

# Building an evidence base on the role of insurance-based mechanisms in promoting climate resilience

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**Report prepared for PPCR side event**

10th November 2015

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# Contents

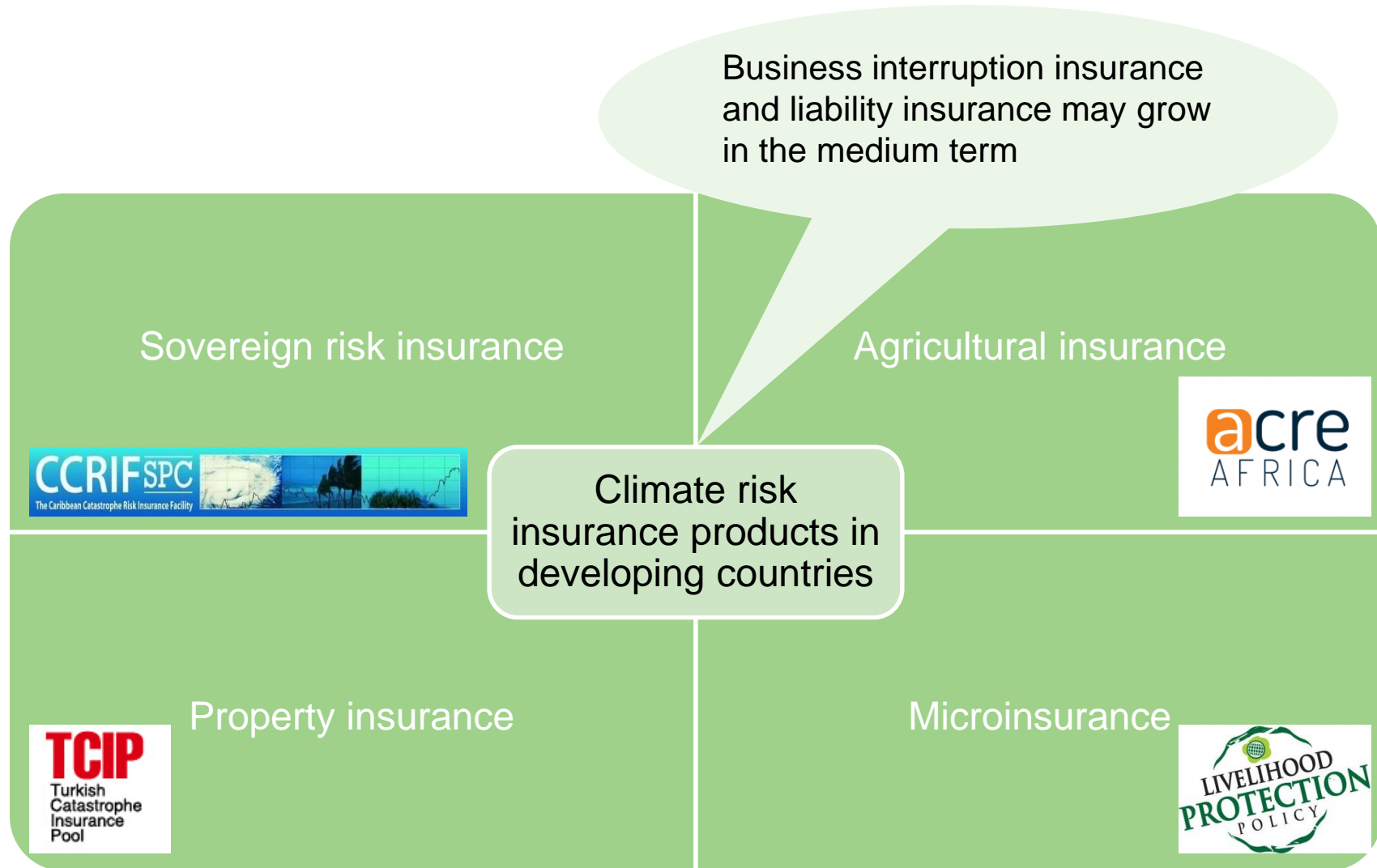
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- 1. Overview of climate insurance in developing countries**
2. MDB experience with climate insurance products
3. Possible options for the PPCR

