

Trends in Adaptation Planning: Observations from a recent stock-taking review

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In recent years, the International Institute for Sustainable Development (IISD) has undertaken several comparative analyses of the state of adaptation action in developing countries. This has included completing reviews of current and planned adaptation action in 125 countries, grouped into 12 regions, for the Adaptation Partnership in 2010 to 2011.¹ More recently, we have undertaken a standardized review of adaptation action for the Collaborative Adaptation Research Initiative in Africa and Asia (CARIAA).² It sought to provide a baseline picture of national adaptation policy and practice in 15 countries in which the CARIAA program is active. This brief provides an overview of some of the trends that emerged from the standardized review completed by IISD for the CARIAA program.

The Study

The CARIAA review provided a snapshot in time of adaptation action taking place in 15 African and Asian countries:

- **South and Central Asia:** Bangladesh, India, Nepal, Pakistan and Tajikistan
- **West Africa:** Burkina Faso, Ghana, Mali and Senegal
- **East Africa:** Ethiopia, Kenya, Tanzania and Uganda
- **Southern Africa:** Botswana and Namibia

It used a standardized approach to summarize the extent of adaptation action occurring in each profiled country. Because each examined country's adaptation challenges reflect its unique geographical location and topography, the study began by identifying the existing and projected climate risks. The economic, social, and political situations of the countries were then summarized and used to provide insight into their vulnerabilities to climate change and the adaptation priorities identified by their national governments. The study then reviewed the critical policies and plans shaping each country's efforts to address climate change

¹ The Adaptation Partnership was formed in May 2010 to catalyze action and promote the sharing of information and lessons learned among institutions and actors engaged in adaptation and resilience building around the world. It was chaired by Costa Rica, Spain, and the United States.

² The CARIAA program, funded by the United Kingdom's Department for International Development and Canada's International Development Research Centre, aims to help build the resilience of poor people to climate change in three "hot spots" in Africa and Asia: semi-arid areas, deltas in Africa and South Asia, and glacier- and snow-fed river basins in the Himalayas. It is achieving this goal by conducting high-calibre research and policy engagement activities in these hot spots through four multi-country projects, each of which is being implemented by a consortium of organizations: (1) Pathways to Resilience in Semi-Arid Economies, led by the Overseas Development Institute; (2) Adaptation at Scale in Semi-Arid Regions, led by the University of Cape Town; (3) Deltas, Vulnerability, and Climate Change: Migration as an Adaptation, led by the University of Southampton; and (4) Himalayan Adaptation, Water and Resilience, led by the International Centre for Integrated Mountain Development.



adaptation at the national and subnational levels. It also examined the scale, type and focus of adaptation projects being implemented in each of the profiled countries, as well as the level of international climate finance flowing into them to support this work. Finally, it identified efforts by civil society to advance adaptation learning and knowledge sharing. Collectively, this information was used to assess the general state of adaptation action in each of the CARIAA countries.

As described in the following sections, the review found that each of the countries examined is taking steps to address the risks climate change poses for its people and economies. Some are well advanced in terms of defining their adaptation priorities, establishing governance structures that facilitate adaptation efforts, implementing adaptation-focused projects and programs, and leveraging financing for priority adaptation efforts. In other countries, progress in these areas has been more limited.

Vulnerability Profiles

The countries reviewed differ significantly in their political, economic and social contexts, as well as the climate risks to which they are exposed. These factors in turn lead to differences in each country's vulnerability to climate change and its readiness to respond to changing climate risks. These differences are reflected in the findings of the University of Notre Dame's Global Adaptation Index (ND-GAIN). One of several vulnerability indexes produced by different organizations,³ ND-GAIN uses a common set of indicators to measure the vulnerability of countries to climate change and their readiness to respond. As indicated in Table 1, ND-GAIN analysis suggests that, of the countries reviewed, Bangladesh, Burkina Faso, Ethiopia, Kenya, Mali and Uganda have the highest levels of vulnerability and the lowest levels of readiness to adapt. Overall, however, the index indicates a trend toward a reduction in vulnerability and an increase in readiness, with the exceptions of Tanzania and Uganda (ND-GAIN, 2016).

