ADAPTATION FUND

AFB/PPRC.17/5
8 September 2015

Adaptation Fund Board
Project and Programme Review Committee
Seventeenth meeting
Bonn, Germany, 7-8 October 2015

Agenda Item 8

ANALYSIS OF CLIMATE CHANGE ADAPTATION REASONING IN PROJECT AND PROGRAMME PROPOSALS APPROVED BY THE BOARD

Background

1. At the twenty-fifth meeting of the Adaptation Fund Board (the Board), the Chair of the PPRC said that one member had pointed out that it was important for the Fund to capitalize on the experience of the projects' climate change reasoning so that the Fund's experience with concrete adaptation projects and programmes could be highlighted to other international actors that were also interested in climate change. However, in order to do that, it would first be necessary for the secretariat to prepare an analysis of how the project and programme proposals approved by the Board had addressed climate change adaptation reasoning.

2. Having considered the comments and recommendation of the Project and Programme Review Committee (PPRC), the Adaptation Fund Board decided to request the secretariat to present, for consideration of the PPRC at its seventeenth meeting, an analysis of how project and programme proposals approved by the Board have addressed climate change adaptation reasoning, especially at the local level, based on the review criteria approved by the Board.

(Decision B.25/16)

3. In response to the decision above, the attached analysis (Document AFB/PPRC.17/4) has been prepared by an intern [1] at the Secretariat, under the supervision of Secretariat officers.

Recommendation

4. The Committee may want to consider to:

(a) Take note of the analysis, and make any applicable recommendation to the Board.

[1] Mr. Todd McGarvey, M.P.P. Candidate, Environmental Policy, School of Public Policy, University of Maryland, College Park, USA

Annex: Analysis of climate change adaptation reasoning in project and programme proposals approved by the Board

Executive Summary

Pursuant to a request by the Adaptation Fund Board, this report presents an analysis to highlight the Fund's experience with concrete adaptation projects and programmes at advanced stages of implementation, and how such projects and programmes have addressed climate change adaptation reasoning.

Reflection on project review criteria

Latest thinking and approaches

- Adaptation as presented in the latest IPCC assessment report incorporates a definite sense of purposefulness to actions, with less focus on autonomous adaptation
- The concepts of incremental and transformational are integral to conceptions of adaptation, although the latter, being a relatively new concept in the literature, currently lacks clear operational definitions which creates difficulties for the identification, evaluation, and practice of transformational adaptation
- Vulnerability, as a key component of adaptation, has acquired increasing complexity as a multidimensional issue – whilst physical hazards are still important, the social and economic drivers of vulnerability are also of importance
- With respect to the Fund's alignment with current approaches to adaptation;
    - It performs strongly in the aspect of purposefulness
    - It's mandate to finance concrete adaptation projects is not at the expense of considering the social and economic drivers of vulnerability, with outcomes and outputs in the Strategic Results Framework focused on the enabling environment (which encompasses such drivers)
    - There is potential for the project outputs financed by the Fund to achieve transformational impacts

Adaptation needs

- Projects frequently identified the increased intensity and frequency of extreme events, including floods, droughts, and tropical storms, as well as warming trends and sea level rise, as climate related drivers of impacts
- The key risks arising from such climate related drivers center around issues of food insecurity and livelihood disruption
- Projects are typically concerned with reducing vulnerability through the securing of assets, both human and natural, that underpin peoples' livelihoods
- Institutional and social, in addition to information and technical capacities, are most frequently identified as barriers to adaptation, and hence represent adaptation needs to address the gap between predicted outcomes and desired outcomes

Adaptation Responses

- From the perspective of the absolute number of expected concrete outputs in the examined projects, social and institutional adaptation options are the most frequently pursued adaptation option
- However from the perspective of the financial resources allocated to project outputs, structural/physical outputs dominate project activities, accounting for nearly 70 percent of project spending
- Simply considering the expected concrete outputs, as classified by adaptation option, can misrepresent the nature of the portfolio of activities occurring during a project

Project alignment with the Fund's strategic objectives, and current adaptation thinking

- The core focus of projects, in terms of their outputs, is on structural/physical adaptation measures, those responses that clearly meet the Fund's objective to finance concrete projects
- However this does not mean strengthening of the enabling environment, and hence addressing the social and economic drivers of vulnerability, is being ignored – as demonstrated by the number of project outputs dedicated to this area
- Whilst transformational adaptation is currently difficult to define, there are project outputs that demonstrate the potential to be transformative – such outputs focus on introducing new technologies or practices, new systems or structures of governance, or changing the location or nature of activities
- The Fund's approach of financing pilot/demonstration projects, and including knowledge management in the Results-Based Management Framework, exhibits potential to achieve transformative adaptation through the replication and scaling-up of activities

Lessons learned by projects

- The lessons identified by projects relevant to climate change adaptation reasoning centered on the importance of institutional, technical, and human capacity for the successful design and implementation of projects
- Such capacities were also identified as key to ensuring the sustainability of results and the replication of efforts, by putting in place the frameworks and skills necessary to continue climate change risk assessment and response measures in the normal course of a country's activities
- The Fund, and the projects it finances, demonstrate an approach whereby concrete adaptation activities are the focus, yet are supported by efforts to strengthen the enabling environment. This could be described as an 'entire-pipeline' approach – both aspects necessary for successful adaptation, being direct activities benefitting vulnerable groups (whether structural or non-structural in nature), *and* an environment that allows such activities to be implemented, are addressed. In this manner, there are direct beneficiaries of the financed activities,

in addition to co-benefits from the activities undertaken to strengthen the enabling environment that are advantageous for groups outside of the target communities.

Reflection on project review criteria

Based on the findings, and in taking into account the latest thinking on climate change adaptation, it is not necessary to add any elements to the Fund's project review criteria, due to:

- Projects demonstrating overall alignment with the strategic objectives of the Fund, with these strategic objectives, and the Strategic Results Framework, themselves largely in alignment with current thinking
- Existing review criteria providing the elements in which to further consider projects in light of current thinking

There is however scope for further guidance to be provided to parties when completing their project proposal documents, particularly to strengthen the sustainability of project outcomes and their contributions to transformational adaptation. This can be achieved through two elements of the current project eligibility review criteria:

Learning and knowledge management

Learning and knowledge management activities are a key way in which broad audiences can benefit from the lessons and best practices of activities financed by the Fund. In capturing and disseminating these lessons and practices, the potential exists for institutional knowledge to be strengthened, individual expertise gained, and beneficial knowledge partnerships formed. The Fund acknowledges that the intent of such activities is to enrich the global, national, and local knowledge on climate change adaptation and to accelerate understanding about what kinds of interventions work. It is in this acceleration that the potential for scaling-up, replication and transformational adaptation can be identified.

It is recommended that project proposals seek to strengthen their demonstrations of how knowledge will be captured, disseminated, and sustained overtime with respect to it benefitting institutions and communities so as to foster the scaling-up and replication of activities. Whilst recognizing that many proposals provide detailed outlines of the knowledge management activities in the project justification, a stronger demonstration of how these activities collectively integrate, and an identification of how they may transform their areas of concern, would be valuable.

Project sustainability

There are several aspects regarding the sustainability of project outcomes that differ based on the type of output. For example, the sustainability of structural/physical outputs is predominantly concerned with their ongoing maintenance, which is relatively easy to demonstrate. What is harder to demonstrate is how outcomes related to social or institutional outputs will be sustained; however their sustainment is critical to projects forming the basis for scaled-up, replicated, and transformative adaptation measures.

It may be useful to require project proposals, within the project sustainability component, to address how the project can contribute to transformational adaptation, at differing scales and in differing types of activities. This would involve proposals further considering and elaborating upon how the non-structural outputs may establish the 'seed' for future actions, and necessitate the provision of additional details regarding how these outcomes will be sustained. The key assumptions underpinning the sustainment of outcomes should also be identified, much as the risks to projects are considered within the project performance reviews.

This report notes above that transformational adaptation is still an evolving concept, and currently lacks clear operational definitions that would allow it to be identified, evaluated, and practiced. As such, integrating a full consideration of the transformational aspects of projects into proposals is difficult at this point in time, and may best be pursued once the concept matures. However there may be value in requesting proponents to at least broadly consider, and respond to, a prompt regarding the transformative potential of the project being proposed.

Opportunities for further study

With the initial climate change adaptation reasoning as pursued by projects established in this report, it is likely that further study, taking into account the supplementary elements and resources, would prove fruitful in furthering understanding regarding how projects are reducing vulnerabilities through concrete adaptation activities. Such study could focus on the following aspects:

1. The lessons learned and changes made to projects as further project performance reports and mid-term evaluations become available
2. Interviews with stakeholders to determine the sustainability of project outcomes, with particular emphasis on the social and institutional activities pursued (for example, how sustainable efforts to establish and implement adaptation plans have been)
3. The social and economic benefits accruing as a result of adaptation activities, given such benefits are key aspects of reducing vulnerabilities
4. The actual replication and scaling-up of activities, given this is a key determinant of the transformative potential of adaptation activities

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Purpose and Structure of Analysis

At its 25th meeting, the Adaptation Board noted that it was important to capitalize on the experience of the projects' climate change reasoning so that the Fund's experience with concrete adaptation projects and programmes (hereafter referred to as 'projects') could be highlighted to other international actors also interested in climate change. The Board decided[2] to request the secretariat to prepare, for consideration of the PPRC at its 17th meeting, an analysis of how project proposals approved by the Board have addressed climate change adaptation reasoning, especially at the local level, based on the review criteria approved by the Board.

The analysis herein is provided to meet this request, and is structured to consider the climate change adaptation of projects as follows. *Section 1* provides an overview of current thinking and approaches to adaptation, representing a synthesis of the more in-depth background document that is included as ***Appendix 3*** to this report. Further, the section considers the Fund's approach to climate change adaptation reasoning - its objectives and Strategic Results Framework - and how these align with current thinking. The narrower focus on adaptation reasoning, as opposed to adaptation broadly, is intended to draw out the theory of change adopted by projects – that is, the outcomes sought by projects with respect to reducing vulnerabilities, and the systematic steps along the causal pathway that will deliver those outcomes. *Section 2* presents the adaptation needs identified in the project proposals that are in an advanced stage of implementation, considering the physical climate impacts faced by the countries, the vulnerabilities caused, in part, by such impacts, and the barriers to adaptation. *Section 3* considers the concrete outputs that form the basis of the projects, providing a high-level overview of the type of adaptation responses countries are pursuing to address their adaptation needs. Having examined the adaptation reasoning pursued by countries in more detail, *Section 4* considers how the activities of projects, and hence the Fund, align with current thinking and approaches to adaptation reasoning, with particular focus on key elements reflecting the evolution of adaptation thinking. *Section 5* considers the project performance reports, and mid-term reviews, where available, for lessons identified by the implementing and executing entities pertinent to their adaptation reasoning. To conclude, *Section 6* reflects on the previous sections in the report in considering whether any elements of the Fund's project review criteria need to be amended/updated to better reflect current trends in adaptation reasoning.

Through this structure, the Fund's experience with concrete adaptation projects, and in turn how they address climate change adaptation reasoning, will be identified, serving as a resource for other actors in the climate adaptation space.

It should be noted that developing the methodological approach for this analysis has been an evolving process, taking into account the current thinking regarding adaptation and

[2] Decision B.25/16

how best the adaptation reasoning employed by the projects could be extracted from the available resources. A more in-depth discussion of the methodology is provided in ***Appendix 1***.

Due to the short time frame available to conduct the analysis, and the detailed nature of the projects considered, certain elements of the analysis as requested in the Terms of Reference were not addressed. This is further discussed in *Section 6*, with some recommendations for further study that could bolster the analysis that follows.

1. Adaptation – Latest thinking and approaches, and the Adaptation Fund

Approaches to adaptation are constantly evolving, as both further studies and practice occur. This section provides an overview of the latest thinking and approaches to adaptation, as informed by the Intergovernmental Panel on Climate Change's (IPCC) *Fifth Assessment Report* (AR5). It further considers how the Fund's approach to adaptation reasoning aligns with current thinking, along with the approaches of other institutions and organizations involved in the climate adaptation space. What follows is a synthesis of a short literature review documenting the latest thinking and approaches on adaptation. For further details, refer to this document, which is included as ***Appendix 3*** of this report.

Synthesis of the science – The Intergovernmental Panel on Climate Change's review of adaptation

The release of the *Fifth Assessment Report* sees an expansion in how adaptation and its constituting components are conceptualized. Of particular interest are changes in how adaptation is defined, as well as one of its key components, vulnerability.

Adaptation

The definition of adaptation employed in the *Fifth Assessment Report* introduces a degree of purposefulness to adaptation actions, clarifies the distinction between human and natural systems and the role of humans in the adaptation of natural systems, and re-categorizes types of adaptation.

Through additional language to the definition, and an exploration of how the term autonomous adaptation has been inconsistently used in the literature and its own reports, the report indicates that going forward, adaptation efforts in the climate context should be focused on purposeful actions taken in response to observed climate and/or in preparation of anticipated climate change.

Natural systems are recognized as having the potential to adapt through autonomous processes, and that humans may intervene to promote particular adjustments. At a broad level, successful adaptation will depend on our ability to allow and facilitate natural systems to adjust to a changing climate, in order to continue ecosystem provisioning.

Incremental and transformational adaptation are noted as being integral to the *Fifth Assessment Report*, recognizing that constraints can pose limits to the ability of actors to adapt to climate change through incremental processes thus requiring transformational action. However it is also noted that transformation is a relatively new concept in the adaptation literature, and clear operational definitions of just what constitutes transformational adaptation, and how it differs from incremental adaptation, are yet to be determined.

Vulnerability

The *Fifth Assessment Report* follows the lead of the IPCC *Special Report on Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation* in adopting a definition of vulnerability that draws focus to the wider social and economic drivers of vulnerability. Since the *Fourth Assessment Report*, the understanding of vulnerability has acquired increasing complexity as a multidimensional concept, with adaptation goals often expressed in a framework of increasing resilience. As stated in the *Fifth Assessment Report*, this framing in terms of resilience "*encourages consideration of broad development goals, multiple objectives, and scales of adaptation, and often better captures the complex interactions between human societies and their environments*"[3]. Physical hazards and impacts are still an important component, but are considered within the adaptation concept of risk, rather than within vulnerability. This broadening of focus to consider the social and economic drivers of vulnerability is reflected in approaches to adaptation assessments, where traditional scenario-driven, impacts-based approaches to assessments are being complemented with assessments of the factors that make people and natural systems vulnerable to the risks posed from hazards.

Adaptation reasoning at the Adaptation Fund

The strategic priorities of the Adaptation Fund, as established through decisions of the Conference of Parties serving as the meeting of the Parties to the Kyoto Protocol, are to:

1. Assist developing country Parties to the Kyoto Protocol that are particularly vulnerable to the adverse effects of climate change in meeting the costs of adaptation
2. Finance **concrete adaptation projects and programmes** that are country driven and based on the needs, views and priorities of eligible Parties

As one of the Fund's key mandates, concrete adaptation projects and programmes are defined in the operational policies and guidelines as:

> *A set of activities aimed at addressing the adverse impacts of and risks posed by climate change.* ***The activities shall aim at producing visible and tangible results on the ground*** *by reducing vulnerability and increasing the adaptive capacity of human and natural systems to respond to the impacts of climate change, including climate variability. Adaptation projects/programmes can be implemented at the community, national, regional and transboundary level. Projects/programmes concern activities with a specific objective(s) and concrete outcome(s) and output(s) that are measureable, monitorable, and verifiable.*

To support the strategic priorities of the Fund, a Strategic Results Framework has been developed, drawing upon definitions of adaptation and vulnerability used by Working

[3] Chapter 14 WGII

Group II of the Fourth Assessment Report of the IPCC. The Strategic Results Framework is included below (***Table 1***).

As demonstrated in both the Framework's goal and impact, the objectives are framed in terms of resiliency; being to implement climate-resilient measures, and to increase resiliency at the community, national and regional levels. Whilst the Fund's mandate is to finance concrete adaptation projects, scope is also provided for projects to strengthen the enabling environment;

- *Outcome 1* allows for risk and vulnerability assessments to be conducted and updated
- *Outcome 2* allows institutional capacity to be strengthened
- *Outcome 7* allows for the integration of climate-resilience strategies into country development plans

Table 1 – Adaptation Fund's Strategic Results Framework

Expected results	**Indicators**
Goal: Assist developing-country Parties to the Kyoto Protocol that are particularly vulnerable to the adverse effects of climate change in meeting the costs of concrete adaptation projects and programmes in order to implement climate-resilient measures.	
Impact: Increased resiliency at the community, national, and regional levels to climate variability and change.	
Outcome 1: Reduced exposure to climate-related hazards and threats	1. Relevant threat and hazard information generated and disseminated to stakeholders on a timely basis
Output 1.1: Risk and vulnerability assessments conducted and updated	1.1. No. of projects/programmes that conduct and update risk and vulnerability assessments (by sector and scale)
	1.2 No. of early warning systems (by scale) and no. of beneficiaries covered
Output 1.2: Targeted population groups covered by adequate risk reduction systems	1.2.1. Percentage of target population covered by adequate risk-reduction systems
Outcome 2: Strengthened institutional capacity to reduce risks associated with climate-induced socioeconomic and environmental losses	2.1. Capacity of staff to respond to, and mitigate impacts of, climate-related events from targeted institutions increased
Output 2: Strengthened capacity of national and sub-national centres and networks to respond rapidly to extreme weather events	2.1.1. No. of staff trained to respond to, and mitigate impacts of, climate-related events (by gender) 2.1.2 No. of targeted institutions with increased capacity to minimize exposure to climate variability risks (by type, sector and scale)
Outcome 3: Strengthened awareness and ownership of adaptation and climate risk reduction processes at local level	3.1. Percentage of targeted population aware of predicted adverse impacts of climate change, and of appropriate responses

	3.2. Percentage of targeted population applying appropriate adaptation responses
Output 3: Targeted population groups participating in adaptation and risk reduction awareness activities	3.1 No. of news outlets in the local press and media that have covered the topic
Outcome 4: Increased adaptive capacity within relevant development sector services and infrastructure assets	4.1. Responsiveness of development sector services to evolving needs from changing and variable climate
	4.2. Physical infrastructure improved to withstand climate change and variability-induced stress
Output 4: Vulnerable development sector services and infrastructure assets strengthened in response to climate change impacts, including variability	4.1.1. No. and type of development sector services modified to respond to new conditions resulting from climate variability and change (by sector and scale)
	4.1.2. No. of physical assets strengthened or constructed to withstand conditions resulting from climate variability and change (by sector and scale)
Outcome 5: Increased ecosystem resilience in response to climate change and variability-induced stress	5. Ecosystem services and natural resource assets maintained or improved under climate change and variability-induced stress
Output 5: Vulnerable ecosystem services and natural resource assets strengthened in response to climate change impacts, including variability	5.1. No. of natural resource assets created, maintained or improved to withstand conditions resulting from climate variability and change (by type and scale)
Outcome 6: Diversified and strengthened livelihoods and sources of income for vulnerable people in targeted areas	6.1 Percentage of households and communities having more secure access to livelihood assets
	6.2. Percentage of targeted population with sustained climate-resilient alternative livelihoods
Output 6: Targeted individual and community livelihood strategies strengthened in relation to climate change impacts, including variability	6.1.1.No. and type of adaptation assets (tangible and intangible) created or strengthened in support of individual or community livelihood strategies
	6.2.1. Type of income sources for households generated under climate change scenario
Outcome 7: Improved policies and regulations that promote and enforce resilience measures	7. Climate change priorities are integrated into national development strategy
Output 7: Improved integration of climate-resilience strategies into country development plans	7.1. No. of policies introduced or adjusted to address climate change risks (by sector)
	7.2. No. of targeted development strategies with incorporated climate change priorities enforced

Alignment of the Adaptation Fund's adaptation reasoning

Although the Strategic Results Framework drew upon definitions of adaptation and vulnerability as contained within the Fourth Assessment Report, and noting that these

definitions have undergone changes in the Fifth Assessment Report, the Fund's adaptation reasoning remains in alignment with current thinking:

- It performs strongly in the aspect of purposefulness, given the Fund's focus on financing the full-adaptation cost of projects and its mandate to finance concrete adaptation projects;
- With respect to the broadened definition of vulnerability (encompassing the social and economic drivers of such), the Fund's mandate is not at the expense of considering the wider social and economic drivers – note the above discussion identifying outcomes focused on strengthening the enabling environment, which implicitly involve considerations of these drivers, as well as the Fund's Environmental and Social Policy, and;
- The question of alignment with the emerging concept of transformational adaptation is somewhat complex, and its considered in greater detail in *Section 4*

In essence, the Fund finances projects that result in both visible and tangible results on the ground, and strengthened enabling environments, seeking to increase resiliency at the community, national, and regional levels through actions that reduce vulnerability. As the guiding framework by which projects are to be designed, it is guidance that is in step with current adaptation reasoning, in that both structural responses and the enabling environment are pursued. *Sections 2 and 3* that follow will examine how projects are aligning with this guidance.