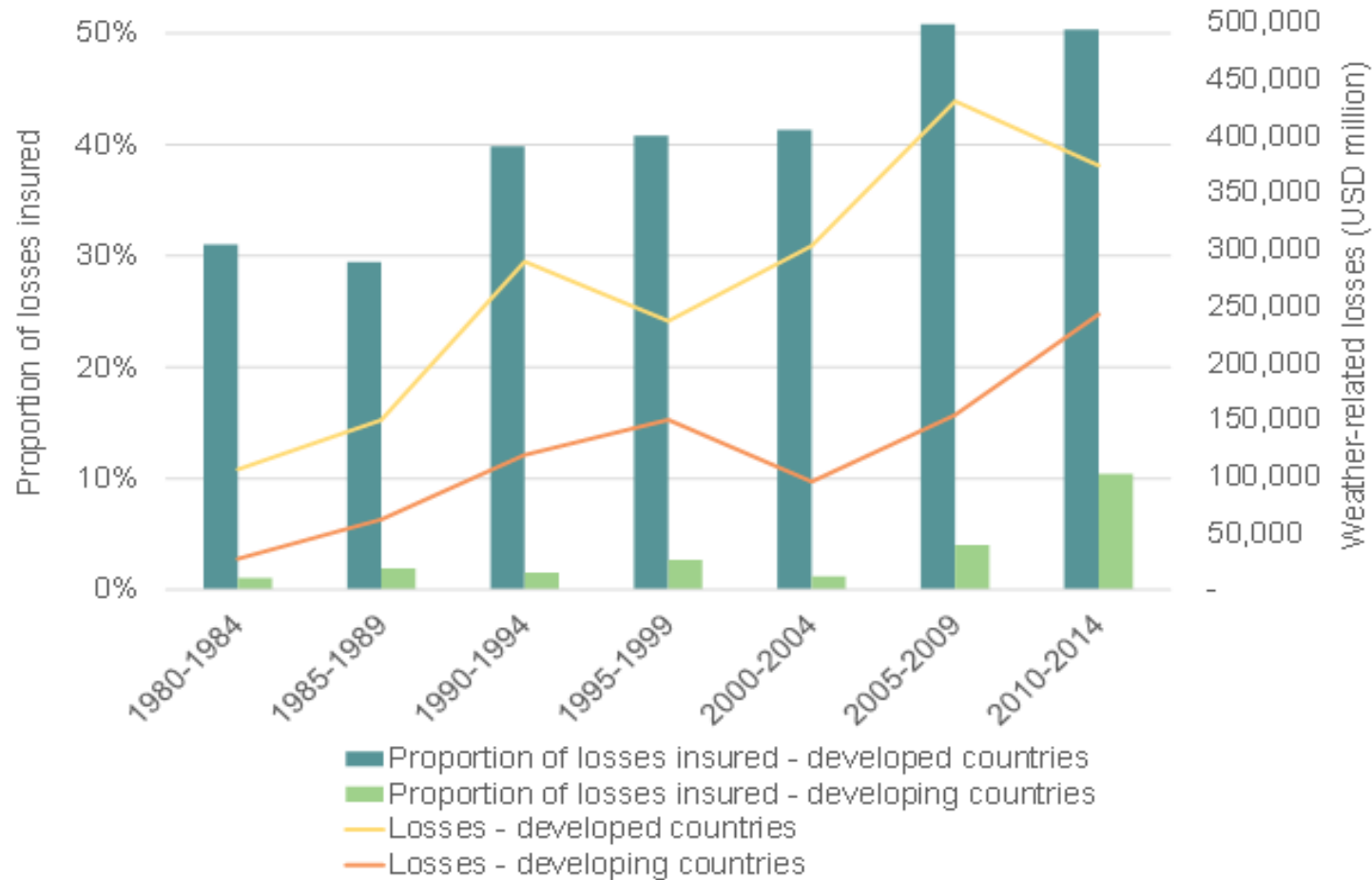


# Climate risk insurance in developing countries largely consists of 4 types

**In many developing countries – especially low income countries – there is much less focus on buildings insurance and greater use of index-based products than in developed countries**



# Despite growth, the proportion of insured weather related losses in developing countries is lower than in developed countries



Source: Vivid Economics based on data from Munich Re, NatCat SERVICE  
 : vivid economics

# There are a range of barriers to (climate) insurance market development in non-OECD countries

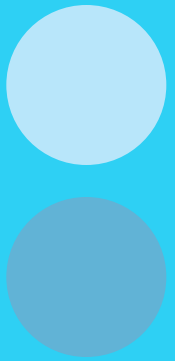
**These exist on both the demand and the supply side**

