AFB/EFC.30/10
October 2022
Ethics and Finance Committee

Thematic Evaluation of the Fund's Approach to Support Innovation for Climate Change Adaptation

Technical Evaluation Reference Group
ADAPTATION FUND

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AF-TERG Chair: Debbie Menezes

Team members: Claudio Volonte (focal point), Martin Rokitzki, Mariana Vidal Merino, Caroline Marie Holo

AF-TERG Secretariat Coordinator: Dennis Bours

The Adaptation Fund (the Fund) was established through decisions by the Parties to the United Nations Framework Convention for Climate Change and its Kyoto Protocol to finance concrete adaptation projects and programmes in developing countries that are particularly vulnerable to the adverse effects of climate change. At the Katowice Climate Conference in December 2018, the Parties to the Paris Agreement decided that the Fund shall also serve the Paris Agreement. The Fund supports country-driven projects and programmes, innovation, and global learning for effective adaptation. All of the Fund's activities are designed to build national and local adaptive capacities while reaching and engaging the most vulnerable groups, and to integrate gender consideration to provide equal opportunity to access and benefit from the Fund's resources. They are also aimed at enhancing synergies with other sources of climate finance, while creating models that can be replicated or scaled up. www.adaptation-fund.org

The Technical Evaluation Reference Group of the Adaptation Fund (AF-TERG) is an independent evaluation advisory group accountable to the Fund Board. It was established in 2018 to ensure the independent implementation of the Fund's evaluation framework, which will be succeeded by the new evaluation policy from October 2023 onwards. The AF-TERG, which is headed by a chair, provides an evaluative advisory role through performing evaluative, advisory, and oversight functions. The group is comprised of independent experts in evaluation, called the AF-TERG members. A small secretariat provides support for implementation of evaluative and advisory activities as part of the work programme.

While independent of the operations of the Fund, the AF-TERG aims to add value to the Fund's work through independent monitoring, evaluation, and learning. www.adaptation-fund.org/about/evaluation/

AF-TERG, 2022. Thematic Evaluation of the Fund's Approach to Support Innovation for Climate Change Adaptation. AF-TERG, Washington, DC.

This report was finalized in September 2022.

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Acronyms and abbreviations

AF-TERG	Adaptation Fund Technical Evaluation Reference Group
The Board	Adaptation Fund Board
AFB Secretariat	Adaptation Fund Board Secretariat
AFCIA	Adaptation Fund Climate Innovation Accelerator
BNP Paribas	Banque Nationale de Paris Paribas (Bank)
CCA	Climate change adaptation
CIF	Climate Investment Funds
CPI	Climate policy initiative
CSO	Civil society organization
CSR	Corporate Social Responsibility
CTCN	Climate Technology Center and Network
DFI	Development Finance Institution
EE	Executing Entity
EFC	Ethics and Finance Committee
EIT	European Institute of Innovation and Technology
EIT Climate-KIC	European Institute of Innovation and Technology's Climate Knowledge and Innovation Community
ER	Expected result
ESG	Environmental and Social Governance
EU	European Union
The Fund	Adaptation Fund
GCF	Green Climate Fund
GCIP	Global Cleantech Innovation Programme
GEF	Global Environment Facility
GIF	Global Innovation Fund
GRP	Global Resilience Partnership
HR	Human resources
ICCCAD	International Centre for Climate Change and Development
IE	Implementing entity (incl. MIE, RIE and NIE)
IFAD	International Fund for Agricultural Development
IFC	International Finance Corporation
IP	Implementation plan
IPCC	Intergovernmental Panel on Climate Change
KfW	Kreditanstalt für Wiederaufbau (Bank)
MEL	Monitoring, evaluation and learning
MFI	Monetary Finance Institution

MIE	Multilateral implementing entity
MTS	Medium-Term Strategy
NGO	Non-governmental organization
NIE	National implementing entity
OECD	Organisation for Economic Co-operation and Development
PFG	Project formulation grant
PPP	Public–private partnership
PPRC	Project/Programme Review Committee
REI	Regional implementing entity
R&D	Research and development
SF	Strategic focus
SDGs	Sustainable Development Goals
SGP	Small grants programme
SME	Small and Medium-Sized Enterprise
SRF	Strategic results framework
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNIDO	United Nations Industrial Development Organization
USAID	U.S. Agency for International Development
WAI	We are Innovation (BNP Paribas)
WWF	World Wildlife Fund

Board decision after recommendation of the EFC

Having considered the recommendation of the Ethics and Finance Committee (the EFC), the Adaptation Fund Board (the Board) decided:

(a) To take note of the key findings of the thematic evaluation of the Adaptation Fund's experience with innovation conducted by the Technical Evaluation Reference Group of the Adaptation Fund (AF-TERG) and contained in document AFB/EFC.30/10, particularly areas of improvement, in informing the overall strategic direction and level of ambition of future work on innovation supported by the Adaptation Fund;

(b) To request the secretariat:

(i) To prepare a draft management response to the thematic evaluation mentioned above and to submit it to the EFC for comments during the intersessional period between the Board's thirty-ninth and fortieth meetings, and to revise the draft management response taking into account the comments received from the members of the EFC for the consideration of the EFC at its thirty-first meeting;

(ii) To consider, in the context of developing plans for the implementation of future work on innovation, various options, including the three options presented in the evaluation document, as well as a combination of relevant elements thereof, and the cost and resource implications required to implement them, as well as their potential benefits and impacts, and accordingly consider them when developing the implementation plan for the medium-term strategy for 2023–2027 for consideration by the Board;

(c) To consider and approve subsequent topics for AF-TERG thematic evaluations in the context of the three-year work plans of the AF-TERG, including the next AF-TERG work programme for 2025–2027.

(Decision B.39/56)

1. Introduction

The Technical Evaluation Reference Group of the Adaptation Fund (AF-TERG) is an independent evaluation advisory group accountable to the Adaptation Fund Board (hereafter "the Board"), established in 2018 to ensure the independent implementation of the Fund's evaluation framework. The first AF-TERG strategy and work programme was approved intersessionally in June 2020, between the first and second part of its thirty-fifth meeting. Having considered the document AFB/EFC.26.a-26.b/3 and the recommendation by the Ethics and Finance Committee, the Board decided to approve the draft strategy and work programme of the AF-TERG contained in Annex I of the document AFB/EFC.26.a-26.b/3 (Decision B.35.a-35.b/29).

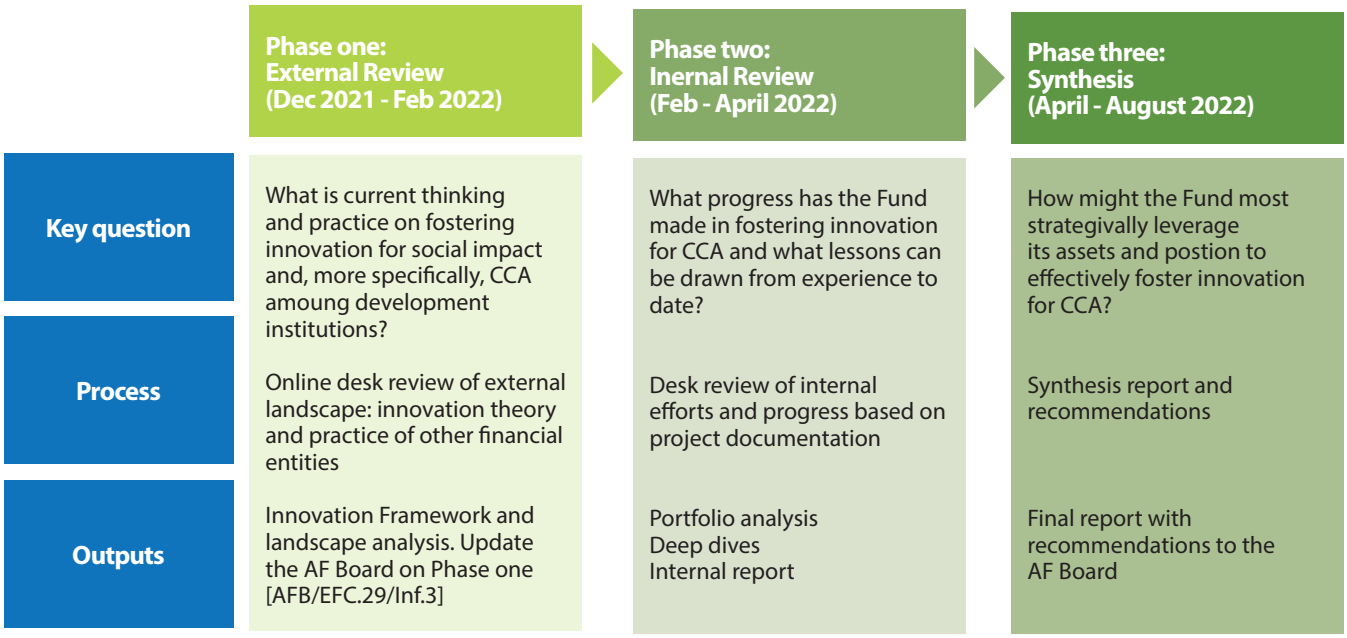
The AF-TERG Strategy and Work-Programme (Workstream 1) focuses on the review and evaluation of the Medium-Term Strategy (MTS), thematic evaluations and the overall model and performance of the Adaptation Fund (hereafter "the Fund"). Thematic evaluations of the Fund's performance will provide perspectives on its core features, such as the country-driven and innovative character of its operations with a view to assessing the potential for scaling up and having a longer-term impact.

Following the AF-TERG Strategy and Work-Programme (Workstream 1), the first thematic evaluation was approved to assess how the concept of innovation is applied by the Fund and to identify examples of innovative climate change actions. The rationale for the evaluation of the use of innovation in the Fund is as follows:

- To identify the potential for innovation in all aspects of the Fund to achieve greater scale and impact given the urgency of climate change adaptation (CCA) actions.
- To provide input to the current discussion on innovation at the Fund and within the CCA community, given (i) the urgency to respond to climate change impacts; (ii) the Adaptation Fund process to develop the next Medium Term Strategy (MTS), which may include (as the previous one did) a focus on innovation and (iii) the need to understand what is working and what is not, to learn to further invest, replicate and scale-up.
- To provide input to the overall evaluation of the Fund.

The evaluation has been implemented in a three-phase process structured around three questions presented in Figure 1.

Figure 1. **Phases for the implementation of the evaluation of innovation**



This report presents the findings of the thematic evaluation of innovation carried out by the AF-TERG. It contains a synthesis of innovation lessons and evidence from the Fund and other institutions that support innovation for development and CCA.

2. A Framework Towards a Common Understanding of Innovation in Adaptation

This section presents the innovation framework used in the subsequent phases of the evaluation. It establishes a common language by identifying key elements and definitions related to innovation that fed into the evaluation design. Rather than adopting a specific definition or categorisation of innovation, this section outlines the conceptual and operational similarities and differences found in the literature.

This section is organised as follows. To define the concept of innovation in the sphere of development and specifically of climate adaptation, section 2.1 elaborates on the interconnections between innovation and climate adaptation. Next, it outlines the different types of innovation to further unpack if and how innovation and adaptation can be meaningfully distinguished in practice (2.2). Sections 2.3 and 2.4 identify typical innovation drivers (motivations and sources) as well as barriers that can hamper innovation performance, respectively. Section 2.5 categorises the range of potential outcomes of innovation. The process of innovation, innovation cycle and related stages are discussed in section 2.6. Last, section 2.7 presents the role, types and characteristics of a range of actors in innovation.

2.1 Defining innovation in climate adaptation - Is adaptation innovative by default?

While the two key concepts at hand – innovation and climate adaptation – are multi-faceted, amorphous and broad concepts, there are significant similarities. Disregarding the sectoral and thematic focus, the majority of definitions of innovation contain the following elements:

- Newness/novelty (also new location);
- Improvement/adjustment; and
- Spread of use, application or practical implementation (scaling-up) (OECD, 2019a)

Adaptation is defined by the IPCC (2014) as 'the process of adjustment to actual or expected climate and its effects. In human systems, adaptation seeks to moderate or avoid harm or exploit beneficial opportunities. In some natural systems, human intervention may facilitate adjustment to the expected climate and its effects'. By looking at the core elements of both definitions, it becomes apparent that the two terms, innovation and adaptation, are interconnected.

Climate change impacts often exceed the existing adaptation capacity of socio-ecological systems. The most recent IPCC report (2022) once again highlights the fact that the adaptation gap exists in all world regions and for all hazard types. To fill the adaptation gap and reduce vulnerability, systems will require novel and improved solutions occurring at a greater scale and faster rate than in the past. Here, innovation can act as a catalyst for

system transition in adaptation processes. Adaptation can be facilitated by innovation in science, technology, culture, policy, and finances, among others.

In order to better target support towards innovation, it will be essential to identify clearly which aspects or actors need to be particularly targeted (in view of innovation support) as opposed to promoting 'just' good practice in bringing about adaptation. In other words: What makes promoting and fostering innovation in adaptation different from promoting non-innovative adaptation? The review will take this into account, particularly looking at institutions that specify the promotion of climate adaptation as an institutional objective.

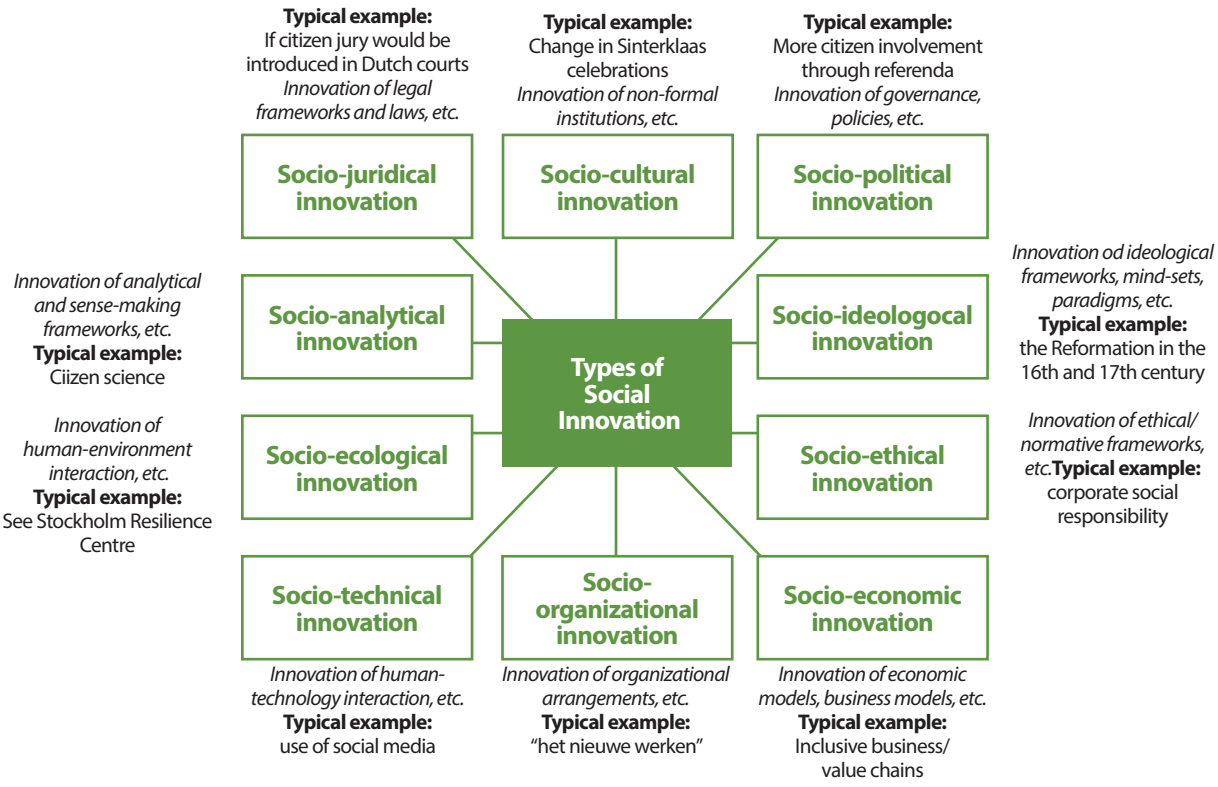
2.2 Types of Innovation

The range of innovation types is generally considered to encompass the following:

- products
- practices
- processes
- services
- technologies
- business models (Edwards-Schachter, 2018)

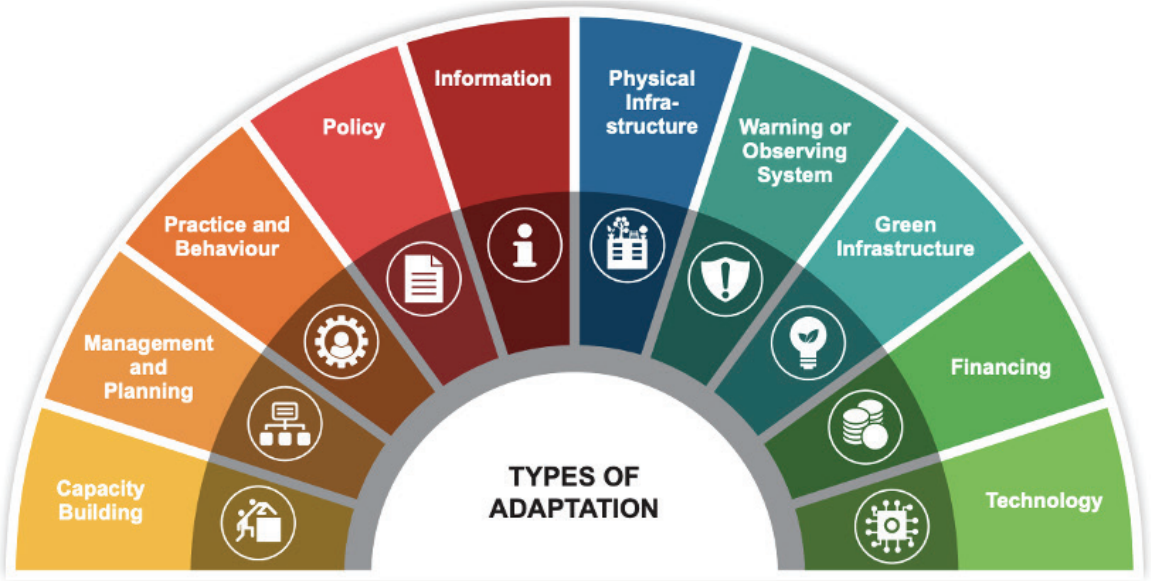
These types are derived from a profit-/ market-focused understanding of innovation (see section 2.5, category A). There is, however, increasing recognition of the relevancy of innovation in view of social and environmental outcomes (see also section 2.5, category B). Each of the above-mentioned types of innovation can potentially feature in both outcome 'spheres'. The types of social innovations cover a wider range (see Figure 2) of societal dimensions, clearly going beyond markets as intervention spaces (e.g., cultural, juridical, ideological, political).