Adaptation reasoning within the wider development community

The way in which climate adaptation is approached at the following institutions was considered, to establish where the Fund's strategic approach exists within the wider development community:

- Green Climate Fund
- Swedish International Development Corporation
- United States Agency for International Development
- International Climate Fund
- Pilot Program for Climate Resilience – Strategic Climate Fund
- Global Environment Facility – Least Developed Countries Fund and Special Climate Change Fund

In assessing their strategic objectives, logic models, and results-based frameworks, the focus of these institutions is predominantly in efforts to strengthen the enabling environment of partner countries and to mainstream climate change into decision-making. Such strengthening is sought to achieve climate-resilient development, and generally consists of activities including:

- Increasing the capacity for knowledge generation and use in decision-making;
- The establishment of effective governance systems;
- Integrating climate-resilient approaches into planning and development instruments, and;

- Increasing the involvement of the private sector in climate-resilient planning and investment

Whilst these institutions do pursue activities that can be classified as concrete actions, such as the adoption of practices and technologies or pilot and demonstration projects, none demonstrate such an explicit focus on financing activities that produce visible and tangible results on the ground in partner countries. As such, the Fund's strategic approach in financing concrete projects is a distinct feature relative to others in the adaptation community.

2. Adaptation Needs

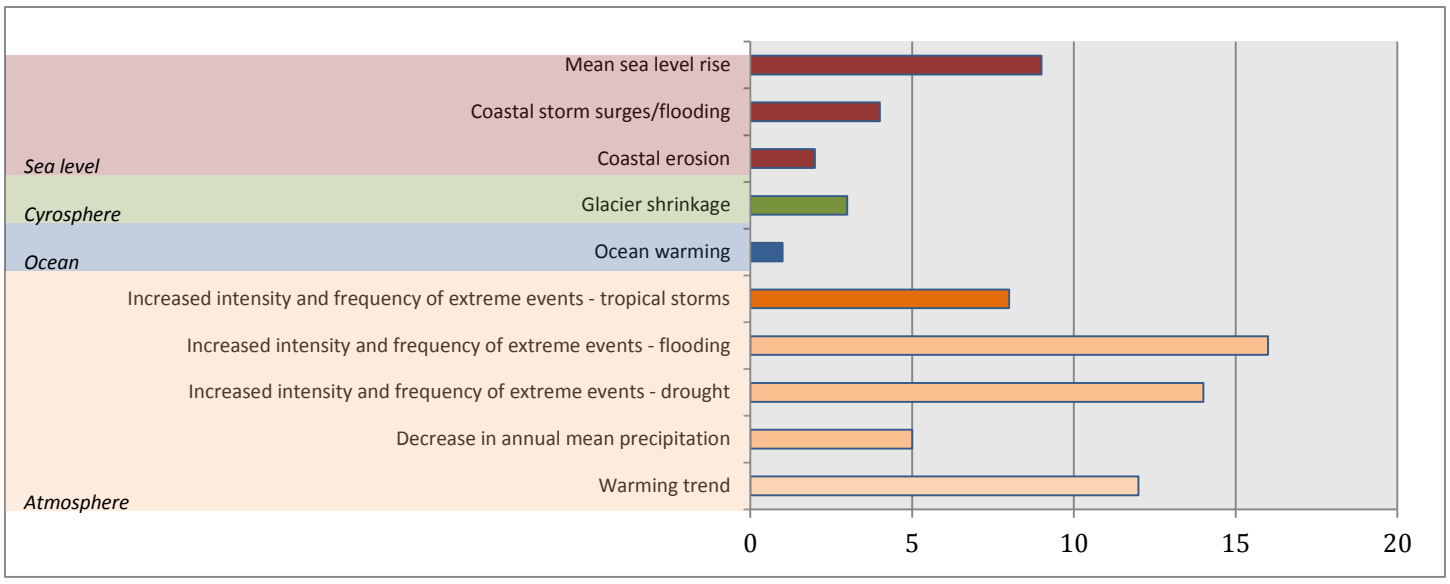
To consider how projects have addressed climate change adaptation reasoning, it is useful to have a sense of the climate related drivers of impacts countries are facing, the key risks resulting from such drivers, and the barriers they face in adapting. These three aspects form the baseline conditions, to which projects financed by the Fund seek to alter, with the objective of increasing resilience and reducing vulnerability.

As per the Terms of Reference for the analysis, the projects examined are in an advanced stage of implementation – having had at least two project performance reports submitted. The projects that meet this criterion, and hence are included in the analysis, are included in ***Appendix 2*** (twenty-one projects in total).

Identified climate related drivers

The problem statements contained within the project proposals were examined, with the climate related drivers of impacts, as identified in the proposals, considered. The identification of these climate related drivers was based on categories contained within the *Fifth Assessment Report Synthesis Report*[1], which considers both observed and projected changes in the climate system occurring within the areas of the atmosphere, ocean, cryosphere, and sea level. Results reflect the climate related drivers pertinent to the projects as self-identified by project proponents, rather than a complete cataloguing of all drivers affecting the regions. Further, the inter-related nature of drivers prohibits perfectly discrete classification, which can under- or over-represent certain drivers – for example, some project proposals identified coastal erosion as a climate related driver of impacts, but not the underlying cause of sea level rise. Such identified drivers were not abstracted to the higher-order cause so as to maintain a level of detail.

As can be seen in ***Figure 1***, proposals were most concerned with the increased intensity and frequency of extreme events related to precipitation, both a lack (drought events) and abundance (flooding events) of it. Warming trends (often identified in association with drought events), the increased intensity and frequency of tropical storms, and sea level rise were also identified as significant concerns.



Identified key risks

The climate related drivers of impacts translate to risks for communities and systems, creating potential vulnerabilities. Again considering the problem statements in the project proposals, the risks posed by the climate driven impacts were identified, to illustrate the vulnerabilities the projects are seeking to reduce.

Given the diversity of potential risks, being the product of unique locations and circumstances, key risk categories were used to enable aggregation. These key risks were taken from the *Fifth Assessment Report Summary for Policymakers*[2], and represent potentially severe impacts relevant to Article 2[4] of the United Nations Framework Convention on Climate Change that span sectors and regions. The risks are considered key due to the high hazard or high vulnerability of the societies and systems exposed, and are based on expert judgment using specific criteria[5]. The key risks are provided in ***Table 2***.

[4] As impacts resulting from "dangerous anthropogenic interference with the climate system"

[5] The criteria include large magnitude, high probability, or irreversibility or impacts, timing of impacts, persistent vulnerability or exposure contributing to risks, or limited potential to reduce risks through adaptation or mitigation.

Table 2 – Key risks arising from climate related drivers of impacts

Key Risk	Description
1	Risk of death, injury, ill-health, or disrupted livelihoods in low-lying coastal zones and small island developing states and other small islands, due to storm surges, coastal flooding, and sea level rise
2	Risk of severe ill-health and disrupted livelihoods for large urban populations due to inland flooding in some regions
3	Systemic risks due to extreme weather events leading to breakdown of infrastructure networks and critical services such as electricity, water supply, and health emergency services
4	Risk of mortality and morbidity during periods of extreme heat, particularly for vulnerable urban populations and those working outdoors in urban or rural areas
5	Risk of food insecurity and the breakdown of food systems linked to warming, drought, flooding, and precipitation variability and extremes, particularly for poorer populations in urban and rural settings
6	Risk of loss of rural livelihoods and income due to insufficient access to drinking and irrigation water and reduced agricultural productivity, particularly for farmers and pastoralists with minimal capital in semi-arid regions
7	Risk of loss of marine and coastal ecosystems, biodiversity, and the ecosystem goods, functions, and services they provide for coastal livelihoods, especially for fishing communities in the tropics and the Arctic
8	Risk of loss of terrestrial and inland water ecosystems, biodiversity, and the ecosystem goods, functions, and services they provide for livelihoods

Figure 2 indicates the key risks identified in project proposals. As can be seen, *Key Risk 5 and 6* are frequently identified as of concern – the risk of food insecurity arising from climate related drivers of impacts (droughts, floods, etc.), and the risk of livelihood losses, income, and agricultural productivity from water scarcity. This reasonably aligns with the climate related drivers most frequently identified, highlighting the link between precipitation changes and extreme events, and their impact on food security and livelihoods.

It should be noted that most projects identified more than one key risk, and hence, the results do not suggest that a single key risk dominated concern at the project level (for example, that Key Risk 6 was the sole risk of concern for most projects). Instead, the

results indicate, that several key risks (5 and 6) were identified by many, but not all, projects, and that such risks were commonly identified in conjunction with others.

As such, the results below should not be treated as a precise quantification of risks being faced in the project regions, but rather to provide a sense of the outcomes projects are seeking to avoid. From this perspective, it is evident that projects are concerned with securing the assets, both human and natural, that underpin human security – being access to food, water, and livelihoods. The predominant vulnerabilities that characterize the groups targeted by the projects are those stemming from a loss of livelihood; hence, efforts to increase the resiliency of communities, nations, and regions would be expected to focus on securing livelihoods and the inputs to such.

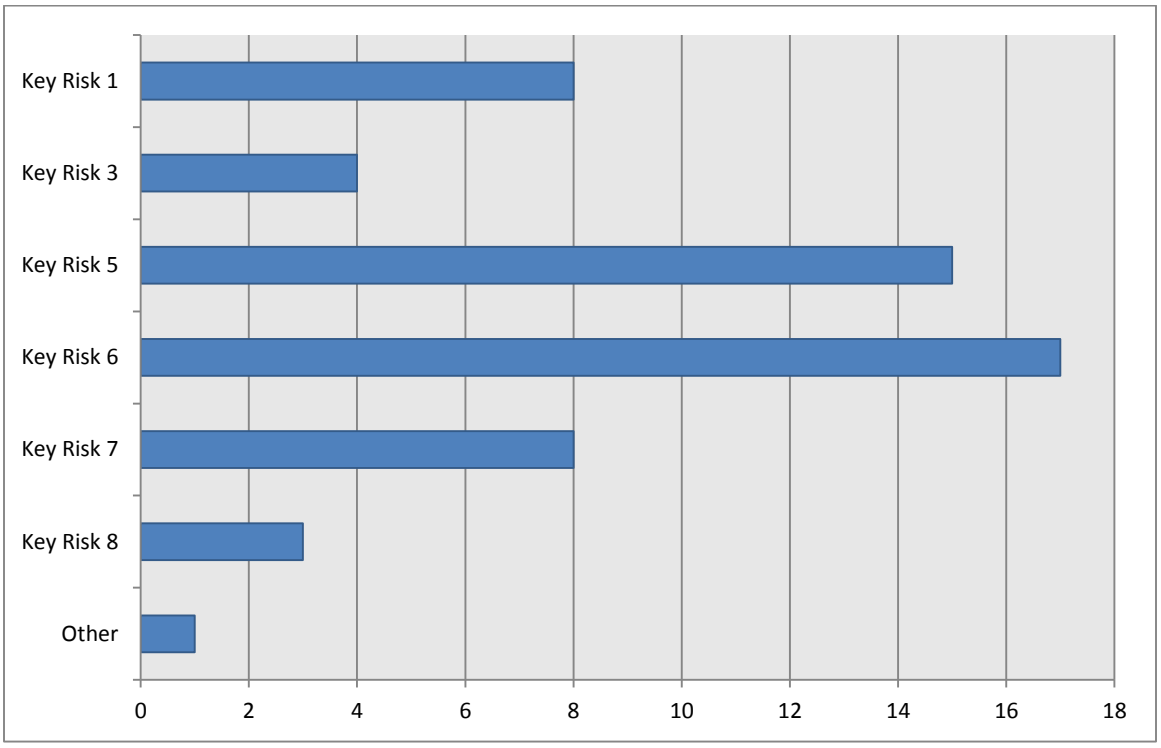


Figure 2 – Identified key risks from climate related drivers of impacts (the 'Other' risk relates to property destruction and loss of life resulting from glacial burst, a risk not amenable to inclusion in any key risk category)

Barriers – what is needed to adapt

In the *Fifth Assessment Report* it is noted that, in line with the expansion of vulnerability to include its economic and social drivers, the most effective description of adaptation needs combines discussions of climate and non-climate drivers of impacts, and the resources, capacity, information, and finance, needed to implement options to moderate those impacts.

The problem statements of the project proposals identified the context-specific barriers that needed to be overcome for successfully adaptation, hence representing adaptation needs. These needs were aggregated[6] based on the categorization of needs put forward in the *Fifth Assessment Report*, which advances four categories – biophysical and environmental; social; institutional; and information, capacity, and resource needs. The Information, capacity, and resource needs category was disaggregated to include information, technology, finance, and human resource needs. Characteristics noted by the *Fifth Assessment Report* of the need categories are provided in ***Table 3***.

Table 3 – Adaptation needs and characteristics (adapted from IPCC AR5)

Adaptation Need	Characteristics
Biophysical and Environment	Maintenance of vital ecosystem services – provisioning services (such as food, fiber, and potable water supply), regulating services (such as climate regulation, pollination, disease control, and flood control), and supporting services (such as primary production and nutrient cycling)
Social	Includes the range of needs for human security – availability of natural, physical, human, political, and financial assets; stability of livelihoods; livelihood strategies
Institutional	A need for effective institutions to identify, develop, and pursue climate-resilient pathways for sustainable development, through social, institutional, and technological innovation
Information, capacity, and resource	Successful implementation of adaptation activities requires the availability of information, access to technology, and funding

Figure 3 presents the results of this aggregation. The project proposals identified an absence of plans and policies, or the ineffective implementation of existing plans and policies (with such items subsumed within the institutional category) as the most common barrier to implementation. Also within this institutional category, and related to the ineffective implementation of plans and policies, were the barriers posed by institutions lacking the capacity to carry out activities, whether they be structural or enabling. Related to this institutional need is the identification of information and technology needs, with

[6] Recognizing that the adaptation need categories are not perfectly delineated, and can overlap, judgment was exercised in which category the identified barrier most accurately aligned with, taking into account the context in which the barrier was discussed in the proposal document

institutions commonly noted as lacking the capacity to generated and make use of climate information in decision-making. Social needs, related to aspects such as high poverty levels, limited awareness and education, and livelihood practices that undermine ecosystem services were also frequently identified. Notably, a lack of financial resources was not a commonly identified adaptation need, possibly reflecting the context in which a proposal for finance was being submitted.

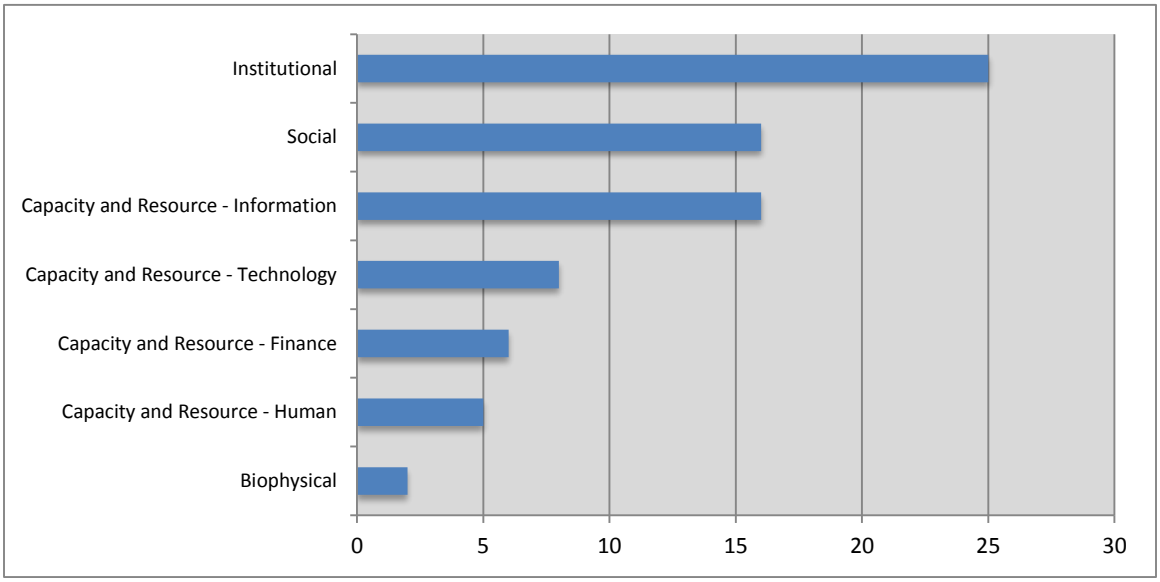


Figure 3 – Identified adaptation needs

Given that the categorization of adaptation needs necessarily loses detail, and that such detail provides insight into context specific barriers that need to be addressed for successful adaptation, ***Table 4*** includes some of the specific barriers as identified in the project proposals.

