Shivam Sen, RUG

Title
Realistic computational models of behavior in cascading disasters

Project description
There has been a significant change in the risk landscape in recent years. Climate change is only one of the many factors that increase the likelihood and magnitude of extreme events, triggering compound disasters with unforeseeable consequences. A single disaster, such as an unexpected flood, can turn into a cascading event if an earthquake happens, causing disruptions in communicative networks, unclear evacuation behaviors and resulting in road congestion and further accidents. Since people differ in their risk perceptions, their preparedness and abilities to respond, while being influenced by their social relations, individual responses to the event can differ greatly. This heterogeneity and the related complexity make the prediction of behaviors in the emergency phase extremely difficult.
The aim of this inter- and transdisciplinary project is to investigate the behavioral and social complexity of disaster preparedness in cascading disasters. The project will combine sociological theorizing, agent-based modeling and citizen science to develop a set of agent-based models and simulations of a cascading disaster, backed by insights from citizen science, and its consequences for the province of Groningen (NL).

Keywords
Disasters, Cascading Disasters, Agent Based Modelling, Citizen Science

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