Figure 2. Types of social innovations (source: Wigboldus, 2016)



Similarly to the definitions of adaptation and innovation, there is a substantial overlap between what is considered to be a type of innovation and what is considered to be a type of adaptation (see Figure 3).

Figure 3. Types of adaptation (source: Biagini et al. 2014)



2.3 Drivers, motivation and sources of innovation

Another classifying element of innovation is the type of driver, sometimes referred to as the motivation or source for innovation. Commonly, there are three types of drivers in any innovation process:

- A recognised need

It is important to look at the process or stakeholder group that expresses a need and who supports the identification of such a need.

- A response to the failure of existing systems/ approaches

Loss or damage is a typical outcome of failure in view of 'new' climate risks, e.g. decrease of yield, damage to protecting infrastructure (dykes, river embankments).

- A diffuse quest for (individual or social) improvement

The motivation may be related to private benefits that can be reaped (by innovators, entrepreneurs or businesses) through the commercialisation of the innovation or in the case of social innovation, a motivation of a social group to change the status quo (OECD, 2019b).

2.4 Barriers to innovation

Innovation performance varies depending on sector and type and is influenced by a number of factors, both internal and external and both stimulating and restrictive, which can exert a significant impact on the design, implementation and diffusion of innovation.

Such limiting factors to innovation, also called barriers, obstacles or hindrance factors to innovation, hamper an organisation's innovation process and consequently influence its innovation performance. These barriers may be classified and grouped in different ways into external (or exogenous, which arise when organisations acquire resources or knowledge externally) and internal (or endogenous, generally associated with difficulties in implementing internal changes in their organisational processes) (Hadjimanolis, 1999; Thakur and Hale, 2013; Lewandowska, 2014).

According to Saatçioglu and Özmen (2010) the internal barriers include (i) lack of qualified personnel; (ii) bureaucracy; (iii) lack of research and development, design, test and other technical problems in organisations; (iv) long time for returns from innovation; (v) perception of innovation as risky; (vi) difficulty to control innovation costs; and (vii) finance of innovation. The external barriers include: (i) patent and license policy; (ii) lack of incentives applied by the government; (iii) foreign trade policy; and (iv) competition policy. As expressed in Table 1, the barriers to innovation are classified into (i) economic factors, (ii) knowledge factors, (iii) market factors and (iv) reasons not to innovate (Madeira et al. 2017).

Table 1. Barriers to innovation (source: Madeira et al. 2017)

Barriers to innovation	Factors
Lack of funds within your enterprose or group	Economic Factors
Lack of finance from sources outside your enterprise	
Innovation costs too high	
Lack of qualified personnel	Knowledge Factors
Lack of information on technology	
Lack of information on markets	
Difficulty in finding cooperation partners for innovation	
Market dominated by established enterprises	Market Facors
Uncertain demand for innovative goods or services	
No need due to prior innovations by your enterprose	Reasons for not innovate
No need because of no demand for innovations	

2.5 Outcomes of innovation

The drivers of innovation are closely related to its expected outcomes, which range across a wide spectrum. Outcomes can be divided into improvements that are reflected (A) in financial markets or accounting systems or (B) the ones that are neglected or only partially reflected:

Category A (for-profit, market-focused, mostly private benefits for the innovator and the beneficiary):

- improved product quality
- creation of new markets
- extension of the product range
- reduced labour costs
- improved production processes
- compliance to regulations and laws (e.g. avoiding fines or penalties)
- reduced consumption of materials
- reduced energy consumption
- replacement of products/services

Category B (non-commercial/ not-for-profit, mostly public benefits):

- reduced environmental damage/ pollution
- enhanced social justice
- reduced climate vulnerability
- increased climate resilience
- reduced inequality
- reduced resource use
- improved enabling environments for innovation and adaptation

There is increasingly more attention to innovations that produce category B outcomes, referred to as social innovation, sustainable innovation, green innovation, eco-innovation and responsible innovation.

Given the overall focus of outcomes and benefits promoted by the Fund, the focus of the review will be on category B. Category A will only be considered in cases where there are co-benefits relating to category B. This overlapping area of private and public benefits and hence, the aspects related to public-private partnerships and blending of public and private finance is, however, considered a core review theme and initially identified as a prioritised area of learning.

2.6 The process of innovation

Another way of classifying innovation is to focus on the processes within an innovation, i.e. the steps, stages and cycles. An innovation that pursues Category A outcomes typically follows certain stages (see Figure 4), although these stages vary according to the type of innovation, industry or sector, planned outcome, etc.

The stages and dynamics of the innovation category B process are distinctively different from innovation in category A. Building on the 'adaptive cycle' concept, Figure 5 depicts a social innovation cycle similar to the stages of innovation that would be undertaken in pursuit of Category B outcomes. As opposed to the innovation cycle in Figure 4, Figure 5 better demonstrates the dynamics of social innovation and conceptualises changes as overlapping cyclical processes. The figure illustrates that social innovations are triggered by a desire to satisfy unmet social needs while also demonstrating the non-linearity of social innovation compared to the typical innovation cycle.

Figure 4. Innovation cycle typical for Category A outcomes (source: Dorn, 2021)

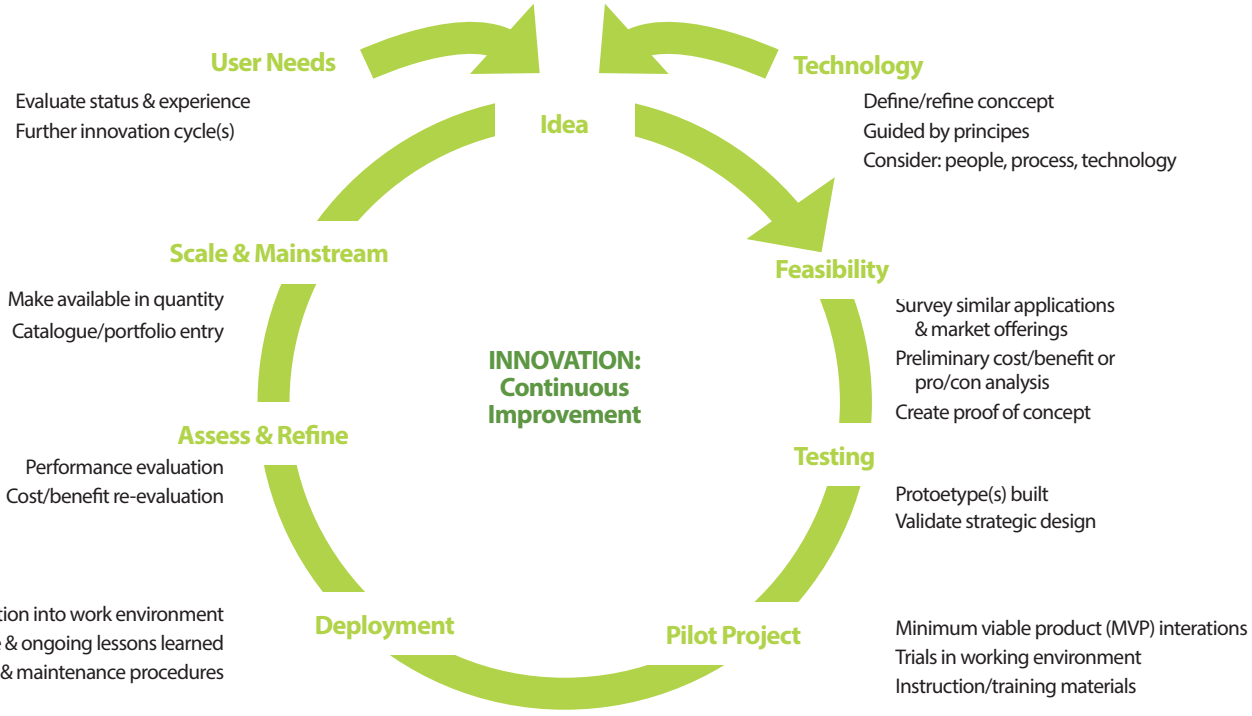
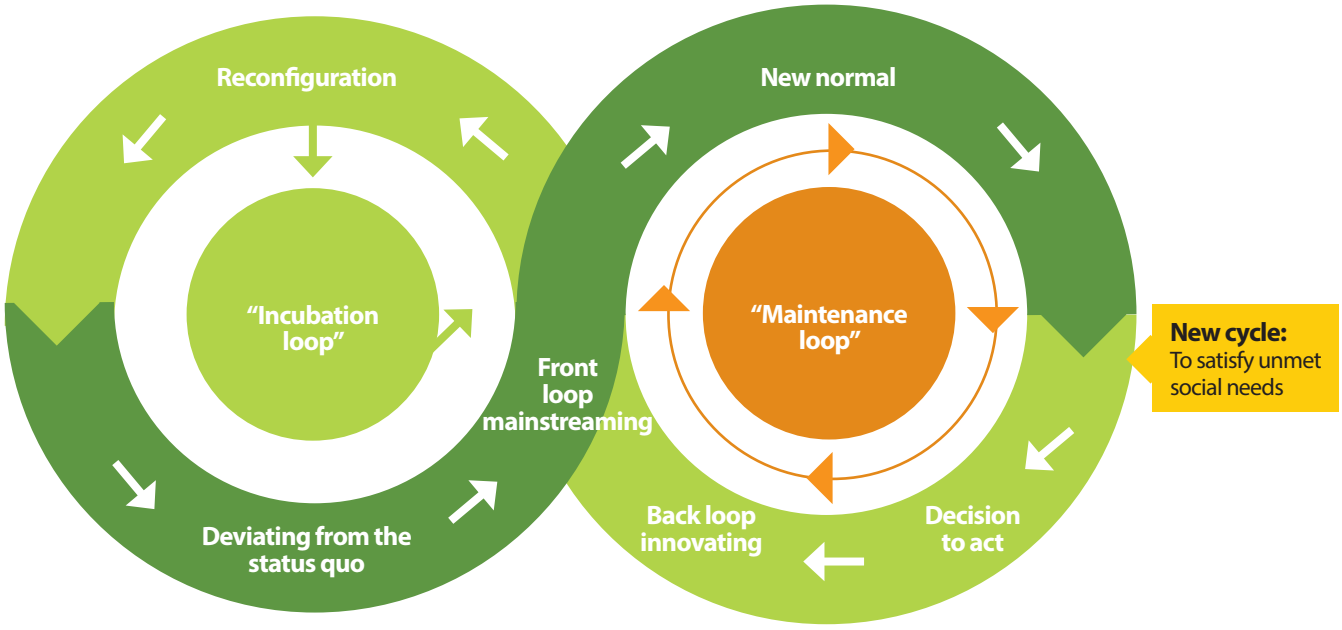


Figure 5. Social innovation cycle related to Category B (source: Sarkki et al. 2021)



The nature of innovation processes strongly varies depending on the envisaged outcomes, and hence, special attention will be given to innovation processes related to category B innovation, e.g. social and environmental outcomes. A large body of literature covers the processes associated with transformational or system change that can be referred to (Doughnut Economics – Kate Raworth, 2017; Great Mindshift – Maja Göpel, 2016, etc.). The theory and practice behind social entrepreneurship and social impact investing (Perrini and Vurro, 2006) is another field relevant to this review.

2.7 Roles and actors in innovation

When considering how to support innovation, it is important to consider the actors involved in the innovation process. There are generally four key actors who hold different roles in the process of innovation:

a. beneficiaries and users

b. innovators/entrepreneurs

c. funders, financiers and investors

d. governments and public sector

a. Beneficiaries and users

With reference to the abovementioned drivers and outcomes of innovation, it is important to distinguish between the various types of interactions between providers and beneficiaries of adaptation services and goods. The interplay between private and public action, costs and benefits in the realm of adaptation innovation and adaptation more widely can be categorised in four domains (see Table 2), each entailing specific institutional arrangements and challenges:

- public provision of adaptation goods for public benefit;
- public provision of adaptation for (largely) private benefit;
- private adaptation for private benefit; and
- (largely) private provision of adaptation goods for public benefit.

Table 2. Domains of adaptation (source: Tompkins and Eakin, 2012)

		Beneficiaries	
		Private	Public
Providers	Private	e.g. buying sand bags to limit home flood damage	e.g. urban flood risk reduction via intentional rural flooding
	Public	e.g. grants for house insulation to reduce cold/ heat stress	e.g. global climate models; "Em-dat" hazards database

This typology is a caricature of the process of adaptive action. Each domain of action is, in essence, a 'fuzzy' category with degrees of public and private interaction and co-production. Nevertheless, while there are some adaptation services and goods in which either public or private action is typical and expected, there are others in which some degree of co-production is not only desired but also necessary.

In the review, these domains will be considered to the extent possible, taking into consideration that the relationship between the public and private sectors is complex and dynamic. Furthermore, the role of users and beneficiaries as drivers and initiators of innovation will be reflected (see also the section on drivers of innovations).

b. Innovators and (social) entrepreneurs

There is generally a consensus among senior executives on the need for innovative leaders: leaders who can turn new ideas and technologies into assets that will transform their businesses and, by extension, the economy, and as an objective of social entrepreneurs/ innovators, society more generally. Forbes (2014) has identified ten key characteristics innovative business leaders embody (see Table 3).

Table 3. Key characteristics of innovation leaders (source: Forbes, 2014)

1. Being innovative means doing things differently or doing things that have never been done before. An innovator is someone who has embraced this idea and creates an environment in which employees are given the tools and resources to challenge the status quo, push boundaries and achieve growth.
2. Innovators are authentic leaders committed to creating dynamic, highly productive and values-based organisations that hire people who are passionate about their work; give them opportunities to grow; make them feel valued and respected; and give them clarity about their roles and responsibilities.
3. Innovators understand innovation never happens in a vacuum. They value, build and sustain active, vibrant networks of people, assets and organisations. Instead of viewing collaboration as a challenge, they see it as an opportunity to identify strengths, weaknesses, opportunities and threats.
4. Innovators are committed to diversity and understand it takes many different points of view to fully grasp the complexity of economic, technological and other challenges.
5. Innovators have let go of the high-control, low-trust model of leadership and lead by directing from the center of their organisations. They empower employees to be creative and develop the skills they need to move to the next level in their careers.
6. Innovators are not taking shortcuts and are not afraid of going after more complex solutions, even if it means taking higher risks.
7. Innovators understand innovation is not a one-time thing and that start-up companies as well as those that are several generations old have to continuously reach above and beyond what they have done before to stay competitive. This requires innovators to be effective change managers who know how to navigate through resistance to their ideas.
8. Innovators are not afraid to break with the norm and push past conventional wisdom that causes people to think in a box. They are aware customers don't always know what they want.
9. Innovators understand paying too much attention to traditional business metrics can inhibit companies from making breakthroughs. At the same time, however, their business success speaks for itself.
10. Innovators contribute new, unconventional ideas of their own.

