

Policy pointers

Costs of inaction on climate risks are high. Now is the time to ensure the adequacy of climate adaptation measures — before escalating climate risks threaten development gains.

To protect the vulnerable, climate adaptation must be more radical — that is far-reaching and far-sighted.

Learning how best to implement radical and effective climate adaptation is a top priority.

Getting ahead of the curve: when climate adaptation has to get radical

The effectiveness of climate adaptation has to be commensurate with the risks it addresses. Otherwise people are abandoned to climate vulnerability. As risks escalate so adaptation must respond, benefiting all of the climate vulnerable and pre-empting, not just recovering from, risks. So adaptation should be far-reaching and far-sighted — or 'radical'. Learning is a main driver of adaptation effectiveness. Across all development sectors adaptation has the potential to do the right things well, and in verifiable ways. IIED and the UK Department for International Development are using case studies to better understand what effective, radical adaptation could look like in different development sectors.

The escalation of climate change effects on development depends upon past, current and future trajectories of greenhouse gas emissions. The IPCC Fifth Assessment Report suggests that if current increases in emissions continue, average global surface temperatures will increase by four degrees by the end of the century.¹ The World Bank has warned starkly against this outcome.²

Adaptation as a response to climate risks to development

Figure 1 illustrates the relationship between escalation of climate change effects over time and the capability to manage climate risks. Two indicative scenarios are plotted — development with effective adaptation and development without effective adaptation.

As climate risks to development increase, people, enterprises, agencies and economies must increase their capability to manage those risks. One way to manage risks is to instigate adaptation measures. At the early stages, when effects are less significant, dealing with development deficits

may be enough to overcome climate risks. As climate effects escalate, adaptation-specific measures become necessary to keep development on track. And at some point, the climate risks to development warrant more far-reaching and far-sighted approaches to overcome effects. Of course, climate adaptation that is not complemented by effective mitigation will be ineffective in the long run.

Economics of climate adaptation

Recent work is revising how the economic effects of climate change impacts on development are assessed and how development programming can address them.³ This work advocates shifting the focus toward longer term and macro-level adaptation effects and responses. Economic effects of climate change on development include asset and output losses, with economic production losses occurring due to asset losses, interruptions to business operations, and disruptions to the supply chain. But we must recognise that macro-economic feedback and adverse consequences on economic growth can also occur due to climate

As climate risks escalate, more far-sighted and far-reaching approaches are needed to overcome effects

change affecting risk perception and the like — for example, where private sector investors see that climate effects are not addressed by adequate public sector adaptation measures and investments in productivity are not made.

The scale of recorded losses due to climate-related impacts are large. The World Bank reports that cyclone Sidr in 2007 led to 3,400 deaths and 55,000 injuries, and seriously affected one million households. Damage and losses totalled more than US\$1.7 billion (2.6% of Bangladeshi GDP) in housing, agriculture and infrastructure sectors. So the costs of inaction on climate adaptation are large and increase with escalating climate effects.

Evidence of the impacts of climate shocks, such as extreme weather events, on economic growth is mixed and differs across economic development levels. Better evidence exists on the impacts on agricultural production, industrial production and human health. The distributional aspects of climate change effects are important from a developmental perspective. Increased poverty owing to asset and output losses may not affect headline economic growth statistics, but inequality predisposes certain groups, particularly women and girls, to disproportionate climate vulnerability.

Outcomes of climate risks

Climate risks at local levels can have overwhelming effects on households and local economies but limited macro-effects when

measured as changes in GDP. Repeated climate-related shocks affect the poor and could reduce how effectively economic growth reduces poverty.⁴ The direct effects of climate change on the poor are important, but so are the indirect effects, such as rising food prices. Better understanding of the transmission mechanisms of climate-related shocks and trends through an economy is essential. This will help design effective responses such as policies that address climate adaptation by blocking the transmission of negative climate effects.

