



Low-carbon resilient development in the least developed countries

Emerging issues and areas of research

Susannah Fisher

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Acronyms

BCCRF	Bangladesh Climate Change Resilience Fund
BCCSAP	Bangladesh Climate Change Strategy and Action Plan
BCCTF	Bangladesh Climate Change Trust Fund
CCCA	Cambodia Climate Change Alliance
CDM	Clean Development Mechanism
CREF	Central Renewable Energy Fund (Nepal)
CRGE	Climate-Resilient Green Economy (Ethiopia)
EDPRS	Economic Development and Poverty Reduction Strategy (Rwanda)
ENAMMC	Mozambique National Strategy for Climate Change Adaptation
FDI	foreign direct investment
FONERWA	National Climate and Environment Fund (Rwanda)
LCDS	Low-Carbon Economic Development Strategy (Nepal)
LDC	least developed countries
LEDS	low emission development strategies
NAMA	nationally appropriate mitigation actions
NAPAs	national adaptation programmes of action
NAPs	national adaptation plans
ODA	overseas development assistance
PAGE	Programme for Accelerated Growth and Employment (The Gambia)
PPCR	Pilot Program for Climate Resilience
REDD+	Reducing Emissions from Degradation and Deforestation
UNFCCC	United Nations Framework Convention on Climate Change

Low-carbon resilience has become the new buzzword in climate policy; it is an agenda that tackles reducing carbon emissions while simultaneously building climate resilience and supporting development in a supposed win-win policy agenda. Although least developed countries (LDCs) are responsible for less than five per cent of global greenhouse gas emissions; nine of them have developed plans to bring together these three issues into one single agenda. Our research has found, however, that the rhetoric is greater than the actions and a learning-by-doing approach is necessary to generate robust evidence on where to find, and how to support, ‘win-wins’.

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Summary

Since 2009, nine least developed countries (LDCs) have announced plans or strategies incorporating elements of both low-carbon development and resilience to climate change. *Low-carbon development* is an approach that focuses on reducing greenhouse gas emissions through the development process; this is linked with the *mitigation* side of the climate change debate. *Resilience* refers to building the capacity of society – whether individuals or communities – to recover after any climate-related shocks and is associated with *adaptation* to climate change. Low-carbon resilient development seeks to link all three of these policy objectives in the context of national development.

These nine countries are ‘early adopters’ of the low-carbon resilient development agenda, and so offer important insights into how the agenda is being operationalised. They also provide an opportunity to learn lessons for other LDCs that may develop such strategies in the future.

The number of strategies and plans at the national level indicates a widespread interest by LDC national governments in how they can begin to incorporate both aspects of the climate change agenda at the national level, and a high level of support from development partners for these planning processes.

The national plans and strategies show an emergence of climate planning on a different scale from the national adaptation programmes of action (NAPAs) and the nationally appropriate mitigation actions (NAMAs), which were driven and structured by the priorities and needs of the United Nations Framework Convention on Climate Change (UNFCCC) process. On the contrary, national plans and strategies described in this paper are products of development planning at national level and seek to cut across the international divide between the elements of climate change mitigation and adaptation.

However, while there has been an emergence of planning within national governments, there has been very little research or understanding of the different national priorities within the agenda of low-carbon resilient development, nor of how different countries – particularly the LDCs – are approaching this challenge.

What we know already

There are many definitions in use of low-carbon resilient development and each one places an emphasis on a slightly different part of the agenda. There are three policy agendas within low-carbon resilient development:

- **Adaptation** in LDCs refers to activities that support development as well as those that address additional climate risks and vulnerabilities. In the LDCs, much of climate change adaptation will involve addressing the underlying causes of vulnerability, often described as the ‘development deficit’.
- **Mitigation** is about the reduction of greenhouse gases; in LDCs, these reductions are likely to be found in the forestry, energy and infrastructure sectors.
- **Development** is about reducing poverty and supporting countries to reach their national objectives, often in traditional areas of education, health and infrastructure planning. Although this is closely linked to adaptation, not all development is adaptation, nor is all adaptation development.

Research shows that there are some theoretical challenges to bringing the policy areas together – such as differences in the timeframe of the agendas and their spatial scale. Nevertheless, some scholars identify some potential ‘win-wins’ – where there are equal benefits for both agendas – or co-benefits – where one policy, primarily about one agenda, may have supplementary benefits for another. Others are more cautious and suggest being attentive to trade-offs and the extra costs of bringing together these policy objectives.

Why adopt this policy approach?

There are multiple political reasons for adopting a low-carbon resilient development agenda. Some of the national reasons for adopting such an approach may lead to a slightly different focus in how the agenda is applied in-country. For example, green growth – an increasingly popular theme emerging in Rwanda,

Ethiopia and Cambodia – emphasises poverty reduction through economic green growth. Ultimately, this could lead to low-carbon resilient development, but it is a different approach to one based on the more traditional policy domains of adaptation and mitigation through development planning.

Current national policies

Within the plans and strategies themselves, certain aspects need to be aligned to support a low-carbon resilient development agenda. These include policy timeframes, financing mechanisms and institutional structures. There is some institutional inertia to bringing these agendas together within existing governmental planning; it is therefore important to be clear on the potential benefits, to ensure the extra effort is worthwhile. There are only a few examples within LDCs at the moment where low-carbon climate-resilient development has gone beyond policy rhetoric into implementation, although there have been some piecemeal efforts often involving the private sector and other actors. Important questions remain about how to identify the key policy areas for win-wins or co-benefits, and how to align the incentives to bring these three issues together.

Key messages of this paper

- Sliding scale of win-wins:** It is vital that stakeholders recognise the challenges of cost and context. There are a range of benefits and win-wins in low-carbon resilient development. These vary on a sliding scale from: a policy that gives pure benefits in one of three areas; to one that may give minor co-benefits to other areas; to one that benefits areas of genuine synergy; and at the other of the scale, one that gives a win-win situation across multiple agendas. Using a sliding scale like this can help assess where a policy, sector or programme might fit. This in turn helps determine the appropriate policy approach and scale for these agendas to be brought together. There is also an area on this scale where there are trade-offs between agendas and possible extra costs.
- Scale:** It is vital that stakeholders recognise the challenges of scale. The scale of the policy agenda is a crucial issue and one that can get overlooked. So far at the country strategy level, the scale has been focusing on an overall framework or policy objective in one area that multiple projects (often on one issue or the other) feed into. It is not yet clear how the win-wins alter at different scales, or whether an overarching framework or objective is more effective than a focused objective situated within one institutional area such as low-carbon policies.
- Climate justice:** It is important that in the search for synergies and win-win strategies, core tenets of climate change justice and rights to development are not left out. Further work needs to be done on the implications of pursuing low-carbon resilience to increasing energy access and poverty reduction efforts.
- Uncertainty and learning:** It is vital that stakeholders recognise the challenges of uncertainty of this policy approach. Very little is known about the advantages and disadvantages of bringing together these agendas in practice. Until there is more evidence, policymakers should adopt a learning-by-doing approach, paying careful attention to the efforts of other countries while monitoring the success of their own approach and being prepared to change course when/if it becomes clearer what areas yield the highest win-wins or co-benefits while securing national development.

