



# Countries addressing climate change using innovative insurance solutions

How to integrate climate risk insurance into a comprehensive climate risk management approach in different country contexts

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## Overview: How can countries manage climate risk in their local context?

The design and implementation of a comprehensive climate risk management approach that is linked to insurance depends on the needs of the community, country, or region in question. Insurance is a flexible tool that can be combined with existing risk management instruments by different actors such as the private and public sectors to address different country needs.

The three country examples presented in this document show similar activities in integrating climate risk insurance into a comprehensive climate risk management approach:

- Phase I: Combining ex ante risk and needs assessments to gather information on the population;
- Phase II: Strategy design and making improvements to create an enabling environment;
- Phase III: Implementation and ongoing monitoring and adjustments as needed to fit the changing conditions.

This document depicts the general steps that all countries can take when devising a comprehensive risk management approach that integrates insurance along with the more tailored approaches to fit to the specific goals of the three country examples listed in the later part of the document.

**Keywords:** Managing climate risk, climate insurance, risk transfer, risk reduction, adaptation, disaster risk management, livelihood protection, sovereign risk, risk pooling, loss and damage.

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# Abbreviations and acronyms

ARC	African Risk Capacity
BMUB	The German Federal Ministry for the Environment, Nature Conservation, Building, and Nuclear Safety
BMZ	German Federal Ministry for Economic Cooperation and Development
CARE	Cooperative for Assistance and Relief Everywhere
CARICOM	The Caribbean Community and Common Market
CCRIF	Caribbean Catastrophe Risk Insurance Facility
CRED	Center for Research on Epidemiology of Disasters
COP	Conference of the Parties (to UNFCCC)
DRFI	Disaster Risk Financing and Insurance Program (of the Global Facility for Disaster Reduction and Recovery)
EM-DAT	Emergency Events Database
HFA	Hyogo Framework for Action
GAIP	Ghana Agricultural Insurance Programme
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH
IAIS	International Association of Insurance Supervisors
ICP	Insurance Core Principles
IPCC	Intergovernmental Panel on Climate Change
IIPACC	Innovative Insurance Products for the Adaptation to Climate Change
LPP	Livelihood Protection Policy
MCII	Munich Climate Insurance Initiative
MFI	Microfinance Institutions
SBI	Subsidiary Body for Implementation
UNFCCC	United Nations Framework Convention on Climate Change
UNU	United Nations University
UNU-EHS	United Nations University Institute for Environment and Human Security
UNEP-FI	United Nations Environment Programme Finance Initiative

# Table of Contents

Overview: How can countries manage climate risk in their local context?	2
Acknowledgements	3
Abbreviations and acronyms	4
<b>1. Introduction</b>	6
<b>2. Challenges for implementation</b>	9
<b>3. Country Scenarios</b>	11
Country A: Livelihood protection strategy including insurance for low-income populations	11
Preconditions for a livelihood protection strategy including insurance	11
Phase 1: Risk & Needs Assessment	12
Phase 2: Design	13
Phase 3: Implementation	14
Country B: National risk management strategy including insurance	15
Preconditions for a national risk management strategy that includes insurance	15
Phase 1: Risk & Needs Assessment	16
Phase 2: Design	17
Phase 3: Implementation	18
Country C: A regional risk management platform including an insurance pool	19
Preconditions for a regional risk management platform including an insurance pool	19
Phase 1: Risk & Needs Assessment	20
Phase 2: Design	21
Phase 3: Implementation	22
<b>4. Summary of recommendations</b>	23
References	25
About the project	26

# 1. Introduction

Climate change and the associated pressures threaten society through changing rainfall regimes, intensified and more frequent storms, sea level rise, widespread desertification and the loss of geological water sources such as glaciers. This threatens to undermine resilience, especially for lower income countries and their citizens, by weakening their capacity to recover and absorb losses from extreme weather events. In order to support governments and households to reduce the immediate and long-term repercussions from these events, countries can include insurance solutions within their national climate change adaptation strategy to support adaptation and build climate risk resilience.

There are a range of tools that governments can combine in a comprehensive climate risk management strategy. These include risk prevention and reduction, risk transfer such as insurance, funds for flood protection, contingency planning and other forms of risk management instruments. Countries can decide on how to manage and finance these risks according to detailed methodologies of risk management, for instance through a risk layering analysis, which separates risk into different segments according to their potential frequency and severity. Climate-related risks which happen often (high frequency) but which are less serious (low severity) can be addressed most effectively by preventative and risk reduction activities. The risk posed by more severe and less frequent events can be transferred by using private and/or public insurance mechanisms. The loss and damage that remains once all feasible measures are taken (i.e., residual risk) requires several approaches, such as strengthening institutional arrangements and socio-economic policies or relocation of populations, flood control investments, fund for irrigation systems, etc.

In order to better understand how countries can possibly set-up a comprehensive approach that is linked to insurance, three situations where countries use risk management tools in different ways are presented starting with Country A. This is a lower middle income country in Asia that is primarily interested in covering agricultural risks. Particularly, Country A wants to ensure livelihood protection for low-income vulnerable populations by using a comprehensive climate risk management approach that includes risk transfer. Country B, on the other hand, is an island in the Caribbean and is categorized as an upper middle income country. Country B is much more interested in helping the government protect their federal budget reserves from dramatic fluctuations due to disaster impacts so it is devising a comprehensive approach linked with risk transfer. Country C is a low-income country in Africa that often faces the risk of droughts, floods and heavy winds. In turn, Country C is interested in participating in a regional risk management approach (e.g., pooling sovereign risk) that can aggregate weather-related risks from the sub-national and national levels.

[Discussion paper open for comments:](#)

This document is considered work in progress as Parties to the United Nations Framework Convention on Climate Change (UNFCCC) move towards the 2015 international agreement on climate change, which is expected to go into implementation from 2020 onwards.