Table 1: Comparison of Global Adaptation Index scores for countries

Country	Vulnerability*		Readiness**		Overall		Trend
	World rank	Score	World rank	Score	World rank	Score	
Bangladesh	140	0.534	148	0.327	140	39.7	↑
India	118	0.473	122	0.377	120	45.2	↑
Nepal	128	0.495	115	0.393	122	44.9	↑
Pakistan	115	0.469	142	0.341	126	43.6	↑
Tajikistan	78	0.409	131	0.357	111	47.4	↑
Burkina Faso	145	0.555	155	0.319	148	38.2	↑
Ghana	124	0.484	102	0.442	108	47.9	↑
Mali	164	0.604	138	0.348	156	37.2	↑
Senegal	146	0.556	127	0.368	137	40.6	↑
Ethiopia	144	0.553	146	0.330	145	38.9	↑
Kenya	147	0.557	159	0.312	154	37.7	↑
Tanzania	143	0.550	144	0.353	139	40.1	↓
Uganda	156	0.573	159	0.312	160	36.9	=
Botswana	123	0.483	76	0.494	94	50.5	↑
Namibia	141	0.547	99	0.445	122	44.9	↑

* A lower score indicates lower vulnerability. Vulnerability is measured for the following sectors: food, water, health, ecosystem services, human habitat and infrastructure.

** A higher score indicates a higher degree of preparedness. Readiness is measured by looking at the economy, governance systems and social readiness.

Source: ND-GAIN, 2016.

³ Other indexes include Maplecroft's Climate Change Vulnerability Index, Germanwatch's Global Climate Risk Index, and the World Food Programme's Food Insecurity and Climate Change Vulnerability Index.



Adaptation Priorities

Although the countries reviewed differ significantly in their population size, geography, economic profiles and climate risks, their priority areas for adaptation were largely consistent. As illustrated in Table 2, all of the countries surveyed identified the agricultural sector as a priority sector in which efforts are needed to build resilience to the impacts of climate change. Specific desired actions to increase resilience varied depending on national circumstances, but included making available drought-tolerant seeds, expanding irrigation systems and improving access to seasonal weather forecasts. Some countries prioritized the needs of their livestock sector, particularly those in which pastoralism remains a significant livelihood strategy.

Ensuring access to fresh water was also of priority interest to the countries surveyed, although the risks they sought to address differed depending on their context. In countries with large arid and semi-arid regions, where access to water is already limited and could become more restricted, national governments are seeking to ensure the capture and storage of available surface water and groundwater resources through mechanisms such as rainwater harvesting and improved watershed management. In coastal areas, countries are seeking to protect freshwater sources from saline intrusion and prevent damage to water infrastructure from strong storm surges. Other actions being promoted include building national capacity in water resource management and strengthening demand-side management, such as by promoting water conservation.

Another common priority of developing countries is addressing the risk climate change poses for human health; nearly all of the countries surveyed prioritized adaptation efforts in this sector. A number of countries also highlighted the risk climate change poses for their energy sector, particularly those that derive a significant portion of their electricity from hydropower. Fisheries (marine, freshwater, or aquaculture) presented another focus area of several countries, reflecting the importance of this industry to local livelihoods and as a source of dietary protein. Disaster risk reduction and the capacity of countries to cope with extreme weather events, such as floods, droughts and cyclones, were also prioritized. In response, countries are interested in strengthening the capacity of their hydrometeorological institutions to prepare climate forecasts and projections, and improving early-warning and disaster risk management systems.

These findings are similar to those that emerged from the review of current and planned adaptation action conducted for the Adaptation Partnership in 2010 to 2011. This review of adaptation priorities in 125 countries similarly noted prevalent concern regarding potential impacts of climate change on agriculture and water. Other common priority areas for adaptation were coastal zones, human health and forestry.