Stakeholders must therefore allow for research and evidence to be gathered during the development and implementation stages, with researchers working in partnership with national governments to document and analyse the processes in different countries. It is important to monitor and evaluate policy programmes, including any unexpected consequences such as distributional effects, potential trade-offs and actual synergies. Expanding the evidence base will help stakeholders judge when the synergies are significant enough to make working through the barriers of cost, context, scale and uncertainty worthwhile.

What is low-carbon resilient development?

Low carbon resilient development involves bringing together three policy areas of climate change mitigation, adaptation and development to find synergies and 'win-wins'. This can be at the level of a policy, an objective or within a financing mechanism.



When Bangladesh released the Bangladesh Climate Change and Strategy Plan (BCCSAP) in 2009, it became the first least developed country (LDC) to develop a comprehensive national plan on climate change. The BCCSAP includes issues of both adaptation and mitigation. Since then, eight other LDCs have announced plans or strategies incorporating elements of both low-carbon development and resilience to climate change. This plethora of strategic documents at the national level indicates a widespread interest on the part of national governments of the LDCs on how they can operationalise both aspects of the climate change agenda at the national level and a high level of support for these planning processes on the part of the development partners.

These countries are 'early adopters' of the low-carbon resilient development agenda. As such they offer important insights into how the low-carbon resilient development agenda is being operationalised and provide an opportunity for lesson-learning for other LDCs that may develop such strategies in the future.

This is an emergence of climate planning on a different scale from the national adaptation programmes of action (NAPAs) and the nationally appropriate mitigation actions (NAMAs), which were driven and structured by the priorities and needs of the UNFCCC process. The objective of these national plans and strategies is to be mainstreamed into national development planning and to cut across the international divide between the elements of climate change mitigation and adaptation. However, while there has been an emergence of action within national governments, there has been very little research and understanding of the different national priorities within the agenda of low-carbon resilient development, nor of how different countries are approaching this challenge.

This issue paper aims to address this gap by analysing the key low-carbon resilient strategies that have been developed in the LDCs. It explores how the concepts of low-carbon development and resilience have been brought together in different contexts, and what this might tell us of the possibility of co-benefits or 'triple wins' in practice, and about the opportunities and challenges that national governments are experiencing.

Many terms are being used in the current climate debate to describe bringing together adaptation and mitigation or adaptation, mitigation and development policy agendas. This has been supported by decisions at the UNFCCC that seek to incorporate a joint approach to mitigation and adaptation from the Cancun decision, including an encouragement for developing countries to 'develop low-carbon development strategies or plans in the context of sustainable development' (UNFCCC 2010). The underlying assumption is that addressing these two or three policy areas simultaneously will leverage triple wins across the agendas and be more cost effective. However, there is very little theoretical basis for such an assumption, and there is not yet sufficient empirical evidence to understand the potential situations in which co-benefits or triple wins can be leveraged, or where trade-offs or regrets will be involved (Tompkins *et al.* 2013).

Table 1 shows the different terminology that various organisations and governments have adopted to describe this policy approach.

Some of these terms describe the same ideas; others have slightly differing emphases.

To consider what it might mean to bring together these policy agendas, it is helpful to be clear about what each one entails in the LDCs and the ways in which they might be brought together in one policy agenda in these contexts.

Table 1. Common terms and approaches

TERMINOLOGY	FOCUS
Low-emission development strategies / low-carbon growth policies	Economic growth and low emissions being combined into one agenda
Climate-compatible development	Development-first approach that minimises harm from climate impacts while maximising development opportunities
Low-emission climate-resilient development	Combines climate-compatible development and low-emission climate development strategies – with equal emphasis on all three agendas
Green growth	Prioritises 'greening' the economy by transforming the energy and other key sectors, aiming to achieve poverty reduction through economic growth.

1.1 Adaptation

Climate change adaptation consists of a set of activities on a spectrum that ranges from addressing the drivers of vulnerability; to building response capacity; to managing climate risk; to confronting climate change (McGray *et al.* 2007). Adaptation has been identified as frequently involving local action – sometimes at the level of individual coping strategies and risk management – and is usually done in response to present climate variability. Government support is needed to address market failures or support the development of national goods such as infrastructure.

National priorities for adaptation in the LDCs have been articulated in the NAPAs and now as part of national climate change strategies. They show national concern for: responding to extreme events and promoting disaster risk reduction; addressing food security and the effects on agriculture; managing coastal zones and ecosystems; managing water resources; enhancing the resilience of infrastructure; and building capacity and education to address the effects of climate change (NAMA database 2013). These priorities are the urgent and immediate needs identified through the NAPA process and are closely related to government development priorities. Planning for longer-term needs is now being started under the national adaptation plans (NAP) process.

1.2 Development

'Normal' development activity – such as promoting universal healthcare or primary education – is closely related to addressing the underlying drivers of vulnerability. LDCs are more vulnerable to climate change – partly because of a high reliance on climate-sensitive sectors such as agriculture and a lower capacity to adapt when necessary – and these factors will be addressed through economic growth and development.

Some scholars suggest that only the right type of growth policies – those that address considerations such as natural capital, institutional and regulatory frameworks, infrastructure, human capital and access to markets – will reduce vulnerability (Bowen *et al.* 2012). Others reiterate that not all development is adaptation, nor is all adaptation necessarily development (Ayers and Dodman 2009). While the two areas are closely linked, particularly towards one side of the adaptation spectrum, LDCs must keep in mind the complex relationship between the two areas and the need for a relative emphasis on their complementary aims when considering the mainstreaming of climate change into national development planning.

1.3 Mitigation

Mitigation is usually associated with action at the national or international scale, although local governments and private companies can also play a role. The five main areas where mitigation is focused are: energy efficiencies; renewable energy use; carbon sequestration through enhancing sinks such as forests; land management for emission reductions; and geo-engineering such as carbon capture and storage (Boyd and Tompkins 2010). Mitigation in developed countries is mainly in the energy and transport sectors, while developing countries will find more emission reductions in forestry, energy and agriculture (Klein *et al.* 2005). Mitigation in the LDCs will offer cost savings in some instances where infrastructure is yet to be built, as it can be done with lower emissions in the first place, rather than more costly retrofitting.