Most current climate adaptation initiatives (often through non-government projects) attempt to address the barriers to autonomous action at household and local levels in the ways that current climate variability is adapted to. This can be characterised as incremental adaptation — limited scale of beneficiaries and short time horizons. However, without an enabling environment created through planned adaptation (actions by the state), there are limits to what households, groups and enterprises can adapt to. In addition, the adaptation actions of some people may have negative spill-over or downstream effects on the climate vulnerability and adaptive capability of others. Conversely, collective action supported by local authorities can generate positive spill-over effects and benefits to wider numbers of beneficiaries and greater public good creation.⁵

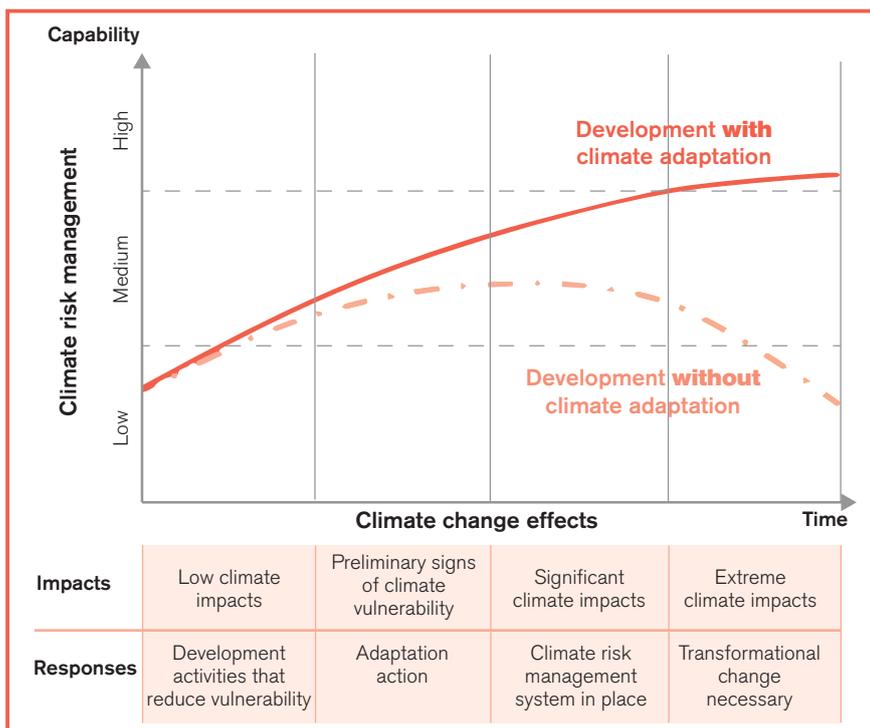
Using a modified version of the ‘Hanging-in, Stepping-up and Stepping-out’ conceptual model,⁶ Figure 2 illustrates how the interaction of different levels of autonomous adaptive capability and the enabling environment for adaptation can lead to different outcomes for households (or enterprises) in local economies. Table 1 indicatively describes these outcomes in respect to the phases of climate challenge identified in Figure 1.

Where poor adaptive capability exists in a weak enabling environment, most households and enterprises faced with escalating climate challenges will ‘hang-in’, resisting the effects of shocks and trends for as long as possible. Those with better levels of adaptive capability will find ways to ‘step-up’ and use different measures to adapt within livelihoods, and those able to benefit from or move into areas with favourable enabling environments will ‘step-out’. But if very low adaptive capability is combined with a very unfavourable enabling environment, households and enterprises may ‘drop-off’, facing the prospect of climate-induced poverty, even destitution.

What do we mean by ‘radical’ adaptation?

Current forms of incremental adaptation often limit their own effectiveness with projects

Figure 1. The relationship between escalation of climate change effects over time and the capability to manage climate risks



of limited scale and need a charge of energy and momentum to overcome the inertia in their design. We must move beyond the more academic approaches used to develop the concept of transformational adaptation and see adaptation as concerted actions under the wider matrix of climate risk management. Adaptation must be much more than incremental if it is to address the root causes of climate risks.

