



Strengthening Decision-Making for Risk-Informed Development

Lessons learnt from Climate Resilient Economic Development

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The context: Why do we need to be more risk-informed?

We are facing increasingly complex, interconnected, and unpredictable risks — jeopardizing people, communities, infrastructure, and societies worldwide. If current trends continue apace, the number of disasters will increase by about 40% until 2030. Despite international commitments to foster resilience, current development choices fall short of changing the way we manage risks (UNDRR, 2022).

Under Germany's Presidency in 2022, the G7 are setting up a "Global Shield against Climate Risks" recognizing the premise of strengthening our resilience worldwide in face of current and future risks. The Shield gathers climate resilience and preparedness activities and also mobilizes funds and resources when a disaster occurs (BMZ, 2022). There is a growing momentum to transform the way we govern risks.

What is risk-informed development (RID)?

The RID approach integrates a broad understanding of risks linked to climate, health, economy, environment, and various other sectors and fields. Addressing the systemic and interconnected nature of risks, RID is an interdisciplinary, strategic, and flexible guiding principle for decision-making towards more resilient and sustainable development progress. RID recognizes that risks are influenced by our activities and choices. (UNDP, 2022).

The Global Initiative on Disaster Risk Management (**GIDRM**), commissioned by the Federal Ministry for Economic Cooperation and Development (BMZ) and implemented by GIZ, aims at strengthening capacities and skills in risk-informed decision-making to safeguard development achievements worldwide. In international cooperation, we need to ask ourselves: *Are our development decisions risk-informed?*

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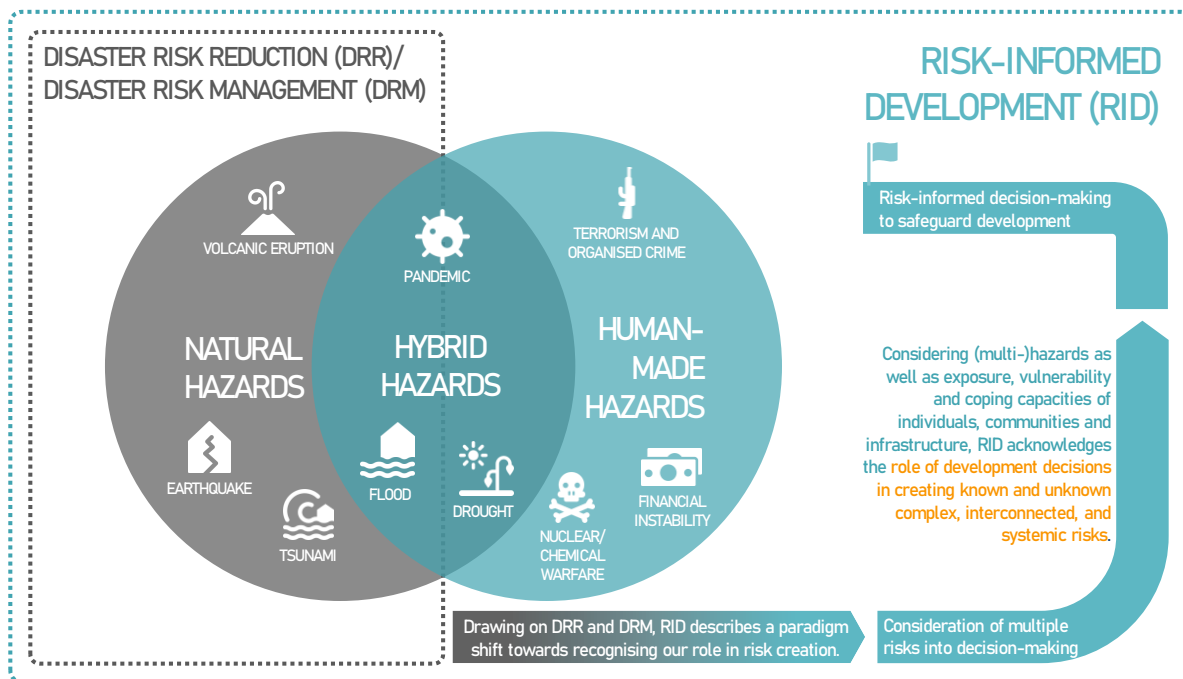
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The challenge: How can we become more risk-informed in international cooperation?