1.4 Bringing the three issues into a single agenda

National governments of LDCs have different options available to them for bringing agendas together or finding synergies between them:

- *One single policy:* For example, a national campaign to distribute solar lanterns as a decentralised renewable energy solution. This type of campaign could offer benefits in all three areas: *mitigation* through renewable technology; *adaptation* through addressing the underlying causes of vulnerability; and *development* through better educational outcomes and income diversification by being able to work in the evenings.
- *An overarching policy objective* within which policies address specific strands of the agenda: these could focus more on *mitigation*, *adaptation* or *development*.
- *Implementing the two objectives simultaneously with a single funding mechanism:* This does not necessarily imply any synergies in implementation beyond a general political will to support both agendas. There may also be policies that primarily address one objective – mitigation, adaptation or development – but are slightly modified to make some contribution to another objective.

BOX 1. MODELS FOR BRINGING AGENDAS TOGETHER

Scholars have identified several economic models for bringing together the agendas as well as technical solutions and guidance. However, there is very little empirical work in developing countries – especially LDCs – on how or if this works in practice. Some scholars note the theoretical challenges to bringing the two or three agendas together.

Klein *et al.* (2005) highlight the different temporal and spatial scales at which mitigation and adaptation are effective, with mitigation offering medium- to long-term benefits at global scales and adaptation often having more immediate, local benefits. They also suggest that it is difficult to compare the costs and benefits of adaptation and mitigation policies; the latter are more easily quantified. There are local examples of leveraging co-benefits or triple wins, but the question is how widespread such win-win scenarios are and how significant such benefits are at the national scale.

Tompkins *et al.* (2013) use an analysis of coastal management in Belize, Ghana, Kenya and Vietnam to show that, while some policies leverage triple wins, others are ‘creating development losses, mal-adaptation and worsening emissions’ (p.16). The authors argue that the simplified depiction of win-wins can hide trade-offs and regrets. ‘Without a strong evidence base there is a risk that the development community could invest in policies that create triple wins with regrets at the expense of more effective policies that might only deliver co-benefits but with no-regrets’ (p.17).

While some triple wins or co-benefits are available, we need to understand better the instances in which they occur, and when other, more single-focused approaches are more appropriate. This is particularly the case in the LDCs, where national climate change planning is moving ahead at a fast pace with support from development partners and international policy, but there is very little evidence on which to base an operationalisation of the low-carbon resilient development agenda. See Box 1, above, for further detail regarding these theoretical concerns.

Plans and strategies

Nine countries have produced plans or strategies that aim to bring together elements of low carbon resilient development into national planning. They have adopted different approaches to the timescales, financing mechanisms and institutional architecture.



The issues discussed in this paper are based on a policy review of plans and strategies in the LDCs that address issues of low-carbon resilient development. This policy review has been undertaken consistent with the framework for analysis outlined in Table 2. An analysis of the policies and strategies themselves also offers significant insight into the government response to climate change and is a first step to understanding the wider dynamics of how and why certain elements are mainstreamed while other plans are not taken further.

The plans and strategies represent the first official response to climate change. Since they have been drawn up, some policies have moved ahead while others are yet to be developed. These have been indicated where possible through interviews or personal communication with key stakeholders.¹ The following framework was used to analyse the policies.

Planning documents represent government discourse on climate change at a particular time and therefore show indications of intent, commitment, priorities and contention. We explore these in this more detail in Section 3, recognising that further empirical research is needed to understand the underlying political economy to these government discourses and the drivers for moving from planning to implementation.

2.1 Why adopt a low-carbon resilient strategy?

The first engagement of many LDC governments with the climate change agenda at a national level has been through the requirements and developments of the UNFCCC as well as international momentum behind events such as the Rio+20. For example, all LDCs have developed a NAPA under the support and guidance of the UNFCCC to address urgent and immediate adaptation needs. Plans are now underway to develop NAPs, which will look at medium- and longer-term adaptation needs and how to develop and implement strategies and programmes to address those needs. Within the structures of the UNFCCC, countries or parties have also made national communications outlining their emissions profiles and actions, as well as developing NAMAs.

The NAMA database is now operational and seeks to match funding opportunities with NAMA projects. UNFCCC is also mobilising other financing mechanisms (NAMA database 2012) and introduced the idea of low emission development strategies (LEDS) in 2008, with the idea that they would offer an overarching national framework within which actions identified in the NAMAs would be carried out.

Table 2. Framework for analysis

KEY ASPECTS OF THE PLAN OR STRATEGY	NOTES AND JUSTIFICATION
Mechanisms and implementation	
Time-bound priorities and the process of prioritisation	Indicate levels of commitment to implementation and how priorities were identified
Financing routes and mechanisms	Indicate the level of commitment to implementation, or at least the feasibility of implementation
Institutional architecture for oversight and implementation	Can demonstrate where in government the climate change agenda is held
Implementation framework, including integration into national planning	Indicates whether countries are looking to mainstream climate change, or if it will remain a sectoral or special issue
Low carbon and resilience	
Overarching justification for low-carbon resilient development	Indicates the official discourse around low-carbon resilient development and its relevance to the national context
Sectors and policies that have been identified for low-carbon development	Identifies how low-carbon policies have been integrated into the plan and the sectors in which they have been prioritised
Linkage between low-carbon measures and resilience	Looking at sectoral measures, policies and linkages to understand if the low-carbon and resilience agendas are linked or separate; may also help identify synergies or conflicts.

1. We held interviews with officials in Bangladesh, Nepal, Rwanda and Ethiopia as part of the second phase of this project. The results have informed this analysis. We have had personal communication with individuals involved in Cambodia, Laos and Bhutan to clarify the status of the plans.

Table 3. Low-carbon resilient development strategies in LDCs²

COUNTRY	DATE	STRATEGY/PLAN NAME
Bangladesh	2009	Bangladesh Climate Change Strategy and Action Plan (BCCSAP)
Bhutan	2012/13	National Strategy for Low-Carbon Development
Cambodia	2010	National Green Growth Roadmap
	2012	Green Growth Master Plan for Cambodia
	In development	National Climate Change Strategic Plan
Ethiopia	2011	Ethiopia's Climate-Resilient Green Economy (CRGE) Strategy
Lao PDR	2010	Strategy on Climate Change of the Lao PDR
Mozambique	2012	National Strategy for Climate Change Adaptation (ENAMMC)
Nepal	2011	Climate Change Policy
	Forthcoming (2013)	Low-Carbon Economic Development Strategy (LCDS)
Rwanda	2011	National Strategy on Climate Change and Low-Carbon Development
The Gambia	2012	Programme for Accelerated Growth and Employment (PAGE)
	2012	Priority Action Plan for Climate Change

As well as these international drivers to move forward on low-carbon resilient development, many national governments have national-level incentives to be pro-active on developing climate change strategies. These drivers can be either around accessing new funding sources such as climate finance or following the trends of relationships with development partners, promoting existing policy priorities such as increasing energy access (Ellis *et al.* 2013). Table 3 outlines the climate change strategies developed so far by those LDCs that have developed national plans to address both mitigation/low-carbon development and resilience/adaptation.