## WHAT SEQUENCE OF KEY ACTIVITIES AND MEASURES ARE NEEDED FOR DESIGNING A COMPREHENSIVE CLIMATE RISK MANAGEMENT APPROACH?

A comprehensive climate risk management approach combines *ex ante* risk assessment to gather information with a subsequent decision on how to manage and finance these risks. Sequencing of key activities starts with a

risk and needs assessment, followed by strategy design, making improvements to the enabling environment and finally implementation and ongoing monitoring and adjustment as needed to fit changing conditions:

### PHASE 1: RISK AND NEEDS ASSESSMENT



- Risk analysis to identify, assess and map risks based on historical data, analyse future hazard trends, risk modelling, vulnerability assessment, and information on costs and benefits of different risk management options.
- A needs assessment is the basis for setting up a comprehensive climate risk management approach to cater to the real needs of vulnerable communities.
- Stakeholder mapping and expert consultations ensure that relevant actors are involved at the early design stages and at the appropriate stages of implementation.

### PHASE 2: STRATEGY DESIGN



- Risk layering approach to separate risks into different segments according to their potential frequency and severity to determine how the different risk segments can be responded to:
  1. Select appropriate risk reduction measures (e.g., early warning, better building codes, improving agricultural practices, etc.) for high frequency and low severity risk.
  2. Combine risk transfer instruments such as insurance and risk reduction for low frequency and medium severity risk.
  3. Select other forms of risk management mechanisms (e.g., fund for irrigation systems, relocation of population, funds for flood protection, investments in alternative irrigation techniques, etc.) for very low frequency and high severity risk.
- Engage relevant actors in the feedback process on design of the risk management measures (e.g., link insurers, distribution channels and regulators) to make sure responsibilities are clearly set out.

### PHASE 3: IMPLEMENTATION

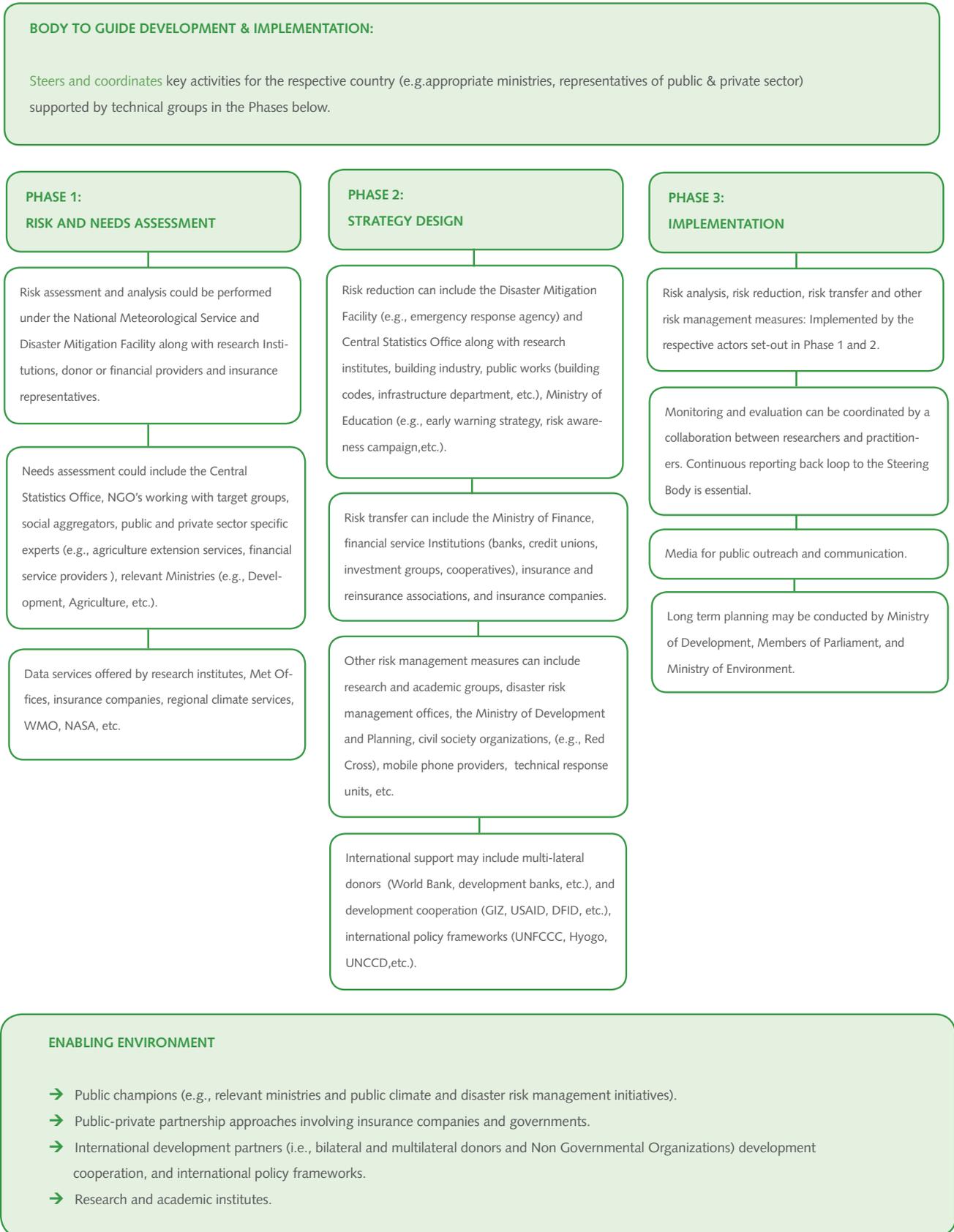
- Ensure steps 1–2 are met and implemented at the appropriate levels.
- Continue to foster country ownership and capacity building of country and local actors.
- Monitor and evaluate respective projects to generate feedback and ensure that the target group and given objectives have been reached.
- Provide lessons learned and good practice at the country level.
- Public communication/media to raise awareness amongst the vulnerable target groups, enhance consumer protection and public outreach.