Table 4 – Examples of adaptation barriers identified in project proposals, by adaptation need

Adaptation Need	Example of barriers identified in project proposals
Biophysical and environmental	• Unsustainable use of wetlands undermining their capacity to mitigate climate change impacts • Unsustainable use of natural resources
Social	• High poverty levels • Communities have limited access to communal services • Absence of awareness, education, and advocacy of climate change impacts and adaptation measures
Institutional	• Lack of land use planning that integrates climate hazards and risks • Weak communication flow between scientists and policy makers as well as between institutions and different economic sectors • Lack of coherent water governance structure • Absence of coherent land use policy • Insufficient policy implementation and enforcement
Capacity and Resource - Information	• Lack of information generation capacity to inform decision-making • Absence or lack of information and knowledge management to support adaptation to climate change • No systematic recording of climate and socio-economic data to inform decision-making
Capacity and Resource – Technology	• Low levels of technology • Capacity gaps in technical areas • Lack of technical resources for community-based adaptation actions
Capacity and Resource - Finance	• Lack of financial resources for community-based adaptation actions • Insufficient public financing to provide coverage of islands with integrated, climate-resilient water management systems
Capacity and Resource - Human	• Capacity gaps in human resource areas • Human capacity constraints

- Limited human capacities to provide tailored information on climate change trends and associated risks

Baseline conditions

The above consideration of the climate related drivers of impacts being faced by proponent countries, the key risks these impacts will have in relation to furthering vulnerabilities, and the barriers and adaptation needs to address these vulnerabilities provides a high-level overview of the conditions the projects seek to change and/or avoid. In essence:

- The increased frequency and intensity of extreme events such as flooding, droughts, and tropical storms, and rising sea levels, are of concern to many proponents
- Livelihood disruption, and the chain of factors that lead to such, are considered to be significant effects arising from climate change and variability
- Projects are concerned with reducing vulnerability through the securing of assets, both human and natural, that underpin peoples' livelihoods
- Institutional, social, and information and technology capacities are identified as necessary areas to strengthen to allow successful adaptation to occur

Such aspects form one chain of climate change adaptation reasoning, being that of *adapting to what.* How project proposals seek to respond to these adaptation needs is considered in the following section.

3. Adaptation Responses

Adaptation options

The identification of needs arising from climate risks and vulnerabilities provides a foundation for selecting adaptation options. The *Fifth Assessment Report* organizes adaptation options into three general categories – structural/physical, social, and institutional – noting that adaptation options are often interrelated, and should be considered overlapping rather than discrete. Categories are then further disaggregated to reflect different groupings of adaptation options. An adapted version of the categories and examples of adaptation options (as included through the assessment report) table is included below (see ***Table 5***).

Table 5 – Adaptation options

Category		Example of options
Structural/Physical	Engineered and built environment	Sea walls and coastal protection structures; flood levees and culverts; water storage and pump storage; sewage works; improved drainage; beach nourishment; flood and cyclone shelters; building codes; storm and waste water management; transport and road infrastructure adaptation; floating houses; adjusting power plants and electricity grids
	Technological	New crop and animal varieties; genetic techniques; traditional technologies and methods; efficient irrigation; water saving technologies including rainwater harvesting; conservation agriculture; food storage and preservation facilities; hazard mapping and monitoring technology; early warning systems; building insulation; mechanical and passive cooling; renewable energy technologies; second-generation biofuels
	Ecosystem-based	Ecological restoration including wetland and floodplain conservation and restoration; increasing biological diversity; afforestation and reforestation; conservation and replanting mangrove forests; bushfire reduction and prescribed fire; green infrastructure; controlling overfishing; fisheries co-management; assisted migration or managed translocation; ecological corridors; ex situ conservation and seed banks; community-based natural resource management; adaptive land use management
	Services	Social safety nets and social protection; food banks and distribution of food surplus; municipal services including water and sanitation; vaccination programs; essential public health services including reproductive health services and enhanced medical services; international trade
Social	Educational	Awareness raising and integrating into education; gender equity in education; extension services; sharing local and traditional knowledge including integrating into adaptation planning; participatory action research and social learning; community surveys; knowledge-sharing and learning platforms; international conferences and research networks; communication through media
	Information	Hazard and vulnerability mapping; early warning and response systems including health early warning systems; systematic monitoring and remote sensing; climate services including improved forecasts; downscaling climate scenarios; longitudinal data sets; integrating indigenous climate observations; community-based adaptation plans including community-driven slum upgrading and participatory scenario development

	Behavioral	Accommodation; household preparation and evacuation planning; retreat and migration which has its own implications for human health and human security; soil and water conservation; livelihood diversification; changing livestock and aquaculture practices; crop-switching; changing cropping practices, patterns, and planting dates; silvicultural options; reliance on social networks
Institutional	Economic	Financial incentives including taxes and subsidies; insurance including index-based weather insurance schemes; catastrophe bonds; revolving funds; payments for ecosystem services; water tariffs; savings groups; microfinance; disaster contingency funds; cash transfers
	Laws and Regulations	Land zoning laws; building standards; easements; water regulations and agreements; laws to support disaster risk reduction; laws to encourage insurance purchasing; defining property rights and land tenure security; protected areas; marine protected areas; fishing quotas; patent pools and technology transfer
	Government policies and programs	National and regional adaptation plans including mainstreaming climate change; sub-national and local adaptation plans; urban upgrading programs; municipal water management programs; disaster planning and preparedness; city level plans; district level plans; sector plans which may include integrated water resource management; landscape and watershed management; integrated coastal zone management; adaptive management; ecosystem-based management; sustainable forest management; fisheries management; community-based adaptation

Project adaptation responses

The above categories were used to consider the expected concrete outputs of the project components, with the intent of determining how projects were responding to the identified adaptation needs. As noted in the *Fifth Assessment Report*, adaptation options are often overlapping, which can introduce ambiguity to a process of discrete classification. When such ambiguity presented itself in the classification of expected concrete outputs, categorization occurred by determining which adaptation option best encapsulated the dominant activity or intent of the output.

The adaptation responses of the projects (as determined from the expected concrete outputs classified by adaptation option category) are presented below in three ways:

- ***Figure 4*** shows the absolute number of responses by adaptation option category, at a 'portfolio' level for the projects considered
- ***Figure 5*** and ***Figure 6*** present these same responses, but weighted according to the percentage each adaptation option category constitutes of all responses undertaken by a project
- ***Table 6*** details the number of responses by adaptation option category, at the project level

The first presentation provides a 'portfolio' level indication of the category of adaptation options financed projects are pursuing, but does not necessarily indicate the share of activity each adaptation option represents at a project level. The second presentation provides an indication of how the responses of a project are broadly distributed amongst the adaptation option categories, by weighting the responses according to the percentage each adaptation option category constitutes of all the responses undertaken by a project.

The third presentation provides the greatest level of detail, identifying the number of responses by adaptation option category at the project level.

Section 4 below addresses some key considerations in relation to interpreting the following results, with respect to objectives and Strategic Results Framework of the Fund. As such, the results are descriptive in nature rather than analytical, with insight provided within the necessary context in *Section 4*.

Responses at a 'portfolio' level

Considering the responses pursued by the projects examined as a whole, social options focusing on education and information feature prominently. Given the inclusion of knowledge management as part of the Fund's Results-Based Management Framework, and that all projects examined addressed this component in some form, the prominence of this adaptation option category is not unexpected. Concrete outputs within this category center largely on the documentation of lessons learned from project implementation, and the subsequent dissemination of these lessons to parties at the community, national, regional, and international levels. Further, the products of technical capacity building, such as climate modeling, hazard and vulnerability assessments, and early warning systems, feature prominently.

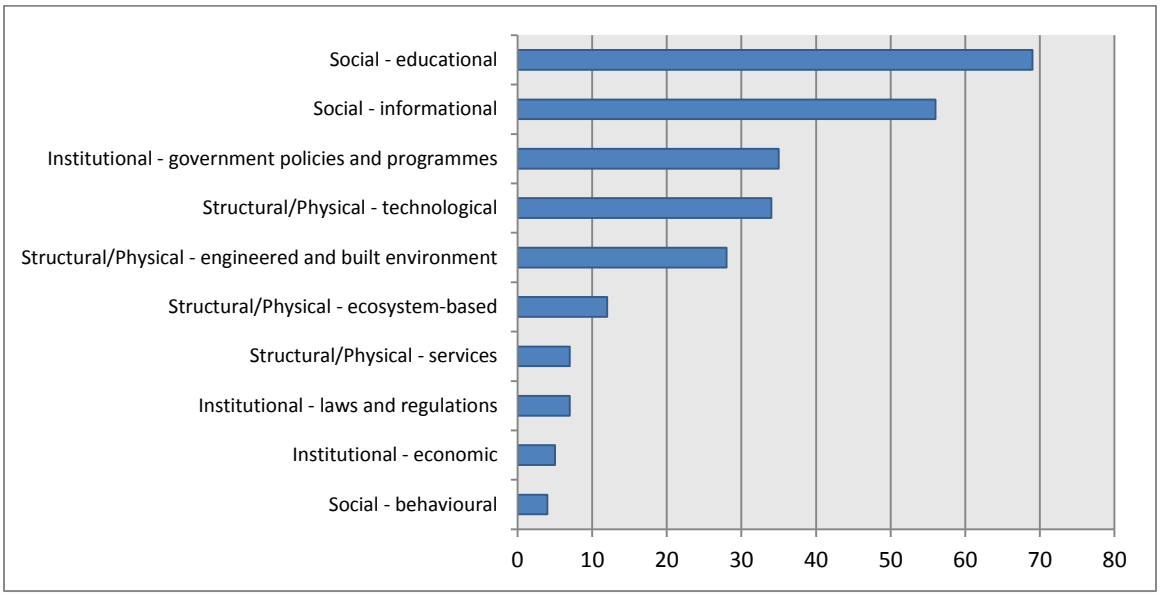


Figure 4 –Responses by adaptation option category

Distribution of responses at a project level

In considering the responses by the percentage of each adaptation option category that constitutes a project, a distribution of the adaptation options pursued in an average project is presented. Largely reflecting the results of the 'portfolio' overview considered above, outputs considered to be social in nature constitute about half a project's responses (see ***Figure 5***). Disaggregating further into the different groupings within categories (see ***Figure 6***), educational and informational responses dominate. Engineered and built environment, technological, and government policies, largely account for the remaining concrete outputs in an average project.

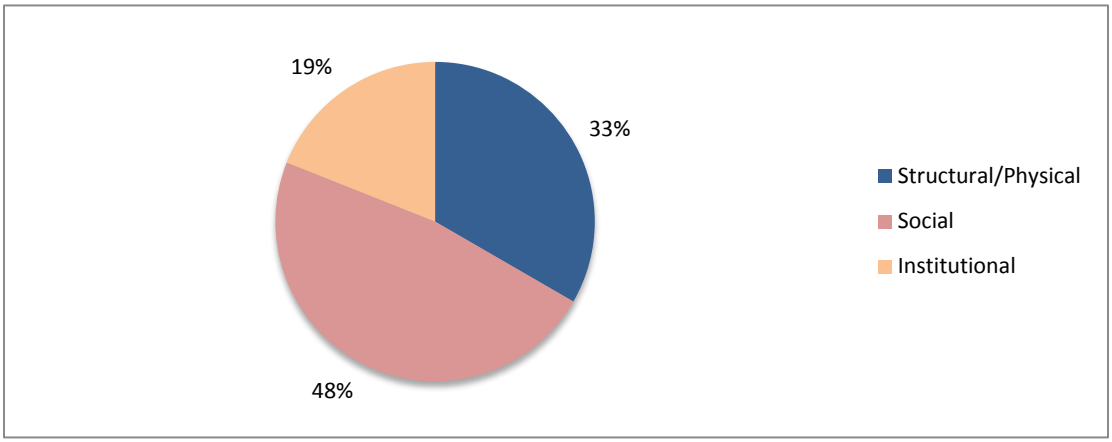
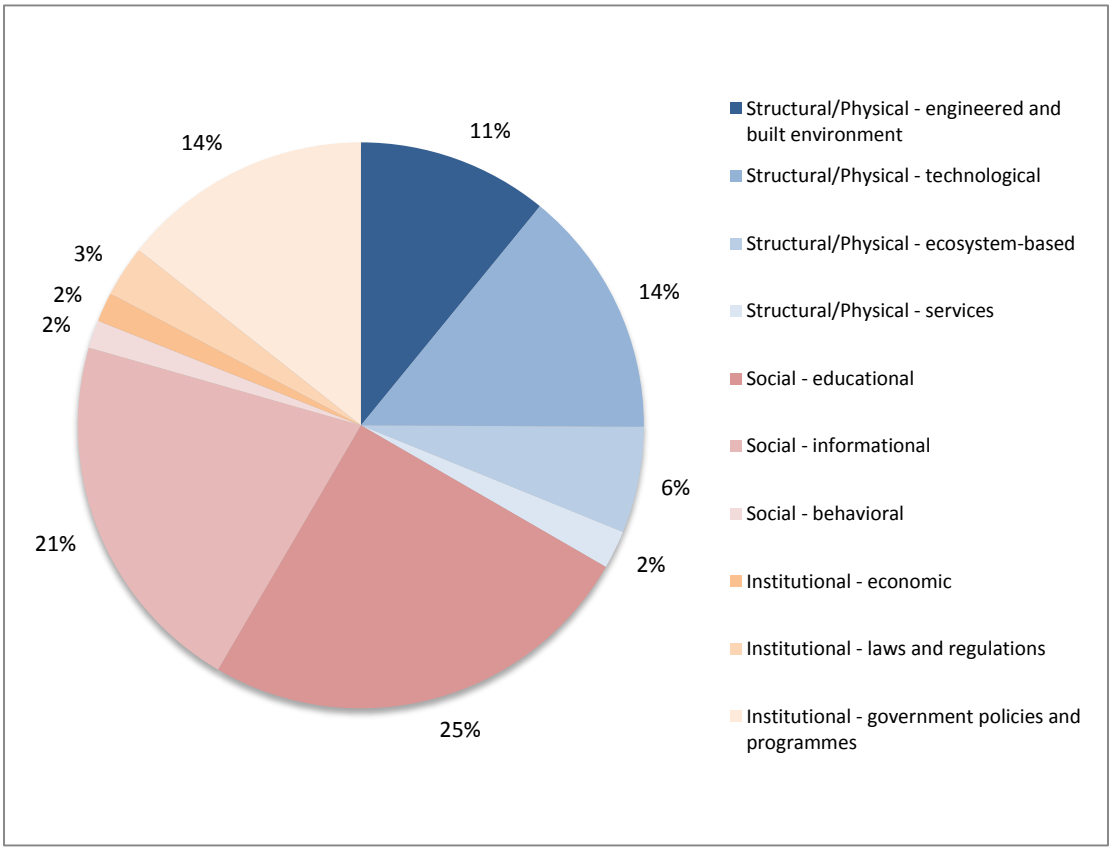


Figure 5 - Responses (weighted) by general adaptation option category



Responses at level – local/community, regional, and national

Figure 7 presents a breakdown of expected concrete outputs by their level of operation. Where an output was identified as operating at multiple levels, the lowest identified level was used for categorization (i.e. an output where documents detailing lessons learned were to be distributed nationally and internationally was classified at operating at its lowest identified level, the national level).

As to be expected due to their nature, and their scale as determined by the funding available, structural/physical outputs largely feature at the local/community level. Conversely, institutional outputs, concerning such things as government policies, and laws and regulations, expectedly operate largely at the regional and national level. The frequency of social outputs at the national level can largely be accounted for in the knowledge management activities that occur as part of the projects, where lessons learned and best practices are shared with the wider adaptation community.

This breakdown of expected concrete outputs further supports that projects are adopting adaptation reasoning in line with the Fund's strategic objectives, with the bulk of activities occurring at the local/community level to deliver visible and tangible results on the ground.

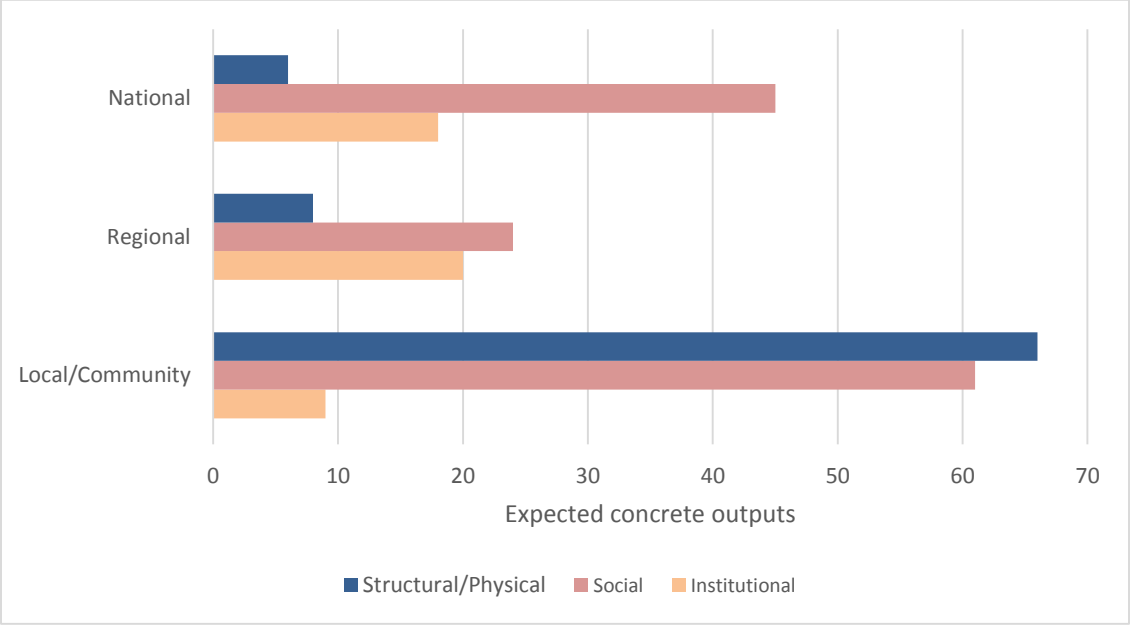


Figure 7 – Expected concrete outputs by level of operation

Project level responses

Table 6 below provides project level detail regarding the adaptation responses pursued. Each shaded box represents a single expected concrete output classified by the category adaptation option it aligns with. Reflecting the breakdown by adaptation option presented above, the table highlights the occurrence of activities within the social adaptation option category, in particular those of education and information. Structural/physical responses

demonstrate a reasonably even distribution amongst engineered and built environment outputs, and technological outputs.