2. Last updated July 2013.

Discourses and country experiences

Discourses around why to move towards low carbon resilient development have been fast moving in the LDCs. Countries have used multiple justifications for adopting this path related to their national circumstances and this has also led to a range of entry points for the agenda.



The discourses surrounding low-carbon resilient development and why LDCs should address low-carbon development at all have been fast-moving since the inclusion of some mitigation elements in the BCCSAP, the very first LDC plan. The main developments are summarised in Figure 1.

3.1 Individual country experiences

Each national plan places a varying emphasis on aspects of the low-carbon resilient agenda. These range between the advantages of green growth to the economy as a whole; to a focus on green jobs; to energy access and energy security.

3.1.1 Bangladesh

BCCSAP, the earliest LDC plan, was intended to include low-carbon development options, to be implemented over the decades as the national economy grew and the demand for energy increased. The addition of mitigation concerns in the plan faced some resistance in the strategy design stage. This was due in part to the long-standing concern in Bangladesh

that the green agenda is a deterrent to national growth; and partly to the role of developing countries in the climate change debate on 'common but differentiated responsibilities'.³ Mitigation and adaptation are therefore treated as separate policy issues. Although mitigation is only a small component of the plan (with 3.2% of total resource), it was retained to support funding and address concerns around energy access and security.

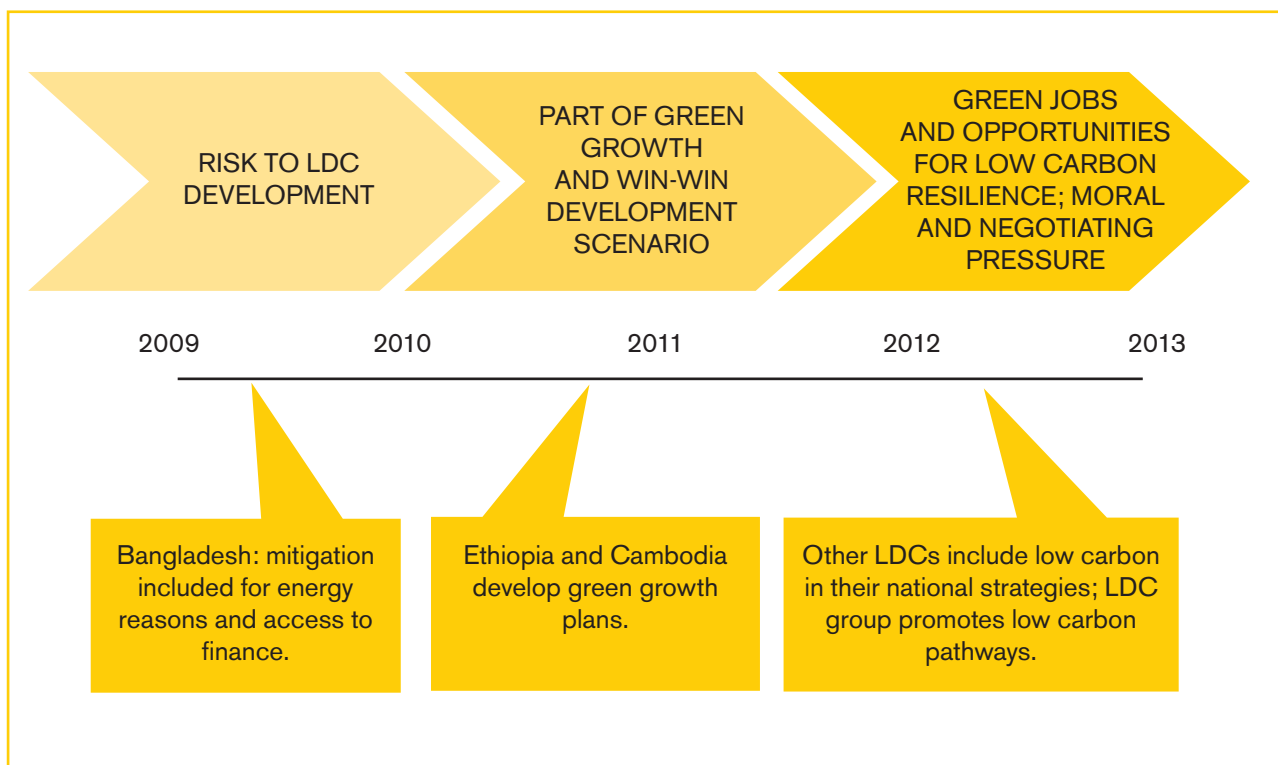
BCCSAP has identified following key sectors for low-carbon development:

- afforestation and reforestation;
- renewable energy development, energy efficiency;
- gas exploration and reservoir management;
- urban waste; and
- lower emissions from agriculture.

3.1.2 Bhutan

The overall development philosophy is guided by the four pillars of gross national happiness: promotion of equitable and sustainable socio-economic development; preservation and promotion of cultural values; conservation of the natural environment; and

Figure 1. Overarching discourse and national experiences of low-carbon resilient development



3. We held interviews with key stakeholders in Bangladesh in January 2013. These included government officials involved in the planning process of low-carbon resilient development, as well as relevant stakeholders from international organisations, civil society and the private sector.

good governance. In 2009, the government pledged to remain carbon neutral and committed to maintain the country's status as a net sink for greenhouse gases by ensuring that emission levels do not exceed the sequestration capacity of its forests. Its strategy therefore focuses on mitigation and the government's commitment to remain carbon neutral, envisaged through interventions aimed at:

- the non-energy related emissions of energy-intensive industries;
- crop production;
- livestock raising;
- municipal solid waste;
- road transport;
- housing; and
- data improvement (sequestration capacity and carbon footprint).

3.1.3 Cambodia

The National Green Growth Roadmap and Master Plan are being developed separately from the Climate Change Strategic Plan, and will sit within it. Both show a considerable political commitment to the idea of green growth. In fact, the Ministry of Environment plans to establish a green growth department and already has a climate change department.