### ENABLING ENVIRONMENT

- Get **political buy-in** from government & relevant decision makers (i.e. Minister of Finance, etc.).
- Obtain and enhance **appropriate data** and **hazard mapping** to better monitor the impact of the proposed measures.
- Provide **support services** (e.g., technology, loss assessment, actuaries, training institutions) and **mobilize resources** (investments/donor support) for implementation.
- Explore appropriate **back-up mechanisms** (e.g., reinsurance, donor support).
- Provide **risk management education**.
- **Approval of policies on measures** to be implemented under national finance / insurance regulations (e.g., microinsurance regulations).
- **Foster country ownership and capacity building** of country and local actors.

## WHAT ACTORS ARE INVOLVED IN PROVIDING CLIMATE RISK MANAGEMENT SOLUTIONS?

A range of actors contribute to the various stages of the development of a comprehensive climate risk management approach including:



## 2. Challenges for implementation

There are some limitations that countries might need to address when implementing a comprehensive climate risk management approach:

Country Level	Limitations	Solutions
Community	Policy holders often expect payouts every year.	→ Insurance products should be complemented by disaster risk reduction and additional services.
	Low-income countries often lack resources and capacity for testing new products.	→ Ensure sufficient resources– for example, technical skills, institutional capacity-building, policy and planning, and knowledge dissemination.
	Overcoming barriers to private sector insurance such as high start-up costs and lack of infrastructure requirements for data collection.	<p>→ Insurance risk assessment can facilitate regional data analysis and help establish data standards, methods and repositories.</p> <p>→ Open source initiatives for catastrophic risk models along with standardized hazard maps can reduce the cost of risk analysis.</p> <p>→ New technologies such as satellite data and simulation models.</p> <p>→ Weather stations can be used for multiple services to reduce infrastructure costs.</p>
National	Difficult to provide funds in a post disaster situation under fraud and corruption as well as biases towards certain groups.	→ Governments have to establish post disaster contingency plans that specify how to disburse and distribute funds to avoid fraud and corruption.
	Institutional inertia: institutions do what they always do.	→ Organizational development and capacity building based on an overarching strategy with clear objectives, roles and mandates is required.
	In the case of small island states, sea level rise is expected to increase. Thus, governments need to decide between approaches to address slow-onset events versus extreme weather events.	→ Sea level rise can be addressed, for example, through a fund invested at the international market (e.g., risk pooling) where profits can be used to fund adaptation measures in relation to sea level rise.

Country Level	Limitations	Solutions
Regional	High turnover rate in the government and loss of knowledge.	<ul style="list-style-type: none"> <li>→ Identify champions on a technical level and ensure government officials have financial and actuarial education.</li> <li>→ Knowledge management and transparency.</li> <li>→ Elaboration of training modules, documentation of lessons learned and public communication.</li> </ul>
	Governments want to invest into something more visible and short-term as opposed to a long-term vision.	<ul style="list-style-type: none"> <li>→ Connect a comprehensive climate risk management approach with a long-term development strategy that is usually medium to long-term.</li> </ul>
	Different operating parameters for the public and private sector	<ul style="list-style-type: none"> <li>→ Need role models in both the public and private sector that showcase the benefits of insurance in a comprehensive approach.</li> <li>→ Public sector capacity building to manage expectations and highlight the value added of integrating insurance into risk management planning.</li> </ul>
	Political unrest and currency risk.	<ul style="list-style-type: none"> <li>→ Third party country can host the insurance. For example, for the African Risk Capacity Insurance Company Ltd, the financial affiliate will temporarily be in Bermuda as a private, non-profit company.</li> </ul>
	Sharing of sensitive data at regional level.	<ul style="list-style-type: none"> <li>→ Draft agreements outlining how sensitive data may be used by the different parties.</li> </ul>

## 3. Country Scenarios

# Country A: Livelihood protection strategy including insurance for low-income populations

- **Context:** Low middle income country in Asia that is primarily interested in covering agricultural risks.
- **Approach:** At the community level, the government wants to ensure livelihood protection for low-income vulnerable populations by using a comprehensive climate risk management approach that includes risk transfer.
- **Challenge:** Lack of weather and agricultural insurance products along with other risk management tools used to support livelihood protection in the country.

### Summary

A livelihood protection strategy starts with an assessment of the risks and needs of the local population and engagement with relevant stakeholders such as agricultural extension officers, the Ministry of Agriculture, private sector and community based organizations before moving to the design phase. In order to include insurance, an enabling risk management environment is required such as access to early warning systems and mobile phone technology by final beneficiaries. The co-benefits of using insurance is that it can create a buffer for individuals and additional source of funding to invest into resilience building activities (e.g., better use of fertilizer or planting drought or flood resistant crops).