The above-mentioned characteristics also apply to social innovators/entrepreneurs, with the difference that this group is driven by the need to respond to societal challenges and not necessarily by profits and financial outcomes (Category B). Also, social innovators may design and implement a social innovation, but social innovation is not the exclusive domain of social innovators/entrepreneurs. What is sometimes referred to as the 'social innovation ecosystem' is also open to other groups of actors, of which social innovators are only one group. In other words, social innovations that address socio-economic issues can be developed and implemented by a diversity of actors, including public, non-profit and private actors (see also Table 4).

c. Funders, financiers and investors

Overall, the key characteristics and needs of this innovation actor can best be understood by considering the investment intentionality spectrum (see Figure 6), which positions organizations according to where they sit on the 'social' impact intentionality spectrum, spanning from grant-making actors, concerned with social impact and innovation (to the left) to traditional investors (to the right), who seek scalable and attractive risk-adjusted financial returns.

The landscape review of practices in innovation focuses on this group (see section 4). The initial findings of the analysis focus on ways and mechanisms through which the selected institutions fund and foster innovation.

d. The role of governments and the public sector

Governments occasionally financially support (social) innovations by providing financial means (either project-related or, less often, permanent governmental innovation budgets), mostly by incentivising or de-risking private investment. However, the government's primary role remains to provide an enabling environment with a clear and supportive regulatory framework for investors in innovation and innovators (USAID, 2018). As such, the government is an important enabler and ensures a conducive innovation ecosystem or innovation climate.

Social innovators play an essential role in generating public goods, which is traditionally the public sector domain. Hence, they engage in activities characterised by governmental failures. Purely private markets equally undersupply social innovations unless governments intervene.

Table 4. **Actors in developing and implementing social innovation**
(source: Audretsch, Eichler and Schwarz, 2021)

	Nonprofit-oriented innovators	Social entrpreneur	Established social organization	Socially responsible business	Profit-oriented entrepreneur
Financial return	None, Finance through donations and voluntary human capital	Covering expenses. Might enable social entrpreneur a salary	Project dependent. Possibility to cross-finance/support SI projects within organization	Profit orientation dominates	Maximization of financial return
Organizational form	Ranging from single individuals (loosely organized) to voluntary associations	Ranging from nonprofit to profit-oriented organizational forms as well hybrid forms	Si project embedded within organizational form of established social org. or project-specific form	Profit-oriented organizational form that considers social aspects (e.g. CSR)	Profit-oriented organizational form
Examples	Individual who initiates a voluntary neighborhood association supporting homeless people	Individual who establishes a business (full-time) that allows people in remote regions access to physician consultation via phone application	Social organization (e.g., Caritas) opening a hotel run mainly by refugees who would otherwise face difficulties entering the job market	Company that is aware of social/ environmental topics and introduces SI projects	Entrepreneur who neglects social and environmental aspects

Figure 6. Investment intentionality spectrum (source: INSEAD, 2018)

3. Methodology

This section presents the series of tasks conducted to support the analysis of the experience of the Fund with innovation. The results of the study are shown in the subsequent chapters.

3.1 Landscape review

The landscape review looked at institutions working in the field of development and climate change that also support or work in the area of innovation. The analysis included a desk review of 39 institutions, pre-selected based on experts' opinions and the following criteria: (a) institutions must pursue developmental, social and environmental objectives (with a primary focus on the Global South); (b) institutions must have some climate-related activities/measures/ schemes; (c) the final list should include institutions operating at different scales (international, regional, national). The initial set was scanned against pre-selected criteria to prioritise institutions with enough information on their approaches and support to innovation. A final group of sixteen institutions (16) was selected for the in-depth analysis.

Appendix I. presents the list of institutions that built the sample and the detailed methodology used in the landscape review.

3.2 Institutional Infrastructure and Readiness

This section analyses the Fund's support to innovation as stated in its strategic documents. The analysis compared the ambition set by the Fund with its institutional settings, results framework, funding programs, and safeguards, among others. The information collected via desk review was complemented and triangulated with expert opinion. The list of actors consulted can be found in Appendix II.

It is worth noting that this analysis did not take into consideration factors outside the Fund's control that may influence the operating environment of the Fund, such as the Covid-19 pandemic.

3.3 Portfolio analysis

The portfolio analysis looked at projects within the Fund's project portfolio that had strong elements of innovation, both within the Action Pillar (or regular funding window) and from the windows set up by the Fund's Medium Term Strategy (MTS) Innovation Pillar (see section 5.2 for more information on these windows). The sample included 23 projects at different implementation stages, including approved, ongoing and closed projects. The distribution of the selected sample across the Fund's different funding windows is presented in Table 5.

Table 5. Distribution of the study sample across the Fund's different funding windows

Funding window	Sample size	Percentage of total approved projects*
Regular Funding Window	15	12%
Innovation Facility: Innovation Small Grant projects	6	100%
Innovation Facility: Adaptation Fund Climate Innovation Aggregator (AFCIA) projects	2	100%

The sample selection for Regular Funding Window projects was made based on the following sources of evidence: (1) projects scaled up by the GCF (as of March 2022); (2) projects with explicit incorporation of innovation elements in their design or outcomes, and (3) projects that have received a distinction/award/prize for its innovative nature.

Appendix III. presents the detailed methodology used in the portfolio analysis.

Appendix IV. presents the list and characteristics of innovative projects within the Regular Funding Window selected for the study.

The portfolio analysis had a few limitations. It was based on (1) a purposive sample of innovative projects across the Fund's regular funding window and (2) the whole universe of approved projects under the Fund Innovation Facility as of March 2022. The final study sample included projects at different stages of implementation, and because of this, the analysis was predominantly centred around project design. As such, this specific analysis cannot address the extent to which the Fund has effectively supported innovation across its portfolio.

Additionally, by the time this study was conducted, only eight projects were approved under the Innovation Facility. Given this small number of approved projects and their early implementation stages, no conclusions regarding project performance can nor should be made.

4. Landscape Review

The landscape review included multilateral climate finance mechanisms such as the Green Climate Fund (GCF), the Climate Investment Funds (CIF), and the Global Environment Facility (GEF), as well as other funding organisations that have development and climate financing within their mandates. The aim of the analysis was to learn and consider examples from institutions working with innovation. The methodology followed is presented in section 3.1, and the list of all institutions considered is in Appendix I.

This section summarises the findings of the landscape review, organised into six key topics: (4.1) Conceptualisation of innovation; (4.2) Institutional policies, guidelines and structures; (4.3) Results and measurements frameworks; (4.4) Funding schemes and types; (4.5) Non-financial support to innovation.

4.1 Conceptualisation of innovation

As aforementioned, innovation is a relatively amorphous and broad concept for many institutions. The concepts and definitions used by institutions are generally flexible enough to cater for a certain range of innovations - also avoiding being too prescriptive. Some institutions specify the concept and definition of innovation in close association with their respective mandate or purpose, as well as the sector in which the institution is active. However, a considerable number remain rather vague in the description and articulation of what innovation means in their sphere of interest.

A commonality across the institutions reviewed is that many specify the innovation stage they target (e.g. UNIDO, Global Innovation Fund). For example, see the stages of innovation as specified by the Global Innovation Fund in Figure 7. This expands to a clear identification of barriers and how to measure and evaluate innovation for each stage (e.g. GCF).

While numerous institutions focus on a concrete type of innovation (a particular product, technology, process etc.), a smaller number extend their focus to gaining a better understanding and hence, supporting an enabling environment for the respective innovators they target. For some, this has been a result of institutional learning (e.g. GIF, EIT Climate-KIC).

Some actors (e.g. EIT Climate-KIC) use the term 'system innovation' to indicate that a narrow focus on 'fully controllable mechanistic interventions' is not sufficient to trigger transformative impact. They define 'system innovation' as a combination of technological and non-technological innovations that, enacted together, deliver transformative impacts. System innovation aims to shift whole systems to strengthen resilience through new ideas applied to multiple barriers to progress simultaneously. As for climate adaptation, this involves deliberately designing and sourcing climate adaptation innovations across finance, policy, regulation, citizen engagement and technology in a test-learn-adjust approach (Mitchell, 2021). As a result, system innovation offers an integrated framework to enable synergies between incremental and disruptive

innovation efforts, which are often uncoordinated across changes occurring at different levels, ranging from products and processes to regulatory frameworks and value systems (see Figure 8).

Figure 7. Global Innovation Fund's stages of innovation (source: Global Innovation Fund, 2020)

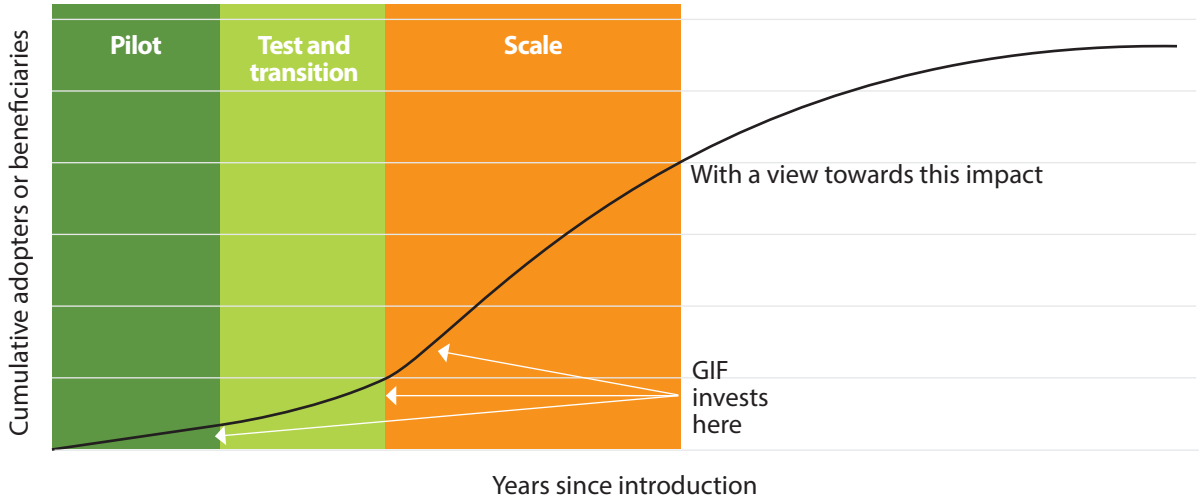
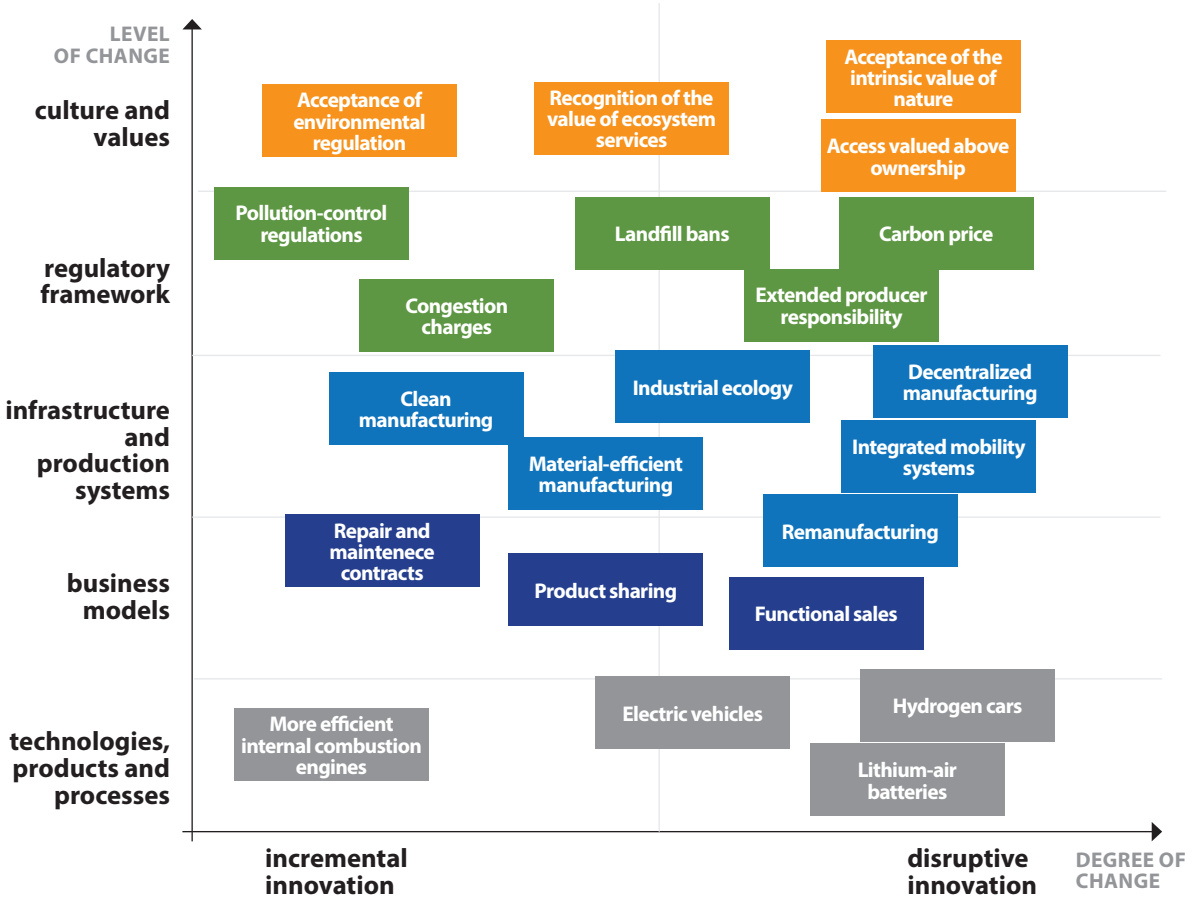


Figure 8. Climate innovations mapped across system elements (source: EIT Climate-KIC, 2017)



Most of the institutions reviewed consider the private sector as the 'powerhouse' of innovation. There seems to be increasing interest and focus on enhancing the interaction of the public and the private sector in order to promote innovation at scale. While the majority looks towards the private sector and businesses as innovators and hence, focus a lot on appropriate and effective financing instruments and facilitating access to capital, some of the institutions highlight the relevance of research and knowledge generation in view of innovation processes (e.g. EU Horizon Europe) and focus their efforts accordingly.

4.2 Institutional policies, guidelines and structures

In order to successfully promote innovation inside and outside of an institution, the organisational governance and structures need to enable innovation effectively. The extent to which innovations are embedded in policies, strategies, procedures, guidelines etc. matters.

Unsurprisingly, the review revealed that the institutions that embrace innovation as one of the core topics of the organisational mandate or purposes had mainstreamed it across all aspects of the organisation, including core structures and governance instruments (e.g. GIF, CTCN).

It appears that the agility of decision-making processes may be an indicator of high innovation potential. For instance, the frequency and flexibility of institutional decision-making help institutions adapt their processes, procedures, and funding instruments (DFIs, e.g. KfW); hence, this process encourages organisational learning. As innovation is a highly dynamic process, such iterative and agile management and governance may constitute an essential element of an innovative, conducive environment. It may be worth further investigating the relationship between innovation potential and the share of decision-making power between management and boards.

Having reviewed mostly institutions that primarily fund innovation, it appeared that the depth and the rigour of processes that support the selection of innovators and innovation projects to be funded differ and most likely strongly correlate with innovation 'success' rates (e.g. KfW, CTCN). The role of Environmental, Social and Governance (ESG) considerations has become a core part of the investment decision-making processes across the institutions and is a field of recent institutional reforms.

Overall, there is a considerable difference between institutions that focus on private sector actors and businesses as innovators (financially viable, market-based innovations) and those that look at social and environmental public benefits as outcomes or at least co-outcomes of innovation. For the first group, the ultimate measure of successful innovation is commercial viability - hence the overall framing conditions are much more straightforward and governed by market mechanisms, including financial markets. Consequently, all organisational processes are geared towards this somehow one-dimensional perspective on innovation.