The central reasoning behind the *roadmap* is that poverty and near-poverty remain rife in Cambodia, and other human development indicators continue to reflect difficult living conditions, especially in rural areas. Most of the high growth over the past decade has been urban based and narrowly focused in the tourism sector and a boom in the construction industry, as well as the surging garment exports trade, which may all be vulnerable to the impacts of climate change.

Similarly, the base of major beneficiaries of development over the past decade has increasingly narrowed, leading to an identified need to improve quality of life by focusing on increasing access to basic goods and services. The *master plan* therefore addresses poverty reduction and economic growth together. In essence, development must take place in a way that avoids further negative impacts and degradation to the environment: access to goods and services are to be addressed via green economic growth projects and programmes, including eco- and resource-efficient innovations, which can create opportunities and new 'green jobs'.

Finally, the *Climate Change Strategic Plan*, which is still in development, will look more at resilience. Synergies between the green growth approach and climate change strategy have not yet been explored.

3.1.4 Ethiopia

One of the world's fastest-growing economies, Ethiopia aims to achieve middle-income status by 2025 while developing a green economy. The country is developing climate resilience and green economy strategies simultaneously but separately. While the green economy strategy has been finalised, climate resilience is work in progress. The government has realised that following a conventional development path would result in an increase in greenhouse gas emissions and unsustainable use of natural resources; to avoid these effects it is focusing policy on the CRGE.

It is acknowledged that if climate change mitigation and adaptation are seen as goals in conflict with economic development, they risk being de-prioritised and under-funded. The main concerns in the plan therefore reflect the unsustainable use of natural resources, being locked into outdated technologies and losing an ever-increasing share of GDP to fuel imports.

3.1.5 Lao PDR

Being highly vulnerable to the effects of climate change, the government of Lao PDR has deemed adaptation and mitigation strategies and actions to be a high priority. Determined to take early precautions, Lao PDR has identified a series of priority actions on mitigation to ensure a low-carbon growth. However, the strategy has very little substantive detail on low-carbon or climate resilient growth and development.

The value of the forestry sector for national GDP and development purposes is also a key factor. With an agrarian economy that depends on natural resources, the strategy states that 'Lao PDR is keenly aware that its future depends on a safe resource base and ecological sustainability has therefore always been at the forefront of the national development agenda. The National Growth and Poverty Eradication Strategy epitomises the Lao approach to sound development.' (Lao PDR 2010).

3.1.6 Mozambique

The National Strategy for Climate Change Adaptation comprises of three sections or pillars. The strategy identifies adaptation and climate risk reduction as national priorities, but also recognises the opportunities for low-carbon development that might occur without development action, to reduce climate change impacts through a set of mitigation and low-carbon development actions. The following areas have been identified for low-carbon development and mitigation:

- improving access to renewable energy;
- increasing energy efficiency;
- promoting low-carbon urbanisation;
- developing low-carbon agricultural practices;

- reducing deforestation and wildfires; and
- managing coastal ecosystems.

3.1.7 Nepal

The LCDS, currently under development, aims to identify the key approaches and interventions that will support Nepal towards a low-carbon development path, to foster optimum economic development. It is being developed as a separate document to NAPA and National Climate Change Policy, and is intended to present a long-term vision on climate and development and a strategic low-carbon development pathway. The LCDS may also identify what is needed to establish a favourable investment climate for low-carbon development actions, and signal to potential investors the long-term ambitions and priority sectors, and the interventions – such as regulatory frameworks or policies – the government will undertake to help achieve these ambitions.

3.1.8 Rwanda

The national climate change strategy takes a low-carbon path to development to address 'climate change, population growth and rising oil prices'. The strategy also has a political commitment to action in climate negotiations, with groups such as the Climate Vulnerable Forum and the Cartagena Dialogue for Progressive Action. Aspects of the strategy are being mainstreamed into the main national development plan (EDPRS 2); other ideas are also incorporated, due to nature of mainstreaming policy process.

Green growth is a priority area in the EDPRS 2, focusing on green technologies and innovation with the aim of allowing Rwanda to leapfrog new technologies and destructive development pathways and build a green economy alongside sustainable economic growth and poverty reduction. Following this agenda positions Rwanda to access international funding. Stakeholder interviews⁴ showed that green growth was an attractive policy approach and generating green jobs was a key motivator in the Rwandan context.

3.1.9 The Gambia

PAGE recommends a low-carbon development strategy, but this has yet to be developed. Climate change is, however, being mainstreamed in national development policies, including PAGE. In the energy sector, for example, there are plans to:

- reduce the pressure on natural forests;
- provide access to reliable technologies and better or cheaper fuels;
- limit damage to infrastructure;
- improve energy efficiency, disaster planning and water resource management;
- raise public awareness;
- restore biodiversity and the health of ecosystems;
- develop cleaner public transport;
- promote clean technology; and
- minimise the impact of flooding and saline intrusion in lowlands.

3.2 Different countries; different approaches

The analysis of country experiences in Section 3.1 shows that there are multiple political justifications for adopting a low-carbon resilient development agenda. Indeed, national governments may use multiple entry points to justify doing so. Some of these discourses may lead to a slightly different focus in how the agenda is applied in country. We see, for example, that green growth is an increasingly popular theme emerging in Rwanda and Ethiopia, while Cambodia places more of an emphasis on poverty reduction through economic green growth. Ultimately, Cambodia's approach could lead to low-carbon resilient development, but this will be different from one based on the more traditional policy domains of adaptation and mitigation.

4. We held interviews with key stakeholder interviews conducted in Rwanda, April 2013. These included government officials involved in the planning process of low-carbon resilient development, as well as relevant stakeholders from international organisations, civil society and the private sector.

Main dimensions of low-carbon resilient development strategies

The structure and dimensions of the climate change strategies themselves can play some role in how low carbon issues, development and resilience might be brought together. Time-bound priorities, financial mechanisms and institutional architecture are three important areas to support any synergies.



The structure and dimensions of the climate change strategies themselves can play some role in how low-carbon development and resilience might be brought together. This is shown in Figure 2. In this section we explore the effect of time-bound priorities, financial mechanisms and institutional architecture.

4.1 Time-bound priorities

One indication of how serious a government is about implementing a national plan in the near future is whether they allocate any time-bound goals and priorities. LDC strategies use several different approaches to time-bound goals, including:

- the relative prioritisation of all programmes;
- attaching deadlines to specific policy measures;
- linking policies to a national development policy framework with its own timeframe; and
- identifying several measures to fast track or act as ‘quick wins’.

The progress that national governments have made in this regard is summarised in Table 4.

