Impacts of climate change – a growing challenge for sustainable development

Impacts of climate change can already be felt today. Recent climate projections anticipate a significant increase in the frequency and/or magnitude of extreme weather events such as storms and floods as well as slow-onset changes, for instance sea level rise and desertification. These trends pose a growing risk in all countries to achieve the sustainable development goals, particularly for poor and vulnerable people in developing countries. They affect livelihoods, ecosystems, economic performance, key assets and jeopardise poverty eradication achievements.

Irrespective of ongoing climate policy efforts, some degree of residual risk of climate change remains in all countries for all plausible scenarios. They affect human and natural systems and may result in economic and non-economic losses and damages. To effectively respond to the entire spectrum of risks, the diverse set of adaptation approaches needs to be understood as complementary pieces of a puzzle, linking existing with more innovative tools in a more comprehensive way. This would allow managing these growing risks effectively to avert, minimise and address loss and damage.

Under all assessed scenarios for mitigation and adaptation, risk from residual damage is unavoidable (very high confidence). IPCC 2014

Averting, minimising and addressing Loss & Damage – international policy discourse

The topic of growing risks from climate change is reflected in the international policy agendas of the Sendai Framework, as part of the United Nations International Strategy for Disaster Reduction (UNISDR) and the United Nations Framework Convention on Climate Change (UNFCCC). Under the UNFCCC, the topic of L&D has gained growing attention, which led to the establishment of the Warsaw International Mechanism for Loss and Damage (WIM) in 2013. In 2015, the Paris Agreement emphasised its importance by introducing L&D as standalone article.

“Parties recognize the importance of averting, minimizing and addressing loss and damage associated with the adverse effects of climate change....”

ARTICLE 8 OF THE PARIS AGREEMENT
Averting, minimising and addressing L&D – a risk-based approach

GIZ advocates a risk-based approach to manage L&D. By analysing risks and identifying suitable solutions on a technical level, this approach supports decision makers from the public and private sector in forward-looking planning.

Comprehensive Climate Risk Management (CRM) is an approach that aims to manage risk along the entire risk continuum, from short-term extreme weather events such as storms and floods to long-term gradual changes such as sea level rise and desertification. Instead of applying individual and standalone measures, it involves a combination of proven and innovative instruments that enlarges our understanding of adaptation as integrated, participatory and iterative approach to manage climate-related risk.

To avert L&D, mitigating greenhouse gases and sustainable development at global level remain paramount. To minimise L&D, it combines a smart mix of instruments that are already applied in climate change adaptation and disaster risk reduction. These tools are complemented by more innovative adaptation tools, such as risk finance and transformational approaches to address L&D. These tools include risk insurance, social protection, human mobility, flexibility in decision making and adaptive management.

CRM implies that all sectors factor risks into plans, including considering how risks may affect action across sectors. At present, existing approaches to include CRM and L&D in national policy rely on their strong linkage to and possible integration into current processes such as National Adaptation Planning (NAP), development planning, existing Disaster Risk Reduction and Management (DRR/DRM) policy, as well as the (re)orientation of national policies towards sustainable development. Institutional integration is crucial for mainstreaming CRM and L&D considerations into new and existing development planning and budgeting processes, within all relevant institutions, sectors, and levels.
To identify the smartest mix of instruments, it is crucial to understand the organisational and economic ability of countries, communities and the private sector to adapt and respond to risk. These factors play an important role for identifying the right measures ensuring climate-resilient development pathways. Due to the partly subjective nature of risk assessment, it is not possible to identify appropriate CRM measures solely through cost-benefit analysis. Many important aspects cannot be quantified and/or monetized but might have a significant impact especially on poor people. Identifying appropriate measures is context-specific and needs to consider the following factors: a suitable combination of different measures, measures that foster sustainable development and stakeholder participation to include affected and marginalised populations on top of the cost-benefit-ratio of measures. Uncertainty regarding future climate change implies that measures of incremental nature will not always be sufficient. In addition, measures that have transformational character and involve fundamental changes need to be considered to appropriately manage current and future climate-related risk.

Comprehensive climate risk management builds on the strong participation of stakeholders from different sectors and scales. It proposes a set of instruments that enables stakeholders to take timely action for enhancing preparedness to climate-related extreme events and for strengthening overall resilience, including slow-onset events.
Averting L&D – mitigation and sustainable development at global level

The magnitude of adverse impacts by climate change depends largely on the global emissions pathway in the coming years and decades. To keep climate change manageable, climate change mitigation is paramount. Hence, taking action to keep global warming well below 2° C compared to pre-industrial levels, as agreed to in the Paris Agreement, and to even limit it to 1.5° C, is an important step for managing climate-related risk.