### Preconditions for a livelihood protection strategy including insurance

Aside from the general steps outlined on page 7 and 8, certain preconditions are advisable for a livelihood protection strategy that includes insurance:

→ Understanding the risk culture in the country and the application of risk management strategies, including government policies to promote risk awareness;

→ Reliable historical data on weather and agriculture (e.g., time series of yield data of major crops) along with current weather data (ground and satellite), geological hazards (such as earthquake, volcanic eruption, landslide, erosion, etc.) and future climate modeling;

→ Availability of data (bases) related to loss and damage experience from extreme events (e.g., Munich Re NatCatService or the Swiss Re sigma as well as EM-DAT of CRED) and agricultural losses;

→ An adequate regulatory and supervisory framework to ensure that insurance undertakings are financially viable and that products are designed and sold in a way that ensures value to the customer;

→ A broad and well-functioning distribution networks in order to effectively reach a large client base. Ideally, distribution partners contribute to risk reduction measures such as education and outreach;

→ Well-established civil society networks and frameworks along with public and private sector actors which are sufficiently trained in livelihood protection;

→ Public-private partnerships can offer the market sustainability of private sector approaches and the flexibility of innovation of public sector approaches;

→ Strong local institutions are required initially and for selected time-bound activities such as training;

→ Appropriate "back-up" mechanisms such as re-insurance are very important to meet exceptionally high claims of the primary insurance providers;

→ Parliamentary and civil-society champions are needed as they usually have a longer tenure than ministers and are often the ones working directly on issues of concern.



# Phase 1: Risk & Needs Assessment

Aside from the general steps outlined on page 7 and 8, the first step in the livelihood protection strategy is the assessment of local population needs using data from the central statistics offices and those NGOs which work directly with the target groups. This step is followed by risk assessments conducted by the National Meteorological Service and with data from research institutes, Meteorological offices, insurance companies, etc. Other key features include:

- Targeted (household level) demand study, as was the case in the Livelihood Protection Policy (LPP) programme in the Caribbean;
- A market study to find existing insurance markets in the given country and to gather lessons learned from the key experts;
- Defining the socio-behavioral aspects of the local population to determine how to incentivize risk reduction behavior;
- Stakeholder mapping and consultation throughout the process to consult with stakeholders (e.g., local governments, community-based organizations, microfinance institutions (MFI), private sector) at important junctures as this will help to create ownership in the given country.

## A demand study in the Caribbean for weather-related insurance:

MCII undertook this study in cooperation with GIZ to confirm that weather-related events are a real threat to the resilience of the Caribbean region, especially in relation to low income households in agriculture and tourism. The study assessed the implicit and explicit demand for microinsurance and also examined potential implementation options. This was done through a demand survey and interviews with representatives from financial institutions.

Source: [http://www.climate-insurance.org/upload/pdf/20121105\\_MCII-GIZ\\_2012\\_Demand\\_for\\_Microinsurance\\_in\\_the\\_Caribbean#pdf](http://www.climate-insurance.org/upload/pdf/20121105_MCII-GIZ_2012_Demand_for_Microinsurance_in_the_Caribbean#pdf)

## Product design in Ghana:

Based on market research, demand assessment and feedback rounds on a crop index insurance product designed for maize farmer against drought, the Ghana Agricultural Insurance Programme found that most smallholders are not interested in buying products which only cover catastrophic events. Products paying out every 10-12 years on average are not attractive enough to these farmers. Farmers often perceive such products as not worth investing in because it would take 10 years before receiving the payouts. The clients suggested a more comprehensive coverage that includes more frequent payouts. The challenge is however that the farmers are not willing to pay a corresponding higher premiums and further work is needed to ensure products are both sustainable and cater to the needs of the population (GIZ, IIPACC 2013 in Warner, 2013).



# Phase 2: Design

The design phase for the livelihood protection strategy follows the general steps outlined on page 7 and 8, but also requires the design of insurance products to be based on **relevance and affordability** (i.e., premiums, payout) by using **community feedback on the design** of the product and by allowing for space to adapt the product over time. Country A also needs to determine the **best use of the fiscal budget** to support and ensure that micro-insurance projects are sustainable in the short and long-term. Other steps during the design phase include:

- Discuss **consumer protection guidelines and specific regulations for microinsurance with regulators**;
- Review existing **claims management processes and systems** and adopt them according to new products to allow insurance organizations to be more efficient and effective in delivering insurance pay-outs to enhance overall end-user satisfaction;
- Use **existing distribution channels**, such as MFIs, credit unions, branch networks of insurance or banking companies, branch network of input suppliers, member networks of large farmer organizations or through public extension officers, to sell the product and keep the transaction costs at a manageable level;

→ **Capacity building of the local insurance suppliers** (designing, pricing, claims management) as part of a sustainable approach that also links insurance with preventative measures and disaster risk reduction through dialogue between relevant ministries and the private sector;

→ **Client education on climate risks and the different tools which can be used to tackle these risks** by involving the **Ministry of Education and civil society organizations**. This should also include awareness building on basic insurance principles; running nation-wide awareness campaigns with support of the government via different local or traditional channels specifically designed for the local context (e.g., radio, mobile phones, cultural events, etc.);

→ **Set-up an impact and evaluation criteria** with indicators, such as effectiveness, efficiency, and access to risk management tools. Select indicators based on local applicability. This can be supported by research and academic groups, Ministry of Development and civil society groups.

Agricultural insurance approaches are generally classified as either traditional crop insurance or index-based insurance. The following distinctions can be made:

## Traditional crop insurance

Indemnity principle - insurance products respond to actual losses.

### Key advantages:

- Multi-peril crop insurance that pays an indemnity if the actual yield is lower than insured yield;
- Covers many perils including drought, flood, high winds, etc.;
- Not subject to the challenge of "basis risk".

### Key challenges:

- Subject to moral hazard problem;
- Subject to adverse selection whereby those taking out the insurance have better information than the insurer about the likelihood of losses;
- Expensive to administer and can require government assistance in the form of subsidies.

## Index-based products

Index principle – insurance products respond to an index (e.g., rainfall, temperature or area yield) rather than assessment of actual losses.

### Key advantages:

- Payouts are made quicker/shortly after the losses;
- Not susceptible to "moral hazard" or "adverse selection;"
- Low administrative costs can lead to more affordable premiums.

### Key challenges:

- Basis risk due to the mismatch between contract pay outs and the actual loss experienced;
- Products can be more difficult to understand;
- Households might have a hard time trusting the insurance companies if the data source and/or trigger methodologies are not transparent or trusted;
- Dependent on working measurement systems, such as weather stations, seismic stations, etc. Maintenance and reliability of such systems can be an issue.