The use of time-bound priorities has implications for attempting to find synergies in low-carbon, resilient and development agendas. Different timeframes will make synergies more challenging – for example, Bangladesh identifies mitigation actions as not short-term, but many adaptation and resilience objectives as immediate and short-term; with this scenario, it is unlikely that synergies will be found.

Similarly, identifying *big wins* or ‘low hanging fruit’ might prioritise mitigation actions that are easier to measure and execute from a central government ministry, and prevent the search longer-term projects with synergies or win-wins which may be more time-consuming.

Mainstreaming into national development plans is a complex political process, whereby different sectors negotiate how climate change will be incorporated into sectoral plans, as has happened in Rwanda and The Gambia. A mainstreaming approach is likely to occur along sectoral lines and the process of ministry-level planning may also act against innovative approaches to try to find synergies between different agendas. Monitoring and evaluation frameworks and ministerial priorities may not cut across the agendas in the same way and so the incentives do not always align.

4.2 Financing mechanisms

Some governments already have financial mechanisms in place to support their plans and strategies, while others have yet to consider a comprehensive funding mechanism. There is also debate at the international level on the role of national funding entities and the potential for national governments to have direct access to international climate funds.

Tables 5 and 6 show the current position of national governments in terms of financing their plans and strategies. Bangladesh, Rwanda, Ethiopia and Nepal have all established or are in the process of establishing a fund for climate change that will support the implementation of the plan and other priorities. Other countries are still developing their financial mobilisation strategies for their policies.

Figure 2. Elements of a climate change plan that can support synergies in low-carbon resilient development

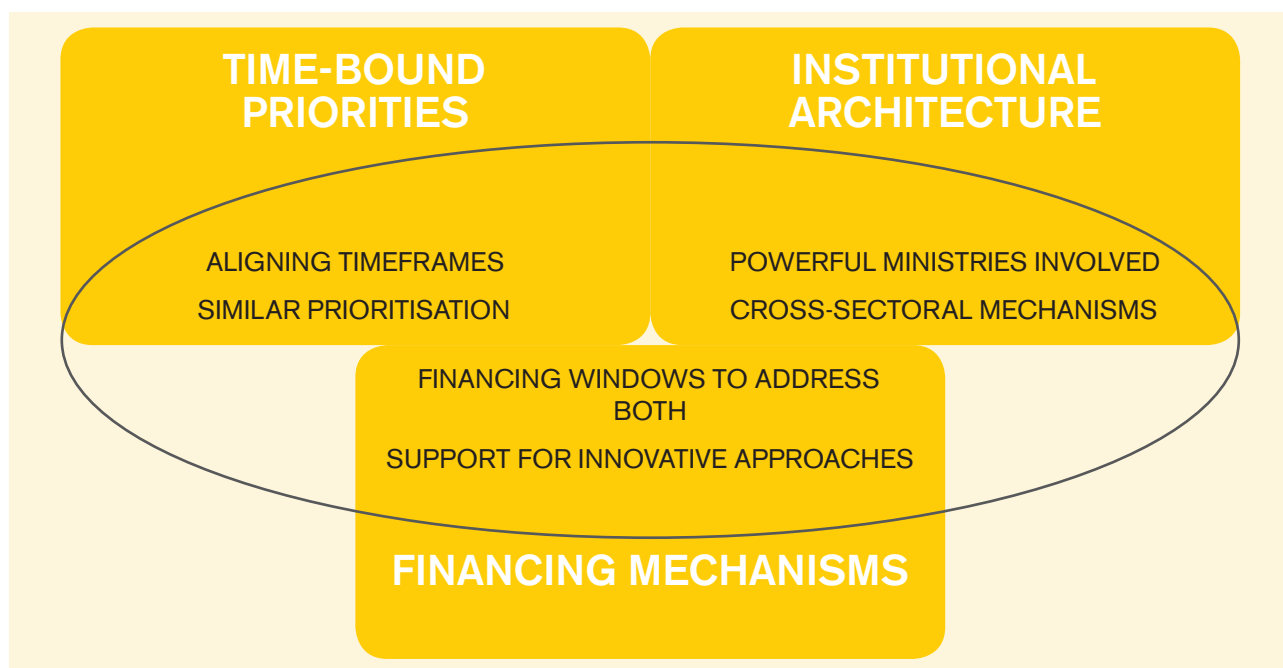


Table 4. Time-bound priorities set by LDC governments

COUNTRY	PRIORITIES SET
Bangladesh	Relative prioritisation, with measures categorised under four timelines from immediate to long-term.
Bhutan	Measures categorised as short-term and medium-term.
Cambodia	Measures categorised as short-term, medium-term and long-term.
Ethiopia	Fast-tracked four measures for implementation to act as quick wins: <ul style="list-style-type: none"> • attracting financing to exploit its vast hydropower potential • promoting advanced cooking technologies on a large scale • monetising reduced emissions from livestock • reducing emissions from deforestation and forest degradation through REDD+.
Lao PDR	Mainstreaming climate change strategies into existing national planning processes through the 7th National Socioeconomic Development Plan, providing a timeframe that is aligned with the consultations and development of the wider national strategies.
Mozambique	2013–2014 action plan for implementing the first phase of the strategy, mainly focused on: <ul style="list-style-type: none"> • community piloting of adaptation • climate risk reduction integrated actions (possibly including low-carbon development aspects) institutional reform • capacity building.
Nepal	Overall, little prioritisation or mention of time-bound deadlines. There are, however, some specific measures with tightly defined targets: <ul style="list-style-type: none"> • establishing a climate change centre within a year • establishing a financial strategy by the end of 2012 • formulating and implementing a low-carbon economic development strategy by 2014.
Rwanda	Mainstreaming climate change strategies into existing national planning processes through EDPRS2, providing a timeframe that is aligned with the consultations and development of the wider national strategies.
The Gambia	Timeframe of the national development plan (PAGE)

Table 5. Countries that have a climate change fund

COUNTRY	FUND NAME	FUND DETAILS
Bangladesh	Bangladesh Climate Trust Fund (BCCTF)	A basket fund for donor and national funds, it manages climate change and supports the BCSSAP; primarily provides funding for adaptation but also mitigation.
	Bangladesh Climate Resilience Fund (BCCRF)	A basket fund for donor and national funds, it manages climate change and supports the BCSSAP. This includes funding from the government budget for both adaptation and mitigation activities.
Ethiopia	Climate-Resilient Green Economy (CRGE Facility)	A basket fund to mobilise and disburse climate finance; it funds both climate resilience and green economy strategies.
Nepal	Central Renewable Energy Fund (CREF)	Renewable energy and low carbon fund. There are no financial strategies for the wider aspects of the policy, though there is project funding for policy priorities.
Rwanda	National Climate and Environment Fund (FONERWA)	A basket fund that aims to ensure financing is available and accessible to support environmental sustainability, resilience to climate change and green growth. The fund will have 'windows' when groups can apply for financing that will reflect government priorities, many of which have been laid out in the Rwandan Green Growth and Climate Resilience Strategy.

