

Executive Summary

Understanding risk is at the heart of building resilience to disasters. The *Asia-Pacific Disaster Report 2019* presents a new analysis of the regional “riskscape” and pathways for managing the risk for “Empowering people and ensuring inclusiveness and equality” – the theme of the 2019 High Level Political Forum on sustainable development.

Slow-onset disasters account for nearly two thirds of disaster losses in the region. The *Report* captures a comprehensive picture of the complexity of disaster risk in the Asia-Pacific region for the first time. It is revealed that annualized economic losses more than quadruple to USD \$675 billion when slow-onset disasters are added to the region’s riskscape.

The intensification and changing geography of disaster risks signal a new climate reality. Hazards are deviating from their usual tracks and becoming more intense, creating greater complexity and deep uncertainty that are harder to predict. The region is not sufficiently prepared for this climate reality. It has experienced unprecedented flooding in Iran, in March 2019, and in the state of Kerala in India, in August 2018. There was unusual cyclone activity as cyclone Ockhi developed near the equator in December 2017, and the lasting impacts of cyclone Gita affected eight Pacific Island countries. Furthermore, quick succession of flooding and heatwaves were experienced in Japan in July 2018, and collisions of sand and dust storms, with thunderstorms raged across the Persian Gulf, the Arabian Sea and the Bay of Bengal in May 2017. The Sulawesi and Sunda Strait tsunamis in Indonesia, in 2018, presented the complexity of near field tsunami risks.

The Asia-Pacific region is facing complex disaster risks clustered around hotspots. Report identifies four distinct hotspots where fragile environments are converging with critical socioeconomic vulnerabilities. The first is located within the transboundary river basins of South and South-East Asia, where poverty, hunger and under-nourishment are coupled with exposure to intensifying floods that alternate with prolonged droughts. The second surrounds the Pacific Ring of Fire, where transport and ICT infrastructure and poor populations are exposed to typhoons and tectonic hazards. The third is the Pacific Small Islands Developing States (SIDS), where vulnerable populations and critical infrastructures are exposed to climate-related

hazards of increasing intensities. A person in Pacific SIDS is found to be three to five times more at risk than those in other parts of the region.

Disasters widen inequalities in outcomes and opportunities and slow down poverty reduction. The *Report* demonstrates that losses due to disasters will undermine the ability of economic growth to reduce poverty and inequality by 2030, by widening inequalities in outcomes and opportunities and disempowering at-risk communities. The *Report* shows that a 1 percentage point increase in exposure to climate events increases the Gini coefficient by 0.24, increases under-five mortality rates by 0.3, and decreases education rates by 0.26 percentage points, respectively.

The *Report* also highlights groups with intersecting vulnerabilities. By geo-locating the most disadvantaged people, it shows that in many countries, poor households depending on agriculture employment are more likely to also be situated in high multi-hazard risk areas and are therefore not only the hardest hit but also excluded and disempowered. Almost 40 per cent of disaster impacts are on the social sectors of health, education, and livelihoods, resulting in deeper inequalities of opportunity that are transmitted over generations. This creates a vicious cycle of poverty, inequality and disasters, which must be broken to prevent disasters from reversing hard-won development gains.

Inclusive investments can outpace disaster risk. The links between poverty, inequalities and disasters can be broken. This will require transformative change, with social policies and disaster resilience no longer treated as separate policy domains. The *Report* highlights how a comprehensive portfolio of risk-informed investments in social sectors may reduce the numbers of people living in extreme poverty across 26 countries that contain 90 per cent of the region’s population. With disaster risk, 119 million people are projected to be living in extreme poverty in these countries in 2030. However, investing in line with global averages in education, health and social protection will bring this number down, to 80 million, 69 million and 53 million, respectively.

Investments in resilience deliver important social co-benefits. While financing additional investments presents a significant challenge, the additional amounts are small compared to the costs incurred from disasters. Furthermore, policymakers can enhance the quality of investments through policy reforms for more inclusive and empowered societies, to ensure that poor and vulnerable groups are not excluded from the benefits of investments due to barriers in accessing land, reliable early warning systems, finance, and decision-making structures. The *Report* showcases examples of innovative risk-informed social policy and pro-poor disaster risk reduction measures that can be replicated throughout the region. The approaches advocated in this *Report* may also deliver co-benefits through better education, health, social and infrastructure services, higher agricultural production and incomes.

Big data innovations help mitigate the challenges of climate reality. Big data innovations, using the large data sets from mobile phone tracking to satellite platforms, reveal patterns, trends, and associations of the complex disaster risks. The use of risk analytics: descriptive, predictive, prescriptive and discursive, helps understand, monitor and predict the risk of both extreme as well as slow onset events, and thus addresses the key challenges of the new climate reality. The substantial reductions in mortalities and economic losses due to typhoons in North and East Asia can be attributed to big data applications that enabled impact-based forecasting and risk-informed early warning. For example, the devastating potential of super typhoon Mangkhut (2018) was minimized by Big Data applications. Further opportunities are available in flood forecasting, a recent innovation in ensemble prediction systems. Machine learning can also be used to accurately predict the location and severity of floods.

Emerging technologies hold unprecedented promise for inclusion and empowerment. Official data collection systems often exclude the most vulnerable who are hardest to reach and empower. The report presents how Big Data, digital identity systems, risk analytics and geospatial data reduce the barriers in information flows to include and empower at risk communities. For example, direct benefit transfer was targeted and delivered to millions of drought-affected small and marginal farmers through digital identity system and risk analytics, which demonstrates its transformative capacity for inclusion and empowerment. Similarly, these systems use satellite data and computer-based flood models and deliver index-based flood insurance pay-outs to small and marginal farmers. Nevertheless, new technologies bring new risks, including algorithmic bias and issues of privacy and cybersecurity. It is vital that vulnerable, marginalized groups are protected from these risks, so that everybody can benefit from this rich, new source of information and knowledge.

We must seize the opportunities for action. Countries have committed themselves to achieving the Sustainable Development Goals (SDGs) by 2030, to ensure that 'no one is left behind'. This cannot be achieved unless Governments utilize new opportunities for breaking the vicious cycle between poverty, inequalities and disasters. Governments must implement risk-informed policies and investments supported by emerging technologies to empower the most vulnerable populations across the riskscape.

Ultimately regional cooperation is required to reinforce national efforts. ESCAP can support this through the Asia-Pacific Disaster Resilience Network (APDRN), which will pool the strengths of the region to address transboundary disasters as all countries of the region adjust to the new climate reality.