Preliminary indications from responses

On the basis of the results presented above, it would appear that a good share of concrete outputs are focused not on the structural adaptation options, but rather enabling environment activities in the social and institutional categories. However, as will be discussed in *Section 4* below, such a conclusion fails to consider the true characteristics of these activities, as well as some of the limitations inherent in the categorization of outputs.

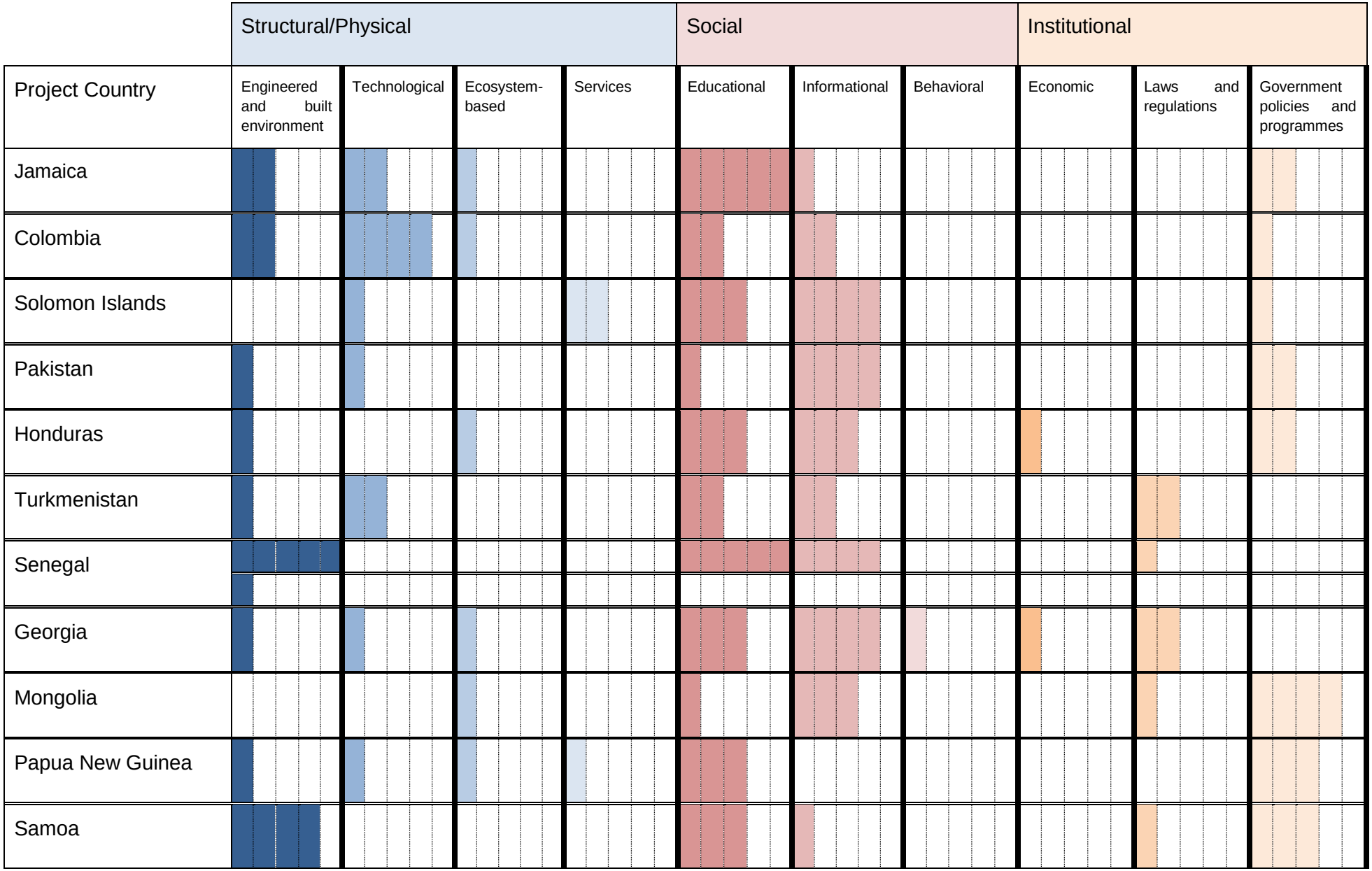
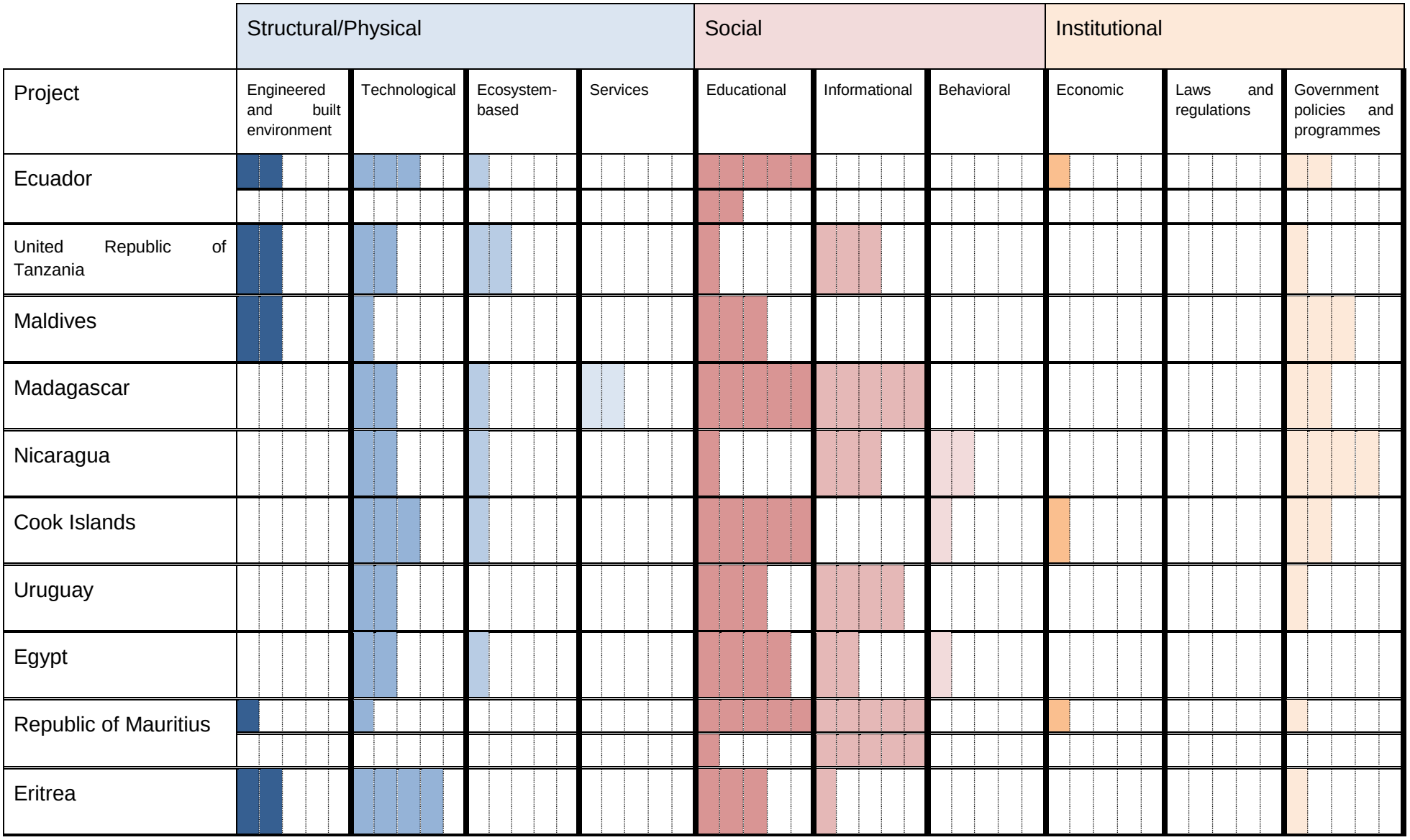

Structural/Physical
Social
Institutional
Project Country
Engineered and built environment
Technological
Ecosystem-based
Services
Educational
Informational
Behavioral
Economic
Laws and regulations
Government policies and programmes
Jamaica
Colombia
Solomon Islands
Pakistan
Honduras
Turkmenistan
Senegal
Georgia
Mongolia
Papua New Guinea
Samoa

Table 6 – Expected concrete outputs at the project level


Structural/Physical
Social
Institutional
Project
Engineered and built environment
Technological
Ecosystem-based
Services
Educational
Informational
Behavioral
Economic
Laws and regulations
Government policies and programmes
Ecuador
United Republic of Tanzania
Maldives
Madagascar
Nicaragua
Cook Islands
Uruguay
Egypt
Republic of Mauritius
Eritrea

4. Alignment with the Fund's strategic objectives and current thinking

The above consideration of the adaptation needs and responses as identified in project proposals indicates that:

- Proponents frequently identified institutional and social needs, and the strengthening of information and technical capacities, as necessary for successful adaptation to the adverse climate impacts faced
- Responses to these adaptation needs, as identified in the expected concrete outputs of the project components, frequently focus on educational and informational activities, in addition to creating/strengthening government policies, and implementing physical and structural adaptation measures

With the Fund's core mandate to finance concrete adaptation projects in order to reduce vulnerability and increase adaptive capacity, the question arises whether the climate change adaptation reasoning adopted by the projects is reflective of this. Further, does the adopted reasoning align with current thinking regarding climate change adaptation? This section will address these two questions, and in doing so, assess the extent to which change adaptation reasoning adopted by the projects aligns both with the Fund's strategic objectives and current thinking on the topic.

Concrete adaptation projects

Relying solely on the frequency with which concrete outputs feature within project proposals to determine whether the climate change adaptation reasoning adopted by projects aligns with the Fund's strategic objectives can be problematic for several reasons:

Abstraction of the concrete outputs to adaptation option categories necessarily loses detail, which given the noted overlap and interaction between adaptation options, may fail to capture all characteristics of a certain output

Does the frequency with which social adaptation options such as information and education feature in projects call into question their overall focus on concrete activities? How 'concrete' are such adaptation options?

On face value, adaptation options categorized as social or institutional rank below structural/physical measures in terms of producing **tangible** and visible results on the ground – a seawall is more tangible than a training program. However, even though an output is concerned with the generation or dissemination of information as a high level activity, the implementation and delivery of this activity doesn't necessarily result in an absence of tangible or visible results being produced. Many of these outputs involve the creation of training tools and manuals, assessment and planning documents, acquisition

of meteorological stations, or information products such as meteorological data. Such detail is lost in the process of abstracting to broad categories.

As such, assertions that the dominance of information and education activities, or government programmes and policies, indicate a failure of projects to align with the Fund's strategic objectives must be tempered by considerations of what specific activities constitute an output.

The number of concrete outputs, grouped by adaptation option category, doesn't necessarily reflect the share of project funding going to the output

Based on the aggregation of concrete outputs by adaptation option category in *Section 3* above, on face value it would appear that the educational and informational outputs are the most dominant form of adaptation response pursued by project proponents, followed by government policies. As just addressed above, this does not necessarily translate to an absence of tangible and visible results on the ground. *Further*, it speaks only to the quantity of outputs within each adaptation option category, and not the project financial resources devoted to each category. This is an important distinction.

Figure 8 takes the resources budgeted to each expected concrete output, aggregating the outputs according to the same adaptation option categories they are assigned in *Section 3*[7] (accounting only for costs associated with concrete outputs, and excluding those costs associated with project execution and administration). As can be seen, from the perspective of allocated financial resources, structural/physical outputs, particularly engineered and built, and technology, account for in excess of 60 percent of project spending. Considering this expenditure on a project level, the average project sees 69 percent spent on structural/physical outputs, 23 percent on social outputs, and 8 percent on institutional outputs (as a percentage of total component costs, excluding project execution and administration costs). ***Figures 9 and 10*** indicate this, for both the general categories, and also the groupings within each.

This provides a very different perspective on how projects are responding to their adaptation needs. Whilst on a purely frequency of concrete output basis the social responses dominate, when considering where financial resources are being directed, structural/physical measures constitute the majority of a project's expenditure.

[7] It should be noted that four of the projects analyzed do not include budgetary information itemized at the output level, and as such, are not included (this is not to say that detailed budgetary information was not included, it was just presented in some other itemized form. Further, the budgeted resources aggregated refer only to those allocated to outputs, and exclude project execution costs and management fees charged by the Implementing Entity.

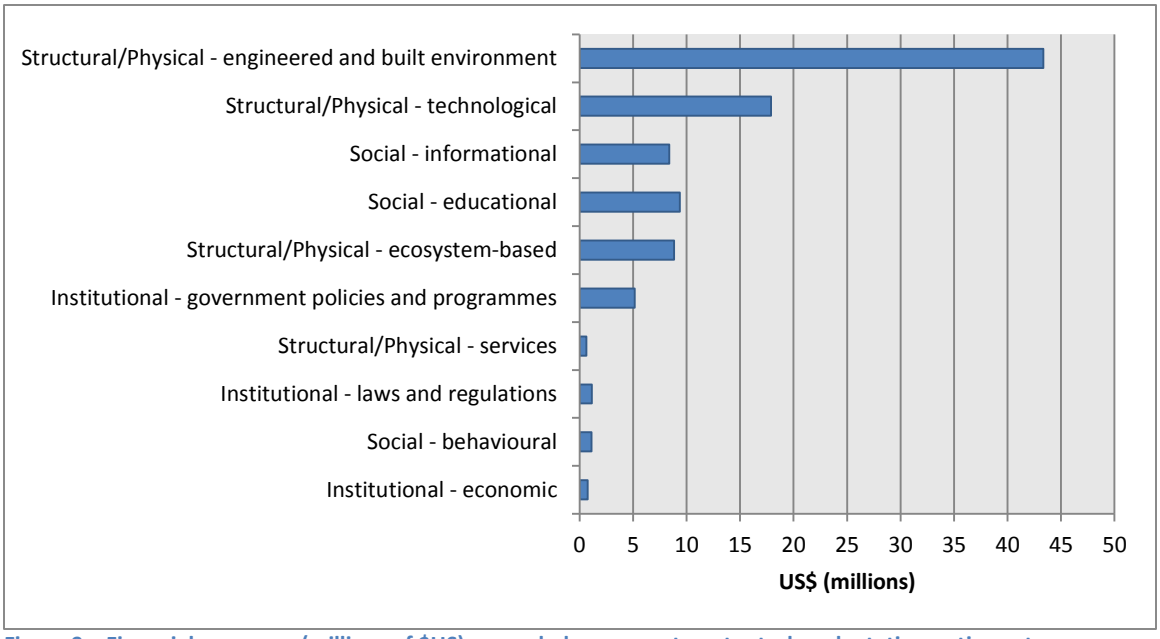


Figure 9 – Financial resources (millions of $US) expended on concrete outputs, by adaptation option category

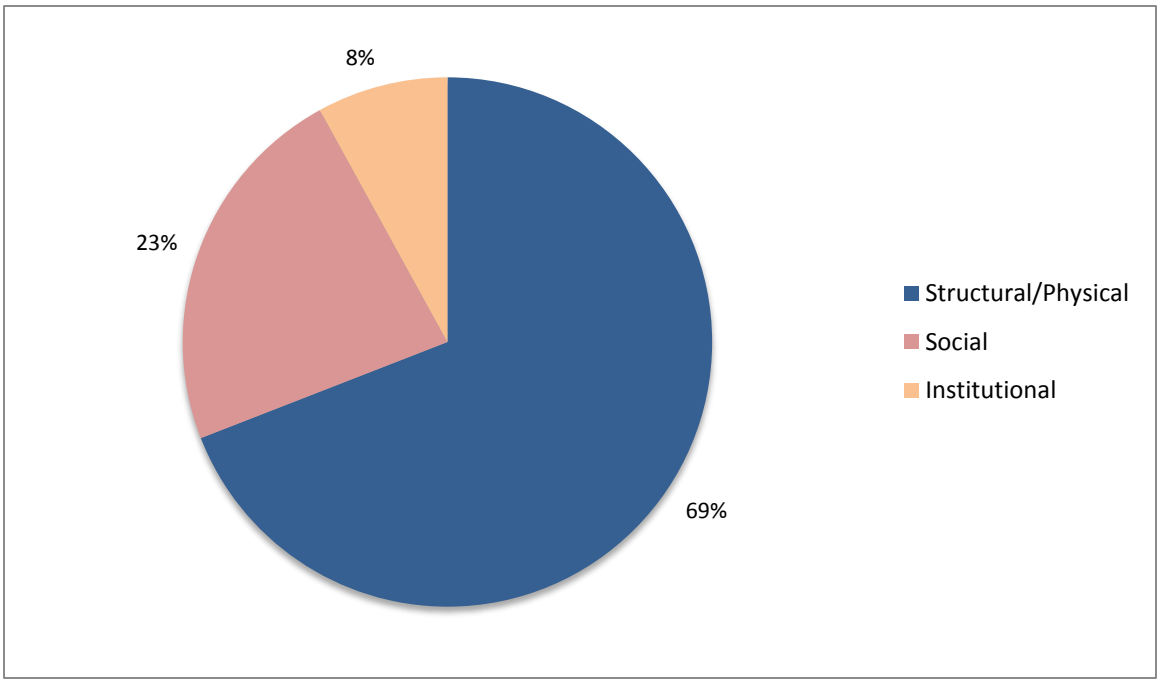


Figure 8 - Percentage of expenditure on concrete outputs, by adaptation option category