## Phase 3: Implementation

Once the country selects the appropriate risk management instruments and the necessary infrastructure is in place, there are several key steps needed during the implementation phase:

- Public sector insurance can be linked to existing disaster risk reduction public programmes such as social protection schemes implemented by the government as for example in the case of Ethiopia;
- Initiate participatory approaches with local risk-affected populations to ensure that insurance products meet their needs by including research and academic groups along with civil society and the target groups;
- Continuous capacity building of the local supply side (designing, pricing, claims management) as part of a sustainable approach rather than donor-driven solutions. This can be supported by the Ministry of Development, and the private sector;
- Monitor and evaluate the performance of the insurance products by assessing its correlation to actual losses, i.e. its inherent basis risk in order to adjust and eventually improve the product to better meet the needs of the targeted population;
- Monitor changes of risk prevention and reduction behavior of clients. Research the impact, interaction and complementarity of insurance solutions with preventative and reduction measures.

### Linking insurance to existing social safety nets:

The R4 Rural Resilience Initiative in Ethiopia integrates insurance within risk reduction, whereby the most vulnerable farmers can use their labor to pay for their premiums. Those farmers who bought insurance work extra days on community adaptation projects such as planting trees to mitigate water erosion to pay their premiums. The program is embedded in an important governmental programme, the Productive Safety Net Program (PSNP).

Source: <https://www.wfp.org/climate-change/r4-rural-resilience-initiative>

### Insurance as incentive for risk reduction:

Insurance can provide the necessary financial security to take on a risky but productive investment. For instance, a market study in India found that rice farmers offered formal index insurance in the Andhra Pradesh region of India diversified their risks by planting higher yield varieties of rice than those without index insurance (Mobarak and Rosenzweig 2012). However, index insurance was not the only measure used by these farmers. Insurance needs to be combined with additional resources such as better seeds (e.g., drought or flood tolerant varieties), technical and management training, access to (local, regional) markets, easier access to credits, etc.

# Country B: National risk management strategy including insurance

- **Context:** Country B is an island in the Caribbean and is an upper middle income country.
- **Approach:** Devise a comprehensive approach linked with risk transfer to help the government protect their federal budget reserves from dramatic fluctuations due to extreme weather events.
- **Challenge:** Governments of small islands face liquidity constraints after disasters and have reduced capacity to respond to and recover from disasters.

## Summary

When a natural hazard occurs, the government needs to mobilize resources quickly without jeopardizing the fiscal budget. Country B should devise a financial protection strategy using a combination of instruments. **The first step is to identify and assess the needs of the sectors at risk** (e.g., tourism, agriculture) and to **subsequently determine whether the country has the capacity to manage these risks**. Setting up a steering committee with relevant actors from existing regional bodies such as the Caribbean Community and Common Market (CARICOM), the Pacific Island Forum, and relevant ministries of the selected sectors which can facilitate this process. The final stage should mainstream climate resilience in all relevant policies and strategies. A comprehensive climate risk management approach that is linked to risk transfer can **buffer national budgets and enable additional funding for long-term investments in, for example, risk management education, socio-economic development, and resilience projects**.

## Preconditions for a national risk management strategy including insurance

In order to implement a national risk management approach that features insurance, specific preconditions need to be in place aside from the general features described on page 7 and 8. This includes **political will** from relevant stakeholders and actors. National governments need to define the **critical threshold** at which the government is expected to cover the relative losses (i.e., at a certain threshold private sector solutions cannot cover the respective losses anymore). Other preconditions include:

- **Historical data on losses, weather, assets, sea level-rise risk, and climate change related projections** to perform risk assessments reflecting topography, design, building practices, and conditions of the given country to support decision-making processes;
- **Technical capacity** of relevant stakeholders and actors such as disaster management facilities, data providers, emergency response agencies, insurance companies, Ministry of Finance, representatives of affected sectors such as tourism or agriculture, etc., to ensure risk assessment and strategy implementation can be carried out;
- **Insurance presence in the country** to conduct the valuation and motivate risk reduction in relation to the disaster risks and climate-related risks;
- **Insurance regulations and other policy frameworks** to determine whether existing laws are suitable for implementing insurance policies in the respective country;
- **Awareness and accepted legitimacy** of the policy among stakeholders targeted by the selected risks;
- **Appropriate “back-up” mechanisms** such as reinsurance are very important to meet the exceptionally high claims of the primary insurance provider;
- **Parliamentary and civil society champions** are needed as they usually have a longer tenure than Ministers and often work directly on the more pressing issues.



# Phase 1: Risk & Needs Assessment

The first step in creating a national risk management strategy that includes insurance is to determine whether the country has the capacity to manage its risks and what steps still need to be taken. The key issues for managing national funds include prioritization in allocation of funds, rapid access, efficiency in reaching vulnerable communities, reduction in cash flow and economic impacts. Other key steps include:

- Identify the sectors that are most at risk and their potential socio-economic impacts and priorities (e.g., agriculture, tourism, etc);
- Strengthening risk analysis and data services for data collection as the capacity to manage data is limited due to the size of the country. This can be supported by the National Meteorological Service, Meteorological Offices, research institutes, regional climate services and insurance representatives;
- Determine existing committees and working groups (e.g. climate change commission, inter-sectoral disaster risk reduction agency) in order to also embed the national strategy into a wider climate risk management approach;
- The Prime Minister's office can be the lead coordinating body but a comprehensive approach also requires setting up a steering committee to identify lead national agencies and relevant public/private stakeholders;
- Check the existing mandates of established bodies and discuss who will lead the process and which organizations (scientific bodies, non-governmental agencies, private sector, end-users and vulnerable population representatives) will makeup the core steering committee members.