Whereas the second group, institutions that foster innovations with social and environmental benefits, often struggle with the differing levels of accountability towards

public and private capital providers. In addition, there are institutions from the first group trying to merge co-benefits with financial benefits of innovations for the innovator and the investor. It is this type of institution that has stand-alone, distinct 'innovation strategies' (e.g. IFAD).

Most institutions' processes cover both activities to strengthen (a) internal innovation capabilities through professional training and coaching programs, etc., while simultaneously recognising the need to (b) partner with external actors to promote innovation in their respective thematic areas or sectors. BNP Paribas, for instance, offers the Intrapreneurial Programme People's Lab for Good to its employees to develop solutions to Corporate Social Responsibility (CSR) issues, informed by the 17 SDGs. This program also provides training in start-up methodologies.

4.3 Results and measurement frameworks

Many of the institutions reviewed do not have precise or readily available results frameworks incorporating innovation as part of the project logic. However, there was an acknowledgement that this was needed.

Many institutions use the term 'innovation' in their results or monitoring and evaluation frameworks in an ambiguous way, such as in the example shown in Figure 9. Others use outcome indicators related to social or environmental benefits or financing leveraged as proxy indicators for innovation (e.g., EIT Climate KIC).

Figure 9. An example of an innovation-focused outcome and output indicator (source: CTCN, 2020a)

Results	Indicators
Outcome 1 - Innovation: Key stakeholders develop, transfer and deploy new and existing climate technologies	**1.A. Number of countries developing, transferring and deploying new and existing climate technologies as a result of CTCN support** **1.B. Anticipated number of collaborations facilitated or enabled within and between developed and developing country Parties (disaggregated by South-South, RD&D, and private sector collaborations)**

The landscape review identified only a few examples of rigorous results or monitoring and evaluation frameworks. One notable example is the Global Cleantech Innovation Index Framework (also used by UNIDO) which evaluates countries based on an average between inputs to innovation and outputs of innovation (15 indicators – see Figure 10). Input indicators correspond to the creation of innovation (the development of technology supply) and output indicators relate to the country's ability to commercialise innovation (the creation of market demand).

Another example is the Global Innovation Fund, which applies a primary innovation measure to all investments (see Figure 11) in order to:

- Forecast the impact of prospective investments and use this information to guide investment decisions.
- Track project performance and impact during implementation, using real-time information to adapt and adjust as necessary.
- Evaluate investments after their completion to better understand how investments fared (and why), using this evidence to guide future GIF decisions; and inform decisions made by other development partners.

Figure 10. Elements of Global Cleantech Innovation Index (source: Cleantech Group, 2014)

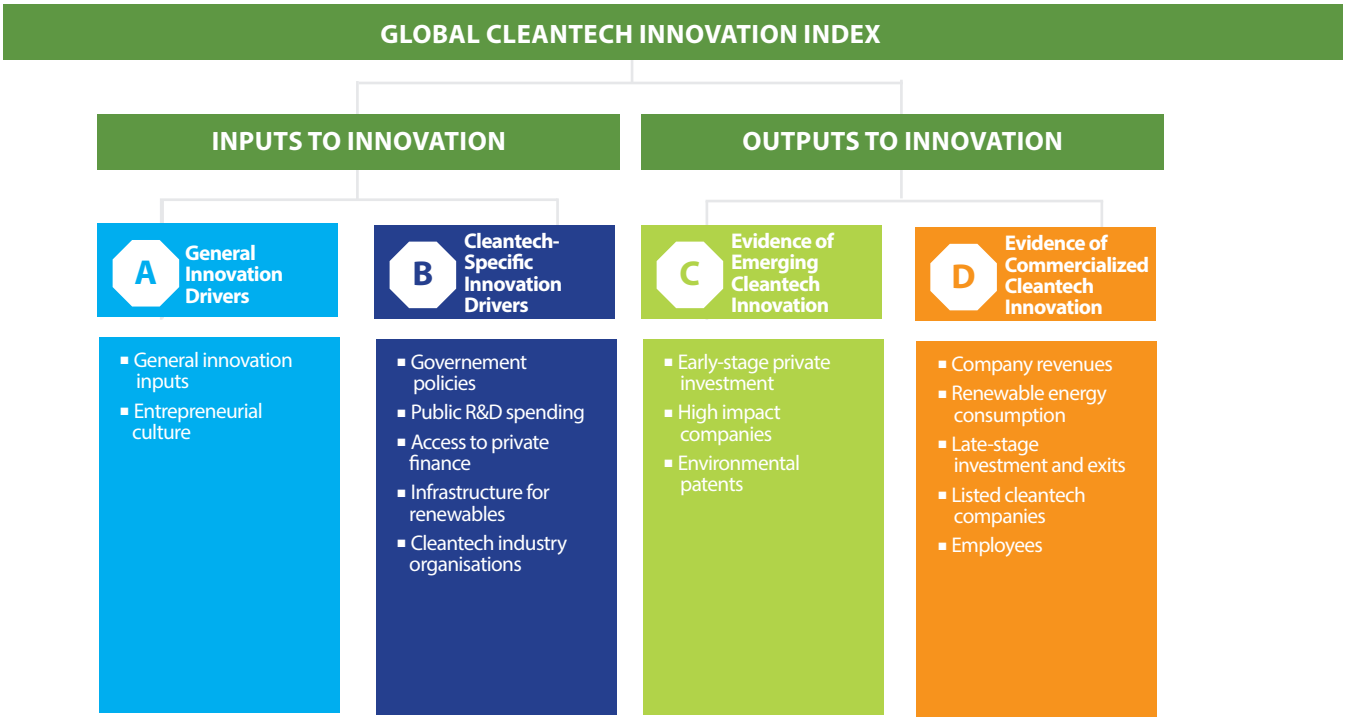
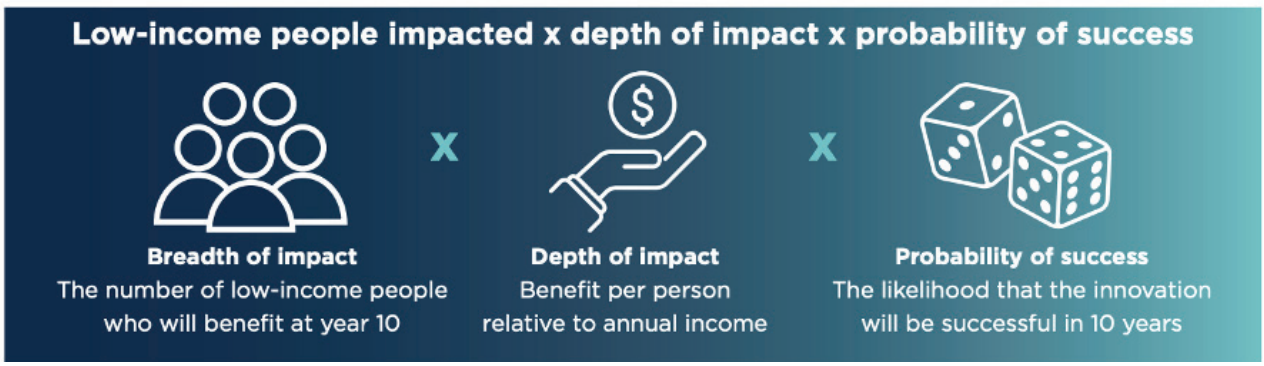


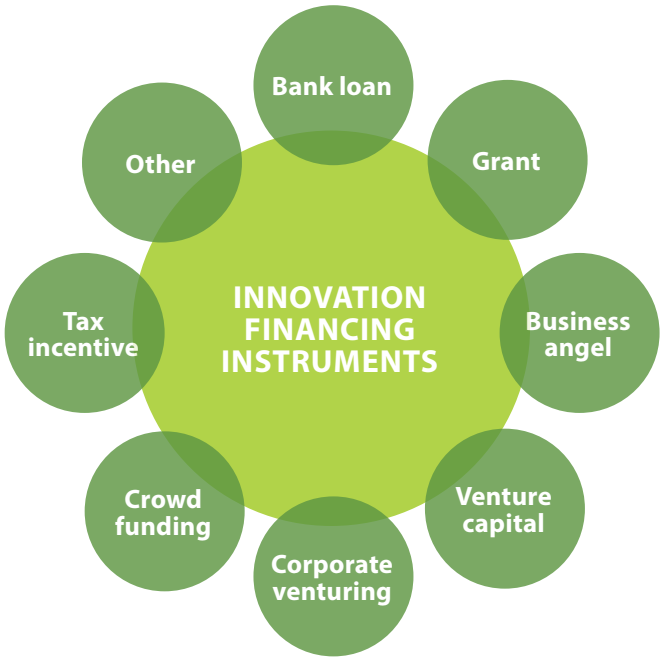
Figure 11. GIF's 'practical impact' measurement – a structured way of forecasting the long-term impacts of early-stage innovations (source: GIF, 2019).



4.4 Funding instruments, schemes and types

The most frequently used development finance instruments to fund climate action include grants, loans, guarantees, equity, and performance-based instruments (see Figure 12). Hybrid instruments (a combination of different tools in risk-sharing mechanisms) can be considered an additional category. An increasing number of MFIs and DFIs use this range of financing instruments (GCF, CIF, GEF, GIF). For some institutions, it appeared that combining different instruments enabled them to target or involve private finance and investors and also research institutions (e.g. GCF, GIF).

Figure 12. Innovation financing instruments (source: Milutinović, Benkovic and Stosic, 2018)



Often, grants are used to incubate and accelerate new climate solutions in combination with other de-risking instruments. Typical non-grant de-risking instruments include anchor investment, first loss equity/first loss position, and guarantees. These instruments are relatively new to adaptation finance but are increasingly used to de-risk innovative adaptation projects and investments by mobilising public resources to help establish a commercial track record and crowd-in larger private co-financers. Also, concessional funding is increasingly structured as co-investments in blended finance to mitigate specific investment risks for investors and banks and help rebalance risk-reward profiles of resilient investments (e.g. GCF, GIF).

Blended finance is being used to mobilise finance to scale-up climate innovations by using public resources to de-risk market-creating projects and crowd-in private finance. An example is the GEF-UNIDO global cleantech innovation programme (GCIP), which aims to reduce barriers to entrepreneurial ecosystems, such as inadequate regulatory

environments, lack of access to finance, and deficient business managerial skills.[1] Another example is the GEF-South Pole-WWF-Chanel Landscape Resilience Fund, a public-private partnership launched in 2021 that will finance adaptation in landscapes where communities are most vulnerable to floods, droughts and other climate-related hazards.[2]

Blended finance has grown since the adoption of the Addis Agenda, but its developmental impact is largely unknown due to weak monitoring and poor transparency. As there is increasing use of blended finance strategies, with possible unintended side effects, a systematic and thorough analysis is required to understand the most effective mandate for DFIs in different types of markets (CPI, 2019; IFC, 2021).

4.5 Non-Financial support services to innovation processes

Besides funding and access to capital, most institutions reviewed provided non-financial support services to innovation processes, often called accelerators and incubators.

Successful incubation and acceleration programs often kick off with mass competitions that maximise the opportunity for great ideas to arise. Open Innovation competitions are a relatively new concept designed to source and co-develop new solutions. Originally used as a tool in the private sector, especially the technology sector, the format has recently made a successful transition into the public and municipal domain, including for climate adaptation (see Box 1).

Box 1: Innovation stimulation - mass competitions and networking events by Climate-KIC and CTCN

Over the last three years, Climate-KIC has been running Open Innovation events across global cities like Copenhagen, Hamilton, Sofia, Singapore, Malmo, and Trondheim, where they are seeking new innovative ways to achieve their ambitious climate targets.[3] Sizeable events have already been conducted in each of the cities. The events were designed to source solutions in response to several "challenges", all of which were designed to help the respective cities to meet their climate strategies. These events began with an open call for solutions and formally culminated in a pitch event for the most promising ideas. EIT Climate-KIC's Climathon[4] is the world's biggest 24-hour climate innovation hackathon. It is a rapidly growing global movement focused on citizen engagement that sees cities and citizens coming together to set and then solve local climate change challenges.

"The CTCN's Youth Climate Innovation Labs and Academy offered youth-centered workshops to co-create endogenous climate technology solutions by using tools such as design thinking principles. Following the completion of the two Labs in Africa and Asia, selected groups participated in a Youth Innovation Academy, a two-month intensive incubator designed to help idea-stage start-ups transform ideas into viable projects. Eleven of the newly developed and promising start-ups pitched their technology solutions for enhanced climate action to investors, partners, and experts in the industry. A third lab was launched in Latin America in July 2021, with the Academy scheduled to take place in the fall. In total, the CTCN received over 1,300 applications from young innovators from across 74 countries." (CTCN, 2021)

1. Global Environmental Facility. (2021). GEF Support to Innovation: Findings and Lessons. Available at: https://www.gefieo.org/evaluations/innovation. Accessed 24 August 2022

2. South Pole. (2021). New climate resilience fund brings private and public climate finance to vulnerable landscapes and farmers. Press release. Available at: https://www.thegef.org/newsroom/press-releases/new-climate-resilience-fund-brings-private-and-public-climate-finance. Accessed 24 August 2022

3. EIT Climate-KIC (2019). Open Innovation White Paper. Available at: https://www.climate-kic.org/wp-content/uploads/2019/03/Open-Innovation-White-Paper-v2-003.pdf. Accessed 24 August 2022

4. EIT Climate-KIC (n.d.). Climate-KIC's Climathon. Available at: https://climathon.climate-kic.org/. Accessed 24 August 2022.

Another instrument is the selective provision of technical assistance and mentoring to standout projects and entrepreneurs. Such programs offer opportunities to connect with mentors or investors who can advance the goals of a start-up. This serves both sides of the start-up market and is a resource reserved for the most competitive projects. BNP Paribas''We are Innovation' (WAI) program[5], for instance, not only invests in start-ups but, in addition, advises medium and large corporates on innovation strategy. The technical assistance consists of four parts: (1) 'Boost' or the acceleration program; (2) 'Lead' – personalised support; (3) 'Connect' – networking events; and (4) 'International' – which supports the internationalisation of start-ups.

Furthermore, funders and promoters of innovation provide match-making opportunities. The CTCN (2020b), for example, implemented so-called SME Technology Clinics to generate awareness in the private sector of relevant technologies and new markets that can be established through their use. The programme facilitated SMEs' opportunities to network with international climate technology suppliers, access financing, gain skills and strengthen the supporting policy frameworks in their countries. Climate-KIC runs the ClimAccelerator Marketplace[6], which offers investors a comprehensive overview of the investment opportunities in early-stage start-ups.

The review also found a significant number of institutions investing in education, mentoring, and training for rising entrepreneurs. For example, the EIT Climate-KIC's Climate Leadership Journey[7] as the world's biggest climate innovation summer school for graduates and young professionals offers immersive, action-oriented, transformative learning experiences each year, through a series of challenge-focused multidisciplinary learning labs. Similarly, for more advanced professionals, the EIT Climate-KIC's Pioneers[8], a professional learning and exchange programme, offers an innovative blended learning approach whereby a common baseline of knowledge is established through e-learning. This learning is then enhanced through workshops and practical application to real-life situations in the form of group project challenges and a 4-6 week placement.

For the future innovation leaders, they offer The Young Innovators programme[9] that empowers young people to understand, explore and address the causes and effects of climate change through innovation. It aims to boost the skills and mindsets of teenagers and prepare them to lead the systems innovation we need now, in the view that they are the future leaders of our societies, businesses, and nations.

5. BNP Paribas (n.d.). WAI Programme: We are Innovation. Available at: https://wai.bnpparibas. Accessed 24 August 2022

6. EIT Climate-KIC. (n.d.). Climate-KIC's ClimAccelerator Marketplace. Available at: https://www.climate-kic.org/marketplace/. Accessed 24 August 2022

7. EIT Climate-KIC. (n.d.). Climate-KIC's Climate Leadership Journey. Available at: https://journey.climate-kic.org. Accessed 24 August 2022

8. EIT Climate-KIC. (n.d.). Climate-KIC's Pioneers into Practice. Available at: https://pioneers.climate-kic.org. Accessed 24 August 2022

9. EIT Climate-KIC. (n.d.). Young Innovators Programme. Available at: https://younginnovators.climate-kic.org. Accessed 24 August 2022

5. The Adaptation Fund's Institutional Infrastructure and Readiness

This chapter presents a review of the Fund's approach to supporting innovation at different levels, including its strategy and funding mechanisms: section (5.1) summarizes the strategic decisions made by the Fund in support of innovation for CCA from its inception; (5.2) describes the main funding windows through which the Fund supports innovation; (5.3) shows the progress in implementation of the Fund's goals regarding its support to innovation for CCA as stated in its Mid-Term Strategy (MTS) 2018-2022; (5.4) looks into how the Fund-level Results Framework incorporates and tracks progress towards achieving the Fund's innovation-related goals. (5.4.1) presents additional funding alternatives offered by the Fund to IEs to support the project formulation phase; (5.4.2) related technical support and guidance. (5.4.3) discusses issues related to additional demands for support by IEs during the project application phase; (5.4.4) discusses the support provided by MIEs to non-accredited entities in the Adaptation Fund Climate Innovation Accelerator (AFCIA) projects. The last section (5.5) reviews learning in the context of innovation within projects, between projects and by the Adaptation Fund.