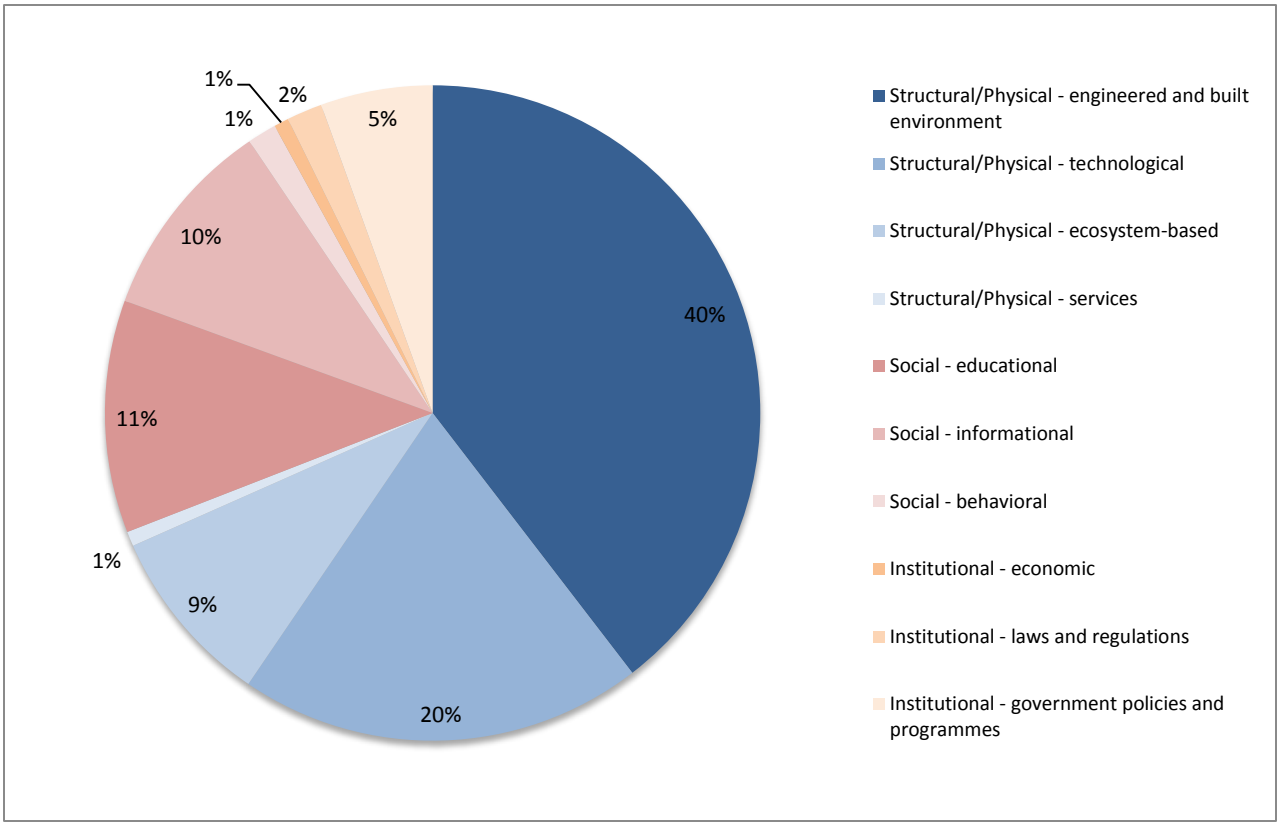


Figure 10 - Percentage of expenditure on concrete outputs, by adaptation option category

The number of concrete outputs, grouped by adaptation option category, does not necessarily reflect the nature of expected outcomes

A final consideration is the expected outcomes from an output, both in terms of the magnitude of impact and the timescale in which such impacts are realized. Such considerations impact how an expected concrete output may align with the Fund's strategic objectives.

For example, structural/physical activities such as constructing seawalls can represent a significant component of a project's expenditure, producing visible and tangible results on the ground and delivering positive impacts at the community level in a short amount of time. Compare this to the preparation of a vulnerability assessment, a small component expenditure wise of a project resulting in a document, but not necessarily on the ground, tangible results. However over an extended time period, the expected outcome of that vulnerability assessment may be the identification and implementation of further adaptation options, some of which may be concrete in nature, so that a relatively small activity has disproportionate impacts.

This example highlights how expected outcomes and time horizons are a necessary consideration when determining how a project aligns with the Fund's strategic objectives. The difficulty of such an approach is its reliance on a project-by-project level assessment, precluding its inclusion in the broad-level analysis provided here.

Alignment with the Fund's strategic objectives

Returning to the initial question, does the climate change adaptation reasoning adopted by the projects reflect the Fund's core mandate to finance concrete adaptation projects? The above discussion highlights the following:

- Given adaptation options overlap and can sometimes present difficulties for discrete classification, the classification of the expected concrete outputs of projects may result in a loss of detail that can mask certain activities within an output – as such, whilst social and institutional adaptation options frequently feature as a part of projects, within these outputs are activities more in line with the mandate for achieving tangible and visible results
- When considered based on the allocation of financial resources, structural/physical options, being the most readily definable as concrete activities, form the majority of a project's expenditure – however it is important to recognize that structural/physical options tend to be more complex and therefore more expensive undertakings than for example social options such as training, given their reliance of complex value chains and higher numbers of associated entities
- If a longer time horizon is taken when considering the impacts of the concrete outputs, certain outputs, where delivery of tangible and visible results on the ground within the timeframe of the project is largely absent, are likely to produce such results in the long-term – this is particularly applicable to outputs strengthening social and institutional capacities

Associated with this last point regarding the impacts of outputs over longer time horizons is the question of transformational adaptation, which we now consider.

Transformational adaptation

The *Fifth Assessment Report* highlights that a number of factors constrain the planning and implementation of adaptation actions, and that these constraints can pose limits to the ability of actors to adapt to climate change. Adaptation has traditionally been viewed as a process of incremental adjustments to climate variability and change, however if climate changes exceed the capacity of human actors and/or natural systems to adapt through incremental adjustments due to the reaching of a limit, then transformational adaptation may be necessary to avoid further adverse outcomes.

Incremental and transformational adaptation is noted as being integral to *the Fifth Assessment Report*. Incremental adjustments seek to maintain the essence and integrity of existing functions, and have been the dominant focus on adaptation efforts to date. Yet the report calls out an emerging awareness that certain impacts, in exceeding adaptation limits, will require transformational change, altering the fundamental attributes of systems at scales and levels of ambition greater than incremental adjustments. However as highlighted in the Fifth Assessment Report, transformation is a relatively new concept in the adaptation literature, and clear operational definitions of just what constitutes transformational adaptation, what is considered a fundamental alteration, and how it differs from incremental adaptation, are yet to be determined.

From the existing knowledge base, as drawn upon in the Assessment Report, emerge some initial characteristics that could suggest an adaptation response is (or has the potential to be) transformational:

- Responses undertaken at larger scales or magnitudes
- Responses that introduce new technologies and practices to a region or system
- Responses that create new systems or structures of governance
- Responses that shift the location or nature of activities
- Responses involving normative elements that seek changes in desired values, objectives, and perceptions of problems

Project/Programme outputs with the potential to transform

Whilst recognizing that ambiguities inherent in these characteristics make it difficult to determine whether the concrete outputs of the Fund's projects/programmes demonstrate the potential to be transformative, the outputs were nevertheless considered for this potential.

Additional criteria[8] were added to the above characteristics to better define what outputs would be treated as having transformative potential:

- The characteristic of responses being undertaken at larger scales or magnitudes was not considered, given the nature of the Fund's projects/programmes as pilots or demonstrations and the intent for all projects to result in scaling-up/replication
- The characteristic of responses involving changes to normative elements was not considered, due to the possible scope and ambiguity of such changes
- New technologies were considered those that, whilst not necessarily resulting in transformation in the project period, could be thought of setting the groundwork to feed information into transformative decision-making – for example, geographic information systems to allow hazard mapping capabilities
- New practices required a substantial change to the way in which a system operated, and were not implemented to allow the system to continue as it were
- Responses that saw investment in institutional capacity and/or human expertise were identified as potentially transformative if it was noted that such investments were benefitting those in charge of planning and policy at levels above communities – the rationale being that building capacity in this area and at higher levels establishes the potential for changes in approaches to planning and policy that could have significant regional or national impacts

[8] There is clearly scope for adjustments, additions, and deletions from these criteria, which would be expected in an evolving area of knowledge and practice. These are put forward as a way for the outputs financed by the Fund to be considered through a transformative adaptation 'lens', and not as the final arbiters of what is and is not transformational.

- Lessons learned were not identified as transformational unless there was an explicit identification of how these lessons would be institutionalized, hence linking into the above criteria regarding investment in institutional capacity and/or human expertise (the link between knowledge management and transformative adaptation is explored in greater detail below)

At least one potentially transformative output was identified in eighteen of the twenty-one projects/programmes analysed. ***Figure 11*** shows that new technologies and practices were most frequently identified as being potentially transformative, followed by new structures or systems of governance. The few outputs that seek to shift locations or the nature of activities reflects the significant level of change and difficulty such shifts entail.

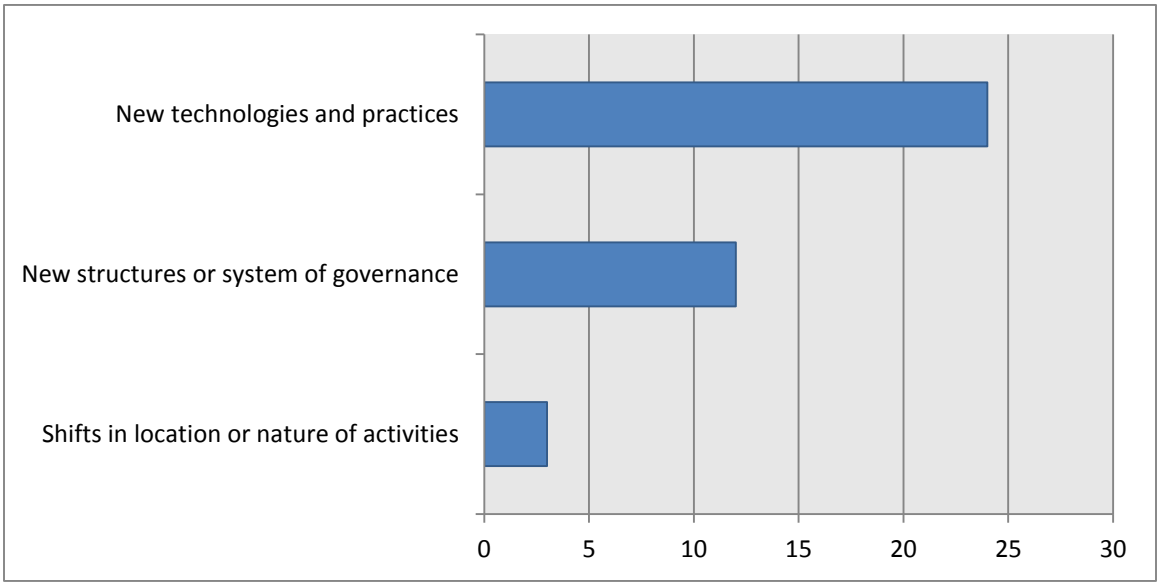


Figure 11 – Concrete outputs with potential transformative characteristics

Table 7 provides an overview of the types of activities that characterize potentially transformative outputs, as determined by the above criteria. It can be seen that the development of planning and policy mechanisms that integrate climate risk assessments and adaptation measures, and the strengthening of the technical and human capacities necessary to develop such mechanisms, are common examples of outputs that have the potential to be transformative. This link is explored further below.

Table 7 – Examples of outputs with potentially transformative characteristics

Transformative Characteristics	Example output from projects/programmes

New technologies and practices	• Early warning systems • Hydrological and meteorological information system development • Systematic screening tools • Technical capacities of policymakers and planners strengthened • Training in climate risk assessment and planning for adaptation
New structures of systems of governance	• Eco-system based assessment integrated within national legislation and planning frameworks • Integration of climate change adaptation needs and risk assessment into national policy frameworks • Formulate comprehensive floodplain development policies, including land use limits and control mechanisms
Shifts in location or nature of activities	• Plans developed for the relocation of houses from within hazard zones • Vegetable and organic gardens established on stilts above flood levels • Diversification of income through raising of rabbits and ducks, and bee keeping

The Fund, knowledge management, replication, sustainability, and transformational adaptation

There are certain aspects relating to the Fund's operations and guidelines that have bearing on how the activities it finances could be viewed in the context of transformational adaptation:

1. There is a focus on financing pilot/demonstration projects, with the financing amounts available and project timelines reflecting this focus accordingly
2. Knowledge management is included as a part of the Fund's Results-Based Management Framework, so that the lessons learned can facilitate the replication of projects
3. Projects are required to address the sustainability of the outcomes, as such outcomes should be sustained after the project ends, and should enable replication and scaling-up with additional funds

These aspects create an important chain between demonstrating adaptation responses, strengthening the enabling environment in which the responses occur, capturing and disseminating the lessons learned to facilitate replication, and ensuring outcomes,

particularly those related to the enabling environment, are sustained to allow replication to occur.

It is this chain that embodies the Fund's, and the projects it finances, value with respect to transformational adaptation – it allows responses to be demonstrated, the necessary enabling environment strengthened, and the knowledge generated to be captured and disseminated, with the intent for replication that could achieve transformation impacts.

The sustainability of the project outcomes is critical to realizing the potential for transformational adaptation. Addressing the sustainability of the project outcomes has not always been *explicitly* required of proposals, in the sense of a standalone project review criterion. However considerations were present throughout different components of the project proposals, including those addressing a project's cost-effectiveness and its consistency with national or sub-national sustainable development strategies. The *Project and Programme Review Committee*, as informed by the Secretariat, noted the need to address the sustainability, or the duration of the impact of, a project in the report of its second meeting[iii], and the sustainability of a project's outcomes was subsequently included as a required component to address in proposals and in the review criteria.

Those project proposals that explicitly addressed the sustainability of outcomes, as well as those that addressed such outcomes within other proposal sections, were considered with respect to the key aspects/strategies to consider regarding the sustainability of project outcomes. Such aspects and strategies include:

- Gain the support of the project beneficiaries through involvement in the selection and implementation of the adaptation activities, so that beneficiary buy-in remains after the project finishes
- Activities should pursue integration with broader government strategies regarding climate mitigation and adaptation, and poverty and development responses, so that climate risk assessment and management becomes a mainstream consideration in planning processes
- The capturing and sharing of knowledge and best practices should not just occur with current stakeholders, but also with the next generation of practitioners, planners, and policy-makers
- Organizations that already play a role in communities should be the focus of capacity building efforts, as their existing links with and responsibilities in the communities mean they are likely to remain after the project ends, and continue on with their activities with strengthened capacity for action
- Identifying locations for interventions should focus on those spaces where there is a strong interaction between the use of natural resources and the management of these resources, as the incentive to change behavior is strongest, and the demonstration of benefits easiest, where linkages between the beneficiary of the resource and potential losers from resource degradation are most prominent
- Adopting adaptation activities that have been previously identified in existing planning instruments, so as to build upon already established support, processes, and information

- Co-benefits delivered by adaptation activities to areas such as health, environmental integrity and biodiversity conservation, and poverty reduction can help to foster the support necessary to maintain the outcomes of the activity
- Adaptation activities that displace the need for an alternative, costly activity, hence delivering net economic benefits, are likely to be self-sustaining due to financial incentives
- Knowledge management activities pursued by projects can be used to influence policy and strategy development at the local level, thus creating institutional support for activities to continue

The projects financed by the Fund, and the Fund itself, cannot address the full spectrum of adaptation needs in communities, regions, and nations. Hence it is the ability for outcomes to be sustained, lessons be shared through knowledge management activities, and the country's adaptive capacity strengthened, that holds the potential for the Fund's efforts to achieve the replication and scaling up of activities that characterizes transformative potential. It is here that a strong demonstration of the sustainability of the project's outcomes, as requested in the project proposals and included as a review criterion, can aid in achieving such potential.

5. Lessons learned by projects

The available project performance reviews and mid-term evaluations were considered for any noted implementation issues or delays, changes made to the project, and identified lessons for adaptation, that were relevant to the climate change adaptation reasoning adopted by the project. The following key considerations were identified:

A lack of necessary human expertise delaying project implementation

Many projects identified difficulties in recruiting people with the necessary technical expertise, which led to delays in the implementation of project outputs. This affected not only the ability of executing entities to carry out outputs themselves (such as planning, assessment, and management activities), but also their ability to procure the goods and services of external parties – there lacked the capacity to generate terms of reference, evaluate the offers, and issue the procurement orders.

Timeline changes needing to be made to allow institutional strengthening to occur

Several projects identified delays to project implementation due to participating institutions lacking the capacity to carry out their project components. Timelines were then changed to allow a number of institutional strengthening and training activities to occur before more structural outputs could be implemented and effectively used. These efforts to strengthen the institutions that support structural outputs were identified as important in consolidating and continuing results.

Communicating benefits of non-structural adaptation measures

The need to communicate more clearly the benefits of non-structural adaptation measures was identified, particular to implementing partners so that they ensure climate adaptation approaches are embedded in their organizations.

The importance of lead coordinating agencies with the necessary technical and knowledge skills

Multiple projects highlighted the importance of having well-resourced, capable bodies responsible for coordination and the provision of guidance and advisory functions. One project noted that its approach was to embed project activities within the national institution with a mandate of relevance, and that this has proven to be effective in securing the sustainability of the project results. Another credited the establishment of a technical committee with full oversight of the project as strengthening the sustainability of the project results.

Replication of results relies on integration into national planning instruments

A noted project lesson was the recognition that responding to climate change and variability impacts is a multi-year process dependent upon national timetables and processes, rather than any single project. The potential for replication then relies upon activities being reflected in national planning instruments, as both the skills and

frameworks are in place to continue climate change risk assessment and response measures in the normal course of a country's activities.

The replication and sustainability of project results is also important at the community level

For outputs occurring at the community level, those considered to have high potential for replication and sustained results involved capacity building of the communities as central activities. Such community capacity building was noted as critical for combining the community's practical experience with technical knowledge to identify climate change impacts and prioritize activities.