Whenever societies are exposed and vulnerable to hazards or lack the capacities to build sufficient resilience in face of risks, an extreme event can turn into a disaster. Disasters impact a variety of areas such as economy, governance, tourism, or critical infrastructure. In already fragile contexts, disasters can have especially devastating effects. Disasters may wipe out many years of development achievements and limit development opportunities, especially in countries insufficiently prepared for current and future risks. Additionally, development decision-making can entail further risk creation. In fact, “risk creation is outstripping risk reduction” (UNDRR, 2022).

Despite the efforts of international cooperation to strive towards making development achievements as sustainable as possible, current development pathways and investments oftentimes are not risk-informed enough or can even contradict each other. Here is an example: The building of a hydropower plant to ensure energy supply for an industrial zone might increase the risk of flooding upstream as natural flood plains are reduced due

to construction as well as the risk of water shortages downstream. This investment decision could then impact the agriculture production of the communities living downstream and impact their livelihoods—possibly leading to food insecurity and transnational or regional social and political conflicts. Additionally, the building project might lack the incorporation of future risk scenarios resulting in a disruption of services in times of unexpected strong storms. The resulting occurrence of a power outage might create cascading risks in other (critical) infrastructure sectors such as health, energy and water supply, transport, or communication.

As development is taking place in an increasingly complex and uncertain environment of risks, building adequate capacities to reduce and manage risks is more than ever key.

Risks are exacerbated by risk drivers such as unplanned urbanization, environmental degradation, gender inequality, fragility, conflict, forced migration, and intensified by climate change. The risks that are being created are increasingly systemic and cascading across social, economic, and environmental systems as the COVID-19 pandemic demonstrated. Current disaster risk reduction (DRR) and climate change

adaptation (CCA) mainstreaming approaches are limited in addressing these risks if only responding to acute risks or dealing with them in isolation. Instead, we need to transform our development decision-making in international cooperation to be as risk-informed as possible from the outset.

While disasters cannot be prevented entirely, mitigating their adverse impacts is possible. Actively managing risks contributes to minimizing the potential loss of life, injury, and destroyed or damaged assets. Originating from the field of disaster risk reduction, risk-informed development (RID) expands the understanding of risks to include multiple concurrent and ever more systemic risks emerging from not only natural, but also human-

made and hybrid hazards. This risk-based approach enables societies to prepare, mitigate, and adapt to the evolving and complex risk landscape with the goal of strengthening resilience (inter-)nationally, regionally, and locally and safeguarding development in a sustainable manner. Thereby, RID emphasizes risks to development, but also the role of development choices as a source of risk creation. By addressing systematic risks in all fields instead of only in DRR or CCA action, RID describes a shift in mindset – across sectors, institutional levels, and stakeholders – from managing single hazards towards incorporating multi-hazards as well as existing and future risks into all development processes from the outset.



RID is primarily a governance process prioritizing the consideration of risks in all development policy, planning, decision-making, and budgeting. With the RID approach as a guiding principle, decision-makers need a variety of strategies, tools, and methodologies to understand the risks faced when entering a certain development trajectory.

Depending on the country or regional context and the opportunities in the respective political economy—RID draws on tools and strategies such as:

- › Building capacities in risk awareness, risk management and governance via trainings;
- › facilitating and financing comprehensive risk assessments;

- › ensuring participation and community-driven policymaking and implementation;
- › promoting risk-informed investments and financial solutions to reduce risks such as insurance; etc.

RID applies existing good practices and instruments adapted to its broad understanding of risks and integrates them continuously into governance processes. The range of strategies and approaches supporting RID is evolving with the development of innovative solutions to global challenges such as climate change. In the context of the climate crisis, the tool of climate-sensitive macroeconomic modelling and ensuing adaptation measures, introduced below, can contribute to fostering resilience and RID.