Demand-side	Supply-side
Low income	Risk characteristics
Lack of trust	Lack of data to accurately price risks and identify when insurance is suitable
Lack of financial literacy and misunderstanding of risks and the role of insurance	Lack of technical capacity and other supply side barriers
Existence of alternative measures including humanitarian assistance	Unsupportive regulatory frameworks

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## MDBs have tended to become involved in climate risk insurance in three main ways

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**technical assistance** to help design climate insurance products and place them in broader risk management frameworks

- IBRD role in CCRIF and various agricultural schemes in Latin America
- AfDB has helped to design policy frameworks
- includes both insurance and re-insurance products

this activity is frequently financed through trust fund arrangements such as GIIF, GFDRR or GEF

in **public sector operations**, improving affordability of public-backed schemes

- by investing in the development of government-backed schemes e.g. IBRD involvement in TCIP in Turkey
- by providing concessional capital to make premia more affordable (e.g. IDA loans for CCRIF membership)

in **private sector operations**, investing in and working with private insurance companies to develop or expand their offering

- EBRD has made investments in private sector insurance companies to help them enhance their portfolio (although only limited link to climate)

: **vivideconomics**



## Evaluation evidence – and qualitative interviews – suggest a number of benefits from this engagement

Reported benefits	Examples
some schemes have achieved significant development benefits	— farmers insured through the ACRE project invested 19% more and earned 16% more than uninsured neighbouring counterparts
success in transferring risk	— TCIP has built up a claims paying capacity of \$5.3 billion, shifting a significant amount of financial risk from government to capital markets
increased engagement by governments in disaster risk management	— CCRIF (Panama) — IBRD experience in Latin America agriculture schemes

## But it also suggests at least five instructive lessons

### **These should help inform how the PPCR takes forward its climate insurance work**

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1. Climate risk insurance is complicated and there may be a lack of expertise in understanding when it is an appropriate tool. Details matter!
2. The complexity of the product, and the resulting challenges, are most apparent in relation to retail insurance offerings by private sector insurers
3. At the same time, sovereign risk mechanisms – which do not require private sector insurers - need to be designed carefully in order to ensure they bring benefits to the poorest.
4. It may be difficult to move towards commercial sustainability in PPCR countries in the short-medium term (although this need not be seen as a problem)
5. Product-led development in isolation from development of market infrastructure and policy/regulatory reform tends to be unsuccessful. The development of this regulation and other enablers have a value in themselves.

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  - whether?
  - how?
  - how to measure?

# There is enough potential overlap with the PPCR results framework to warrant investigation of climate insurance

## Two of the five outcome indicators overlap with the expected benefits of climate insurance

PPCR outcomes	Fit with climate insurance initiatives?	Comment
adaptive capacities strengthened → capacity to develop tools, instruments, strategies to respond to CV and CC	✓	<ul style="list-style-type: none"> <li>— in the right circumstances, and with the right design, academic evidence suggests insurance can increase financial adaptive capacity</li> <li>— <b>further enhancements in adaptive capacity can be promoted if insurance schemes builds in risk reduction</b></li> </ul>
adequate institutional frameworks in place → new and enhanced skills, knowledge, and abilities within a variety of government bodies	?	<ul style="list-style-type: none"> <li>— observed in some MDB schemes, depends on whether the public sector is involved in the facilitating design or implementation of the scheme</li> <li>— more likely if scheme takes into account <i>future</i> climate change</li> </ul>
climate information in decision making routinely applied	✓	<ul style="list-style-type: none"> <li>— if (relative) price signals maintained, insurance can be an important tool in incorporating climate information into decision making</li> <li>— stronger benefits if insurance takes into account <i>future</i> climate change</li> </ul>
improved sector planning, and regulation for climate resilience improved	?	<ul style="list-style-type: none"> <li>— depends on whether the public sector is involved in the facilitating design or implementation of the scheme</li> <li>— more likely if the scheme is part of a broader DRM framework</li> </ul>
innovative climate responsive investment approaches identified and implemented.	?	<ul style="list-style-type: none"> <li>— observed in some MDB schemes, depends on whether <b>climate insurance is designed to encourage risk reduction</b></li> </ul>

# But there is significant concern that insurance can actually worsen climate resilience by encouraging imprudent risk taking