Table 6. Financial mechanisms that are still under development

COUNTRY NAME	POTENTIAL SOURCES	DETAILS OF FUNDING POTENTIAL
Bhutan	CDM REDD+ Post-2012 carbon market	A range of international funding sources such as these have been identified, but the government has not put forward a national mechanism or commitment to co-fund the strategy.
Cambodia	Cambodia Climate Change Alliance (CCCA)	There are no detailed plans or commitments in its strategy documents, but the Ministry of Environment's Climate Change department gets policy development and coordination and awareness-raising support from by the CCCA's climate change trust fund. The CCCA, jointly implemented by the Ministry of Environment and UNDP is funded by UNDP, the EU, Denmark and Sweden. It also funds 21 grants implemented by government institutions. This experience could be part of the foundation for a national fund.
Lao PDR		No financing mechanisms were in place at time of research; there are no detailed commitments in its strategy documents.
Mozambique	Pilot Programme for Climate Resilience (PPCR)	The (PPCR) supports national strategy development and implements some area of work. Technical assistance and investments supported by PPCR funding will be complemented by Development Policy Operations support from the World Bank, to improve low-carbon energy access for poor people and reduce emissions from degradation and deforestation through REDD+.
	State budget Multilateral environmental agreements Bilateral accords Private sector/civil society	Financing for the strategy will coordinated by the National Environment Fund (FUNAB), with necessary funds arising from the potential sources listed here.
Nepal	Clean Development Mechanism (CDM) Carbon trading	All of these have been identified as possible funding mechanisms by Nepal. National-level arrangements to access and manage international and bilateral climate finance are under preparation.
	Donors PPCR	Nepal has received a considerable amount of financial support for adaptation from bodies such as the PPCR. However, this has not been channelled through a basket mechanism (as done by Bangladesh and envisaged by Rwanda and Ethiopia).
The Gambia	Overseas development assistance (ODA)	Climate Change Action Plan costed and integrated into national three-year plan (PAGE).
	Foreign direct investment (FDI)	Resource mobilisation strategy relies on international sources (ODA and FDI).

The financial structures for funding climate change strategies can also play a role in bringing the agendas together. Demand-driven structures such as FONERWA in Rwanda – that allow line ministries and others to apply for money around certain themes but with projects and programmes they have devised – may support existing policy programmes rather than promoting those that attempt to innovate and focus on synergies. Funding windows for each area – such as green growth or resilience – will also split the incentive to bring the two together.

Other innovative ways of using financing to support low-carbon resilient development include leveraging ‘crowd finance’ for small-scale investments (Wilson and Symons 2013) or using an intermediary to help mobilise and disburse resources. For example, Rwanda explicitly uses the Development Bank as an intermediary to mobilise and disburse money for low-carbon resilient development investments. Another example of innovative financing is in Bangladesh, where the government is supporting adaptation and mitigation by providing finance from their own national budget to these areas through one of their funds. The amount allocated is more than the total donor financing under BCCRF.

4.3 Institutional architecture and implementation

The plans and strategies vary in their institutional architecture for oversight and in the respective roles for parts of government, sub-national actors, the private sector and civil society. In most countries the Ministry of Environment is expected to play a key role in strategy coordination for climate change, including the low carbon or green growth elements. However, they have little power to implement these plans, as the key implementing entities are often the line ministries. This is the case in Bangladesh, where most BCCRF projects are implemented through the agriculture ministry, an energy ministry, or the local government ministry.

Most strategies also include the creation of some cross-sectoral mechanisms – both for oversight and to generate ownership of the agenda. In some countries – for example, Nepal and Lao PDR – institutions such as a climate change council were already in place before the strategy was developed. Other countries – such as Mozambique – are working towards having national implementing entities that are organisations accredited to receive international climate funds from sources such as the Adaptation Fund. A national implementing entity must have robust fiduciary and oversight functions.

The institutional structure of a plan may also affect the likelihood of finding policy synergies between low carbon, development and resilience. Environment ministries are traditionally less powerful within national government, and may be less able to influence mainstream development planning that might offer some of the main win-wins – such as energy access, transport or agriculture. These ministries are also often under staffed, and have limited capacity or evidence on which to make strong case for synergies, which are still emerging anyway, and therefore not well understood (Tompkins *et al.* 2013). If there was a better understanding of where the main win-wins might be found, it would be easier to situate those parts of a strategy within the relevant institutional structure, and pure mitigation or adaptation components where they could be most effectively implemented.

Bringing multiple agendas together

The policy agendas can be brought together at different scales – at the level of the policy instrument, the objective or the financing mechanisms. There is often a lack of clarity about which level is being sought, and where synergies might be most effective.



Countries have treated low-carbon strategies and resilience in different ways – for example, in Bangladesh they are separate policy areas; in Ethiopia and Rwanda they have been moved under one overarching policy framework. Although low-carbon resilience is a concept designed to bring together adaptation and mitigation simultaneously in one policy framework (Kennedy and Corfee Merlot 2012), many of the LDC plans identified in this review have not managed to integrate low carbon and resilience agendas beyond the broader policy rhetoric at this stage.

As we discussed in Section 2, there are several ways to bring together the policy agendas at varying scales – at the level of a policy instrument, a policy objective or a funding mechanism. The majority of the LDCs have brought together low carbon, development and resilience at each of these levels, but few are intending to bring them together at the level of a single policy. Table 7 shows how some of these countries are taking this forward.