One approach: Assessing long-term economic impacts of risks and risk reduction measures

A valuable tool to improve the information base of decision-makers for RID are macroeconomic models. Macroeconomic assessments have two key advantages disclosing (1) the mid- to long-term **costs of risks** (e.g., droughts or floods) on the national economy and (2) how **risk reduction measures** affect the whole economy in the long run. Drawing on an improved understanding of the national economy's vulnerabilities to risks, these models serve decision-makers as an enhanced appraisal method for the risks faced by the development trajectories taken. Such models can also help to assess the economy-wide benefits of implementing certain risk reducing measures, which often occur outside their immediate area or sector of implementation.

Since 2019, the GIZ global programme Climate Resilient Economic Development (**CRED**) is piloting macroeconomic modelling for managing climate risks and adaptation planning in Georgia, Kazakhstan, and Vietnam. Together with its partners (ministries of economy or planning as well as economic research institutes) country-specific macroeconomic models have been developed and assessments of economy-wide climate change impacts and respective adaptation measures were conducted. The modelling results inform about direct, indirect, induced, and total socio-economic impacts (among others, on GDP, employment, and CO₂ emissions) of both climate hazards and adaptation options.

CRED's partners are enabled to compare the macroeconomic impacts of different adaptation measures to identify those measures that benefit the national economic development. The results also provide insights into whether an adaptation measure increases or decreases energy-related CO₂ emissions to favor adaptation options with co-benefits. In case of increased emissions, additional mitigation measures can accompany the adaptation measure to manage the trade-off between adaptation and mitigation efforts.

Additionally, CRED's approach is applied to risks beyond those resulting from the climate crisis: Partners used the macroeconomic model to assess the respective impacts of the COVID-19 pandemic or of Russia's war on Ukraine on the national economy. Based on this information governments may take suitable measures to mitigate the impacts of such external economic shocks.

Case study Kazakhstan: Macroeconomic Modelling for Adaptation Planning in the Agriculture Sector

In the context of adapting to increasing occurrence and severity of droughts due to climate change, Kazakhstan’s climate sensitive macroeconomic model developed under the CRED programme was applied to show the **economy-wide effects of investments in irrigation system reconstruction and expansion** in Kazakhstan. The figure below shows the impacts of such investments on GDP, employment, and energy-related CO₂ emissions.



Compared to a situation without adaptation, investments in the agricultural water infrastructure result in a yearly increase of up to **1.2% of GDP** and **up to 0.8% higher employment rates** corresponding to up to **78,000 additional jobs**. These investments increase agricultural output, also in years when droughts are not occurring. Other sectors along the value chain are indirectly positively affected, for instance, food production or the construction sector, which profits from the rehabilitation and expansion of water canals and reservoirs. However, a higher growth path leads to an annual rise of energy-related CO₂ emissions of up to 0.4%. This identification of potential trade-offs with mitigation efforts is crucial to lay the foundation for additional mitigation actions.

The benefits: A powerful tool for RID

The results from macroeconomic models make the business case for adaptation measures: they go beyond sectoral cost-benefit analyses by showing how the economy as a whole as well as specific sectors benefit in the mid- to long-term from such investments. Partners can then utilize this information to mobilize resources for adaptation not only within their country, but also from international climate finance. Macroeconomic modelling can be used as an effective instrument for advancing capacities, risk awareness and knowledge in partner countries for more risk-informed decision-making: understanding both the

economic implications of the risks faced today and in the future as well as the benefits of different measures to reduce, prevent and manage various types of risks and identify potential benefits and trade-offs in the context of climate action.

The approach of climate resilient economic modelling could be scaled up in line with the RID principle to a broader understanding of risks to allow more risk-informed decision-making in the national context as well as in international cooperation. Using macroeconomic models for these purposes thereby supports the shift to the paradigm of risk-informed development if integrated sustainably in international cooperation.

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