



Climate hazard impacts to water supply - Learning from past floods and droughts in Sweden

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Water supply is one of the critical services that can be disrupted by climate-related disasters. Floods and droughts, in particular, can cause damages to infrastructure and alterations of water source quality and availability. In the Nordic water sector, concern about climate risks has been growing due to the successive dry summers from 2016 to 2018, major flooding events in 2023, various heavy rainfall events, as well as projections that floods and seasonal droughts could become more frequent and intense in many regions. Knowledge from past events is essential to prepare for potential climate impacts. However, learning opportunities are currently limited as small local impacts to water supply are rarely reported in national and global databases. This study examined climate impacts to water supply in Sweden, in the period 2010-2024. Drawing from reports by regional authorities, local surveys, and media articles, we mapped the occurrence of flood and drought events throughout the country and compiled both the impacts to water supply and post-event evaluations of the disaster response. The results indicate that past climate hazards have led to impacts ranging from sewage pipe breaks and inundated pump stations to poor raw water quality and low surface- and ground-water levels. Disruptions of drinking water services have been minor and manageable, while interruptions affecting consumers, such as water use restrictions or water boil advisories have generally been brief and of a preventive nature. However, regarding disaster management, official reports reveal a lack of hydrological knowledge, the absence of a big-picture understanding during events, and insufficient coordination with neighbor regions and across governance levels. These results concur with previous findings that societal impacts to drinking water supply have, so far, been limited in the Nordic region. Nonetheless, impacts are expected to become more serious in the future due to climate change and challenges in crisis management. This underscores the importance of building robust impact and response databases to support water managers in improving disaster preparedness and ensuring the continued security of safe drinking water supplies.