## Linking early warning models with vulnerability data:

Africa RiskView combines existing operational rainfall-based early warning models on agricultural droughts in Africa with data on vulnerable populations to form a standardized approach for estimating food insecurity response costs across the continent. This information is critical for financial preparedness for drought and for providing the basic infrastructure needed to establish and manage a parametric risk pool and trigger early disbursement.

Source: <http://www.africanriskcapacity.org/africa-risk-view/introduction>



## Phase 2: Design

Aside from the general steps listed on page 7 and 8, if governments are to design a strategy for a national risk management strategy that includes insurance, they also need to determine what risks can be retained, what risks can be dealt with through risk reduction and management, and what portion of residual risk needs to be transferred. Once this is completed, other steps that follow should include:

- **Prioritization of the risks** to be addressed in the national strategy according to the level of vulnerability of economic sectors and populations;
- **Risk reduction** is the key starting point for a comprehensive approach: **the moment you are able to reduce risk is the moment you are able to reduce the cost of impact**. The overall risk reduction policy should be tied to risk transfer mechanisms and include relevant actors, such as the Disaster Mitigation Facility, research institutes, building industry, public works, academic groups, and insurance representatives;
- **Disaster risk management and risk transfer** can be effective for extreme events, while a more comprehensive climate risk management approach can help to address slow-onset risks such as sea level rise;
- **Decide on allocation of insurance payouts between short-term** (e.g., increasing personnel, re-building destroyed infrastructure) **and long-term measures** (e.g. securing social safety systems, investing in alternative irrigation systems, flood control, relocation of populations) for the selected risk transfer mechanisms;
- **Long-term planning**, by scanning existing frameworks and strengthening long-term institutional and regulatory frameworks to fill any gaps. This can include the Ministry of Finance, financial service institutions (e.g., banks, credit unions, investment groups and cooperatives), insurance and reinsurance associations, and Members of Parliament;
- **Training at sectoral and sub-national level** on risk management supported by Ministry of Education and other relevant ministries along with insurance representatives.

### Regulation and Supervision Supporting Inclusive Insurance Markets:

In 2012, International Association of Insurance Supervisors (IAIS) published a paper on regulation and supervision of inclusive insurance markets. The paper addresses how supervisors can address innovative insurance and pilot projects. It also features issues relevant to the developing country context, such as how to define microinsurance and what minimum requirements have to be met before introducing such an approach.

Source: <http://www.iaisweb.org/>



## Phase 3: Implementation

Key issues for managing national funds include, prioritizing how the funds are allocated, rapid access to funds, efficiency in reaching the individuals and businesses in the given sectors, reduction in the impacts on cash flow and the economy. The implementation phase also includes:

- **Mainstreaming climate resilience** in order to integrate resilience in all relevant policies and strategies, allocating a portion of the country's budget for risk management and working towards a long-term goal;
- Ensuring that the **timing of payouts matches the liquidity and reconstruction needs** of the identified sectors/target;
- **Steering committee** offers leadership role to ensure that all stages decided upon in the design phase are implemented and taken up by responsible actors;
- **The steering committee** can request **annual updates from technical groups** to ensure regular monitoring of selected indicators of success;
- Risk transfer strategies should not be developed in isolation from **other socio-economic factors**, such as increase in population and urban growth in coastal areas.

### National disaster risk management and insurance in Fiji:

In 1990, Fiji's national disaster management program which began as an ad hoc governmental committee for emergency response was restructured to make it more comprehensive, covering prevention, mitigation, preparedness and rehabilitation activities in addition to emergency response. The program also laid out a comprehensive policy and detailed the supporting roles of NGOs in all disaster management functions. After particularly severe cyclones in 1984, the Commissioner of Insurance established the Fiji Building Standards Committee, made up mainly of private insurers. This committee had the responsibility to oversee the preparation of a national building code that would set minimum standards to reduce disaster-related losses and help achieve a stable or reduced hurricane insurance premiums (Freeman 2003).

# Country C: A regional risk management platform including an insurance pool

- **Context:** Low-income country in Africa that often faces the risk of droughts, floods and heavy winds.
- **Multi-regional approach:** Interested in participating in a regional risk management approach (e.g., pooling sovereign risk) that can aggregate weather-related risks from the sub-national and national levels as well as realize trickle-down effects to the local levels to benefit the local population.
- **Challenge:** National governments on their own cannot establish a national insurance program because of the lack of financial capacity to invest in resilience measures.

## Summary

Participating in a regional risk management approach and ensuring that the benefits trickle down to the local level, requires working with participating member countries and identifying country priorities to be covered through the regional insurance pool. A contingency plan needs to be in place to demonstrate how countries will use the insurance payments to invest in climate change adaptation measures at lower administrative levels. Establishing an intergovernmental negotiation group can facilitate discussions on issues affecting all the participating countries. The comprehensive approach can be connected with a long-term development strategy to stay relevant even when no payouts are being made. Overall, there are many benefits to joining an existing pool, both for new countries coming in and existing countries. These benefits can include helping to overcome political and governance challenges.

## Preconditions for a regional risk management platform including an insurance pool

A regional risk management approach that includes insurance requires certain preconditions to be met in the respective countries, such as a market for insurance along with the necessary infrastructure. Countries participating in the pool also need to have the necessary budget to pay the respective premiums. Other preconditions include:

- A risk assessment needs to be in place before the country joins the pool and an overview of all the risks that countries in the pool are experiencing, including credit and operational risks needs to be available. Given the lack of data in many developing or less developed countries, a parametric analysis could provide affordable solutions;
- Regulation of the frequency of premium payments to the risk pool (e.g., every year, every two years, etc.)<sup>1</sup> as well as the existence of regulated financial systems (insurance, banking, securities);
- The existing regional risk management facility offering insurance coverage requires the country to design a contingency plan outlining how to address selected risks as eligibility criteria for participation in this pool;
- An allocation mechanism needs to be in place to monitor how payouts to the government are being distributed;
- Appropriate “back-up” mechanisms such as reinsurance are very important to meet the exceptionally high claims of the primary insurance provider;
- Ensure timely payout and have a (financial) entity that collects and distributes insurance payouts (defined in the contingency plan of the country).

