

**Words into Action Guidelines:  
National Disaster Risk Assessment  
Hazard Specific Risk Assessment**

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## **12. Cross-border risk assessment**

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**Key words:**

Cross-border risk, systemic and cascading risk

**UNISDR**  
2017

Disaster risk knows no national boundaries, as movements of goods, people and finances are intricately linked across borders. While most disasters observed globally are geographically confined incidents occurring on a subnational scale, disasters routinely displace millions of people within and across borders (IDMC 2016).

Around the world, over 270 rivers cross the borders of two or more countries. Ten per cent floods reported globally in periods between 1985 and 2005 were transboundary incidents, which affected approximately 60 per cent of the population (Bakker 2009). Transboundary resources such as rivers may act as a mechanism for the spread of contamination, as in the Sandoz chemical spill of 1986, when the river Rhine conveyed toxic chemicals through Europe after a fire at a Sandoz factory in Switzerland (Boos-Hersberger 1997).

When countries share critical infrastructure, commerce and supply chains (including food, water, fuel and medical supply chains), temporary shutdown of cross-border flows can significantly disrupt economic and social functions. Recent disasters such as the 2011 Thailand flood and the 2011 Japan earthquake and tsunami also illustrated the potential economic spillover impacts well beyond their borders (UNISDR 2013).

Following the destruction of the manufacturing industry in Tohoku, for example, the automobile production in Thailand and China's Guangdong Province declined by 11.5 per cent and 14.3 per cent in the second quarter of 2011, respectively (GFDRR/WorldBank). As more people travel across borders and are affected by disasters overseas, their countries of origin often become active in rescue – as seen in the Indian Ocean tsunami of 2004 and the New Zealand earthquake of 2016. These systemic and cascading consequences of natural disasters call for careful attention to cross-border concerns in national disaster risk assessment and management

In principle, cross-border risk assessment and transboundary coordination take place based on mutual respect for national sovereignty and require broad political support of national leaders and domestic stakeholders (Edwards 2009). Transboundary consideration for DRR – bilaterally or multilaterally – may be incorporated in a variety of forms such as joint risk assessment, contingency planning and exercises, financing and risk pooling arrangements, and technical cooperation. These may be promoted under non-legally binding arrangements such as intergovernmental meetings and strategic frameworks, or through explicit treaties such as the ASEAN Agreement on Disaster Management and Emergency Response, the CARICOM Caribbean Disaster Emergency Response Agency and the SAARC Agreement on Rapid Response to Regional Disasters (Brookings Institution 2013). Existing intergovernmental bodies also provide common platforms for mutual collaboration: the Mekong, Zambezi and Danube River commissions,<sup>1</sup> for example, are regional bodies

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<sup>1</sup> [www.mrcmekong.org/](http://www.mrcmekong.org/); <http://www.zambezicommission.org/>; <https://www.icpdr.org/main/>

with varied extent of transboundary risk management involving major riparian States.

The establishment of common guidelines, harmonization of terminologies, and sharing of information using multiple languages are some of the first steps in harmonizing cross-border risk assessment (European Commission 2010; EXCIMAP 2007).

The United Nations Economic Commission for Europe recommends that countries jointly identify technological risk if an industrial facility is located within 15 km of the shared border or if an accidental substance released could reach a neighbouring country within two days. The Convention on the Transboundary Effects of Industrial Accidents also encourages member countries to share their risk assessment methodologies (UNECE 2001).

The current EU guidelines on national risk assessments also encourages the development of transboundary risk mapping, giving practical tips on how to facilitate such cross-border collaboration. The guidelines recommend broadening the scope of risk assessment as a way to garner stakeholder support, involving such sectors as air quality, spatial development, noise reduction, crisis management and others to engage in joint risk assessment (EXCIMAP 2007).

In addition to these intergovernmental platforms, recent years have also seen public- and private-sector collaboration such as RiSE promoted globally<sup>2</sup> and the Otagai project<sup>3</sup> between Thailand and Japan. These public-private initiatives encourage greater visibility of risk and DRR benefits using common risk metrics and certification schemes applicable to business investment decisions.

Cross-border DRR coordination and harmonization are advisable both to facilitate operation and to leverage limited resources and technical capacity. Collective policy response, such as the establishment of regional catastrophe risk pools, saves considerable public funds through “the law of large numbers”. By pooling drought risk across the African continent, it is estimated that the African Risk Capacity (ARC) reduces its contingency funding needs by as much as 50 per cent (Clarke and Hill 2012). In the ARC, countries participate in an index-based insurance for infrequent, severe droughts, upon completion of initial processes such as the customization of the common risk assessment tool (Africa RiskView software), signing memorandums of understanding for capacity-building activities, agreeing on a contingency plan for ARC payouts, etc.

The fund’s initial capital comes from member countries’ premium contributions supplemented by partner contributions. In addition to ARC, similar gains from

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<sup>2</sup> [www.preventionweb.net/rise/home](http://www.preventionweb.net/rise/home)

<sup>3</sup> <http://kenplatz.nikkeibp.co.jp/otagaien/project/>

regional risk pooling initiatives are estimated for existing regional pools such as the Caribbean Catastrophe Risk Insurance Facility and the Pacific Catastrophe Risk Assessment and Financing Initiative.

With increased movements of capital, goods and populations, along with systematic drivers such as climate change, greater awareness of transboundary risk and bilateral and multilateral DRR cooperation will likely be needed.

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