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Addressing weather and climate related extreme events in terms of policies, methods and practices in Europe

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Making clear links between disaster risk reduction (DRR) and climate change adaptation (CCA) is becoming priority for policy makes and knowledge providers. This efforts to link DRR and CCA are driven from large economic, social and environmental losses of extreme weather and climate related events (including hydrological extremes), which many of them will in the future increase further due to consequences of anthropogenic climate change (EEA, 2017a).
Total reported economic losses of climate extremes in the 33 European Environment Agency's member countries over the 1980–2016 period amounted to over EUR 436 billion (EEA, 2017b, 2017c, Munich Re, 2017). These estimates should be understood as the lower bounds of the actual losses, as many intangible and non-monetary impacts are not included.
In addition weather and climate related extremes can affect and shape ecosystems and thus have an impact on the services they provide (e.g. water retention, food production, cooling, energy production, and carbon sequestration). In some cases the loss of such services can increase the probability for other natural hazards.
Under future climate change, nearly all weather and climate extremes are projected to increase in severity, duration and/or extent, and some also in frequency. In particular heat waves are projected to become more intense and to last longer in all regions in Europe (EEA, 2017a). Projected changes in frequency and intensity of extreme precipitation events show regional differences with largest increases in heavy precipitation in central and eastern Europe in winter.
Similarly projected changes in river floods show also strong regional with greatest increases in floods for British Isles, north-west and south –east France, northern Italy, parts of Spain, the Balkans and the Carpathians (EEA, 2017b). In turn the projected increases in temperature and in precipitation patterns will affect rock slope stability condition and favour increases in the frequency of landslides, especially in European mountains.
Along with climate change, socio economic developments such as growing population and economic wealth, developments in hazard-prone areas, and deteriorated status of natural ecosystems will influence the exposure and vulnerability if the regions.
Innovative examples of integration in CCA and DRR policy and practice exist, but are not always explicit, e.g. in the flood risk prevention sector where often climate projections are already considered in designing strategies and plans. Comprehensive, multi-hazard risk and vulnerability assessment frameworks can support evidence-based and robust decision making and guide polices and practices in CCA and DRR.

References

EEA: Climate change, impacts and vulnerability in Europe 2016 - An indicator-based report, [online] Available from: http://www.eea.europa.eu/publications/climate-change-impacts-and-vulnerability-2016, 2017a.
EEA: Climate change adaptation and disaster risk reduction in Europe - Enhancing coherence of the knowledge base, policies and practices, 15/2017, European Environment Agency, Copenhagen (Denmark). [online] Available from: https://www.eea.europa.eu/publications/climate-change-adaptation-and-disaster, 2017b.
EEA: Economic losses from climate-related extremes, CLIM039, [online] Available from: https://www.eea.europa.eu/data-and-maps/indicators/direct-losses-from-weather-disasters-3/assessment, 2017c.
Munich RE, 2017,'NatCatSERVICE' (https://www.munichre.com/en/reinsurance/business/non-life/natcatservice/index.html) accessed 12 January 2018.