The above points demonstrate the importance of the enabling environment for both the immediate, and the long-term, success of a project. During the actual project period, adequate social and institutional capacity is necessary to design, implement, and manage the project components and outputs. However the project outputs themselves can work to strengthen this capacity, and in doing so, provide both for the successful implementation of the project and to establish the 'seeds' of adaptive capacity that allow project results to be sustained, scaled-up, and replicated.

The direct access modality is beneficial in developing the capacity of organizations and agencies to design and implement adaptation activities

The ability of national implementing entities to directly access finance from the Fund has allowed such entities to build their capacity to design, implement, and monitor climate adaptation activities, aiding not only the activities financed by the Fund, but the opportunities for these entities to demonstrate capability in order to access additional sources of finance. Further, the direct access modality and the capacity building it fosters allows entities to establish recognition from national authorities as credible actors in climate change efforts, setting up the potential for further adaptation efforts as supported by the national authorities and managed by the entities.

6. Key findings and recommendations

The purpose of the above analysis is to consider how project proposals approved by the Adaptation Fund Board have addressed climate change adaptation reasoning, with the view to highlighting the Fund's experience with concrete adaptation projects to other international actors also interested in climate change. Further, this analysis was conducted with consideration of the latest approaches to adaptation reasoning.

Key findings

The key findings are presented below, disaggregated for clarity.

Latest thinking and approaches

- Adaptation as presented in the latest IPCC assessment report incorporates a definite sense of purposefulness to actions, with less focus on autonomous adaptation
- The concepts of incremental and transformational are integral to conceptions of adaptation, although the latter, being a relatively new concept in the literature, currently lacks clear operational definitions which creates difficulties for the identification, evaluation, and practice of transformational adaptation
- Vulnerability, as a key component of adaptation, has acquired increasing complexity as a multidimensional issue – whilst physical hazards are still important, the social and economic drivers of vulnerability are also of importance
- With respect to the Fund's alignment with current approaches to adaptation;
    - It performs strongly in the aspect of purposefulness
    - It's mandate to finance concrete adaptation projects is not at the expense of considering the social and economic drivers of vulnerability, with outcomes and outputs in the Strategic Results Framework focused on the enabling environment (which encompasses such drivers)
    - There is potential for the project outputs financed by the Fund to achieve transformational impacts

Adaptation needs

- Projects frequently identified the increased intensity and frequency of extreme events, including floods, droughts, and tropical storms, as well as warming trends and sea level rise, as climate related drivers of impacts
- The key risks arising from such climate related drivers center around issues of food insecurity and livelihood disruption
- Projects are typically concerned with reducing vulnerability through the securing of assets, both human and natural, that underpin peoples' livelihoods
- Institutional and social, in addition to information and technical capacities, are most frequently identified as barriers to adaptation, and hence represent adaptation needs to address the gap between predicted outcomes and desired outcomes

Adaptation Responses

- From the perspective of the absolute number of expected concrete outputs in the examined projects, social and institutional adaptation options are the most frequently pursued adaptation option
- However from the perspective of the financial resources allocated to project outputs, structural/physical outputs dominate project activities, accounting for nearly 70 percent of project spending
- Simply considering the expected concrete outputs, as classified by adaptation option, can misrepresent the nature of the portfolio of activities occurring during a project

Project alignment with the Fund's strategic objectives, and current adaptation thinking

- The core focus of projects, in terms of their outputs, is on structural/physical adaptation measures, those responses that clearly meet the Fund's objective to finance concrete projects
- However this does not mean strengthening of the enabling environment, and hence addressing the social and economic drivers of vulnerability, is being ignored – as demonstrated by the number of project outputs dedicated to this area
- Whilst transformational adaptation is currently difficult to define, there are project outputs that demonstrate the potential to be transformative – such outputs focus on introducing new technologies or practices, new systems or structures of governance, or changing the location or nature of activities
- The Fund's approach of financing pilot/demonstration projects, and including knowledge management in the Results-Based Management Framework, exhibits potential to achieve transformative adaptation through the replication and scaling-up of activities

Lessons learned by projects

- The lessons identified by projects relevant to climate change adaptation reasoning centered on the importance of institutional, technical, and human capacity for the successful design and implementation of projects
- Such capacities were also identified as key to ensuring the sustainability of results and the replication of efforts, by putting in place the frameworks and skills necessary to continue climate change risk assessment and response measures in the normal course of a country's activities

As can be seen, the Fund, and the projects it finances, demonstrate an approach whereby concrete adaptation activities are the focus, yet are supported by efforts to strengthen the enabling environment. This could be described as an 'entire-pipeline' approach – both aspects necessary for successful adaptation, being direct activities benefitting vulnerable groups (whether structural or non-structural in nature), *and* an environment that allows such activities to be implemented, are addressed. In this manner, there are direct beneficiaries of the financed activities, in addition to co-benefits from the activities

undertaken to strengthen the enabling environment that are advantageous for groups outside of the target communities.

Reflection on project review criteria

This analysis includes a reflection, based on the findings of the study, as to whether any elements needed to be added to the Fund's project review criteria. The component of the review criteria most relevant to this request, project eligibility, is included in the table below for reference (see ***Table 8***).

Based on the findings, and in taking into account the latest thinking on climate change adaptation, it is not necessary to add any elements to the Fund's project review criteria, due to:

- Projects demonstrating overall alignment with the strategic objectives of the Fund, with these strategic objectives, and the Strategic Results Framework, themselves largely in alignment with current thinking
- Existing review criteria providing the elements in which to further consider projects in light of current thinking

There is however scope for further guidance to be provided to parties when completing their project proposal documents, particularly to strengthen the sustainability of project outcomes and their contributions to transformational adaptation. This can be achieved through two elements of the current project eligibility review criteria:

Learning and knowledge management

Learning and knowledge management activities are a key way in which broad audiences can benefit from the lessons and best practices of activities financed by the Fund. In capturing and disseminating these lessons and practices, the potential exists for institutional knowledge to be strengthened, individual expertise gained, and beneficial knowledge partnerships formed. The Fund acknowledges that the intent of such activities is to enrich the global, national, and local knowledge on climate change adaptation and to accelerate understanding about what kinds of interventions work. It is in this acceleration that the potential for scaling-up, replication and transformational adaptation can be identified.

It is recommended that project proposals seek to strengthen their demonstrations of how knowledge will be captured, disseminated, and sustained overtime with respect to it benefitting institutions and communities so as to foster the scaling-up and replication of activities. Whilst recognizing that many proposals provide detailed outlines of the knowledge management activities in the project justification, a stronger demonstration of how these activities collectively integrate, and an identification of how they may transform their areas of concern, would be valuable.

Project sustainability

There are several aspects regarding the sustainability of project outcomes that differ based on the type of output. For example, the sustainability of structural/physical outputs

is predominantly concerned with their ongoing maintenance, which is relatively easy to demonstrate. What is harder to demonstrate is how outcomes related to social or institutional outputs will be sustained; however their sustainment is critical to projects forming the basis for scaled-up, replicated, and transformative adaptation measures.

It may be useful to require project proposals, within the project sustainability component, to address how the project can contribute to transformational adaptation, at differing scales and in differing types of activities. This would involve proposals further considering and elaborating upon how the non-structural outputs may establish the 'seed' for future actions, and necessitate the provision of additional details regarding how these outcomes will be sustained. The key assumptions underpinning the sustainment of outcomes should also be identified, much as the risks to projects are considered within the project performance reviews.

This report notes above that transformational adaptation is still an evolving concept, and currently lacks clear operational definitions that would allow it to be identified, evaluated, and practiced. As such, integrating a full consideration of the transformational aspects of projects into proposals is difficult at this point in time, and may best be pursued once the concept matures. However there may be value in requesting proponents to at least broadly consider, and respond to, a prompt regarding the transformative potential of the project being proposed.

Table 8 – Project Eligibility review criteria of the Adaptation Fund

Project Eligibility
• Has the government endorsed the project through its designated authority? • Does the project/programme support concrete adaptation actions to assist the country in addressing the adverse effects of climate change and build in climate change resilience? • Does the project/programme provide economic, social and environmental benefits, with particular reference to the most vulnerable communities, including gender considerations, while avoiding or mitigating negative impacts, in accordance with the Environmental and Social Policy of the Fund? • Is the project/programme cost effective? • Is the project/programme consistent with national sustainable development strategies, national development plans, poverty reduction strategies, national communications or adaptation programs of action, or other relevant instruments? • Does the project/programme meet the relevant national technical standards, where applicable, in compliance with the Environmental and Social Policy of the Fund? • Is there duplication of the project with other funding sources?

- Does the project/programme have a learning and knowledge management component to capture and feedback lessons?
- Has the project/programme provided justification for the funding request on the basis of the full cost of adaptation funding
- Does the project/programme align with the AF results framework?
- Has the sustainability of the project/programme outcomes been taken into account when designing the project?
- Does the project/programme provide an overview of environmental and social impacts/risk identified?

Opportunities for further study

As indicated at the beginning of the report, the development of the methodology for the analysis contained within was an evolving process, taking into account current thinking regarding adaptation reasoning and how best to extricate such reasoning from available project documentation. In addition to this evolution, time constraints prevented the consideration of certain elements contained within the Terms of Reference (such as co-benefits, unanticipated benefits and costs, and an in-depth consideration of institutional and technical aspects), as well as the use of additional data resources (such as questionnaires and interviews with stakeholders).

With the initial climate change adaptation reasoning as pursued by projects established in this report, it is likely that further study, taking into account the supplementary elements and resources, would prove fruitful in furthering understanding regarding how projects are reducing vulnerabilities through concrete adaptation activities. Such study could focus on the following aspects:

5. The lessons learned and changes made to projects as further project performance reports and mid-term evaluations become available
6. Interviews with stakeholders to determine the sustainability of project outcomes, with particular emphasis on the social and institutional activities pursued (for example, how sustainable efforts to establish and implement adaptation plans have been)
7. The social and economic benefits accruing as a result of adaptation activities, given such benefits are key aspects of reducing vulnerabilities
8. The actual replication and scaling-up of activities, given this is a key determinant of the transformative potential of adaptation activities

Appendix 1 – Methodology

Key frameworks and data resources

The Intergovernmental Panel on Climate Change's *Fifth Assessment Report*, as a provider of clear and up to date information on the current state of scientific knowledge relevant to climate change, was the key source used to construct the methodological frameworks by which the projects were considered in terms of their climate change adaptation reasoning. Project data was obtained from the project proposal documents, in addition to project performance reports and mid-term evaluations where available.

Specifically, the information contained within the *Fifth Assessment Report* was used to:

- Identify climate related drivers of impacts – the biophysical categories within which observed and predicted climate changes occur were used to categorize climate related drivers identified in the problem statements of the project proposals (see *Section 2 – Identified climate related drivers*)
- Categorize key risks identified in the project proposals – the key risk categorizes contained within the Summary for Policymakers, having been determined through expert judgment based on specific criteria, were used to aggregate the risks arising from identified climate related drivers (see *Section 2 – Identified key risks*)
- Categorize the adaptation needs identified in the project proposals – the categories of need, as contained within Working Group II's *Adaptation Needs and Options* chapter, were used to allocate the identified needs amongst biophysical and environmental, social, institutional, and capacity and resources (see *Section 2 – Barriers – what is needed to adapt*)
- Categorize the expected concrete outputs contained within project proposals into the type of adaptation response option – the categories of adaptation options, as contained within Working Group II's *Adaptation Needs and Options* chapter, were used to determine the type of adaptation option each expected concrete output represented, aided in categorization by the examples of options included within *Table 14-1* of that chapter (see Section 3 – Adaptation options for a synthesized version of this table)

Further analysis

These methodological frameworks and the aggregated project level data that resulted from their application formed the basis of the analysis, as it allowed a portfolio level consideration of climate change adaptation reasoning with respect to:

- What projects were seeking to adapt to, being the climate related drivers of impacts and the vulnerabilities posed by such impacts (*Section 2*);
- How projects were seeking to adapt, being the adaptation options proposed as responses (*Section 3*); and,

- How these responses were distributed; at spatial scales (local/community, regional, national), amongst the types of adaptation options available (structural/physical, social, and institutional), and with respect to project financing (*Section 3* and *Section 4*)

The spatial scale of expected concrete outputs was determined through a consideration of the description of each output, with the majority of such descriptions identifying the scales at which the activities were operating. Where the descriptions lacked the necessary information, the scale of operation was inferred from the context of the project description as a whole.

The consideration of the distribution of responses by project financing was determined through the concrete output level budget information contained within the proposals, aggregated by type of adaptation option (structural/physical, social, and institutional). Several project proposals did not provide concrete output level budget information, and hence were not included in this component of the analysis.

Limitations

A methodological approach involving the abstraction of project level data into portfolio level aggregations has inherent limitations, which are noted at the relevant sections throughout the analysis. The key issues as identified throughout include:

- That of discrete classification efforts – many aspects of adaptation, from the climate related drivers of impacts, to the impacts themselves, and the responses, do not exist as discrete activities or outcomes. Such aspects are interrelated and overlap, complicating efforts to categorize them. As such, there exists the potential for the under- or over-misrepresentation of aspects in categories, as those with shared characteristics of several categories are inevitably allocated to a single one.
- The loss of detail – adaptation needs and responses are highly location and context specific, and such detail, an important component in the justification of the adaptation reasoning, is necessarily lost when abstracting to higher level categories

Noting these limitations, the quantitative results of the analysis were used as a basis to inform a broader qualitative discussion of the climate change adaptation reasoning adopted by projects. The results should not be interpreted as representative of any single project, but rather as representative of the portfolio of advanced projects the Fund has financed to date. To this end, the results were discussed with respect to their alignment with the Fund's strategic objectives, and with the current thinking regarding adaptation reasoning. Common lessons as identified in the project performance reports and mid-term evaluations were also included to illustrate where project proponents have self-identified lessons or issues with their original climate change adaptation reasoning.

Appendix 2 – Projects included in analysis

Project/Programme Title	Country	Grant Amount (US$)	Implementing Entity	Approval date
Addressing Climate Change Risks on Water Resources in Honduras: Increased Systemic Resilience and Reduced Vulnerability of the Urban Poor	Honduras	5,620,300	United Nations Development Programme	09/17/2010
Adaptation to coastal erosion in vulnerable areas	Senegal	8,619,000	Centre de Suivi Ecologique of Senegal	09/17/2010
Reducing Risks and Vulnerabilities from Glacier Lake Outbursts Floods in Northern Pakistan	Pakistan	3,906,000	United Nations Development Programme	12/15/2010
Reduction of Risks and Vulnerability Based on Flooding and Droughts in the Estero Real River Watershed	Nicaragua	5,500,950	United Nations Development Programme	12/15/2010
Enhancing resilience of communities in Solomon Islands to the adverse effects of climate change in agriculture and food security	Solomon Islands	5,533,500	United Nations Development Programme	03/18/2011
Climate Change Adaptation Programme in water and agriculture in Anseba Region, Eritrea	Eritrea	6,520,850	United Nations Development Programme	03/18/2011

Enhancing resilience of communities to the adverse effects of climate change on food security, in Pichincha Province and the Jubones River Basin	Ecuador	7,449,468	United Nations World Food Programme	03/18/2011
Addressing climate change risks to farming systems in Turkmenistan at national and community level	Turkmenistan	2,929,500	United Nations Development Programme	06/22/2011
Ecosystem Based Adaptation Approach to Maintaining Water Security in Critical Water Catchments in Mongolia	Mongolia	5,500,000	United Nations Development Programme	06/22/2011
Increasing climate resilience through an Integrated Water Resource Management Programme in HA. Ihavandhoo, ADh. Mahibadhoo and GDh. Gadhdhoo Island	Maldives	8,989,225	United Nations Development Programme	06/22/2011
Climate Change Adaptation Programme in the Coastal Zone of Mauritius	Republic of Mauritius	9,119,240	United Nations Development Programme	09/16/2011
Building Resilience to Climate Change and Variability in Vulnerable Smallholders	Uruguay	9,967,678	Agencia Nacional de Investigacion e Innovacion	12/14/2011
Developing climate resilient flood and flash flood management practices to protect vulnerable communities of Georgia	Georgia	5,316,500	United Nations Development Programme	12/14/2011
Enhancing resilience of coastal communities of Samoa to climate change	Samoa	8,732,351	United Nations Development Programme	12/14/2011

Implementation of concrete adaptation measures to reduce vulnerability of livelihoods and economy of coastal communities of Tanzania	Tanzania, United Republic of	5,008,564	United Nations Environment Programme	12/14/2011
Promoting climate resilience in the rice sector through pilot investments in Alaotra-Mangoro Region	Madagascar	5,104,925	United Nations Environment Programme	12/14/2011
Strengthening the Resilience of our Islands and our Communities to Climate Change	Cook Islands	5,381,600	United Nations Development Programme	12/14/2011
Enhancing adaptive capacity of communities to climate change-related floods in the North Coast and Islands Region of Papua New Guinea	Papua New Guinea	6,530,373	United Nations Development Programme	03/16/2012
Enhancing the resilience of the agriculture sector and coastal areas to protect livelihoods and improve food security	Jamaica	9,965,000	Planning Institute of Jamaica	06/28/2012
Reducing risk and vulnerability to climate change in the region of La Depresion Momposina in Colombia	Colombia	8,518,307	United Nations Development Programme	06/28/2012
Building Resilient Food Security Systems to Benefit the Southern Egypt Region	Egypt	6,904,318	United Nations World Food Programme	06/28/2012

Appendix 3 – Background document

Synthesis of the science - the Intergovernmental Panel on Climate Change's review of adaptation

The release of the *Fifth Assessment Report* by the IPCC signalled an evolution in how adaptation and its constituting components are viewed. Of particular interest are changes in how adaptation is broadly conceptualized, as well as one of its key components, vulnerability.

Adaptation

The *Fourth Assessment Report*, released in 2007, defines adaptation as the:

Adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities. Various types of adaptation can be distinguished, including anticipatory, autonomous and planned adaptation[4].

> ***Anticipatory adaptation:*** *Adaptation that takes place before impacts of climate change are observed. Also referred to as proactive adaptation.*
>
> ***Autonomous adaptation:*** *Adaptation that does not constitute a conscious response to climatic stimuli but is triggered by ecological changes in natural systems and by market or welfare changes in human systems. Also referred to as spontaneous adaptation.*
>
> ***Planned adaptation:*** *Adaptation that is the result of a deliberate policy decision, based on an awareness that conditions have changed or are about to change and that action is required to return to, maintain, or achieve a desired state.*

The categorization of the types of adaptation centres on distinctions of purposefulness and timing, with these two distinctions arrived at through an examination of common attributes used to differentiate adaptation processes and forms in the literature[5]. Anticipatory and planned adaptation demonstrates a degree of purposefulness and proactivity, as opposed to autonomous adaptation which is reactive nature. In terms of timing, planned adaptation can be either anticipatory or responsive, whilst autonomous adaptation is responsive by definition[6].