Table 7: Priorities and synergies in some LDC countries

COUNTRY NAME	PRIORITIES IDENTIFIED	MERGING TOGETHER
Rwanda	<p>Four major priorities for climate resilience:</p> <ul style="list-style-type: none"> • irrigation • robust roads • centre for climate knowledge management • agroforestry <p>These are separate priorities from low-carbon policies.</p>	<p>The following cross-cutting themes – also known as enabling pillars – underlie both the low-carbon and resilient big wins:</p> <ul style="list-style-type: none"> • institutional frameworks • finance • integrated data and management • capacity building. <p>Although some policy programmes – for example, on the sustainable intensification of agriculture – combine elements of low-carbon development and climate resilience, it is not clear how these programmes might work together.</p> <p>Much would depend on how such policy ideas are operationalised through the EDPRS 2.</p>
Ethiopia	<p>Green growth and climate resilience strategies come together to form the CRGE. It is explicitly stated at the outset that the document on green growth does not cover climate resilience; this will be added over the coming months.</p>	<p>While the climate-resilient plan and the green economy strategy will constitute the CRGE, there is no intention for all benefits to cross over between both strategies. Instead, they will be implemented simultaneously with complementary aims to meet the overarching policy objective.</p> <p>Some flagship programmes – such as the national cookstove and biogas programmes – aim to bring these two together, although there is so far little evidence on how, or if, win-wins will be leveraged.</p>
Cambodia	<p>Green growth plans have been developed separately from the climate change strategy.</p>	<p>There is no merging together: resilience and green growth are treated in separate policy documents and have separate institutional arrangements.</p>
Bhutan	<p>The 11th five-year plan (2012–18) has the objectives of: 'climate-resilient and carbon-neutral development'</p>	<p>Short- and long-term actions should be aligned to these objectives. The plan's framework for mainstreaming environment, climate change and poverty concerns acknowledges that the integration of both carbon-neutral and climate-resilient development should be considered a national key result area across different sectors; there are a number of suggestions for incorporating and mainstreaming such considerations across sectors.</p> <p>In the strategy document itself, however, there is little evidence of the alignment of low-carbon and climate-resilient development.</p>

In summary, therefore, low carbon and climate resilience are mainly being conceived together at the policy objective level, with some flagship programmes and policies to demonstrate win-wins. There are, however, very few examples where this co-benefit approach has gone beyond policy rhetoric into implementation. Important questions remain about how to identify the key areas for this synergy and how to align incentives to bring these two together.

Some countries are bringing together the two agendas through more autonomous piecemeal efforts, which may not be called low-carbon resilient development or may not fit within their broader strategy. For example, some BCCRF projects in Bangladesh and autonomous actions by the private sector in low-carbon energy are supporting co-benefits between some of these agendas, even if it is not a comprehensive low-carbon resilient development approach. Such attempts may be incentivised by development partner support in these areas.

Another way to bring the agendas together is to identify theoretical win-wins or areas where multiple agendas could be brought together, and support implementation across barriers with active monitoring and evaluation to generate more evidence on the issues. Further evidence is also needed on the relationship between poverty reduction and adaptation, and on how the green growth agenda will support synergies between mitigation and adaptation.

There needs to be more explicit recognition of the spectrum of co-benefits or win-wins in low-carbon resilient development, which can range from mitigation benefits only; to minor co-benefits for resilience and development; to areas of genuine synergy; and at the other end of the scale, adaptation benefits only. Assessing where a policy, sector or programme might fit on a sliding scale like this can help governments develop an appropriate policy approach and determine the appropriate scale for bringing these agendas together.

Discussion and conclusions

Low carbon resilient development is emerging at the national planning level but has not yet been systematically implemented in the LDCs. Governments need to be attentive to the scale of any synergies, the location of the big win-wins, any particular trade-offs and monitor and evaluate the impacts of such an approach.

6

Despite the widespread rhetoric around bringing together adaptation, mitigation and development under one single low-carbon resilient development agenda in the LDCs, there has been little evidence to date of countries doing this systematically in practice. Our examination of the LDC national strategies that have brought these agendas together in some way shows that the win-win rhetoric is widely used; but progress in operationalising these ideas into actual policy synergies has been slower. Some governments are seeking to address low carbon and resilience issues in their own ways to leverage co-benefits, although they have not been terming this as low-carbon resilience development. Examples of this include solar programmes in Bangladesh that address adaptation and mitigation issues, and Ethiopia's national cookstove programme.

We found that there are multiple institutional barriers to a real overarching agenda, and that policy incentives, timeframes and financing structures all need to be set up to support synergies and cross-sectoral work in the areas where significant co-benefits can be leveraged.

The scale of the policy agenda is a crucial issue, and one that can get overlooked. So far, at country strategy level, it has focused on an overall framework or policy objective in one area that multiple projects (often single-issue ones) feed into. It is not yet clear how the synergies alter at different scales, or whether an overarching synergistic framework or objective is more effective than a focused objective situated within an institutional silo. This option at least aligns with existing planning processes and incentives around policy implementation. To overcome institutional barriers to such cross-cutting development planning – working across ministries as diverse as agriculture, energy and transport – there needs to be a significant evidence base and justification that such an approach will yield more transformative benefits, given the inertia to such an approach.

The low-carbon resilient development agenda is not just about finding and securing win-wins for the sake of efficiency, but also about ensuring equity, access and distribution of benefits at the heart of any merging of agendas. It is important that, in the search for synergies and win-win strategies, core tenets of climate change justice and rights to development are not left out, and that further work is done on the implications of pursuing low-carbon resilience to increasing energy access and poverty reduction efforts.

Several emerging areas of low-carbon resilience take different perspectives and work with different arms of government. The green growth agenda is the most defined of these, seeking to address the effects of economic growth on the environment while also reducing poverty. The natural experiments occurring over the next few years in countries taking different approaches need to be carefully monitored; and

ongoing research must continue to feed into these processes. This will ensure that countries learn from the different approaches and any potential trade-offs are recognised and managed according to national priorities.

Looking forward

Policy is moving fast in the LDCs, largely ahead of an evidence base to support low-carbon resilient development policymaking in these contexts. The best way ahead remains an open question. However, just noting the challenges does little to support those already working on these issues at governmental level. We therefore recommend the following:

1. Development partner support for the agenda and multi-lateral finance mechanisms both need to recognise the uncertainty of this policy approach and allow for research and evidence to be gathered during the development and implementation of these approaches.
2. Low-carbon resilient development is only appropriate at particular scales in particular contexts and carries costs in terms of institutional inertia and lack of experience in implementation. These challenges need to be recognised and a concerted effort made to expand the evidence base of when the synergies are significant enough to make working through these barriers worthwhile.
3. In cases where the evidence suggests this will be beneficial, governments need to invest in monitoring and evaluating policy programmes, including any unexpected consequences such as distributional effects, potential trade-offs and actual synergies. This will build evidence on the practical application of the agenda.
4. There is a role for researchers to work in partnership with national governments to document and analyse this process as it occurs in different ways in different countries.

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Low-carbon resilience has become the new buzzword in climate policy; it is an agenda that tackles reducing carbon emissions while simultaneously building climate resilience and supporting development in a supposed win-win policy agenda. Although least developed countries (LDCs) are responsible for less than five per cent of global greenhouse gas emissions; nine of them have developed plans to bring together these three issues into one single agenda. Our research has found, however, that the rhetoric is greater than the actions and a learning-by-doing approach is necessary to generate robust evidence on where to find, and how to support, 'win-wins'.

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