Figure 13. Summary of the Fund's innovation strategy and delivery model (source: author)

Objective of the MTS Strategic Focus 2 (SF2): Innovation

To support the development and diffusion of innovative adaptation practices, tools, and technologies.

(Decision B.30/42)

Definition of innovation

Innovation is understood as the creating, testing, deployment or diffusion of new, adapted or improved adaptation solutions, developed contextually and with the inclusion of the communities most vulnerable to climate change, to enable those communities to become more resilient to climate change. Innovation solutions may include approaches, technologies and machanisms. Innovation projects and programmes under the action pillar in the nature of their stakeholder engagement, including with unconventional actors, and in the emphasis on iterative deplyment where change, learning and new information projects and programmes in different directions.

(Decision B.36/39)

Vision for innovation under the AF

The Adaptation Fund will fund innovative practices that demonstrate potential to help the most vulnerable communities adapt to the impacts of climate change through its Innovation Facility and through other modalities. It will fund a broad range of projects and programmes underpinned by a strong innovation rationale, thus creating a portfolio of diverse and locally appropriate innovation projects and programmes. It will support projects and programmes that encourage multi-stakeholder partnerships by including e.g., youth, women, disabled people, researchers, civil society, and the provate sector. It will support rolling out and scaling up successful innovations, encourage and accelerate new adaptation practices, tools and technologies, and generate evidence on the conditions that lead to successful innovation. It will encourage, as pasrt of an innovation approach patnerships, iteration, learning and adaptive management.

(Decision B.36/39)

Expected Results of the SF2

ER1 - Successful innovations rollet out. Innovative adaptation practices, tools and technologies that have demonstrated success in one country spread to new countries/regions

ER2 - Viable innovations scaled up. Innovative adaptation practices, tools and technologies that have demonstrated viability at a small scale piloted at larger scales

ER3 - New innovations encourages and accelerated. Development of innovative practices, tools and technologies encouraged and accelerated

ER4 - Evidence base generated. Evidence of effective, efficient adaptation practices, products and technologies generated as a basis for implementing entities and other funds to assess scaling up.

(Decision B.30/42)

Delivery Model: The Innovation Facility

INNOVATION LARGE GRANTS
Grant amount:
up to US$ 5 million each

Appicants:
NIEs, MIEs and RIEs

Application via AF

Contribute to ER1 & ER2

INNOVATION SMALL GRANTS

Grant amount:
up to US$250,000 each

Appicants: NIEs

Application via AF

Contribute to ER3 & ER4

THE ADAPTATION FUND CLIMATE INNOVATION ACCELERATOR (AFCIA)
Grant amount:
up to US$ 250,000 each

Applicants: other entities that are not accredited with the Fund (businesses, agencies, NGOs, youth, vulnerable groups and others).

Application via ERs, with emphasis on ER3, ER4

5.1 The Adaptation Fund's innovation journey

The Fund positions itself as a highly innovative organization established to finance concrete adaptation action in developing countries that are particularly vulnerable to climate change. Main features perceived by the Fund and its partners as innovative include:

- Its Environmental and Social Policy, adopted in 2013, is pioneering in promoting human rights, gender equality, marginalized groups, climate action and biodiversity in its projects (Adaptation Fund, 2017).
- The establishment of new models for accessing finance, such as Direct Access and Enhanced Direct Access, has opened doors to smaller entities and empowered national institutions (AFB/B.37/6, 2021).[10]
- Fostering innovation in climate change adaptation via concrete actions across food security, water management, sustainable agriculture, coastal management, disaster risk reduction, rural development and forests (Adaptation Fund, 2017).

The Fund further showed its commitment to supporting innovation in 2017, when its Medium-Term Strategy (MTS) for 2018-2022 adopted innovation as one of its three strategic pillars (Strategic Focus SF2). The pillar's objective is to support the development and diffusion of innovative adaptation practices, tools, and technologies. It is aligned with the Fund's mission to i.a. support country-driven projects and programmes, innovation, and multi-level learning for effective adaptation. It is also in alignment with the Paris Climate Agreement, which calls accelerating, encouraging and enabling innovation 'critical' for an effective global response to climate change.

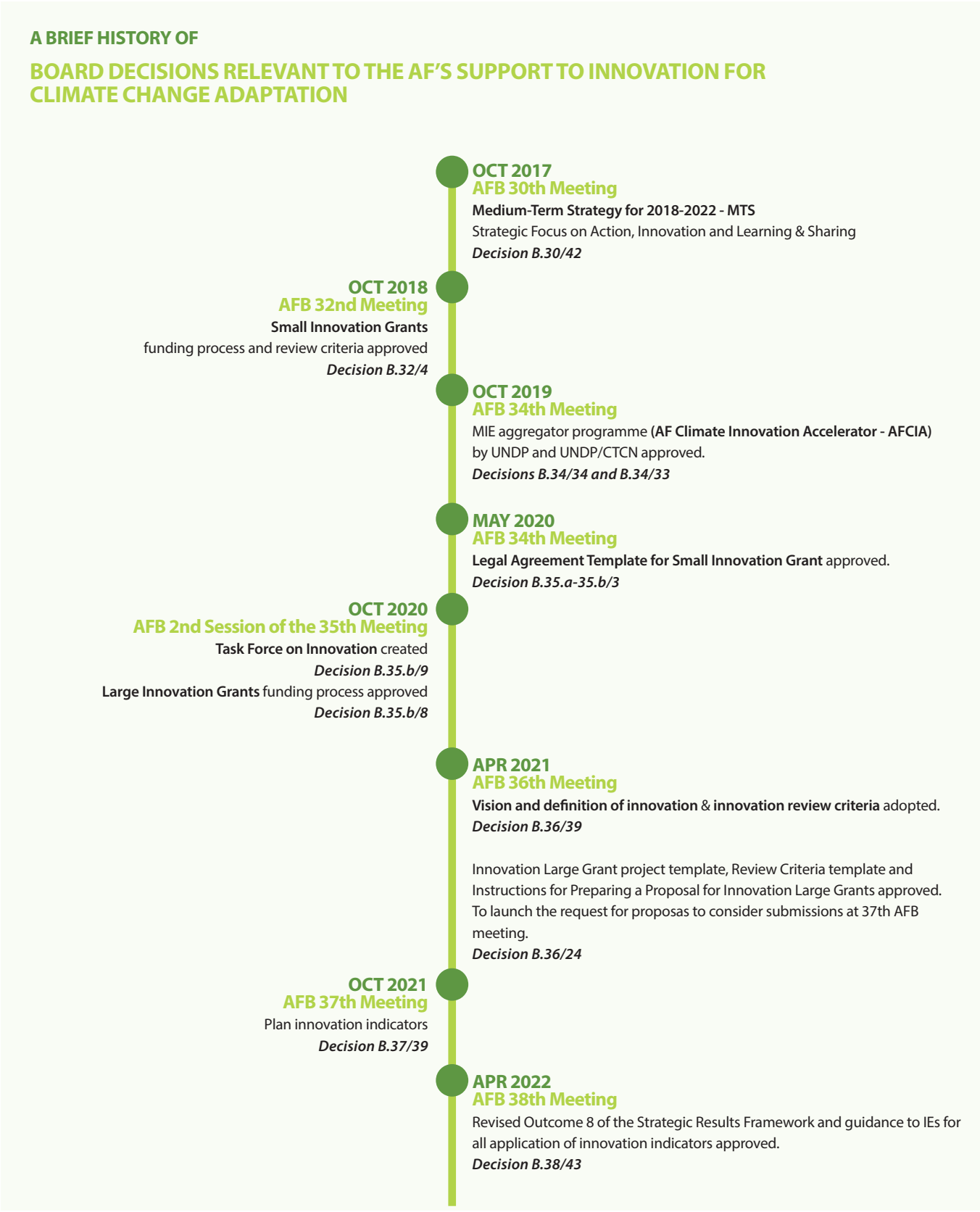
To further guide the Fund's support to innovation for climate change adaptation, the Board made several strategic and programmatic decisions, summarised in Figure 13 and presented chronologically in Figure 14. These include the establishment of the Innovation Facility, with specific funding windows to support innovative projects and programs (see section 5.2). In addition, an innovation Task Force composed of Board members representing developing and developed countries was established at the Fund's second session of its 35th meeting (October 2020). Among others, the Task Force was commissioned to work on further defining and elaborating on the Fund's support to innovation for climate change adaptation, particularly for the benefit of vulnerable groups, countries and sectors (Decision B.35.b./9)[11]. At the Funds 36th Board meeting (April 2021), the Innovation Task Force put forward a proposed vision and definition of innovation together with review criteria, which were adopted by the Board (Decision B.36/24)[12]. In support of the funding windows under the Innovation Facility, the Fund's results framework has been modified to incorporate an innovation-specific outcome (Outcome 8) and respective indicators, which are currently at a piloting stage.

10. AFB/B.37/6. Available at: https://www.adaptation-fund.org/document/specific-objectives-and-indicators-for-the-innovation-aspects-of-the-projects-and-programmes/. Accessed 24 August 2022

11. Decision B.35.b./9. See "Report of the Second Session of the Thirty-Fifth Meeting of the Adaptation Fund Board", p 8-9. Available at: https://www.adaptation-fund.org/wp-content/uploads/2020/12/AFB.B.35.b.8-Report-of-the-second-session-of-the-thirty-fifth-meeting-of-AFB.pdf. Accessed 24 August 2022

12. Decision B.36/24. See "Report of the Thirty-Sixth Meeting of the Adaptation Fund Board", p. 19. Available at: https://www.adaptation-fund.org/wp-content/uploads/2021/06/AFB.B.36.10-Report-of-the-thirty-sixth-meeting-of-AFB-4-1.pdf. Accessed 24 August 2022

Figure 14. Board Decisions relevant to the Fund's support to innovation (source: author)



5.2 The Adaptation Fund's innovation delivery mechanism: The Innovation Facility

The operationalisation of the Fund's strategy to support innovation for climate change adaptation is mainly done through its Innovation Facility, which offers small and large grants through three different funding windows (see Figure 13). The funding approved for the Innovation Facility falls outside of the allocation per country (country caps), which is focused on the Action Pillar. The establishment of the facility has not precluded the Fund from supporting innovative operations through the other windows, particularly through the Action Pillar, as discussed later in the portfolio review analysis chapter.

The **Innovation Large Grants** approved in October 2020 target all accredited IEs who may request grants of up to US$ 5 million. This funding window supports the expected results under the Innovation Pillar outlined in the MTS implementation plan:

ER1. Successful innovations rolled out. Innovative adaptation practices, tools and technologies that have demonstrated success in one country spread to new countries/regions; and

ER2. Viable innovations scaled up. Innovative adaptation practices, tools and technologies that have demonstrated viability at a small scale piloted at larger scales.

IEs may request an additional Project Formulation Grant (PFG) at the concept-development stage.

The **Innovation Small Grants** launched in 2018 target NIEs, who may request grants of up to USD250,000. This funding window supports the expected results under the Innovation Pillar outlined in the MTS implementation plan:

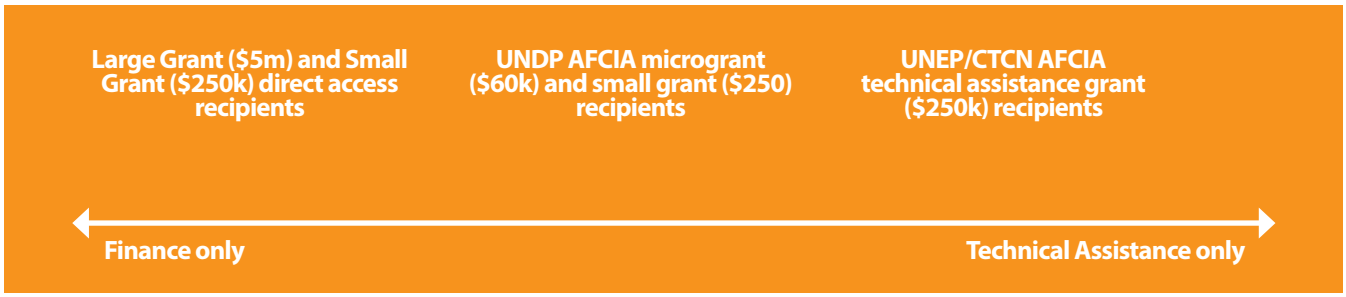
ER3 New innovations encouraged and accelerated. Development of innovative adaptation practices, tools and technologies encouraged and accelerated; and,

ER4 Evidence base generated. Evidence of effective, efficient adaptation practices, products and technologies generated as a basis for implementing entities and other funds to assess scaling up.

The **Adaptation Fund Climate Innovation Aggregator (AFCIA)**, approved in October 2019, is the third funding window, operationalised as two separate, albeit connected, mechanisms, both described as pilots. One is managed by the Fund's MIE partner, the United Nations Development Programme (UNDP), and the other by United Nations Environment Programme (UNEP) together with the Climate Technology Centre and Network (CTCN). Both target non-accredited entities and while they support all expected results of the MTS under the Innovation Pillar, they primarily focus on ER3 and ER4.

A key distinction between Fund-managed Innovation Funding windows and AFCIA projects is that the Fund offers primarily financing (with some readiness and training input) while AFCIA projects offer more extensive capacity support/technical assistance for the implementation of innovation projects (see Figure 15 and section 5.5).

Figure 15. Distribution of funding windows under the Innovation Facility according to the level of technical assistance provided for project implementation (source: author)



5.3 Implementation of innovation goals set in the Adaptation Fund's Mid-term Strategy

The Fund's Implementation Plan (IP) builds on the MTS 2018-2022 and outlines proposed activities over a 5-year period for achieving its goals. It organizes activities primarily along the three strategic foci (pillars) of the MTS, one of which, Strategic Focus 2 (SF2), is about innovation in support of climate change adaptation.

The progress in implementing innovation-related targets was tracked via the output indicators stated for the SF2 in the IP (see Table 6). The assessment shows uneven progress and, for some indicators, verification means were not evident, which hindered the tracking of progress. It is worth noting that this assessment was done without taking into consideration factors outside the Fund's control that may influence the operating environment of the Fund, such as the Covid-19 pandemic.

Complementary, progress in the allocation of planned funds via the Innovation Facility – the primary delivery mechanism of SF2 -was assessed for its three funding windows. The disbursement progress is outlined in Figure 16. The development and operationalisation of these windows have been relatively slow, partly due to ongoing debates about the definitions and understandings of innovation.

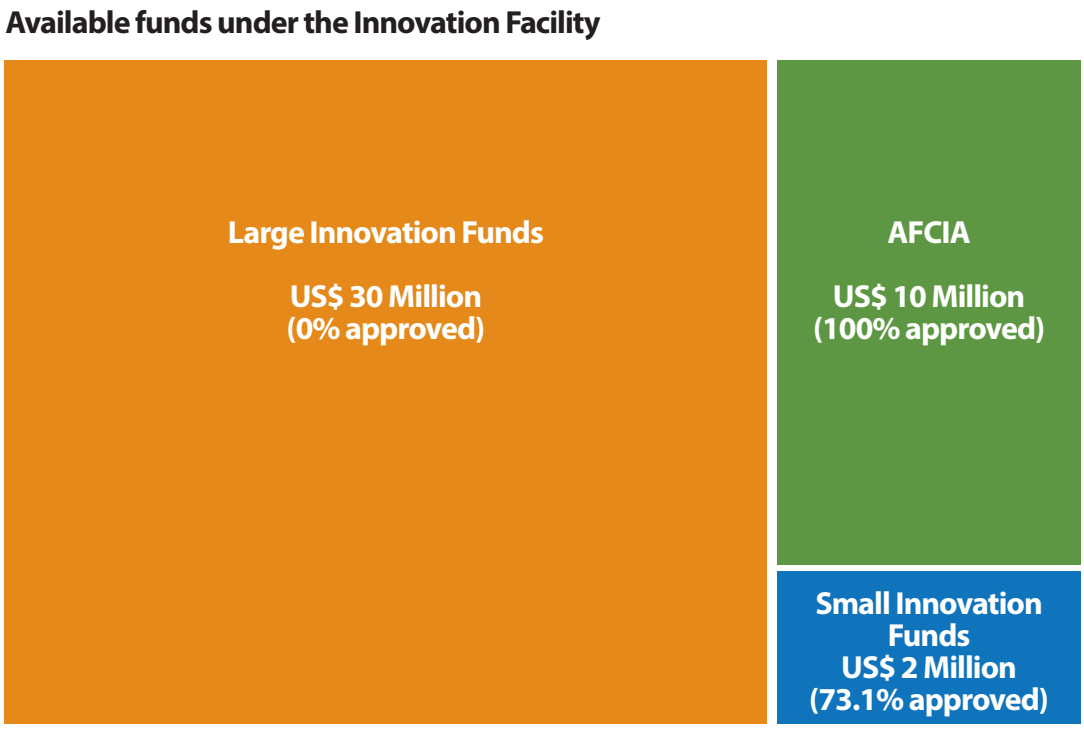
For example, as of April 2022, no proposals have been approved under the Innovation Large Grant window, and six proposals have been approved within the Innovation Small Grant window (73% of the funds allocated). The USD10 million allocated to the AFCIA has been granted for UNEP and UNDP to implement, with 22 and 11 proposals approved within each AFCIA, respectively.