## **While insurance can often have high transaction costs**

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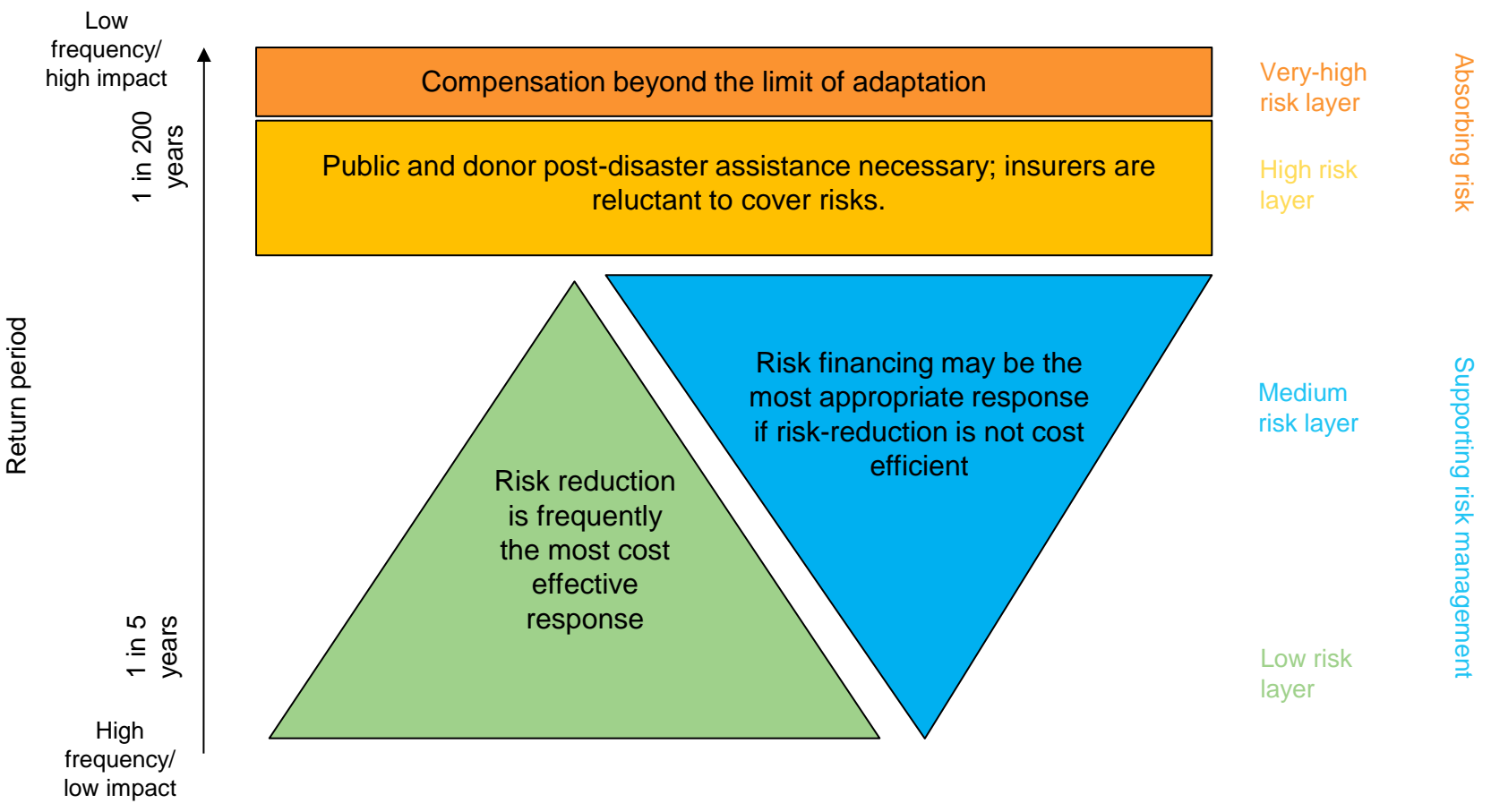
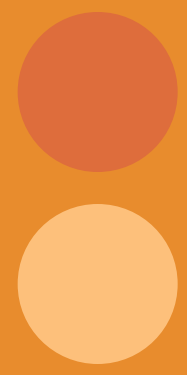
the transfer of climate risk might lead to individuals and firms taking actions that actually **decrease** climate resilience by encouraging risk-taking activity