So what characteristics define radical adaptation? Radical adaptation tackles the root causes of climate risks both for the wider population and further into the future.⁷ This addresses the inter-generational inequity of climate change, by ensuring the current generation takes on rather than puts off the costs of climate change to the extent possible by investing in far-sighted, further reaching adaptation. Radical adaptation should also pre-emptively identify and act on climate-induced tipping points to development, and aim to achieve widespread and inclusive benefits. This is very much akin to the transformational shifts proposed by the High Level Panel on the Sustainable Development Goals in terms of 'leaving no-one behind' and 'putting sustainable development at the core'.⁸

Rationale behind exploring cases of radical adaptation

Climate change poses significant risks to economic activities and livelihoods. These risks vary by region and within countries. Impacts on a given economic sector depend on its characteristics and geographical location. Economies in vulnerable developing countries are highly susceptible to the impacts of climate change, as their economic activities often depend largely on natural resources.⁹

Climate risks can be reduced through emissions mitigation and climate adaptation. However, climate risks will not be reduced to zero. In

developmental terms, the most important climate risks are those that harm economic growth potential and the processes for poverty reduction. Working in a coordinated and coherent way across the spectrum of mitigation to adaptation (both incremental and radical) will allow the best allocation of resources to reduce climate risk.

Mitigation and incremental adaptation have been explored more than radical adaptation. Radical adaptation is relatively poorly understood, and its potential deserves to be explored from a variety of perspectives.

IIED and partners are developing a series of sector cases studies to address the following questions:

- Are the limits to incremental adaptation, and therefore the residual risks of loss and damage, different for women and men, and if so, how different are they in different sectors?
- When and how are the limits of different types of climate adaptation reached?

Figure 2. Livelihood level climate adaptation outcomes dependent upon adaptive capability and an enabling environment.

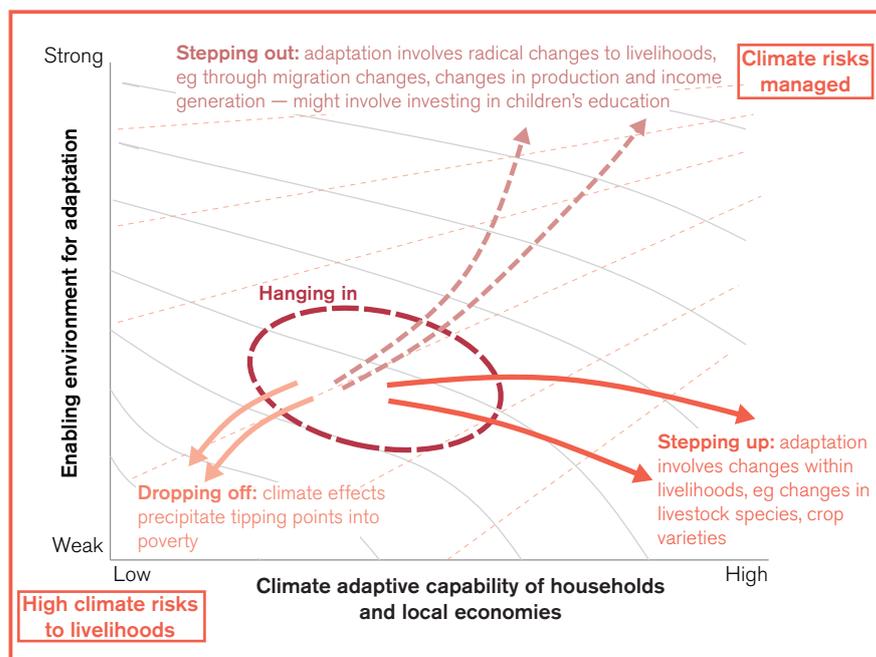


Table 1. Adaptation outcomes as climate challenges escalate given different levels of adaptive capability and enabling environment

		Climate challenge levels — points along the escalation curve			
		Adaptive capacity of households and local economies	Development addresses adaptation deficit	Specific adaptation measures needed	Radical action required to address escalating climate change effects
Enabling environment for climate adaptation	Strong	Poor	Development reduces adaptation deficit	Unlikely to benefit from adaptation measures	Climate-induced tipping points likely
		Good	Development reduces adaptation deficit	Likely to benefit from adaptation measures	Likely to benefit from adaptation measures
	Weak	Poor	Adaptation deficit apparent	Adaptation gap likely to be significant	Climate-induced tipping points likely
		Good	Development reduces adaptation deficit	Dependent upon own adaptive capability	Climate-induced tipping points likely

- What prevents and/or catalyses radical adaptation action?
- Can we distinguish opportunity-driven radical adaptation from radical responses to systems degradation and/or crisis? What can we learn about the differences?
- How do we develop capacity to respond effectively when new climate risks begin to emerge?
- Can incremental adaptation approaches be used to build the capacity needed to identify, assess and implement radical adaptation?
- Do existing adaptation tools support radical adaptation where it is needed, or are they limiting adaptation options according to the prevailing institutional context?
- What role can networks and knowledge exchange play in helping to explore opportunities for transformation?

