

EXPLAINER

Understanding Different Approaches to Managing Climate Change Risks



In Mongolia, climate change has worsened the effects of a dzud, an unusually dry summer followed by a severe winter. The phenomenon can be devastating to livestock on which many people rely for food and livelihood. Photo credit: ADB. *Risk reduction, retention, and transfer are risk management approaches that can be used to address loss and damage associated with climate change impacts.*

Introduction

There exists a range of approaches and instruments to manage the loss and damage associated with the impacts of climate change. The challenge for decision makers is to identify which ones are more appropriate not only to the type of risk but also to the socioeconomic circumstances of the people and communities that are at risk.

Three risk management approaches can be identified for climate change risks. These are risk reduction, risk retention, and risk transfer.

In this explainer, we define each approach, give examples of related instruments or measures, and discuss the pros and cons. Lastly, we present the implementation requirements of each approach.

Risk Reduction

The risk reduction approach entails putting in place measures (either structural or non-structural) before an event occurs with the goal of reducing loss and damage, which could be caused by slow onset events, such as desertification, sea level rise, and ocean acidification, or by extreme weather events, such as storms and flash floods

Table 1: Examples of Structural and Non-Structural Risk Reduction Measures

Structural Risk Reduction Measures	Non-Structural Risk Reduction Measures
<ul style="list-style-type: none"> • Contingency planning • Disaster risk reduction plan • Early warning system • Land-use planning • Public awareness 	<ul style="list-style-type: none"> • Engineering measures such as dams, flood levies, and evacuation shelters • Retrofitting of existing structures • Enhanced building codes to increase structural resilience of new infrastructure

Source: Adapted from UNFCCC (2012). Available at: <http://unfccc.int/resource/docs/2012/tp/01.pdf>

While the implementation of risk reduction measures may be costly, the benefit of such measures (where the benefit is the estimated reduction in expected loss and damage) should justify implementation costs.

Risk Retention

Risk retention is defined as an approach by which a society or community (at national or local level) would accept a degree of risk of loss and damage associated with impacts from slow onset and/or extreme weather events.

Table 2: Examples of Planned and Unplanned Risk Retention Measures

Planned Risk Retention Measures	Unplanned Risk Retention Measures
<ul style="list-style-type: none"> • Contingency loan • Social funds • Reserve fund 	<ul style="list-style-type: none"> • Emergency services or assistance loans • Humanitarian assistance • Reconstruction • Rehabilitation

Source: Adapted from UNFCCC (2012). Available at:
<http://unfccc.int/resource/docs/2012/tp/01.pdf>

A distinction is made between planned and unplanned risk retention measures. Planned risk retention measures involve setting aside public funds explicitly to respond to emergency needs. Unplanned risk retention measures involve drawing from the general budget for an unforeseen emergency, making it an unexpected burden to fiscal resources.

Risk Transfer

This approach involves shifting the risk of loss and damage from one entity to another. It is typically undertaken when the potential loss and damage is greater than the ability to manage it. Insurance (including microinsurance) is a risk transfer measure and so are catastrophe bonds, risk pooling, conditional risk transfer, and combined insurance-credit programs.

Risk transfer measures can be invaluable to governments, or even households, as they help limit the financial burden of rebuilding or recovering from loss and damage.

Comparison of Risk Management Approaches



In this video, Swenja Surminski, senior research fellow at the Grantham Research Institute on Climate Change and the Environment, talks about the different approaches used in identifying the right combination of financial instruments and tools to address the risks of loss and damage.

Loss and damage can be triggered by extreme weather or by slow-onset hazard. In general, risk reduction should be undertaken in either case wherever cost-effective risk mitigation can take place.

Similarly, risk retention is likely to be effective in both types of situations. However, this risk management approach is likely to be of greater importance to mitigate the impact of slow-onset hazards, which are projected to happen with a great degree of certainty (such as sea-level rise).

The use of risk transfer instruments is focused mostly on addressing the impacts of extreme weather events. However, these instruments may also be useful for addressing the impacts of slow-onset events. For example, there are well-developed insurance schemes designed to protect against loss and damage from drought.

The selection of an approach or combination of approaches also depends on the frequency and level of impact of the event.

In the case of extreme weather events that occur with a high degree of frequency but with low impact (or low severity)—such as recurring localized annual floods, risk retention (accompanied by risk prevention and reduction) may be a better suited approach.

In the case of extreme weather events with a low degree of frequency but high impact (such as a 1-in-100 year typhoon affecting a large territory), risk transfer (accompanied by risk prevention and