Sustainable development at all levels includes using renewable energy or switching to low-carbon transportation and lifestyles. Sustainable development paths offer multiple co-benefits such as better air quality and energy access. Adaptation measures like afforestation of mangroves and agroforestry entail similar co-benefits.

Minimising L&D – smart combination of proven tools already applied in adaptation and disaster risk reduction

Instruments that are already applied in the field of climate change adaptation (e.g. “drought-resistant crops”, “climate-proof cities and infrastructure”, ecosystem-based adaptation) are combined with tools of disaster risk reduction (e.g. contingency planning, early warning systems).

Addressing L&D – innovative adaptation instruments, e.g. risk finance and insurance as well as transformational approaches

Addressing L&D is another critical pillar of adaptation and comprehensive CRM.

Risk finance mechanisms such as climate risk insurance, contingency funds and social protection schemes can foster resilience to climate change by spreading risks across different actors, geography and time. These mechanisms also gain importance for addressing residual risks. To continuously manage remaining risks, two options exist: risk transfer or re-entry of residual risk into the risk management cycle.

Instruments for addressing L&D are not only of incremental character. In addition, transformational approaches such as diversification of livelihoods, flexibility in decision-making and adaptive management approaches are needed in order to adapt to change and to reduce the risk of loss and damage. In addition, human mobility has been and will be an important part of development – with or without climate change. Migration can be an important adaptation strategy. It is already widely used in regions experiencing climate variability, e.g. seasonal labour migration. Migration and planned relocation, as a last resort, can reduce the risk of loss and damage.

Main definitions according to the IPCC

Impacts
“[...] Impacts generally refer to effects on lives, livelihoods, health, ecosystems, economies, societies, cultures, services, and infrastructure due to the interaction of climate changes or hazardous climate events occurring within a specific time period and the vulnerability of an exposed society or system. [...]”

Incremental Adaptation
“Adaptation actions where the central aim is to maintain the essence and integrity of a system or process at a given scale.”

Transformational adaptation
“Adaptation that changes the fundamental attributes of a system in response to climate and its effects.”

Risk
“The potential for consequences (= impacts) where something of value is at stake and where the outcome is uncertain [...]. Risk results from the interaction of vulnerability, exposure, and hazard [...]”

Source: IPCC WG II ARS Glossary 2014
FACTS & FIGURES

The impacts of climate change from e.g. rising sea levels and soil salinisation (slow onset events) or tropical storms, floods and heatwaves (extreme weather events) are increasing.

From the 1980s to 2013, the average number of natural catastrophes has nearly doubled.

Over 70% of total economic damage from disasters are weather and climate related.

Extreme weather events alone caused a damage of 100 Billion USD in 2014. 60% of that damage affecting developing countries.

95% of agriculture in Sub-Saharan Africa is rain-fed, thus exposed to changed rainfall patterns.

The impacts on public health, culture and ecosystems are particularly serious.

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Geographical overview of relevant weather-related loss events worldwide 1980 – 2016

Source: Munich Re
Main recommendations to foster a comprehensive approach to climate risk management

1. Foster dialogue and raise awareness on comprehensive CRM approaches and L&D e.g. through programmes offering capacity development and dialogue facilitation, involving relevant institutions at national and sub-national levels.

2. Support a holistic and adaptive approach that links communities, local authorities, and national action.

3. Improve existing approaches and methodologies to assess actual and future climate-related risk based on existing methodologies from the field of climate change adaptation and disaster risk management (such as risk assessments and post disaster needs assessments). Be aware that CRM is context-specific and there is no universal solution.

4. Identify gaps and expand the set of effective CRM measures to address risks e.g. on approaches on how to better deal with L&D from slow onset changes, tools to deal with non-economic L&D or innovative instruments to finance CRM-measures.

5. Generate experience and good practices by concrete demonstration of activities and projects.

KEY MESSAGES

➔ The adverse impacts of climate change are already visible today: over 70 per cent of total economic damage from disasters are weather and climate related (World Bank, 2017). Effects on public health, culture and ecosystems are particularly serious.

➔ The topic of growing risks from climate change is reflected in international policy agendas, particularly under the United Nations Framework Convention on Climate Change (UNFCCC): In 2013 the Warsaw International Mechanism for Loss and Damage (WIM) was established and in 2015 L&D was introduced as standalone article in the Paris Agreement.

➔ Comprehensive Climate Risk Management (CRM) is an approach to assess and manage climate-related risks along the entire risk continuum, from short-term extreme weather events to long-term gradual changes such as sea level rise and desertification.

➔ To avert L&D, mitigating climate change globally remains paramount. To minimise L&D, CRM combines a smart mix of instruments that are already applied in climate change adaptation and disaster risk reduction. These tools are complemented by more innovative adaptation tools such as risk finance and insurance as well as transformational approaches.