Table 6. The Fund's progress in achieving indicators related to innovation (SF2) of the Implementation Plan of its Mid-term Strategy 2018-2022 (source: author)

Expected result	Expected outputs (Delivery methods)	Output indicators	Progress based on indicators**	Explanation
ER1 – Successful innovations rolled out. Innovative adaptation practices, tools and technologies that have demonstrated success in one country spread to new countries/ regions	1. A large grant (up to US$ 5 M/ grant) mechanism established to roll out proven solutions in new countries/regions At least two proposals supported under the 1st Request for Proposals (RFP) and at least four proposals supported under the 2nd RFP link with cross cutting themes 1 (vulnerable groups) and 2 (gender) Understanding of possibilities and challenges in rolling out financing for innovative action improved and recorded Link with SF3.	Numbers of proposals funded under the RFPs: at least 9*	■	No Innovation Large Grant Mechanism approved
		Quantity and quality of key findings on possibilities and challenges in rolling out financing for innovative action: at least 5 reports	?	Unclear the type and authorship of reports referenced here
		Number of monitoring reports outlining lessons learned: at least 18*	?	Unclear the type and authorship of reports referenced here
ER2 – Viable innovations scaled up. Innovative adaptation practices, tools and technologies that have demonstrated viability at a small scale piloted at larger scales	1. A large grant up to US$ 5 M/ grant) mechanism established to scale up innovations already demonstrated to work at a small scale; At least two proposals supported under the 1st Request for Proposals (RFP) and at least four proposals supported under the 2nd RFP link with cross cutting theme 1 (vulnerable groups) and 2 (gender) Understanding of possibilities and challenges in rolling out financing for innovative action improved and recorded Link with SF3.	Numbers of proposals funded under the RFPs: at least 9*	■	No Innovation Large Grant Mechanism approved
		Quantity and quality of key findings on possibilities and challenges in scaling up financing for innovative action: at least 5 reports	?	Unclear the type and authorship of reports referenced here
		Number of monitoring reports outlining lessons learned: at least 18*	?	Unclear the type and authorship of reports referenced here
ER3 - New innovations encouraged and accelerated. Development of innovative adaptation practices, tools and technologies encouraged and accelerated	1. A relevant, efficient, effective and sustainable micro-grant (up to US$ 250,000) mechanism established to develop and/ or test innovative adaptation products (e.g. project management tools) and technologies; link with cross cutting theme 1(vulnerable groups) and 2 (gender) 2. At least 14 proposals from Implementing Entities and at least 20 proposals from other entities supported.	Numbers of proposals funded under the direct access RFPs: at least 14*	■	6 Small Innovation Grants ($250 k) approved
		Number of innovative adaptation practices, tools and technologies funded through MIE partner: at least 20*	■	33 projects financed between the two AFCIA. In this report this is taken as a proxy for "number of innovative adaptation practices"
ER4 – Evidence base generated. Evidence of effective, efficient adaptation practices, products and technologies generated as a basis for implementing entities and other funds to assess scaling up	1. A relevant, efficient, effective and sustainable micro-grant (up to US$ 250,000) mechanism established to generate evidence base effective, efficient adaptation practices, products and technologies, to enable implementing entities and other funds to assess scaling up; link with cross cutting theme 1 (vulnerable groups) and 2 (gender) 2. At least 14 proposals from Implementing Entities and at least 20 proposals from other entities supported.	Quantity and quality of key findings on effective, efficient adaptation practices, products and technologies generated through direct access: at least 14* proposals	■	As of April 2022, there are 6 approved Innovation Small Grants ($250 k)
		Quantity and quality of key findings on effective, efficient adaptation practices, products and technologies generated through MIE partner: at least 20* proposals	■	No project has submitted a project performance report (PPR)

*Note: the numbers of proposals to be approved depend on the quality of those proposals, which is largely outside the control of the Fund
** Status as of April 2022.■ Not achieved; ■ in progress; ■ achieved; ? unclear

Figure 16. Planned vs approved funds under the innovation facility (source: author)



In the Innovation Large Grants, there are no approved projects from a total of eight concepts submitted. The intention was at least six large grants in the first request for proposals launched in 2021[13] . There are three projects in the pipeline: one concept (Egypt) and two pre-concepts (Gambia/Tanzania and Kenya/Uganda) have been endorsed, all from MIEs. One fully developed NIE proposal (Bangladesh) and three concepts (Belize, Somalia, Viet Nam) have not been endorsed. One NIE submitted concept from Panama was not endorsed due to accreditation issues.

In the Innovation Small Grants, there are six approved projects from a total of eight projects submitted to the Board. The intention was 28 projects[14.] Two projects were approved the first time (Armenia, Chile), one approved after deferral (Antigua and Barbuda), two projects approved at the second submission (Bhutan and the Dominican Republic) and one on the third submission (Uganda). Two other projects (Zimbabwe and Tanzania) were not resubmitted after they were initially not approved. In terms of the Innovation Pillar, the Innovation Small Grant was launched first. However, the process of defining innovation for the Fund, and the lack of clarity and guidance for IEs regarding key concepts, has affected the quality of proposals and thus delayed funding.

Two AFCIA projects of $5 million each have been approved and are operational. After initial delays, they are now on track and have approved grants; UNDP AFCIA has approved 22 grants of 60k/125k (from over 400 applications), and UNEP/CTCN AFCIA has approved

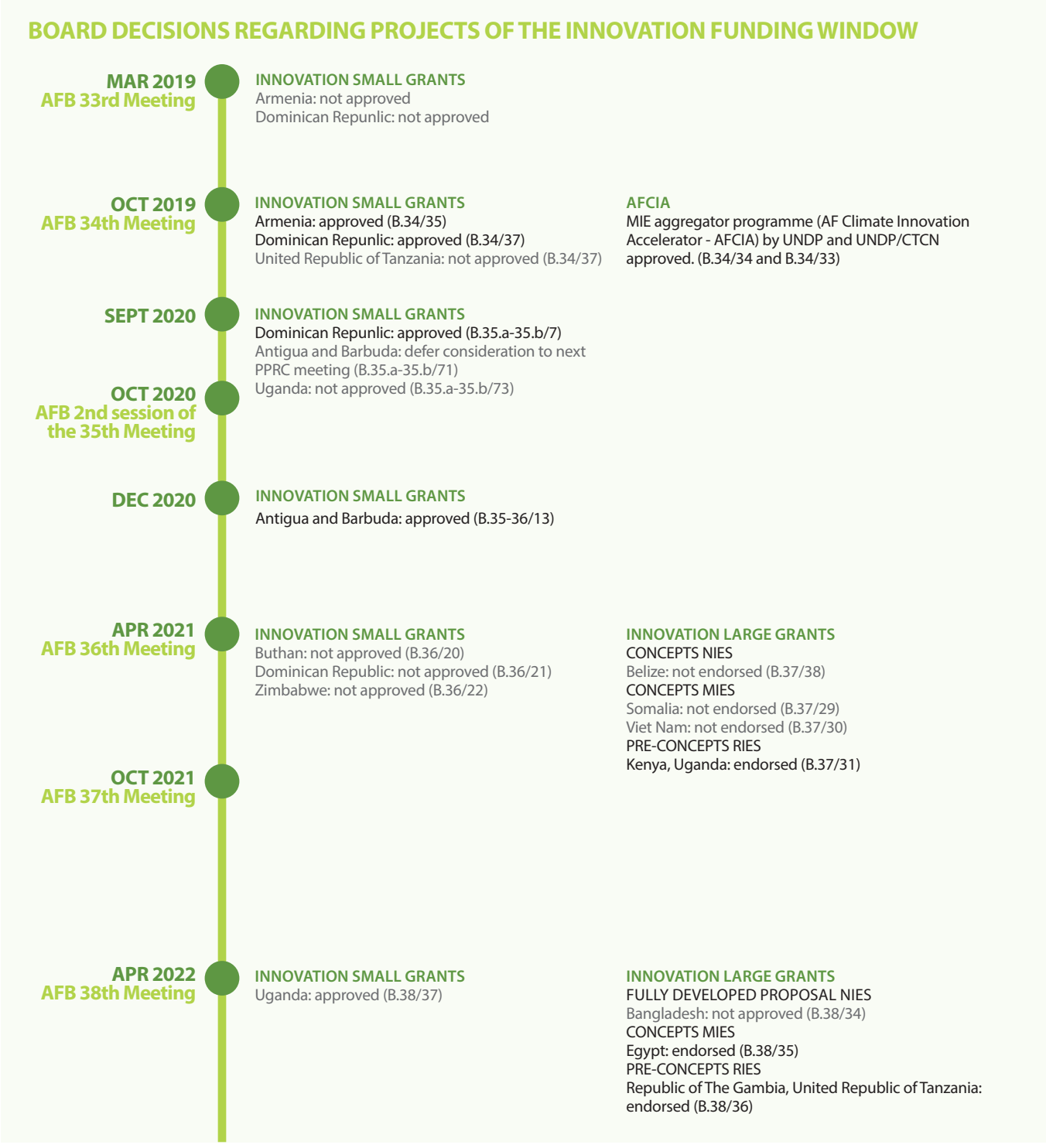
13. AFB/PPRC.27/28. Available at: https://www.adaptation-fund.org/wp-content/uploads/2021/03/AFB.PPRC_.27.28-Operationalization-of-the-large-grants-for-innovation.pdf. Accessed 24 August 2022

14. AFB.B.32.12. Available at: https://www.adaptation-fund.org/wp-content/uploads/2019/03/AFB.B.32.12-Report-of-the-32nd-meeting.pdf. Accessed 24 August 2022

11 grants of up to 250k each (from 47 applications). The third UNEP/CTCN call for proposals has been launched.

Figure 17 shows the timeline of the Fund's board decisions regarding project proposals submitted under the Innovation Facility.

Figure 17. Timeline of board decisions regarding project proposals submitted under the Innovation Facility (source: author)



5.4 Innovation in the Adaptation Fund's Results Framework

The Fund-level Strategic Results Framework (SRF) consists of impact-level results and eight key outcomes. Each outcome has one or more related outputs and indicators associated with outcomes and outputs, respectively. The SRF is intended for all the adaptation projects of the Fund and, therefore, applies to the funding windows under the Innovation Facility.

Outcome 8 is explicitly focused on innovation, and as such, it contributes to the objective of the Innovation Pillar, SF2, of supporting the development and diffusion of innovative adaptation practices, tools, and technologies. The SRF was most recently amended in April 2022 (37th Board meeting) to include a set of five performance indicators to Outcome [15]. These indicators are currently in a piloting stage and might be modified based on the recommendations of the AFB Secretariat to the Board. The indicators are primarily activity-focused; they monitor the number of innovations advanced, innovators supported, partnerships, learning and sharing initiatives and number of applicants to innovation calls. Projects are intended to align their objectives and subsequent monitoring with those of the Fund. However, the AFCIA projects have also adopted an outcome-related innovation indicator around funding for scale-up or replication at both individual project and aggregator levels.

At a portfolio level, the Fund's broad definition of innovation and support for all stages of innovation presents a challenge to the efficiency of the proposed indicators, as potentially, any adaptation activity could fall within the innovation category (see also section 2.1). By remaining general and "all-encompassing", they risk failing to capture the scope and magnitude of the adaptation challenge and whether the innovation is making progress toward solving it. That has equally negative knock-on effects in view of identifying innovations and assessing the scaling readiness of innovative approaches.

The review did not identify any specific guidance or support within the AFB Secretariat for monitoring and evaluating innovations at a project level. The AFCIA projects do appear to provide innovation focussed monitoring advice to grantees as part of their wider support package (see 5.4.4).

5.4.1 Project formulation support via complementary (small) grants

The Fund makes project formulation support available to its IEs at the concept development stage of its project cycle process for Innovation Large Grants. As of the Fund's Board 38th meeting in April 2022, this support mechanism remained unused. 5.25.4.4

NIEs might request a Project Formulation Grant (PFG) of up to US$ 50,000 per project, with their project concept submission, to be granted only if the Board endorses the concept. Similarly, RIEs and MIEs may request a PFG of up to US$ 30,000 per project together with their submission of the regional project concept proposal. As of the Fund's Board 38th

15. AFB/B.37/.6 Specific Objectives and Indicators for the Innovation Aspects of the Projects and Programmes. Available at: https://www.adaptation-fund.org/document/specific-objectives-and-indicators-for-the-innovation-aspects-of-the-projects-and-programmes/. Accessed 24 August 202

meeting, no concept note by an NIE had been endorsed, and consequently, no PFG had been used. As for MIEs, only one concept note has been endorsed but didn't include a request for PFG.

5.4.2 Guidance for preparation and submission of project proposals

For the Innovation Small Grants, an application form, samples of project proposals and detailed instructions for preparing a request for an Innovation Small Grant have been developed and made available via the Fund website. This is complemented by a free e-training comprising two videos: one explaining innovation-related concepts and the second on how to find the form on the Fund's website and complete the application.

For Innovation Large Grants, templates are provided for fully developed concept and pre-concept proposals. Guidance is provided in the Appendixes of two Board documents (starting on pages 28 and 13 respectively) to which links are provided from the website and within the templates. In both cases, the aspects of guidance specifically focused on innovation are relatively short.

Both the guidance and the proposal templates are substantially similar to those for Action Pillar projects. The discussion of risk within the guidance is primarily focused on environmental and social risk, as in the Action Pillar. The small Innovation Projects application templates do not request projects to specify any risks specifically related to innovation. The updated guidance for the Large Innovation Pillar includes a section on risks of innovation, suggesting that it may be mitigated through adopting a portfolio of innovations, using a data-driven approach that allows projects to identify innovations that are failing and move away from them. It is too early to say how projects will interpret or implement this guidance.

Capacity development undertaken by the AFB Secretariat is concentrated in the proposal stage. The focus has been on strengthening NIEs' understanding of the Innovation Facility funding windows and how to apply. Support has been provided in the form of samples of project proposals, detailed instructions for preparing a request for the different funding windows under the Innovation Facility, free e-training, and guidance and knowledge-sharing webinars, including one by AFICA project leads. In addition, the Readiness Programme has provided information about the Innovations Facility, for example, via the Global Seminars for NIES[16].

5.4.3 Demand for support / Identified issues in the project application phase

There have been issues with both the quantity and quality of applications. The review process in advance of the Board meeting in March 2022[17] identified issues relating to the quality at entry of funding applications for the Large Innovation project proposals, such as the need to use correct templates and for proposals to more clearly define and describe the project's innovation rationale. Although not working with NIEs, both AFCIA projects also found they needed to provide considerably more support to applicants than

16. Presentations from previous Global Seminars can be found in https://www.adaptation-fund.org/readiness/news-seminars/. Accessed 24 August 2022

17. AFB/PPRC.29/33. Available at: https://www.adaptation-fund.org/wp-content/uploads/2022/03/AFB.PPRC_.29.33-Report-of-the-Secretariat-on-the-initial-screening-and-technical-review-of-large-innovation-projects-1.pdf. Accessed 24 August 2022

anticipated in order to generate good quality proposals. For instance, many of the AFCIA applicants are not familiar with the concept of climate adaptation and have difficulties linking the social outcomes of their innovations to adaptation outcomes.

The experience of the Fund suggests that there are capacity issues among many Adaptation stakeholders to effectively lead or support adaptation innovation. Capacity issues among NIEs identified by interviewed stakeholders include lack of knowledge of innovation, lack of resources and lack of motivation to innovate. There is also confusion in making a decision between applying to the innovation windows or through the Action Pillar, a process that they may be more familiar with already.