Table 2: Adaptation priorities identified by national governments

Identified sectors of priority by countries	Agriculture	Livestock	Water resources	Human health	Forestry	Fisheries	Biodiversity and environment	Energy	Infrastructure	Urban areas and human settlements	Disaster risk management	Coastal zones	Gender	Tourism	Industry	Social protection
Bangladesh	✓		✓	✓	✓					✓	✓	✓	✓			
Nepal	✓		✓	✓	✓		✓			✓						
India	✓		✓	✓	✓	✓	✓	✓	✓	✓		✓				
Pakistan	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓				
Tajikistan	✓		✓	✓				✓			✓					
Burkina Faso	✓	✓	✓		✓											
Ghana	✓		✓	✓		✓		✓								
Mali	✓	✓	✓	✓		✓		✓								
Senegal	✓		✓	✓	✓	✓				✓		✓				✓
Ethiopia	✓		✓	✓				✓	✓							
Kenya	✓	✓	✓	✓	✓		✓	✓				✓		✓		
Tanzania	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓		✓	✓	
Uganda	✓	✓	✓	✓	✓	✓										
Botswana	✓	✓	✓	✓	✓											
Namibia	✓		✓	✓							✓	✓		✓		

Policy Response

Responding to the risk posed by climate change, governments in the surveyed countries have begun to establish the institutional structures needed to facilitate adaptation efforts. National development plans generally acknowledge the need to prepare for the current and future impacts of climate change. Some countries have begun to integrate climate change considerations into medium-term planning and budgeting processes (e.g., Bangladesh, Ghana and Kenya). Many countries state a commitment to integrating climate change into sectoral policies and plans. However, progress toward this goal is often limited; while climate change risks might be acknowledged in a sectoral policy, strategy or plan, possible actions to reduce these risk are not necessarily identified. As well, some countries are developing separate plans to address the risk climate change poses for a specific sector, as opposed to integrating these efforts into “mainline” strategies and plans. Efforts to integrate climate change considerations into sector policies and plans appear to be more advanced in those focused on agriculture, water and disaster risk management.

A number of climate change policies and plans have been produced by the surveyed countries to guide and support their adaptation efforts. To illustrate, Kenya recently passed into law its Climate Change Bill, has in place a National Climate Change Strategy and National Climate Change Action Plan, and has prepared a draft national climate change framework policy and a draft climate finance policy. While a few countries, such as Ghana and Kenya, have prepared stand-alone National Adaptation Plans (NAPs), most have just launched their NAP process and are preparing their approach. Several of the countries surveyed, including Bangladesh, Kenya, Mali and Senegal, have established or plan to establish national climate change funds to mobilize and coordinate domestic and international financing of their climate change plans. Of the



countries surveyed, very few (e.g., Kenya and Bangladesh) appear to have initiated systems for monitoring and evaluating progress toward their adaptation objectives.

While policy and planning are advancing at the national level across all of the countries reviewed, less progress is occurring at the subnational level. Few examples were found of subnational governments that have integrated climate change considerations into their own development plans, or that have established stand-alone climate change strategies or plans. Recognizing the need to enhance the role of subnational governments in building resilience to climate change, some national governments have initiated strategies to promote adaptation planning at this level. For example, in 2009 India requested that states each develop a State Action Plan on Climate Change and developed a common framework document to help them identify and plan adaptation and mitigation priorities that align with the country's National Action Plan on Climate Change. However, insufficient institutional capacities, budgetary constraints and inadequate attention to the plans' potential to support climate-resilient development have impeded the potential benefits of these plans (Dubash & Jogesh, 2014). This experience points to the general need to enhance capacity at the subnational level to take on the additional responsibilities associated with preparing for—and responding to—the impacts of climate change.

