, information, models, tools, and knowledge between different actors; developing model chains capable of simulating NaTech events; improving capacity in all levels of actors based on enhanced community engagement, development of novel communication and situational awareness tools, as well as developing new governance and risk management strategies for NaTech disasters using a bottom-up, value-driven co-development approach.

TRANSCEND will leverage latest advances in observation science, numerical modelling, and AI to develop tools, SoPs, and management frameworks that help build capacity for decision makers and first/second responders in dealing with climate-induced NaTech disaster cascades. In doing this, TRANSCEND aims to increase societal resilience towards climate-induced NaTech disasters. Accordingly, the following specific objectives are defined.

O1: To identify gaps in existing tools, cross-border SoPs, and management frameworks for CINT disasters.

O2: To develop methods for (worst-case) scenario-development for cascading natural-technical disasters triggered by extreme climate events.

O3: To develop developing tools and approaches to simulate the entire chain of cascading natural-technical disasters from extreme climate events to systemic impacts.

O4: To build capacity for first/second responders and decision-makers in dealing with low probability high impact climate-induced NaTech disaster cascades.

O5: To strengthen collaboration/coordination related to NaTech disasters across sectors/borders with key networks of actors.

Lead Partners: RWTH Aachen Universität, Vrije Universiteit Amsterdam, Luxembourg Institute of Science and Technology, CIMA Research Foundation, European Emergency Number Association, Deutsches Geoforschungszentrum, Deltares, European Science Communication Institute gGmbH

Associated Partners:

Given the specific nature of the call on NaTech, we invite industrial partners to join us as associated partners and shape the direction of the project deliverables, for instance the tools and the management plans. Particularly, we are interested in companies/organisations which are working with hazardous chemicals including nuclear power plants with storages, explosives, power grids, or refineries which are at risk of being severely impacted by extreme climate events and could lead to cascading technical disasters.

The partners will benefit through the knowledge transfer as well as workshops on how to deal with such events, and will also receive an opportunity to implement a tailored version of the management framework developed in TRANSCEND for their own company risk management plans. The associated partners are expected to provide inputs during annual project workshops, the gap analysis phase where we would like to understand their current experience and thinking about climate driven technical disasters. In terms of distribution, they can be located anywhere in the EU or associated countries.

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