The AFB Secretariat has limited capacities in relation to Innovation, and currently, no senior expert is primarily dedicated to the innovation theme. This limited in-house capacity constraints the consistency and type of support the Secretariat can offer to IEs. And as stated earlier in this section, the need for support to IEs, especially NIEs, during the design and implementation phase of innovative projects is considerably higher than proposals sent to the Action Pillar. At its 38th meeting (April 2022), the Board took a positive step to breach this gap by approving a new position, successfully recruited in July 2023, and additional recruitment of a Junior Professional Officer is in progress. Expansion of the team is welcome but unlikely to be able to provide the level of support required to achieve the Fund's current level of ambition in relation to innovation.

5.4.4 Support by MIEs to non-accredited entities in the AFCIA aggregator mechanism

As explored in section 5.2, the AFCIA projects differ from the AF projects in that they provide assistance to grantees, including at the proposal stage. Both projects work with partners to provide this support. The UNDP AFCIA project has developed strong partnerships at a global level with a range of climate and innovation-focused organisations that are able to provide a range of support to grantees. The CTCN/UNEP AFCIA project works by connecting national entities to members of its network of technical assistance service providers.

The UNDP AFCIA project used its partnerships during the call for proposals phase, working with other actors in the innovation ecosystem to communicate about the grants and identify potential applicants, subsequently receiving more than 400 applications. The Project Progress Report says, "The project has received many more applicants than expected due to the partners' network (UNDP Youth team's 6000+ young entrepreneurs, Climate-KIC's graduates of ClimateLaunch pad programme, previous UNDP SGP grantees and GRP's network of CSOs/NGOs)." (UNDP AFCIA, 2022[18]). This large number of applicants also reflects the direct access modality that is not limited to accredited entities.

Both AFCIA projects involve multi-stage application processes that start with submitting initial concepts using application forms before developing full proposals. Both AFCIA projects identified that applicants found the proposal process challenging and provided them with support throughout. The UNDP AFCIA project found that it "overestimated the capacity of the local organizations to submit proposals on adaptation innovation" and

18. UNDP-AFCIA (2022). Project Progress Report 1 (PPR1) document. Available at: https://www.adaptation-fund.org/project/adaptation-fund-undp-innovation-small-grant-aggregator-platform-isgap/. Accessed 24 August 2022

needed to provide considerable support, including in areas such as budgeting. Similarly, the UNEP/CTCN AFCIA project found that it took more time than anticipated to understand the submitted concept notes and work with stakeholders to determine the real innovation idea.

5.5 Learning within projects, between projects and by the Adaptation Fund

The importance of learning in the context of innovation is acknowledged by the Fund in its definition of innovation which stresses the importance of "iterative deployment where change, learning, and new information are embraced", and its vision, which commits to encouraging learning and evidence generation as part of its innovation support (See Figure 13). This recognition has made the Fund take some steps to support learning, particularly at a project level. However, learning in relation to innovation appears fragmented, and no overarching strategy for learning about innovation was identified. Existing approaches, instruments and mechanisms have not yet been applied to or tailored for innovation.

The review sought to identify mechanisms, plans and strategies for learning about innovation within projects, between IEs and by the Fund as a whole. It did not identify any documentation concerning the relationship between the Innovation and Learning Pillars. Furthermore, Learning Grants do not appear to link to innovation.

Evidence Generation is one of the Expected Results areas (ER4) of the SF2 of the MTS, one to which almost all of the directly funded innovation projects and concepts aim to contribute. However, evidence generation on innovation takes place within individual projects and is focused on supporting scaling by other funds. It is unclear how evidence generated about specific innovations (successful or otherwise) or about supporting innovation will feed back to other projects, across the Fund's Pillars, within the Fund and beyond.

Innovation is not a substantive focus of the learning and sharing SF3 of the MTS, where "the importance of innovation in readiness, accreditation or scaling up concrete projects" is identified as an example of a possible research topic. It was not clear whether other Fund learning mechanisms, Country Exchanges or the Community of Practice for Direct Access Entities plan to consider innovation. The standard project reporting format, the annual PPR, has a "lesson learned" section; this has not yet been customised for Innovation projects6, although changes are anticipated in future. The latest revision in 2019 included a section inviting projects to describe innovative practices or technologies; this is a potentially interesting source of insights which provides a jumping-off point for further investigation and learning.

There are some examples of collaboration between the AFB Secretariat Knowledge Management team and the Innovation team. They collaborated to produce the innovation training for Innovation Small Grant applications (see 5.4.2) on an Innovation Webinar for NIEs under the Readiness Program and in sharing learning from AFCIA projects at a conference. A study on the topic of Innovation is planned for the next financial year.

One possible barrier to learning is a lack of oversight across the Innovation Pillar or between the Innovation and Action Pillars concerning innovation. For example, the same

technology had been funded through the Innovation Small Grants and the UNEP/CTCN AFCIA project, which provides an interesting learning opportunity (see Box 2). Lack of oversight is likely to be another consequence of the Secretariat's reliance on external experts to support the strategic development of the organization (also mentioned in 5.4.3). The fact that the know-how brought by external experts can only partially stay within the organization can impact the capacity building and ongoing organisational learning of the Fund.

Box 2. Water-filled barriers: One innovation, different locations, different financing mechanisms provide an opportunity for learning

In response to separate proposals from Uganda and Burundi, the Adaptation Fund is supporting two projects that seek to test a scalable water-filled barrier to manage flood and drought risks effectively. Support is being provided in different ways. In Uganda, a Innovation Small Grant ($250k) was approved in which NIE, the Water and Environment Ministry, will work with a private company to test SLAMDAM technology and share findings with local communities. The other is a CTCN AFCIA technical assistance grant ($250k) in Burundi, in which a contractor selected by CTCN will identify and test a water-filled barrier and define a roadmap to scale up the technology. The similarities between these projects being undertaken using different financing mechanisms provide a rich opportunity for learning not only about the innovative technology itself but also about how the Fund can most effectively support the deployment of innovative approaches.

6. Portfolio Analysis – Focus on innovation at a Project Level

A key part of the thematic evaluation was a desk-based review of the Fund Portfolio to explore innovation supported by the Fund to date in both the Action and the Innovation pillars. The review did not explore the impact or effectiveness of projects or innovative elements within them. Instead, it sought to explore the extent and nature of innovation within Fund projects using the framework identified in section 2 of this report, namely types, stages, outcomes, actors and processes. Applying this lens ex-ante was challenging as documentation was not structured according to this framework. In particular, it was difficult to meaningfully distinguish between public and private outcomes. However, it generated some useful insights, including differences in innovation between the Action and Innovation pillars, as summarised in this section. In addition, four innovative projects from across the Portfolio were examined in greater depth, and interesting elements were identified. These are summarised in Appendix V. :

- Deep Dive 1: Innovation in the Action Pillar and Support to Scale, Action Pillar project in North Rwanda
- Deep Dive 2: Piloting a global funding and support mechanism for locally-led adaptation innovation; the UNDP AFCIA project
- Deep Dive 3 Technical assistance to drive innovative adaptation practices, products and technologies, the UNEP-CTCN AFICA project
- Deep Dive 4: Combining public and private resources to respond to failings in innovation ecosystems for adaptation, Innovation Small Grant project in the Dominican Republic

6.1 Innovation in the Action Pillar

Text analysis of the Action Pillar projects showed that most of the reviewed project documentation contained mentions of innovation (52%), pilot (51%), test (57) and demonstration (56%). A selection of 15 projects (labelled AP1 to AP15, see Table 11 in Appendix IV.) were identified as highly innovative and were further analysed based on pre-selected criteria to explore how innovation is supported at the project portfolio level. See the methodology summarized in section 3.3 and detailed in Appendix III. Findings from the structured analysis of 15 projects were as follows.

The review found inconsistent use of the language and concepts of innovation. While not surprising, it was challenging to identify which projects had innovative components and undertake rigorous comparison and analysis. Some projects use "innovative" as an adjective synonymous with "new" (e.g. AP-1); others demonstrate elements of the innovation framework (piloting, deployment, scaling) without using the language of innovation (e.g. AP-7). Many of the projects that were subsequently scaled up (AP-17) did not use language associated with innovation.

Considering the types of innovation, the sample of innovative projects from the Action Pillar is composed predominantly of projects implemented in the water management

and rural development sectors, so agricultural and water management technologies and practices formed the majority of innovations. Other innovations included: the development/upgrading of early warning and monitoring systems (six projects); financial products to support resilience and adaptation featured in five projects; socio-organisational and socio-cultural innovation was explicit in some projects and implicit in others, e.g. new models for natural resource management; supporting innovation in small scale income generating activities featured in three projects.

Considering the innovation stage, most projects reviewed are focused on testing, deploying and diffusing existing approaches into new contexts rather than generating new innovations. Pathways to scale were not clear in project proposals, although the projects appeared to assume a public sector pathway to scale (e.g. via public policies and legislation) as opposed to a commercial pathway to scale. Many projects were committed to documenting and communicating innovations - necessary but not sufficient for scaling. The review identified the following pathways, the first of which was most commonly used in projects that were about rolling out existing technologies: Dissemination of innovations through stakeholder engagement, capacity building and knowledge sharing - in some cases supported with access to finance for individuals for adoption; mainstreaming by the government into national policy; roll out by IE or EEs whether locally nationally or regionally; scaling up by other entities, in particular the GCF (see Appendix V. , Deep Dive 1).

Considering the roles and actors in innovation, innovation was frequently driven by the "the project", that is the IE, typically Government Ministries working in multi-level or cross-sectoral partnerships, sometimes playing an "innovation broker role" connecting different actors and passing on funding. Research institutes were the most frequently mentioned innovator; private sector actors were mentioned as innovators only in relation to financial products; farmers, indigenous people, and community members were considered generators of innovation in a minority of projects; otherwise, they were the adopters of innovations.

6.2 Innovation Pillar Projects and Proposals

Analysis was undertaken of the six approved Innovation Small Grant projects and three pipeline Innovation Large Grants (recognising that the latter may not be approved). The purpose of the analysis was to review the nature of innovation projects in comparison with the Fund's Innovation ambition and innovation within the Action Pillar (see the summary of analysed projects in Table 7).

In the Innovation Pillar, some projects and pipeline proposals target aspects of the innovation ecosystem rather than focusing on a specific innovation. They attempt to identify and tackle specific barriers to adaptation innovation, particularly experienced in developing countries, strengthening the enabling environment for adaptation innovation at micro, regional and global levels. For example, an Innovation Small Grant project in the Dominican Republic will test a micro-ecosystem for accelerated technological co-creation (see Appendix V. , Deep Dive 4). One pipeline Innovation Large Grant project proposes

supporting access to finance by early-growth adaptation SMEs in Kenya/Uganda; another proposes creating two Regional Innovation Hubs in Africa to develop and advance the uptake of innovative hydrometric approaches. The UNDP-AFCIA project is itself a key player, as a platform to support the adaptation innovation ecosystem at a global level.

Engagement with the private sector and private finance is more apparent in the Innovation Pillar project documents than in the Action Pillar. Some projects and proposals, particularly those focusing on the innovation ecosystem (the Dominican Republic and the proposed Tanzania/Gambia project), emphasise the importance of engaging private sector actors, particularly local SMEs, as drivers of innovation. The role of the private sector as financers and investors of innovations is clearer in many projects; however, barriers to engagement remain. For example, the Dominican Republic proposal was revised to remove co-financing. Similarly, plans to support SMEs directly by the UNDP-AFCIA project were considered too complicated to pursue, given UNDP policies.

Roles and actors in innovation processes are somewhat clearer in the Innovation Pillar. The role of the project implementing or executing entities as innovation brokers or facilitators is clearer in the Innovation Pillar projects, particularly those that focus on supporting the innovation ecosystem. As outlined above, the role of private sector actors as drivers and financiers of innovation is clearer. Innovation Pillar projects place greater emphasis on locally-led bottom-up innovation, including but not exclusively, farmers. The innovators in UNDP AFCIA-supported projects are overwhelmingly the leaders of local NGOs, often representing communities or indigenous groups. Research institutes are again acknowledged as key actors in an innovation system, often working with other actors.

Table 7. Summary of Innovation Pillar Small Grants (approved) and Large Grants (concept or pre-concept endorsed) (source: author)

Innovation Small Grants	Summary of Innovation
Bhutan: Building Adaptive Capacity through Innovative Management of Pests/Disease and Invasive Alien Species (IAS) in Bhutan to Enhance Sustainable Agro-Biodiversity and Livelihoods **NIE - Project Approved**	Competition to develop traps for invasive alien species, prototyping/testing, building an evidence base and scaling to nearby communities.
Dominican Republic: Strengthening of a Replicable Micro Ecosystem of Accelerated Technological Innovation for Adaptation and Mitigation to Climate Change in the Dominican Republic through the Development of a Pilot Thermo Solar **NIE - Project Approved**	Seeks to test an international micro-ecosystem of accelerated technological co-creation where local companies drive technological innovation and resources are leveraged from the US private sector and multilateral funds.
Chile: Water Security: Improving Water Access during Emergency Situations in San Antonio Province. Region Valparaíso **NIE - Project Approved**	Open competition to source the design of cost-effective, replicable and resilient Water Point that also is an interactive source of relevant information.
Armenia: Engaging Future Leaders: Digital Education Module on Adaptation Challenges and Best Practices for Youth **NIE - Project Approved**	Design and test a replicable and sustainable digital education solution for high school students in Armenia to educate new generations of environmentally cultured young change-makers with a focus on adaptation.
Uganda: Enhancing Resilience to Climate-induced Flooding and Drought through the Deployment of a Water-filled Barrier **NIE - Project Approved**	To test and generate evidence about the effectiveness of data-driven risk analyses and the deployment of a scalable water-filled barrier (SLAMDAM) to prevent flooding and simultaneously store and harvest water.
Antigua and Barbuda: Innovative Technologies for Improved Water Availability to Increase Food Security in Antigua and Barbuda **NIE - Project Approved**	Test solar-powered reverse osmosis technology at main agriculture sites and a solar-powered water pump at three farms. Generate business models and share information to inform policy standards and potential scale-up projects.
Innovation Large Grants - Pipeline	**Summary of Innovation**
Tanzania and Gambia: Enhancing Hydromet Services through Regional Monitoring Innovation Hubs in Africa (Gambia, Tanzania) **MIE: World Meteorological Office - Pre-concept approved**	Create two Regional Innovation Hubs in Africa to develop and advance the uptake of innovative hydrometric approaches by the NMHSs in Tanzania, The Gambia and surrounding countries.
Egypt: Building Resilience in the Old Lands by Combining Innovations in Irrigation, Agriculture, and Livelihood Activities **MIE: FAO - Concept Endorsed**	Roll out innovative irrigation techniques to a small group of farmers in the Old Lands, a suite of social, technological and process innovations along a value chain. Evidence generation and Capacity building for national policymakers to support scaling.
Kenya and Uganda: Unlocking Investments in Female and Youth-Led Early-Growth Stage Adaptation Micro, Small and Medium-Sized Enterprises in Kenya and Uganda **MIE: UNIDO**	Support access to finance by early-growth adaptation SMEs through national and regional accelerators based on a pioneering performance-based blended financing mechanism.

6.3 Cross-Cutting Observations

In terms of stages of innovation, the Portfolio Review found that projects in the Action Pillar, Innovation Small Grants and AFCIA projects were clustered around encouraging and accelerating new applications through testing, piloting and small-scale diffusion of proven innovations. There is some ambiguity about the stages of

innovation that the Fund intends to support at the early and later stages of the innovation pathway. In particular, there appear to be mixed messages about whether the Fund supports scoping and developing new innovations, and there is a blurred boundary between the rolling out of proven innovations (ER1 of SF2) and the implementation of proven approaches, which is not universally considered innovation.

Pathways to scale remain primarily public. Projects aim to generate evidence about the viability of innovations or their applicability in particular contexts in order to position innovative adaptation solutions for scaling by other actors, e.g. larger funds and national governments. This relies on good evidence generation and has been supported in one instance in the Action Pillar with a Scale-up Grant[19], the only time a Scale-Up Grant has been used to date (See Appendix V. , Deep Dive 1). Both AFCIA projects provide grantees with dedicated support for scaling, including commercial pathways to scale.