Adaptation Programming

To better understand the range, focus and type of discrete adaptation initiatives under way in the CARIIAA countries of focus, a review of ongoing or recently completed projects and programs supported primarily by bilateral and multilateral organizations was undertaken. The research focused on large projects and programs that specifically aim to support climate change adaptation, as reflected in their title, goals statement and/or objectives. The review identified 224 significant adaptation projects being implemented in the countries reviewed, of which 159 were being implemented solely in one country; the remainder comprised 48 regional and 13 global projects. The number of projects being implemented in the countries reviewed varied significantly. Very few projects were identified as being implemented in Botswana, for instance, while a large volume of projects and programs were found to be proceeding in countries like Bangladesh and India (including some financed by their respective national governments). A variety of factors influence these differences, including the extent to which adaptation has been prioritized in practice by national governments, institutional capacities and relations with the international development assistance community. The limited extent of adaptation programming in Botswana, for instance, can be traced in part to its transition to middle-income country status, which led a number of bilateral and multilateral donors to withdraw their development assistance.

As reflected in Figure 1, about 40 per cent of the projects identified focused in whole or in large part on reducing vulnerability in the agriculture sector. This finding is consistent with the priority given by countries to reducing the vulnerability of their agriculture sectors. Often the identified projects addressed needs at the local level and contained elements such as promoting sustainable agricultural practices, diversifying livelihoods (such as through value chain development), enhancing sustainable landscape management, advancing gender equality and improving access to climate information. A sizable proportion of the projects included elements intended to strengthen the capacity of governments, either at the national or subnational level, to plan for and implement adaptation actions. Other common areas of focus were disaster risk management and strengthening capacity to generate and access climate information.



The analysis also suggests gaps in current adaptation action relative to the adaptation priorities identified by the surveyed developing countries. Among these is the low level of adaptation programming occurring in the health, fisheries and forestry sectors—all of which are areas commonly prioritized for adaptation action. Similarly, although it is not uncommon for projects to have improving gender equity as an aim, few have as their principal objective addressing the differentiated gender impacts of climate change. As well, although a number of adaptation projects seek to increase the resilience of Asian cities, significantly fewer initiatives were found that focus on needs in Africa’s growing urban centres.

It must be acknowledged, though, that findings related to the gaps in adaptation programming may be a function of the methodology used in the review, which focused exclusively on identifying discrete adaptation-focused projects. Initiatives with broader mandates that might contribute to adaptation, such as REDD+ projects,⁴ were therefore not captured within this review. Moreover, the review does not reflect the range of ongoing development initiatives that contribute to building adaptive capacity in these and other sectors.

Comparing the results with outcomes from the previously completed Adaptation Partnership review reveals both similarities and differences. Both studies indicated that adaptation projects most commonly focused on needs in the agriculture sector. As well, gaps in programming related to health, forestry and gender were noted. However, the nature of the work being undertaken has advanced. In the Adaptation Partnership review, most of the identified projects focused on creating an enabling environment for adaptation, such as by supporting research, assessments and capacity building, as well as the formation and implementation of adaptation policies and plans. In contrast, while capacity building remains a significant focus, most of the projects identified as part of the CARIIA review were focused on implementing identified adaptation actions.