- Fankhauser and McDermott (2015) find evidence that countries where there is greater insurance penetration tend to suffer greater losses from extreme events, all else equal, than countries where there is lower insurance penetration
- anecdotal evidence from developed countries also suggests that this can be a significant challenge, especially where premia are subsidised e.g. Flood Re
- reflects broader moral hazard concerns with insurance
  - reduced by index-based insurance

climate risk insurance can also be expensive and have high transactions costs

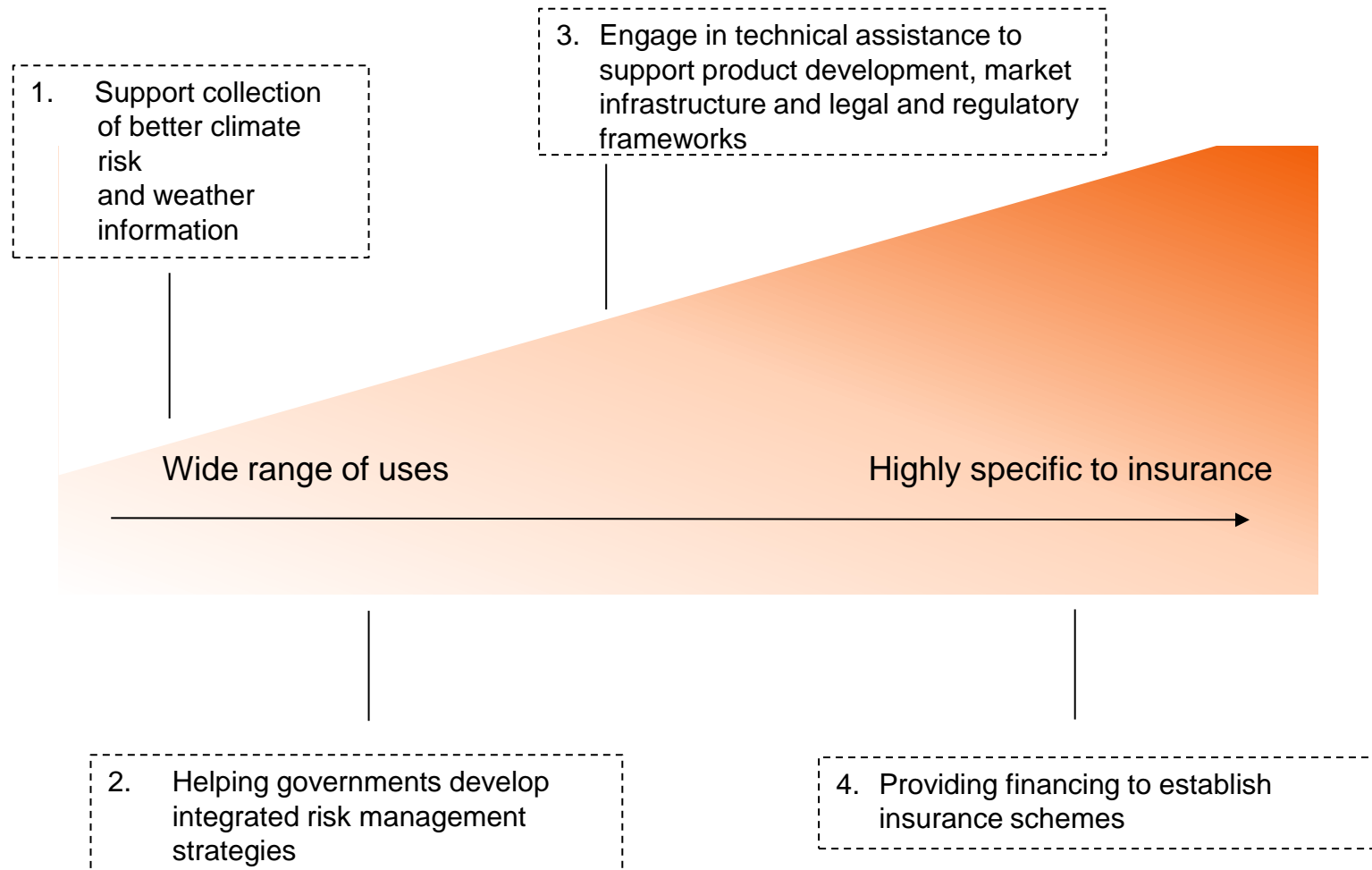
# To avoid imprudent risk taking, and ensure insurance is used cost-effectively, risk-layering is likely to be helpful