The definition employed in AR5[7] introduces a degree of purposefulness to adaptation actions, clarifies the distinction between human and natural systems and the role of humans in natural system adaptation, and re-categorizes types of adaptation:

> *The process of adjustment to actual or expected climate and its effects. In human systems, adaptation seeks to moderate harm or exploit beneficial opportunities. In*

some natural systems, human intervention may facilitate adjustment to expected climate and its effects.

Incremental adaptation: *Adaptation actions where the central aim is to maintain the essence and integrity of a system of process at a given scale*

Transformational adaptation: *Adaptation that changes the fundamental attributes of a system in response to climate and its effects*

Purposefulness of adaptation actions

The addition of the phrase "which seeks to moderate" rather than "which moderates" acts to emphasize the purposefulness of adaptation actions. The report notes that the ability to cope with climate impacts can also be increased by actions that are not anticipatory or purposefully undertaken *in response to observed or anticipated climate impacts*, casting these as unplanned actions or autonomous adaptation. It further states that the use of the term (autonomous adaptation) has been inconsistent in the literature, including in the IPCC reports. The term is referenced as often being used to refer to purposeful adaptation actions carried out without external inputs such as policies, information, or resources, as well as to purposeful actions that are reactive to experienced climate impacts, rather than being proactive or anticipatory of them. The addition "which seeks to", in conjunction with the associated explanation, suggests that going forward, adaptation efforts in the climate context be focused on purposeful actions taken in response to observed climate change and/or in preparation of anticipated climate change.

Human and natural adaptation

The enhanced distinction between human and natural systems recognizes that natural systems have the potential to adapt through autonomous processes, and that humans may intervene to promote particular adjustments. At a broad level, successful adaptation will depend on our ability to allow and facilitate natural systems to adjust to a changing climate.

Incremental and transformational adaptation – the issue of limits to adaptation

The *Fifth Assessment Report* highlights that a number of factors constrain the planning and implementation of adaptation responses, and that these constraints can pose limits to the ability of actors to adapt to climate change. Adaptation has traditionally been viewed as a process of incremental adjustments to climate variability and change, however if climate changes exceed the capacity of human actors and/or natural systems to adapt through incremental adjustments due to the reaching of a limit, then transformational adaptation may be necessary to avoid further adverse outcomes.

Incremental and transformational adaptation are noted as being integral to the *Fifth Assessment Report*. Incremental adjustments seek to maintain the essence and integrity of existing functions, and have been the dominant focus on adaptation efforts to date. Yet the report calls out an emerging awareness that certain impacts, in exceeding adaptation limits, will require transformational change, altering the fundamental attributes of systems at scales and levels of ambition greater than incremental adjustments. However as

highlighted in the *Fifth Assessment Report*, transformation is a relatively new concept in the adaptation literature, and clear operational definitions of just what constitutes transformational adaptation, what is considered a fundamental alteration, and how it differs from incremental adaptation, are yet to be determined.

Hence, on a conceptual level there is a logical rationale for transformational adaptation, as experience is indicating greater levels of action will be necessary to adapt to observed and expected climate changes [8]. However determining what makes an action transformational, when such actions are appropriate, and how they can be designed and implemented, is difficult from a practitioner's perspective given the current infancy of the concept and its supporting knowledge base.

When considering the existing knowledge base, approaches to transformational adaptation substantially depend on how transformation is framed. In what could be conceived as 'weak' transformation, several authors identify at least three classes of adaptations that they consider to be transformational; (1) those adopted at much larger scales or intensities, (2) those that are truly new to a particular region or resource system, and (3) those that transform places and shift locations. In this framing, adaptation actions do not have to be transformational in an absolute sense – they could consist of actions already being pursued within incremental adaptation efforts but applied in more ambitious manners, or introduced to new locations or systems. Indeed, the authors recognize that over the long run, incremental changes may cumulate to what retrospectively could be considered transformational adaptation [9]. A further conception of transformational adaptation aligns with this more aggressive pursuit of incremental actions, recognizing that transformational shifts may include combinations of technological innovations, institutional reforms, behavioural shifts, and cultural changes[10]. Such aspects are common characteristics of existing adaptation actions.

The third class of transformational adaptation, those that transform places and shift locations, is arguably more in line with a 'strong' definition of transformation, which is advanced by other authors. This approach sees transformational adaptation concerned with the wider and less visible root causes of vulnerability, as contained within social, cultural, economic, and political spheres. If vulnerability is framed as an outcome of wider social processes that shape how people see themselves and others, how they construct their relationships with the environment, and how they play a role in political processes, than adaptation becomes concerned with much broader, societal-construction issues, rather than specific climate impacts[11]. Transformational adaptation is then an action of shifting the way people and organisations behave and perceive their place in the world, and typically requires changes to entrenched systems that are maintained and protected by powerful interests[12,13].

From this knowledge base, the *Fifth Assessment Report* synthesizes *potential* criteria of what would constitute transformational adaptation (whilst emphasizing the current complexity and ambiguity in the definition): significant increase in the magnitude of an adaptation response; introduction of new technologies or practices; formation of new structures of systems of governance; geographic shifts in the location of activities;

normative elements involving changes in desired values, objectives, and perceptions of problems.

Transformational adaptation then is currently a difficult concept to operationalize. Does it require taking the adaptation actions that are currently being implemented and significantly increasing their level of ambition and application? Or does it require a focus on changing the ways people interact with and perceive each other, as well as natural systems? As occurred (and is still occurring) with the broader concept of adaptation, it is reasonable to expect that our understanding of transformational adaptation will evolve as increased academic and practicing efforts are undertaken.

Despite the lack of clarity around the concept, it may be useful to consider current adaptation efforts through a transformational lens, to determine if certain aspects suggest an alignment with current thinking regarding transformational adaptation. Such alignment could be suggested by adaptation efforts that are being pursued at much larger scales, those that are introducing practices, technologies, and ways of governance to new areas or systems, and those that are acting to redefine relationships between and amongst humans and nature, however slight this is.

Vulnerability

The *Fifth Assessment Report* follows the lead of the IPCC *Special Report on Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation* (SREX) in adopting a broadened definition of vulnerability that includes the wider social and economic drivers of vulnerability. In the latest assessment report, vulnerability is defined as[14]:

> *The propensity or predisposition to be adversely affected. Vulnerability encompasses a variety of concepts including sensitivity or susceptibility to harm and lack of capacity to cope and adapt.*

The earlier IPCC definition considered vulnerability as the (emphasis added)[15]:

> *Degree to which a system is susceptible to, and unable to cope with, adverse effects of climate change, including climate variability and extremes. Vulnerability is a function of the character, magnitude, and rate of climate change and variation to which a system is exposed, its sensitivity, and its adaptive capacity.*

Since the *Forth Assessment Report*, the understanding of vulnerability has acquired increased complexity as a multidimensional concept, with adaptation goals often expressed in a framework of increasing resilience. As stated in AR5, this framing in terms of resilience "*encourages consideration of broad development goals, multiple objectives, and scales of adaptation, and often better captures the complex interactions between human societies and their environment*"[16]. It casts vulnerability towards considering the social construction of risks through socio-economic drivers.

The concept of exposure, removed from the *Fifth Assessment Report* definition, is now considered within the wider conception of risk. As noted by the *Fifth Assessment Report*, the recent literature highlights that risks from climate change are not simply a result of

externally generated climate events, but rather the result of "*complex interactions among societies or communities, ecosystems, and hazards arising from climate change*"[17]. The chapter considering emergent risks and key vulnerabilities makes a distinction between exposure to physical climatic impacts, and the sensitivity and capacity of people and systems. The characteristics of climate change and its effects on geophysical systems are considered as hazards, whilst in contrast, vulnerability refers "*primarily to characteristics of human or socio-ecological systems exposed to hazardous climatic or non-climatic events and trends*"[18].

This is not to say that physical hazards and impacts are no longer an important consideration. They still feature as a key adaptation question, being that of 'adapting to what'. Vulnerability however, as now conceptualized, is predominantly concerned with the social and economic drivers that make humans and natural systems susceptible to, and determine the capacity to cope and adapt to, these physical hazards and impacts.

The broadening of focus to consider the social and economic drivers of vulnerability can be seen in approaches to adaptation assessments. The standard approach, and that which has dominated previous IPCC reports, has been the climate scenario-driven impacts-based approach, where focus is primarily on the biophysical climate change impacts to which people and systems need to adapt. These have been described as top-down approaches, due to their use of downscaled global climate models to consider local biophysical climate impacts. Emerging assessment approaches see greater focus placed on the social and economic factors that make people vulnerable, utilizing bottom-up, stakeholder participant methods to gather this insight. As noted by the *Fifth Assessment Report*, most adaptation assessments include both top-down and bottom-up approaches, and an assessment of both physical climate change risks and the factors that make people and natural systems vulnerable to these risks[19]. Hence, adaptation reasoning has not done away with considerations of physical hazards and impacts, but rather brought to the fore of considerations the social and economic factors that induce vulnerability to these hazards as key when determining adaptation needs and responses.

2. Adaptation reasoning at the Adaptation Fund

The evolution of adaptation reasoning at the Adaptation Fund has developed through two key tracks:

1. Efforts to clarify what is meant by the term *concrete adaptation projects and programmes*
2. The establishment of the Fund's *Results Based Management* approach and associated strategic results framework

A brief overview of these two key tracks is provided to contextualize the Fund's adaptation reasoning, both to identify the origins of its reasoning and to highlight points of convergence/divergence from the reasoning adopted by other implementing organizations.

Concrete adaptation projects and programmes

Decision 10/CP.7 decided that an adaptation fund was to be established to finance concrete adaptation projects and programmes in developing country Parties that were Parties to the Kyoto Protocol, marking the first time the concept of concrete adaptation was embodied in a Convention decision[20]. The third session of the Conference of the Parties serving as the Meeting of the Parties to the Kyoto Protocol reaffirmed this mandate, with Decision 1/CMP.3 stating the Adaptation Fund was to finance concrete adaptation projects and programmes that were country driven and based on the needs, views, and priorities of the eligible Parties[21].

At the third meeting of the Adaptation Fund Board, a *Draft Strategic Priorities, Policies and Guidelines* document was approved, and it was decided to forward the document to the fourth Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol[22]. Contained within this document, and adopted by Decision 1/CMP.4, were the strategic priorities of the Adaptation Fund, again reaffirming the focus on concrete adaptation projects and programmes;

> a) Assist developing country Parties to the Kyoto Protocol that are particularly vulnerable to the adverse effects of climate change in meeting the costs of adaptation
>
> b) Finance **concrete adaptation projects and programmes** that are country driven and are based on the needs, views and priorities of eligible Parties

In its first meeting, *the Project and Programme Review Committee* (PPRC) identified issues that had arisen during the screening/technical review process of submitted projects, one of which was the lack of guidance regarding what was meant by 'concrete' adaptation projects and programmes[23]. A short review of the history and usage of the term was prepared by the Secretariat, determining that there was no agreed definition of *Concrete Adaptation Projects*. The review noted that a substantial interpretation of *concrete,* where

project activities are targeted to bring about positive change in a specific, pre-defined situation, would be a distinctive feature of projects within Stage III of the three-staged approach to adaptation funding introduced in Decision 11/CP.1. Whereas Stage I and II focus on planning and capacity-building, Stage III projects involve measures to facilitate, rather than plan or prepare, adequate adaptation[24].

At the twelfth meeting of the Adaptation Fund Board, it was requested of the Secretariat to present a preliminary draft of the revisions that might be required to the operational policies and guidelines[25], of which Paragraph 10 dealt with the definition of adaptation projects and programmes[26];

> *A concrete adaptation project is defined as a set of activities aimed at addressing the adverse impacts of and risks posed by climate change. Adaptation projects can be implemented at the community, national, and trans boundary level. Projects concern discrete activities with a collective objective(s) and concrete outcomes and outputs that are more narrowly defined in scope, space, and time.*

Decision B.14/26 saw the Board refer Paragraph 10 to the PPRC for further consideration, due to the issues raised regarding the lack of specificity regarding concrete adaptation projects and programmes[27]. At the fifteenth meeting of the Board, it was decided to approve the amendments to the operational policies and guidelines, one of which contained an altered definition of adaptation projects and programmes[28]:

> *A concrete adaptation project/programme is defined as a set of activities aimed at addressing the adverse impacts of and risks posed by climate change.* ***The activities shall aim at producing visible and tangible results on the ground by reducing vulnerability and increasing the adaptive capacity of human and natural systems to respond to the impacts of climate change, including climate variability.*** *Adaptation projects/programmes can be implemented at the community, national, regional and transboundary level.* ***Projects/programmes concern activities with a specific objective(s) and concrete outcome(s) and output(s) that are measureable, monitorable, and verifiable****.*

The bolded text highlights the additions to the definition of concrete adaptation projects and programmes, and aligns with the distinction between planning and preparation efforts, and specific measures, which the review prepared by the Secretariat noted. These additions further clarify that the purpose of the Adaptation Fund is to focus on adaptation activities that produce '*visible and tangible results on the ground*', as distinct to a focus on improving the enabling environment, which is often the focus of other institutions working in the adaptation sphere (discussed below).

Strategic Results Framework

Whilst the definition of concrete adaptation projects/programmes determines the type of adaptation efforts that are to be of focus, it does not establish how the projects/programmes contribute to adaptation goals. A common approach is the development of a logical framework.

In approving the Operational Policies and Guidelines for Parties to Access Resources from the Adaptation Fund at the seventh meeting of the Adaptation Fund Board[29], the Board committed itself to developing a Results-Based Management framework to support the strategic priorities, policies and guidelines of the Adaptation Fund. A framework was introduced at the ninth Board meeting, establishing a goal and impact for the Fund, in addition to objectives and outcomes[30]. The framework built upon the already agreed upon priorities for the Fund contained within the *Strategic Priorities, Policies and Guidelines* document, with respect to the financing of concrete adaptation projects and programmes in developing countries particularly vulnerable to the impacts of climate change. Notably, the framework drew upon definitions of adaptation and vulnerability in establishing objectives, referencing those used by Working Group II of the Fourth Assessment Report of the IPCC.

Following revisions, Decision B.10/13 adopted the approach implementing results based management, in addition to the Strategic Results Framework for the Adaptation Fund[31]. The Strategic Results Framework is included below.

As illustrated by the framework, the outcomes of the Fund and outputs sought are not solely focused on concrete adaptation activities. Several outputs specified within the framework concern activities focused on developing the enabling environment – for example, the undertaking of risk and vulnerability assessments (Output 1), participation in adaptation and risk reduction awareness activities (Output 3), and the improved integration of climate-resilience strategies into country development plans (Output 7). As such, whilst recognizing the mandate of the Adaptation Fund as specified by Convention and Protocol decisions, there is also recognition of the importance of a strong enabling environment in supporting concrete adaptation projects and programmes.

Table 1 – Adaptation Fund Strategic Results Framework

Expected results	Indicators
Goal: Assist developing-country Parties to the Kyoto Protocol that are particularly vulnerable to the adverse effects of climate change in meeting the costs of concrete adaptation projects and programmes in order to implement climate-resilient measures.	
Impact: Increased resiliency at the community, national, and regional levels to climate variability and change.	
Outcome 1: Reduced exposure to climate-related hazards and threats	1. Relevant threat and hazard information generated and disseminated to stakeholders on a timely basis
Output 1.1: Risk and vulnerability assessments conducted and updated	1.1. No. of projects/programmes that conduct and update risk and vulnerability assessments (by sector and scale)
	1.2 No. of early warning systems (by scale) and no. of beneficiaries covered

Output 1.2: Targeted population groups covered by adequate risk reduction systems	1.2.1. Percentage of target population covered by adequate risk-reduction systems
Outcome 2: Strengthened institutional capacity to reduce risks associated with climate-induced socioeconomic and environmental losses	2.1. Capacity of staff to respond to, and mitigate impacts of, climate-related events from targeted institutions increased
Output 2: Strengthened capacity of national and sub-national centres and networks to respond rapidly to extreme weather events	2.1.1. No. of staff trained to respond to, and mitigate impacts of, climate-related events (by gender) 2.1.2 No. of targeted institutions with increased capacity to minimize exposure to climate variability risks (by type, sector and scale)
Outcome 3: Strengthened awareness and ownership of adaptation and climate risk reduction processes at local level	3.1. Percentage of targeted population aware of predicted adverse impacts of climate change, and of appropriate responses
	3.2. Percentage of targeted population applying appropriate adaptation responses
Output 3: Targeted population groups participating in adaptation and risk reduction awareness activities	3.1 No. of news outlets in the local press and media that have covered the topic
Outcome 4: Increased adaptive capacity within relevant development sector services and infrastructure assets	4.1. Responsiveness of development sector services to evolving needs from changing and variable climate
	4.2. Physical infrastructure improved to withstand climate change and variability-induced stress
Output 4: Vulnerable development sector services and infrastructure assets strengthened in response to climate change impacts, including variability	4.1.1. No. and type of development sector services modified to respond to new conditions resulting from climate variability and change (by sector and scale)
	4.1.2. No. of physical assets strengthened or constructed to withstand conditions resulting from climate variability and change (by sector and scale)
Outcome 5: Increased ecosystem resilience in response to climate change and variability-induced stress	5. Ecosystem services and natural resource assets maintained or improved under climate change and variability-induced stress
Output 5: Vulnerable ecosystem services and natural resource assets strengthened in response to climate change impacts, including variability	5.1. No. of natural resource assets created, maintained or improved to withstand conditions resulting from climate variability and change (by type and scale)
Outcome 6: Diversified and strengthened livelihoods and sources of income for vulnerable people in targeted areas	6.1 Percentage of households and communities having more secure access to livelihood assets
	6.2. Percentage of targeted population with sustained climate-resilient alternative livelihoods

Output 6: Targeted individual and community livelihood strategies strengthened in relation to climate change impacts, including variability	6.1.1.No. and type of adaptation assets (tangible and intangible) created or strengthened in support of individual or community livelihood strategies
	6.2.1. Type of income sources for households generated under climate change scenario
Outcome 7: Improved policies and regulations that promote and enforce resilience measures	7. Climate change priorities are integrated into national development strategy
Output 7: Improved integration of climate-resilience strategies into country development plans	7.1. No. of policies introduced or adjusted to address climate change risks (by sector)
	7.2. No. of targeted development strategies with incorporated climate change priorities enforced

Alignment of the Adaptation Fund's adaptation reasoning

Given the Strategic Results Framework drew upon definitions of adaptation and vulnerability as contained within the *Fourth Assessment Report*, and noting that those definitions have undergone changes in the *Fifth Assessment Report*, a prudent question is whether the Adaptation Fund's adaptation reasoning (as embodied in the Strategic Results Framework) aligns with current thinking (as embodied within the IPCC *Fifth Assessment Report*). As a quick summary, adaptation in the *Fifth Assessment Report* focuses on a sense of purposefulness to adaptation actions, and emphasizes incremental and transformational adaptation. With respect to vulnerability, its definition has been intentionally broadened to focus on the social and economic drivers that interact to create vulnerability, with less emphasis on the physical hazards and impacts of climate change.