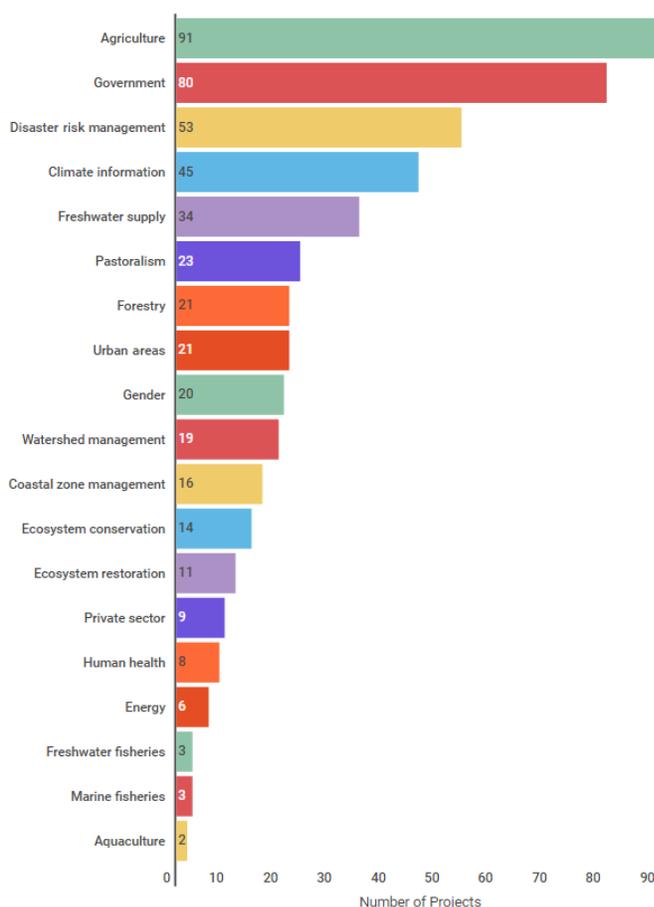


Figure 1. Sectors of focus of identified current adaptation projects and programs

Note: Individual projects may address more than one sector.

⁴ REDD+ = Reducing Emissions from Deforestation and forest Degradation, and fostering conservation, sustainable management of forests and enhancement of forest carbon stocks.



Main Observations

As with other stock-taking exercises, findings from the review completed for the CARIIA program can provide insight into existing trends within the adaptation efforts of developing countries. Among the trends that emerged from this recent review are:

- **Variable progress between countries.** As might be expected, the degree to which adaptation action is occurring varies among the countries profiled. Some have made limited progress in terms of identifying adaptation priorities, developing associated strategies and plans, and/or implementing adaptation programming; others have robust policy frameworks and are actively engaged in mainstreaming adaptation concerns into policy and programming. These differences cannot be attributed solely to the development status of the countries in question; countries with higher levels of human development, such as Botswana and Pakistan, are less actively engaged in adaptation planning than less-developed countries such as Bangladesh, Ghana and Uganda. Nor can it be attributed to differences in exposure to climate risks and understood vulnerabilities to climate change. Rather, progress appears to be driven primarily by the degree to which responding to climate change has been prioritized by senior government leadership and influenced by the priorities of development assistance agencies in each country.
- **Limited progress in adaptation planning and mainstreaming at the subnational level.** Across the countries surveyed, the capacity of subnational governments to identify, prioritize, mainstream and implement adaptation actions appears to be limited. This finding is reflected both in countries with a long history of decentralization and those in which progress toward decentralization is more limited. Greater capacity is needed among subnational actors, including local organizations and communities, to plan, implement, monitor, and evaluate adaptation action to better enable the identification, prioritization and implementation of adaptation actions that respond to their diverse needs and priorities. Building this capacity and enhancing linkages between national and subnational adaptation processes and actors are critical for effective implementation of countries' commitments under the Paris Agreement (Dazé, Price-Kelly, & Rass, 2016).

The orientation of such capacity-building efforts will be strongly influenced by the status of decentralization efforts in the country in question. In those that have decentralized significant responsibility to local actors, efforts should focus on integrating climate considerations into broader efforts to enhance the capacity of subnational governments, communities and local institutions to take on their devolved responsibilities. In other countries, where little progress on decentralization has occurred, greater emphasis may be placed on clarifying the roles and responsibilities of different levels of government and establishing effective institutional arrangements.

- **Shared focus on agriculture.** Across all of the countries surveyed, agriculture was identified as a priority sector for adaptation. It also emerged as a focus area of the largest proportion of identified adaptation projects and programs. As well, agriculture was among the sectors in which adaptation considerations are most likely to be integrated into current policies, strategies and plans. This prominence is also reflected in the content of submitted Intended Nationally Determined Contributions, 80 per cent of which discuss agriculture (Meadu, Coche, Vermeulen, & Friis, 2015). This focus is perhaps unsurprising given the climate sensitivity of crop and livestock production, governments' desire to meet the food security needs of their people and the continuing prominence of agriculture as a source of employment and GDP in many developing countries. While the level of activity occurring in this sector is high, it is also clear that considerable needs remain and a further scaling-up of efforts is required to build resilience within this sector (Food and Agriculture



Organization of the United Nations, 2016). Given the range of actions under way, greater sharing of experiences within and between countries striving to meet similar challenges may contribute to improving the scale and effectiveness of interventions.