**This identifies different return periods for different risks and the most appropriate responses**



Source: Mechler et al (2014)

# There are a number of options that the PPCR can consider in terms of their engagement in insurance options



## In most cases, the options are best deployed in a sequence

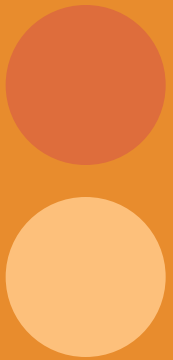
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fundamentally, providing TA and supporting integrated risk planning by the government should take place before supporting insurance product development

- but options 1 and 2 could take place simultaneously
- there may be scope for PPCR to work with other development partners who are engaged in some of these activities

in addition

- some countries may already have undertaken sufficient preparatory work to be able to move to stages 3 and/or 4 already
- there may be some merit in developing some pilot schemes without undertaking the previous steps (if these are explicitly considered as primarily providing learning)
  - especially around the best ways to integrate resilience measures into insurance products





## Three questions the PPCR may consider when designing and financing any climate insurance scheme (Steps 3 and 4)

**The experience on all of these issues remains relatively scarce**

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How does the insurance proposal fit within a broader integrated risk management package?

How has climate change been included in the underlying risk assessment and analysis?

How will the scheme incentivise risk reduction and stronger adaptive behaviour?

## The success of insurance schemes might be measured by consideration against four groups of indicators

Term	Definition	Possible metrics
Affordability	Cost effectiveness of an insurance product from the perspective of the consumer	<ul style="list-style-type: none"> <li>— Average Premium Paid / Average Coverage Amount</li> <li>— Premium paid/expected insured losses</li> </ul>
Value for money	Based on the usual effectiveness criteria set by donors or public investors (relative to alternatives)	<ul style="list-style-type: none"> <li>— Costs of the scheme relative to benefits generated</li> </ul>
Commercial Viability/ Financial sustainability	<p>Demand for an insurance product in the particular market segment the product is designed for</p> <p>Demand needs to be high enough to cover operating costs, including salaries and wages, supplies, loan losses, and other administrative costs in the short run and (additionally) cost of capital in the long run</p>	<ul style="list-style-type: none"> <li>— (Administrative Cost + Indemnity Payments)/Premium Payments (with or without adjustment for subsidisation)</li> <li>— Claims paying capacity, including reinsurance limits, as well as, free capital (CCRIF, 2013)</li> <li>— Solvency ratios</li> <li>— Potential revenues = (number of insured + number of potentially insured) x average premium, including returns from investing accumulated premium in equity markets</li> <li>— Potential costs: administrative + expected indemnity payments (claims) + cost of reserve capital and any losses from investment</li> </ul>
Vulnerability Reduction	<p>Lessening the two types of impacts from disasters:</p> <p><u>Direct impacts</u> are those resulting from building, lifeline, and infrastructure damages</p> <p><u>Indirect impacts</u> are those that follow from the physical damages</p>	<ul style="list-style-type: none"> <li>— Change in individual wealth, physical and other assets, from disaster events</li> <li>— Dollar value of indirect and direct impacts</li> <li>— Percentage of total losses insured</li> <li>— Number of people killed and/or affected</li> <li>— Number of risk reduction measures installed in households</li> <li>— Number of households moving out of high-risk areas</li> </ul>

## Summary

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1. (Climate) insurance market and products in developing countries look very different from those in developed countries
2. MDB experience suggests that climate insurance can have positive impacts but also indicates a number of instructive lessons around understanding, private sector engagement, reaching the most vulnerable, likely need for concessionality, and the need for complementary interventions
3. Given our currently somewhat limited knowledge of the impacts of climate insurance, there is sufficient overlap with the PPCR objectives to justify consideration of insurance.
4. The PPCR might consider a largely sequential four step process for engaging in climate insurance from data improvements to developing integrated risk management strategies, to technical assistance on product and market development to financing insurance schemes
5. The design/financing of any climate insurance mechanism should consider how the intervention fits within a broader risk management strategy, how future climate change has been factored in, and, crucially, how it will encourage risk reduction activity
6. Monitoring of climate insurance schemes might consider factors such as affordability, value for money, commercial sustainability and, crucially, vulnerability reduction

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