<sup>1</sup> Combining index insurance with indemnity insurance can make regulation easier as it includes a double trigger



# Phase 1: Risk & Needs Assessment

A regional risk management approach that includes insurance requires that countries identify the **priorities they want** to have covered under the regional risk pool. Other steps include:

- **Designate and mandate entities** in the concerned countries for risk assessment at the regional level;
- **Risk mapping and vulnerability assessment** and determining the neighboring countries' risk management activities, and their effect on the overall pool. Key actors can include regional climate services, the World Meteorological Organization and NASA;
- **Needs assessment is performed** to identify the country's priorities that will be covered through the regional insurance pool, including relevant actors such as the Central Statistical Office, public and private expertise and relevant Ministries;
- **Stakeholder mapping** to determine which stakeholders must or should be integrated as well as their mandate, role and objective. **One focal point** (e.g., Ministry of Finance) can also be chosen to lead the Steering Committee;
- Identify **programmes that are intended to benefit from the regional approach** (i.e., the trickle-down effect).

## Stakeholder mapping:

Determine existing committees / working groups (e.g. climate change commission, intersectoral disaster risk reduction agency, etc.) along with existing mandates of these bodies in order to embed into wider climate risk management approach:

Identify relevant stakeholders and ensure that they are involved at the early stage



Start by analyzing whether the vision and the proposed solutions can be aligned.



Ensure that governments, NGOs, private sector, along with community groups have the opportunity to offer feedback.



Nominate a representative from each of the stakeholder group (including Ministries, technical groups, research bodies, community initiatives, etc).



Capacity building of relevant stakeholders (e.g., vulnerability assessment, combination of risk management tools, contingency planning, etc).



## Phase 2: Design

In order to be part of a regional risk management approach that includes insurance, Country C should ensure that an intergovernmental negotiations group is set-up to deal with issues affecting all respective countries in the pool and interact with the body that is guiding development and implementation (e.g., an existing regional body such as the African Union). Other key steps include:

→ Designing a contingency plan based on the needs and risk assessments performed in phase 1. The plan needs to define how payouts will reach lower administrative levels to benefit the selected programmes (as identified in the assessment phase);

→ Invest in risk reduction and make a business case for risk prevention using a cost-benefit analysis;

→ Strategy structuring by determining how much risk will be retained by the government and how much residual risk will be transferred according to the risk layering exercise;

→ Determine where priorities overlap for the different stakeholders, particularly among ministries;

→ Drafting by-laws on how countries will pay their premiums based on their risks.

### Risk pooling in the Caribbean:

Some governments (particularly in small countries), individuals and primary insurers may or do need to rely on a multi-region or multi-country approach that diversifies their risks regionally and even globally. Caribbean island states were the first to form a multi-country (16 Caribbean countries) catastrophe insurance pool for immediate liquidity in the aftermath of hurricanes and earthquakes. It is an example of a private-public partnership as it was developed through funding from the Japanese Government and was capitalized through contributions to a multi-donor Trust Fund by the Government of Canada, the European Union, the World Bank, the governments of the United Kingdom and France, the Caribbean Development Bank and the governments of Ireland and Bermuda, as well as through membership fees paid by participating governments. Other multi-country examples include the African Risk Capacity, the Pacific DRFI Program which builds on the Pacific Catastrophe Risk Assessment and Financing Initiative and the European Solidarity Fund. Some of the lessons learned from implementing a regional risk pool such as CCRIF include:

→ Regional pools need to hold a lot of capital to operate and it may divert funding from disaster risk management and climate change adaptation. Thus, governance and trust issues arise around using capital to underpin a sustainable insurance mechanism. Another issue relates to the source of initial capital as modalities for donor contributions are evolving but they still require governance controls;

→ During the initial stages, there is usually a need for a critical mass of countries – both to make the economics work but also to demonstrate to donors that the countries really want the pool to happen;

→ Risk assessment and parametric model needs to be in place before countries can join the pool;

→ The Caribbean countries will not be strictly in a single pool – there will be some segregation of risk so that the exposure of one region to the other is separated. Although this somehow diminishes the diversification benefits, there are many other benefits to joining an existing pool to both new countries coming in and existing Caribbean countries such as helping to overcome the political and governance challenges.

Source: Simon Young, independent interview



## Phase 3: Implementation

In order for Country C to take part in the regional risk management approach, they need to implement their contingency plan, which indicates how threats will be identified and how resources will be provided. The plan will also outline how payouts will reach lower administrative levels to benefit selected programmes. Other key steps include:

- Support from the public sector for trickle-down effects from the regional to the local level. For instance, the public sector can provide services to complement risk transfer for the low-income sector by helping low-income people access credit, offering support to protect livelihoods and employing agriculture extension officers to educate people about good risk management practices for extreme weather events, etc.;
- Make sure that the pool's funding provisions to programmes at lower administrative levels (trickle-down effect) do not create a dependency on those cash-flows;
- Monitoring and evaluation to ensure that insurance payouts are used to meet the needs of the county;
- Consolidate with the intergovernmental negotiation group to discuss issues affecting all countries participating in the risk pool, including cross-boundary issues such as water and migration.