Even with the changes to key definitions, the Adaptation Fund's approach is still in alignment with current thinking. It performs strongly in the aspect of purposefulness, given its focus on financing the full-adaptation cost of projects, and its mandate to finance concrete projects and programmes. With respect to the broadened definition of vulnerability, the Fund's mandate to finance concrete adaptation projects and programmes (which typically address the risk from physical hazards and impacts) is not at the expense of considering the wider social and economic drivers of vulnerability - note the above discussion identifying outcomes and outputs that are focused on strengthening the enabling environment.

The question of alignment with the emerging concept of transformational adaptation is somewhat complex, due to;

- Clear, operational definitions of transformational adaptation (and hence the ability to decisively say whether actions are or are not transformational) being currently non-existent, and

- The Fund's goal of assisting with the implementation of climate-resilient measures, and the sought impact of increasing resiliency to climate variability and change

The issues arising from a lack of clear, operational definitions of transformational adaptation are self-evident. The issues arising from the pursuit of increasing resiliency are less so, but arise from how resilience is generally conceptualized and hence are not unique to the Adaptation Fund.

Resilience, as defined by Working Group II of IPCC's *Fifth Assessment Report*, is[32];

> *The capacity of social, economic, and environmental systems to cope with a hazardous event or trend or disturbance, responding or reorganizing in ways that maintain their essential function, identity, and structure, while also maintaining the capacity for adaptation, learning, and transformation.*

The focus on the system maintaining its "*essential function, identity, and structure*" aligns with the outcomes sought by incremental adaptation, and not those of transformational adaptation, which seeks to alter these fundamental system attributes. In fairness, the definition does contain references to a resilient system maintaining the ability to adapt, learn, and transform. However, there is arguably currently a tension between the support for both incremental and transformational adaptation that is yet to be reconciled. It may be a question of the timeframe, where a resilient system, in the short-term, is able to respond to disturbances to maintain its essential function, identity, and structure, while in the long-term, the resiliency of the system is defined by its ability to adapt, learn, and transform. Approached in this way, aligning the Fund's pursuit of resiliency with the concept of transformational adaptation can be achieved through actions that allow systems to respond to disturbances and maintain their fundamental attributes in the short-term, whilst not foreclosing, or indeed establishing the support structures (the enabling environment) for, the ability of that system to transform over the long-term. Such a conception suffers from the same lack of operational definitions of transformational adaptation, however it does not conceptually exclude the actions financed by the Fund from contributing to this emerging area of adaptation practice.

3. Adaptation reasoning within the wider development community

This section provides a brief overview of how adaptation is approached within the wider development community, focusing on those organizations with developed reasoning linking their programme activities to adaptation goals.

Green Climate Fund

The Governing instrument for the fund, annexed to Decision 3/CP.17 of the UNFCCC[33], establishes that (emphasis added);

> *In the context of sustainable development, the Fund will promote the paradigm shift towards low-emission and climate-resilient development pathways by providing support to developing countries to limit or reduce their greenhouse gas emissions and to adapt to the impacts of climate change, taking into account the needs of those developing countries particularly vulnerable to the adverse effects of climate change.*

The Fund's initial investment guidelines[34] contains paradigm shift as a criteria, defined as the degree to which proposed activities can catalyse impact beyond a one-off project or programme investment. This is further elaborated as activities with:

- The potential for scaling-up and replication
- The potential for knowledge and learning
- The contribution to the creation of an enabling environment
- The contribution to the regulatory framework and policies

The GCF Board adopted the adaptation logic model included below[35]. When considering the outcomes at the project/programme level, there is an exhibited focus on developing enabling environments – strengthening the institutional and regulatory systems for planning and development, increasing the use of climate information in decision-making, and awareness building. Structural adaptation measures are considered in a sub-indicator of the adaptive capacity and exposure reduction outcome, noting the number of structural measures established/strengthened disaggregated by category and hazard. Further, at the fund-level, structural measures are considered throughout the possible initial performance indicators for each result.

At a portfolio level, funding between mitigation and adaptation activities is to occur with a 50/50 split (over time).

Table 2 – Green Climate Fund initial adaptation logic model

Levels	Results
Objective	Increased climate-resilient sustainable development
Fund-level impacts	Increased resilience and enhanced livelihoods of the most vulnerable people, communities, and regions
	Increased resilience of health and well-being, and food and water security
	Increased resilience of infrastructure and the built environment to climate change
	Improved resilience of ecosystems and ecosystem services
Project/Programme Outcomes	Strengthened institutional and regulatory systems for climate-responsive planning and development
	Increased generation and use of climate information in decision-making
	Strengthened adaptive capacity and reduced exposure to climate risks
	Strengthened awareness of climate threats and risk-reduction processes

Swedish International Development Corporation (SIDA)

As the agency pursuing government development objectives, SIDA's high-level strategic direction is established in Sweden's Aid Policy Framework[36]. Sub-objective 3 of the Framework concerns limiting climate impacts and developing greater resilience to environmental impacts, climate change, and natural disasters.

The Framework does not explicitly address adaptation, instead approaching from a disaster, resiliency, and capacity perspective. Further, there is a mixed-approach in terms of efforts directed towards structural adaptation measures, and efforts to enhance the enabling environment. With respect to disasters, measures are called for to reduce the risk of negative impacts to human life, social structures, and the environment – areas in which structural measures can be deployed. Increasing resiliency is framed in terms of integrating climate aspects into national planning and monitoring activities, in addition to strengthening the capacity of environmental management institutions.

United States Agency for International Development (USAID)

The Presidential Global Climate Change Initiative addresses three pillars: (1) clean energy, (2) sustainable landscapes, and (3) adaptation. Through its Climate Change & Development Strategy, USAID is contributing to the third pillar.

Strategic Objective 2 of the strategy calls to *increase* [the] *resilience of people, places, and livelihoods through investments in adaptation*[37]. This objective is to be achieved through a focus on three intermediate results, with associated illustrative measures of success (for the period 2012-2016), which will achieve long-term goals (beyond 2016). These results, measures, and goals are included below.

The results and long-term goals to be pursued to achieve the objective indicate a focus on enhancing the enabling environment. There is a particular focus on developing information and analysis capabilities and their integration with decision-making, so as to establish credible governance systems and encourage private sector participation in climate-resilient development. In developing the enabling environment, it is reasoned that the private sector will be willing to respond to adaptation needs.

Table 3 – USAID strategic framework

<table>
<tr><td colspan="3">Strategic Objective 2: Increase resilience of people, places, and livelihoods through investments in adaptation</td></tr>
<tr><td rowspan="3">Intermediate results</td><td>Improve access to science and analysis for decision-making</td><td rowspan="3">Illustrative measures of success:
Increased number of institutions with improve capacity for adaptation planning and response
Decision makers develop greater access to and improved capability to utilize climate data and forecasting
Number of partner country scientists working in climate change-related fields increased
Increased engagement of vulnerable stakeholders in climate change responses</td></tr>
<tr><td>Establish effective governance systems</td></tr>
<tr><td>Identify and take actions that increase climate resilience</td></tr>
<tr><td rowspan="5">Long-term goals</td><td colspan="2">Increased partner country investments in climate-resilient development in key economic sectors</td></tr>
<tr><td colspan="2">Reduced economic and social losses from climate variability and change</td></tr>
<tr><td colspan="2">Climate change planning and decision making in partner countries is inclusive and transparent and responds to the needs of its citizens</td></tr>
<tr><td colspan="2">Actions to build climate resilience scaled up from pilot efforts to systemic adoptions</td></tr>
<tr><td colspan="2">Private sector incentivized to invest in climate resilient growth</td></tr>
</table>

International Climate Fund (ICF)

The ICF is the primary channel of UK climate change finance, being a high-level, cross-departmental fund with an operational timespan from 2011-2016. The Fund supports climate change action according to three priority areas, across five activities, within three thematic areas, as outlined below.

Table 4 – International Climate Fund strategic framework

Priority Areas				
Demonstrate that building low carbon, climate resilient growth at scale is feasible and desirable	Support the negotiations, particularly through support for adaptation in poor countries and building an effective international architecture	Drive innovation and new ideas for action, and create new partnerships with the private sector		
Activities				
Build global knowledge and evidence that low carbon, climate resilient development supports growth and reduces poverty	Develop, pilot and scale up low carbon, climate resilient programs	Support country level action	Build an enabling environment for private sector investment	Mainstream climate change into UK, EU and other development assistance
Thematic Areas				
Adaptation	Low carbon development	Forestry		

The Fund's ambition to enable a transformed pattern of development that is low carbon and climate resilient integrates mitigation and adaptation priorities into crosscutting priority areas, making it challenging to extricate the logic chain of adaptation reasoning for the Fund. Its high-level activity areas demonstrate a diversified approach, with efforts to develop enabling environments through knowledge and capacity building, as well as more concrete actions to pilot and scale up low carbon, climate resilient programs.

Reflecting the level of ambition and crosscutting nature of priorities, the Fund's theory of transformational change[38] (below) is a high-level overview of the drivers, mechanisms, and enablers necessary to achieve its impacts, rather than a specified logic chain. It does however indicate the importance the Fund places on the enabling environment within which adaptation activities are implemented, highlighting the influence of political will and local ownership on the transformation pathways to achieving low carbon and climate resilient development.

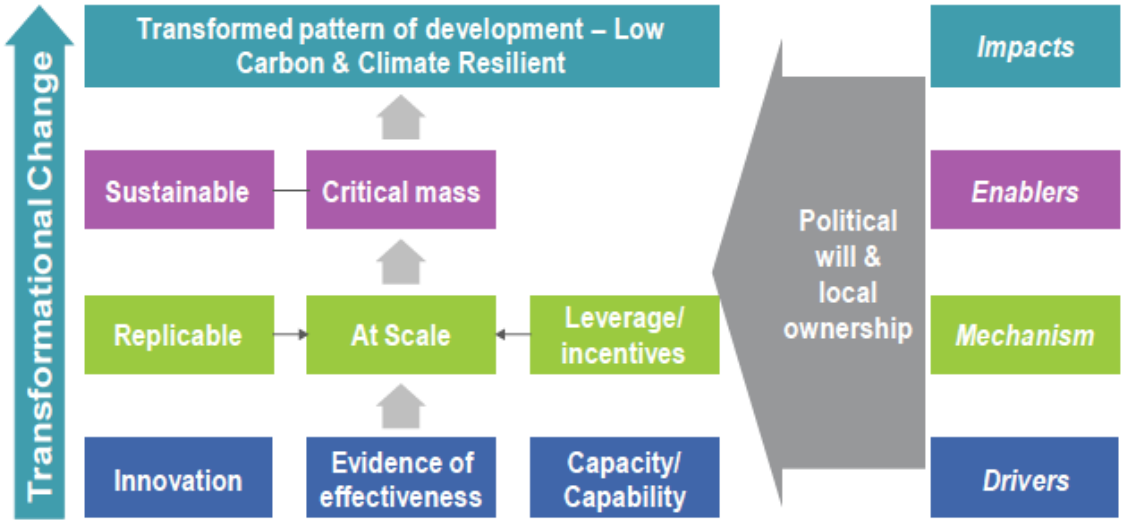


Figure 1 – International Climate Fund's theory of transformation change

Pilot Program for Climate Resilience (PPCR) – Strategic Climate Fund

A program under one of two Climate Investment Funds (CIFs) operated by the World Bank Group, the PPCR is to:

1. Provide programmatic finance for country-led national climate resilient development plans
2. Provide lessons that might be taken up by countries, the development community, and the future climate change regime, including the Adaptation Fund
3. Be complementary to existing sources of adaptation funding and supportive of the evolving operation of the Adaptation Fund
4. Pilot and demonstrate ways to integrate climate risk and resilience into core development planning

The logical framework[39] underpinning these objectives, having been revised based on first-hand experiences of the countries and multilateral development banks involved, is below. It extends beyond that for the PPCR, to outline the outcomes of the CIF portfolio

as a whole, as well as the outcomes of the Strategic Program for Climate Resilience (SPCR).

Similar to others, the PPCR logical framework indicates an approach focused on the enabling environment, with some broad considerations of structural activities. The capacity for climate information generation and management, and its incorporation into decision-making through improved institutional frameworks and planning activities is emphasized at the country level. Notably, sector specific activities are highlighted at the project/program level, with outcomes related to climate resilient agriculture and water supply, and physical infrastructure.

Table 5 – Pilot Programme for Climate Resilience logical framework

CIF Outcome	• Improved climate resilient development
SPCR Objectives	• Increased resilience of households, communities, businesses, sectors and society to climate variability and climate change • Strengthened climate responsive development planning
SPCR Outcomes	• Adaptive capacities strengthened • Institutional framework improved • Climate information in decision-making routinely applied • Sector planning, and regulation for climate resilience improved • Climate responsive investment approaches identified and implemented
PPCR Outcomes	• Climate resilience into development planning of key vulnerable sectors mainstreamed • Capacity for climate resilience strengthened • Coastal climate resilient water supply improved • Climate data and information management improved • Climate resilient agriculture and food security promoted • Roads and bridges management and maintenance improved

Global Environment Facility – Least Developed Countries Fund and Special Climate Change Fund

The Global Environment Facility (GEF) administers the Least Developed Countries Fund (LDCF) and the Special Climate Change Fund (SCCF), which were established under the Conference of the Parties to the UNFCCC. The LDCF was established to finance the preparation and implementation of National Adaptation Programs of Actions (NAPAs) for least developed countries, whilst the SCCF was established to support adaptation and technology transfer in all developing country parties to the UNFCCC.

At the sixteenth meeting of the LDCF/SCCF Council in 2014, the Council endorsed a new programming strategy on adaptation to climate change for both funds[40]. The new programming strategy introduced a revised results framework for the GEF adaptation fund, structured around three objectives. The revised results framework is included below.

In considering the revised results framework, it is instructive to look both to the strategic programming pillars of the GEF Adaptation Program, as well as its mandate under the UNFCCC. The first strategic programming pillar seeks to mainstream adaptation across core development sectors, whilst the second is to prepare countries for long-term adaptation. In line with this, and as stated in its programming strategy, the GEF strives to incorporate adaptation projects and programs into broader development efforts, rather than financing isolated adaptation actions[41]. Objective 3 of the framework represents the most significant departure from the previous results framework, and is intended to reflect the GEF's mandate under the UNFCCC to support the preparation of the national adaptation plan (NAP) process. Generally, the new framework has been designed to be broadly consistent with the results frameworks and logic models of similar funds, including the Adaptation Fund, the Pilot Program for Climate Resilience, and the Green Climate fund[42].

Table 6 – Least Developed Country Fund and Special Climate Change Fund Results Framework

Goal	Increasing resilience to the adverse impacts of climate change in vulnerable developing countries, through both near- and long-term adaptation measures in affected sectors, areas and communities; leading to a reduction of expected socio-economic losses associated with climate change and variability
Objective 1	Reduce the vulnerability of people, livelihoods, physical assets and natural systems to the adverse effects of climate change
Indicator 1	Number of direct beneficiaries
Outcome 1.1	***Vulnerability of physical assets and natural systems reduced***

Indicator 2	Type and extent of assets strengthened and/or better managed to withstand the effects of climate change
Outcome 1.2	***Livelihoods and sources of income of vulnerable populations diversified and strengthened***
Indicator 3	Population benefitting from the adoption of diversified, climate-resilient livelihood options
Outcome 1.3	***Climate-resilient technologies and practices adopted and scaled up***
Indicator 4	Extent of adoption of climate-resilient technologies/practices
Objective 2	Strengthen institutional and technical capacities for effective climate change adaptation
Outcome 2.1	**Increased awareness of climate change impacts, vulnerability and adaptation**
Indicator 5	Public awareness activities carried out and population reached
Outcome 2.2	**Access to improved climate information and early-warning systems enhanced at regional, national, sub-national and local levels**
Indicator 6	Risk and vulnerability assessments, and other relevant scientific and technical assessments carried out and updated
Indicator 7	Number of people/geographical area with access to improved, climate information services
Indicator 8	Number of people/geographical area with access to improved, climate-related early-warning information
Outcome 2.3	**Institutional and technical capacities and human skills strengthened to identify, prioritize, implement, monitor and evaluate adaptation strategies and measures**
Indicator 9	Number of people trained to identify, prioritize, implement, monitor and evaluate adaptation strategies and measures
Indicator 10	Capacities of regional, national and sub-national institutions to identify, prioritize, implement, monitor and evaluate adaptation strategies and measures
Objective 3	Integrate climate change adaptation into relevant policies, plans and associated processes

Outcome 3.1	**Institutional arrangements to lead, coordinate and support the integration of climate change adaptation into relevant policies, plans and associated processes established and strengthened**
Indicator 11	Institutional arrangements to lead, coordinate and support the integration of climate change adaptation into relevant policies, plans and associated processes
Outcome 3.2	**Policies, plans and associated processes developed and strengthened to identify, prioritize and integrate adaptation strategies and measures**
Indicator 12	Regional, national and sector-wide policies, plans and processes developed and strengthened to identify, prioritize and integrate adaptation strategies and measures
Indicator 13	Sub-national plans and processes developed and strengthened to identify, prioritize and integrate adaptation strategies and measures
Outcome 3.3	**Systems and frameworks for the continuous monitoring, reporting and review of adaptation established and strengthened**
Indicator 14	Countries with systems and frameworks for the continuous monitoring, reporting and review of adaptation

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