- **Continuing gaps in adaptation action in some priority sectors.** The CARIIAA review again suggests that insufficient attention is being given to meeting adaptation needs in some sectors recognized as being particularly vulnerable to the impacts of climate change. These sectors include health, forestry and fisheries. The reasons for this continuing pattern are unclear; they could be a reflection of, for example, national governments' internal prioritization processes, a desire by sector officials to focus on immediate development needs, the absence of substantial international financing for adaptation in these sectors or an artifact of the research methodology used in the stock-taking exercise. Further analysis is required to answer these questions.
- **Absence of monitoring and evaluation systems.** With a few exceptions, the countries reviewed have not yet initiated efforts to establish systems to monitor and evaluate progress toward their adaptation goals. These systems are needed to assess the effectiveness of current investments in adaptation action by developing-country governments and their development assistance partners; to monitor progress in implementing adaptation policies, plans, and programs; and to identify implementation gaps and areas for refinement. Significant investment is needed to build capacity at the national and subnational levels—potentially as part of ongoing national adaptation plan processes—to establish, manage and use monitoring and evaluation systems appropriate to the local context. The establishment of these systems may also be expected to contribute to broader initiatives such as the Paris Agreement's global stock-take.

Recognizing the Review's Limitations

Reviews such as those completed for the Adaptation Partnership and the CARIIAA program provide an opportunity to take stock of the progress developing countries are making toward the goal of enhancing their adaptive capacity, strengthening their resilience and reducing their vulnerability to the impacts of climate change. They can provide a picture of the state of adaptation action in individual countries, enable comparison of progress within and across regions and provide an opportunity to detect commonalities and differences between countries with diverse development and climate profiles. However, there are inherent limitations to the information and insights that they are able to provide.

For one, the reviews conducted by IISD have focused on understanding discrete adaptation efforts or policy- and programming-related activities designed specifically to address the additional risks and potential opportunities arising from climate change. As such they do not capture the wide range of development efforts being undertaken in countries—from strengthening health systems to improving urban infrastructure—that can contribute to building adaptive capacity. They therefore provide an incomplete picture of countries' efforts to prepare for climate change. Moreover, as developing countries do not yet have robust systems in place to track and communicate their own financing for adaptation, the review does not provide a balanced representation of the extent to which adaptation action is being funded by domestic versus international public sources.

Additionally, the review does not provide an assessment of the degree to which current policies and programming are truly advancing adaptation efforts and meeting the needs of those most vulnerable to the impacts of climate change. Established policies, strategies, and plans may or may not be effectively designed to meet priority needs, and governments (national and/or subnational) may lack the capacity to ensure their effective implementation. As well, there is no guarantee that initiated programs and projects will achieve their intended outcomes.



These limitations must be considered as plans are made to undertake similar assessments, such as the Paris Agreement's global stock-take. Strategies will need to be developed to overcome some of these limitations, such as through the strengthening of monitoring and evaluation systems at the subnational, national, and international levels. However, it must be recognized that no stock-taking exercise will be able to fully capture the breadth of efforts supporting climate change adaptation in any one jurisdiction, let alone for a region or the entire globe. As such, stock-taking exercises should be fully transparent regarding what their outcomes do and do not capture.

Final Thoughts

Stock-taking exercises such as those completed for the CARIIA program can play a valuable role in supporting efforts to advance adaptation action. These exercises can help identify broad trends in developing countries' ongoing efforts to adapt to the impacts of climate change and enable comparisons of progress to be made between countries and regions. They can also be used to inform programming decisions by developing countries and bilateral and multilateral donors. The CARIIA review, for example, draws attention to the need to scale up efforts to enhance the capacity of subnational governments and institutions to play a more active and vital role in adaptation planning and implementation. It also points to the need for greater investment in monitoring and evaluation systems to better inform national and international efforts to reduce vulnerability and build resilience in developing countries. The strengths of these stock-taking reviews, as well as their limitations, should be taken into consideration as the objectives and modalities of future assessment exercises are determined.



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