### Africa Risk Capacity: Linking contingency planning and insurance for food security in a holistic way

African countries regularly experience drought and traditional ex post humanitarian aid is often too late to avoid loss of life and property to many people. Establishing contingency funding or resources that participating African Member States can access allows governments to execute more timely and reliable responses in the case of extreme drought or flood.

#### Contingency planning:

Member states have to go through a process of contingency planning to clarify how they intend to spend funds if the ARC policy is triggered. The process is assessed by a number of criteria:

#### Peer review mechanism:

- Experts review the contingency plan using criteria such as time sensitive process, administration of flow of funds, livelihoods saved, etc.
- Once the country passes the review process, a Certificate of Good Standing is granted that allows for participation in ARC.

#### Disaster finance rating mechanism:

- The ability of partner countries to employ the resources that are given to them.
- The willingness to pay the premium that goes into the pool.
- Operational capacity/effectiveness of partner countries to actually employ resources for better preparedness in their countries (e.g., standards on ability to attract resources).

#### Regulations and monitoring:

- To see if countries actually stick to their contingency plans, States adopt compliance rules that dictate consequences for deviating from the implementation plans.
- The operational plan for the disbursement of funds (attached to contingency plan) needs to be checked by the Board before payouts can be received.
- It is most effective if the countries (or participants in the approach) set the rules themselves.

Source: <http://www.africanriskcapacity.org/>

## 4. Reflections for decision making

Insurance is a flexible tool that can be used in combination with other parts of comprehensive risk management approaches to address climate risks. Three phases mark comprehensive climate risk management: a risk and needs assessment, design, and implementation. In the first phase, risks are assessed, priced, and weighed against a range of social values, norms, and priorities. During this phase the mix of tools – early warning and risk reduction, risk retention, risk transfer including insurance, and managing residual risks. This mix of tools are (ideally) chosen through the lens of a climate risk management objective that is trying to be reached.

These final reflections give ideas about how countries can incorporate the full range of risk management tools into their plans to address climate risks. These reflections also point to ways that the international community including the UN Framework Convention on Climate Change can enhance the environment for countries and regions to manage climate risk in ways that help foster human well-being.

### National governments with engagement of the relevant public and private actors can support the process in the following ways:

- Mainstream climate resilience in all relevant policies and sectoral and development strategies at the national level.
- Provide support to gather and digitize historical data on weather and losses (e.g., time series of yield data of major crops) for baselining and monitoring.
- Ensure an adequate regulatory and supervisory framework, including for parametric and non-commercial products. Protect consumers (financial viability of insurance schemes, ensure value to customer).
- Encourage public-private partnerships. The public sector can undertake many activities that facilitate comprehensive climate risk management:
  - Improve access to data;
  - Awareness campaigns/training, improving infrastructure;
  - Client education on climate risks and the different tools which can be used to tackle these risks by involving the Ministry of Education and civil society organizations.
- Capacity building of insurance suppliers and disaster risk reduction through dialogue between relevant Ministries and the private sector.
- Technical training at sectoral, sub-national level, and household level on risk management supported by Ministry of Education and other relevant ministries along with insurance representatives.
- Linking public works programs to disaster risk reduction projects.
- Ensure that risk transfer strategies are not developed in isolation from other socio-economic factors such as increase in population and urban growth in coastal areas.
- Allow for insurance products to be complemented by disaster risk reduction and additional services.
- Initiatives taken by governments at the national and local level can complement efforts by the international community and on-going dialogue and discussions should be facilitated.

# The international community

including climate discussions (UNFCCC) and risk reduction (UNISDR) can contribute to an enabling environment for comprehensive climate risk management approach, policy coherence, and enhanced support that includes insurance by:

- Providing guidance and assessment methods and data collection standards for risk transfer.
- Establishing a clearinghouse for comprehensive climate risk management, including inter alia:
  - Guidance on enabling conditions for implementing a comprehensive risk management approach that includes insurance with a focus on infrastructure, incentives, data collection and standards, assessments, public-private partnerships, innovative insurance solutions and funding mechanisms, etc.
  - Lessons learned and analysis of existing risk transfer approaches worldwide. This can help as governments and relevant stakeholders implement climate resilient approaches.
  - Fostering a network of regional risk management and transfer platforms by linking already existing regional insurance pools (e.g., ARC, CCRIF) that could provide services such as:
    - Advise on the designing of a contingency plan that provides information on climate threats and suggestions on how resources will be provided to meet the needs of the target group.
    - Technical workshops on thematic areas such as regulation, disaster risk reduction, risk and vulnerability assessments, etc.
    - Regional data repository.
  - Linking existing comprehensive climate risk management approaches into current climate discussions such as NAPs and Loss and Damage.
  - Support countries in setting-up a contingency plan that can be used to analyze the impact of potential climate related risks and ensure adequate and appropriate arrangements are made in advance in order to be able to respond in a timely, effective and appropriate way to the needs of the affected population.

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# About the project:

The Munich Climate Insurance Initiative (MCII) and Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) collaborated on behalf of the German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB) on a project to better assist policymakers and climate negotiators in finding ways to implement climate risk insurance solutions in an integrated risk management approach. To address these policies and practical concerns, this document offers a close examination on how insurance instruments can be applied for different purposes and in particular contexts to address the effects of climate change. The document provides three country examples of comprehensive climate risk insurance approaches linking risk transfer instruments, such as insurance, in helping low-income groups and emerging economies manage climate-related risks. The document draws on lessons learned from existing climate risk-related insurance approaches within both the public and private sectors, considering limitations, challenges and current good practices. MCII and GIZ hosted two expert workshops on innovative insurance solutions for climate change that took place in Bonn at the United Nations University Institute for Environment and Human Security (UNU-EHS) on April 2013 and May 2014, along with a series of policy consultations at major climate events. MCII and GIZ hope to further explore the necessary steps to be put in place by cooperating with interested governments on the implementation of a comprehensive climate risk management.