Case study findings

The case study work carried out so far has arrived at the following preliminary findings:

Climate finance landscape. In order to support 'radical adaptation' the climate finance landscape needs to be scaled-up, scaled-out, longer term and to have more flexible finance. Emerging design choices are: using a mix of financial intermediaries to access and deliver adaptation finance; integrating adaptation into financial planning systems; and the sequential deployment of financial instruments to incentivise scaled-up investment in adaptation.

How are cities adapting. Universal provision of services and risk-reducing infrastructure, accountable local governments, and engaged civil society are preconditions for achieving radical adaptation in cities. Catalysts for achieving radical adaptation include responsive local government able to work with civil society and who recognise the need to act on local risks. Improving urban governance in itself is a mechanism for better risk management, such as through far-sighted planning incorporating risk mapping. Devolved, targeted and flexible finance to cities is necessary to overcome barriers in investment capacity and allow locally tailored responses to climate risks.

Notes

¹ Summary for policymakers of the IPCC Working Group I assessment report Climate Change 2013: the Physical Science, IPCC, 2013. / ² World Bank (2012) Turn down the heat: why a 4°C warmer world must be avoided. <http://documents.worldbank.org/curated/en/2012/11/17097815/turn-down-heat-4%C2%BDc-warmer-world-must-avoided> / ³ This work is led by Annika Olsson with collaboration of Paul Watkiss. Outputs will be published soon by DFID. / ⁴ Measured as growth elasticity of poverty reduction, i.e. the percentage change in poverty with respect to a 1% change in per capita GDP (or mean income or expenditure per capita). / ⁵ Sharma, V *et al* (2014) Supporting local climate adaptation planning and implementation through local governance and decentralised finance provision. *Development in Practice* 24(4). / ⁶ Dorward, A *et al*. (2009) Hanging in, stepping up and stepping out: livelihood aspirations and strategies of the poor. *Development in Practice* 19(2). / ⁷ Conceptually akin to Bill Rees' concern for the "distant elsewheres" as articulated in his ecological footprint work. / ⁸ Report of the High-Level Panel of Eminent Persons on the Post-2015 Development Agenda: A new global partnership: eradicate poverty and transform economies through sustainable development. / ⁹ See UNFCCC report on economic climate resilience <http://unfccc.int/resource/docs/2009/sbsta/eng/07.pdf>

Combining social protection and climate resilience (focusing on women headed households). Initial assessment in Kenya shows that strong synergies could be achieved from coordinating social protection programmes with support to local climate adaptation through county level funds. These synergies could enable more people to step out of poverty with livelihoods that are more climate resilient.

Internal migration in Bangladesh. Migration from high climate vulnerability rural areas to urban environments where jobs can be found could reduce climate risks for significant numbers of households. However, the current situation indicates that if migration, displacement and immobility can be addressed together the likelihood of radical outcomes are greater. Governments need to better understand the linkages between migration patterns and sustainable development goals.

Conclusions

It is now very likely that incremental adaptation will be insufficient to enable the poor and marginalised to overcome the escalating effects of climate change upon their economic and social development. This could leave people in situations of increasing climate risk.

Planned adaptation must therefore look to ensure that people that need to can adapt, and in ways that lead to climate risks being reduced in the long term. This is what we term radical adaptation.

However, diagnosis of the problem and seeing the prognosis is only half way to the remedy. Radical adaptation will take different guises in different development sectors. A case study approach is being used to explore the potential for achieving radical adaptation through different perspectives. Combinations of approaches across designs for financial flows, adaptation in cities, facilitated migration and coordinated social protection with climate resilience have the potential to get adaptation ahead of the climate effects on development curve.

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Knowledge Products

The International Institute for Environment and Development (IIED) promotes sustainable development, linking local priorities to global challenges. We support some of the world's most vulnerable people to strengthen their voice in decision making.

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