Many innovative projects are testing or piloting technologies and approaches, and the Fund's Innovation Funding mechanisms are themselves considered pilots. However, in most cases, it is not clear exactly what is being tested, what constitutes "success" or "viability", or how that is being monitored (see also discussion on Innovation indicators in section 5.4). Positive examples were identified, such as the UNEP/CTCN AFCIA project, which supports projects in determining metrics for the success of innovations. Another example is the Dominican Republic project (See Appendix V. , Deep Dive 4), which aims to generate a "minimal viable product", suggesting clear metrics will be identified and monitored.

19. Further information about Scale-up Grants available at: https://www.adaptation-fund.org/readiness/readiness-grants/project-scale-grants/. Accessed 24 August 2022

7. Sense-Making and Recommendations

Based on the observations and analysis presented in sections 4, 5 and 6, this section will make sense of these findings and put them into perspective. To do so, the Fund's own targets and good practices in other comparable institutions are used as benchmarks or reference points. Overall, a reconsideration of the recommendations and findings of the document "Options for further defining innovation in adaptation" discussed at the 26th meeting (October 2020) of the Project and Programme Review Committee (AFB/PPRC.26.b/17) is encouraged.

7.1 Strengths and potential of the Fund as a supporter of innovation

Strategically, the Fund is well positioned to engage in adaptation-related innovation processes given the vastness of experiences in planning and implementation of adaptation projects across a high diversity of contexts since its launch (more than 15 years by now). Its inventory of evidence, lessons learnt, and best practice examples lays an excellent foundation for a better understanding of innovations in the field. Given the synergies and similarities between the adaptation and the innovation domain (see section 2.1), it does not surprise that the portfolio analysis has identified several innovative elements in Action Pillar project designs, despite not being explicitly focused on innovation (see section 6). The Fund would benefit from using these examples, documenting them, and integrating the lessons in future guidance and processes.

An important aspect of (social) innovation design is a good understanding of the innovation ecosystem (including regulatory and legislative frameworks) as the wider operating system. The Fund has developed excellent and long-standing relationships with NIEs in developing countries, an essential prerequisite to a thorough assessment of the domestic innovation ecosystems to embed project-based innovation (as supported by the Fund currently) processes successfully.

Another potential to exploit is the opportunity to embed the Fund's grant financing of innovation, possibly as a de-risking instrument, into investment packages customised for innovation financing. In particular, blended finance arrangements hold great potential to achieve results in cooperation with complementary actors that provide impact investment, loans or private equity. The Small Grant project in the Dominican Republic provides an interesting example of combining multiple sources of finance to support innovation. (See Appendix V. , Deep Dive 4).

The UNDP AFCIA programme (see section 5.4.4) has explored what seemingly is a step forward in engaging promising innovators. It provides funding to non-accredited entities from realms of society beyond the public and government sectors. It thereby increases the likelihood of engaging with talents, skills and institutional cultures that are conducive to innovation processes.

7.2 Areas for Improvement and Potential Actions

This section presents areas for improvement and related recommendations to lift barriers and realize the full potential of the Fund to support innovation that helps adapt to climate impacts. Improvement areas are organized into seven thematic and operational areas, and for each area, the core findings derived from Chapters 4, 5 and 6 are presented. Furthermore, some of the implications (i.e., explanations of why and how a specific finding can be interpreted in view of specific success factors) are stated, and subsequently, forward-looking recommendations (mostly strategic) are provided per area.

AI1. Definitions and terminology

Findings/ observations:

- The definitions and terminology related to innovation used in the Fund's documents are broad and not specific enough to be fit for purpose. The Fund does not differentiate between innovation outcomes (see categories A and B in section 2.5) and remains "all-encompassing" regarding the types of innovation (see section 2.2) and the topics supported within the wider CCA thematic. It supports all stages of the innovation process, from new innovations to acceleration and scaling existing ones (see strategic results in section 5.25.4). Still, it remains unclear what each of these stages entail and where the operational/programmatic boundaries lie between them.
- At the portfolio level, terms related to 'innovation' were generously used across the documentation of projects under the Innovation Facility (see section 6.1). However, significant aspects remain unclear about the nature, process, monitoring and evaluation, learning and operational elements of the respective innovation.

Implications:

- One issue observed is that the guidance for IEs is unclear regarding the kind of projects and measures expected in the specific funding windows under the Innovation Facility. Following the Fund's current definition of and support to innovation for CCA, most projects under the Action Pillar could potentially be adjusted to fit the requirements for grants under the Innovation Facility (see section 5.5). Martinez et al. (2017) state that 'there is the danger that in any critical debate or discussion of the topic, protagonists may become embroiled in controversy or drift down irrelevant intellectual and practical blind alleys simply because of differences in the meaning of the term 'social innovation'.
- The meaning and the operational value of indicators and target setting of innovation-focused MEL systems (both at the Fund and project level) are undermined by the lack of clear definitions. By remaining general and all-encompassing, the MEL systems risk failing to capture knowledge as to whether the innovation is making progress toward solving the adaptation challenge. That has equally negative knock-on effects in view of the identification of innovations and the assessment of scaling readiness.
- The support systems (financial and non-financial) are equally general and remain, for the most part, unused.

- Learning and comparability between projects are compromised, and targeted support is harder to focus on and implement.

Potential Actions:

PA1.1 Define innovation more precisely and narrowly while avoiding over-prescriptive definitions, using the categories presented in the innovation framework developed and used in the thematic evaluation (see section 2), particularly in view of (1) Type of innovation targeted, (2) Intended outcome of innovation (for suppliers, users, society etc.), (3) Intended users of innovation/distribution of benefits, (4) Stages of innovation supported, and (5) Scaling pathways encouraged.

Given that the Fund's mandate is focused on the 'generation' of publicly available economic, social and environmental benefits, the definitions should take the latest experiences in the field of social innovation into account. The Fund should more precisely define what it means by social innovation, also acknowledging that terms mean quite different things to different people (Gatignon et al., 2016).

PA1.2 Considering that different innovation types, outcomes, stages, and scaling pathways require differentiated enabling conditions and resources, the Fund should prioritize the development of specific guidance and support to certain sub-types of the abovementioned categories. This would allow the Fund to better target its limited resources to specific high-risk, innovative projects and gather experience and knowledge on particularly promising innovation processes in the adaptation field. The Implementing Entities' priorities could guide such prioritization.

AI2. Understanding and conceptualisation of innovation

Findings/ observations:

- The Fund conceptualises innovation primarily through a project approach and, more importantly, through a project design process that culminates in the elaboration of a project document, which later guides the project implementation. To a much lesser extent, the Fund uses an innovation ecosystem approach as used, for example, by Climate-KIC (see also section 4.1)
- Project documents tend not to specify the pathway to scale innovations at question clearly, and in most cases, not enough attention is given to preparation for the post-project period.
- The organisational culture of some of the Fund's IEs, especially NIEs, is not aligned with known enablers of social innovation, such as a creative, open and flexible organisational environment and culture.
- The landscape review (see Annex I, section 4) suggests that grant-only funding instruments are largely insufficient in supporting the funding needs along the innovation pathway. Innovators require different types of investment (e.g. blended finance), particularly social innovators and entrepreneurs (see Bugg-Levine, Kogut and Kulatilaka, 2012). The review also highlights positive examples of how grants can be used as part of blended-financed arrangements, fostering the mobilisation of additional

finance towards climate change adaptation and in support of social innovators and entrepreneurs. In this regard, the AF Board has taken a positive step by requesting the Secretariat to develop a draft guidance on optional co-financing that would define the scope and parameters for the Fund's co-financing and outline the suite of financial instruments that can be utilized.

- The Fund approach to support innovation seems to be predominantly focused on activities (limiting the overhead/ indirect costs). By contrast, many innovation funding institutions focus on the innovator itself (e.g., social entrepreneur, start-up, business, PPP manager) and provide seed or institutional funding. This relates to the need to sustain an innovation process over a longer period of time until a certain scale or breakthrough is achieved. That is why banks and private equity, for instance, provide unearmarked funding to the organisation or company ('the innovator') to also cover administrative and other baseline costs, besides activities that can be discretely related to the innovative product, service or technology.
- There are early signs that the UNDP AFCIA mechanism successfully serves its purpose by providing pre-seed adaptation innovation funding, which is crucial as public funding is proven to be extremely crucial for incubating and accelerating innovation when entrepreneurs are still operating at a pre-seed stage with limited (or no) revenue potential.

Implications:

- The evolution of social innovation is increasingly conceptualised as a multi-stakeholder, intensely collaborative and iterative process supported by collective social learning processes (see, e.g. Amatullo et al., 2022). As such, a project approach, or the planning pathway of isolated innovations, may hinder understanding the innovation ecosystem and the enablers and barriers within this ecosystem.
- The amounts of financial support for innovation provided by the Fund per project are relatively low compared to larger climate funds (e.g., GCF, GEF). The somehow limited funding amount per innovation project may be confining or even ruling out interest by innovators of more commercially-focused, R&D-intensive innovations, but be sufficient for social innovations. Recent evidence from a global review of social innovation cases (Amatullo et al., 2022) shows that 89% of flagship examples from a global set of cases, comprising 182 projects, cost less than 1 million USD and 42% even less than 100.000 USD.

Potential Actions:

PA2.1 For innovation-focused projects, the type of IE should be reconsidered, and potentially, new channels for accreditation should be opened up. Alternatively, the selection of non-accredited entities as recipients of funds (as already practised under AFCIA) should be further encouraged, establishing partnerships with institutions and organisations with proven experience and innovation culture. This could include innovation support hubs and centre (e.g. Kenya Climate Innovation Center[20]) and

20. See Kenya Climate Innovation Center. Accessed 24 August 2022

apex organisations for social entrepreneurship. The Fund should be ready to also fund innovation brokers (see Winch and Courtney, 2007) beyond the innovators themselves (see also Table 4 in section 2.7 in view of the range of 'new' actors), following initial good practice (see also section 5.1).

PA2.2 The project design should put more emphasis on a rigorous innovation ecosystem assessment (or any other process that enables the enhanced understanding of the innovation ecosystem) and an iterative, open and collective innovation design process. To this end, the Fund should provide required financial and non-financial support to IEs. Given an innovation design process's iterative and experimental nature, staggering financial support mechanisms may be advisable over a longer period. The Fund should take further action to encourage using the Project Formulation Grant (PFG) option.

PA2.3 It may be advisable to consider the arrangements for blended finance[21] instruments, including a design process that considers collaborations and joint funding arrangements, including sources from across the commercial funding spectrum (see Figure 6 in section 2.7 for the range of traditional innovation investment and social innovation investment). There is a need to embed the Fund's grant into a more complex investment strategy (e.g., blended finance) for most innovations, particularly product and service-based 'category A' innovations (see section 2.5, and UNEP Finance Initiative, 2019).

PA2.4 The Fund could profit from a clearer stance as to whether the business-based and market-oriented 'category A' innovation is a vehicle for innovation that the Fund is ready to support. Hence, private sector companies would be eligible to receive support (either directly or indirectly) being a vehicle to generate wider social and environmental adaptation benefits (Martinez et al., 2017). As laid out in the subsequent section (AI3), integration of the private sector is strongly encouraged. An alternative would be collaborating with other funders that typically provide funding to private sector entities in co-financing arrangements.

PA2.5. Given the relatively low amount of financial support available per project under the Innovation Facility, it is vital to embed the Fund's grant in a financing strategy (based on blended finance) that focuses not only on promoting a specific innovation but also (or alternatively) on strengthening certain aspects of the innovation ecosystem. In addition, the Fund may want to focus on low-tech, low-input local innovations that require lower financial investments but have limitations in terms of the scale of impact. If so, that would have to be engrained and visible in all support instruments and related documents.

PA2.6 The Fund may shift towards actor-based (focused on the innovator) funding models going beyond activity-focused funding and lift or relax the limitation in view of

21. Blended finance is the use of catalytic capital from public or philanthropic sources to increase private sector investment in developing countries and sustainable development. Blended finance is a structuring approach that allows different types of capital (whether public, impact, or commercially oriented), to invest alongside each other while each achieves its own objectives (financial, development, or social impacts, or a blend).

Blended finance structures are observed across a broad range of transaction types, including funds, facilities, bonds, notes, projects, and companies. Public or patient capital in blended finance applications is primarily used to take higher risks in projects (e.g., through "first loss" or repayment guarantees), which helps to "crowd-in" private capital. Blended finance structures are typically used in circumstances where there are perceived or real risks by private investors, and where public capital can take more risk (without the commensurate return expectations) to catalyze investments faster than would otherwise happen. See UNEP Finance Initiative (2019). Driving Finance Today for the Climate Resilient Society of Tomorrow. Available at: https://www.unepfi.org/wordpress/wp-content/uploads/2019/07/GCA-Adaptation-Finance.pdf. Accessed 24 August 2022

core or institutional funding, supporting the organisation's structures and processes. In addition, the Fund should pay more attention to or potentially revise the application, approval processes and funding practice to more consistently assess and strengthen the organisational capacities and cultures of the innovator.

AI3. The role of private and public sector as a (social) innovator and their interactions

Social innovation requires a complex interaction of actors from the private and public sphere (funders, innovators, innovation brokers, legal and judicial entities etc.). As previously stated, adaptation provision and benefits cannot be discretely disentangled (see section 2.7), requiring the close collaboration of private and public actors from the beginning. Martinez et al. (2017) highlight that social innovation 'fundamentally relies on the socially constructed dynamics between business and social actors who carry ideas, focus their energies, mobilise competencies and create new complementarities to tackle social problems. Economic gain, in this approach, is at best an outcome of social innovation, not its engine'.

Findings/ observations:

- While there are some adaptation services and goods in which either public or private action is typical and expected, there are others in which some degree of co-production is not only desired but also necessary. The landscape review (see section 4 in Annex I) points to increasing interest and focus on enhancing the interaction of the public and the private sector in order to promote innovation at scale. However, institutions that foster innovations with social and environmental benefits often struggle with differing levels of accountability toward public and private capital providers.
- Analysis of the Fund portfolio of projects revealed that engagement with the private sector and private finance is more apparent in the Innovation Pillar project documents than in the Action Pillar. Some projects and proposals, particularly those focusing on the innovation ecosystem (e.g. the Dominican Republic Innovation Small Grant see Appendix v, Deep Dive 4), emphasise the importance of engaging private sector actors, particularly local SMEs, as drivers of innovation. The role of the private sector as financers of innovations is clearer in many projects. However, barriers to engagement remain.
- The analysis of the Fund's project portfolio showed that project concepts do not consistently describe the role of actors in the innovation process or whether the provision of the benefits takes place in the public or private sphere.
- Analysis of the project portfolio also revealed that when pathways to scale were discussed, they were primarily public. Projects aim to generate evidence about the viability of innovations or their applicability in particular contexts in order to position innovative adaptation solutions for scaling by other public actors, e.g. larger funds and national governments. However, the AFCIA projects offer support for innovations that identify a market pathway to scale.

Implications:

- The roles of different actors (i.e. private, public or third sector actors) are often unclear in the project (designs). This, in turn, blurred the analysis of the institutional arrangements

and how well private and public actors collaborate and input their knowledge, skills and expertise into the innovation process.

- This lack of clarity also blurs a more focused view on what capacities, skills and expertise are needed to maximize the prospect of a successful innovation process.

Potential Actions:

PA3.1 The Fund, being a publicly mandated financing institution, could position itself to play an expanded role in bridging public policy objectives and investment, including private investment. The Fund could enhance its support - where private investors will not – to socially valuable investments that accelerate public policy objectives, such as investment in pre-commercial and marginally commercial technologies, geographies, and market segments. This holds equally, if not more so, for adaptation and resilience investments, many of which do not yet generate sufficient private benefits for purely market-based solutions.

PA3.2 The decision of which blended finance instruments the Fund could consider should be guided by assessing barriers to climate innovation in developing countries (see Appendix VI.). By doing so, the Fund would enhance its contribution to lowering several barriers at each stage of the innovation chain - emergence, diffusion, and widespread adoption –filling out the persistent funding gap in transformative climate innovation in developing countries. Purely focusing on scaling up through bigger publicly mandated financing institutions will not mobilise the amounts of money necessary to build the required climate resilience in the countries in question.

PA3.3 The Fund should further elaborate on the possibilities to engage private sector actors - as potential innovators, scaling partners or investors - in the (social) innovation processes it supports and funds. It appears imperative to use the combined strengths of the varied set of actors in society to instigate social impact through innovation. A social innovation process is fundamentally driven by an inspirational and emulative effect that involves morally-engaged and motivated individuals in a dynamic and interactive flow of ideas, values, capital, and talent across sector boundaries (Mulgan, 2006). Public-private partnerships (PPPs)[22] play an increasingly important role in delivering social innovation and should therefore be more consistently considered as delivery models of social innovation.

AI4. Measuring success and preparing for scaling-up

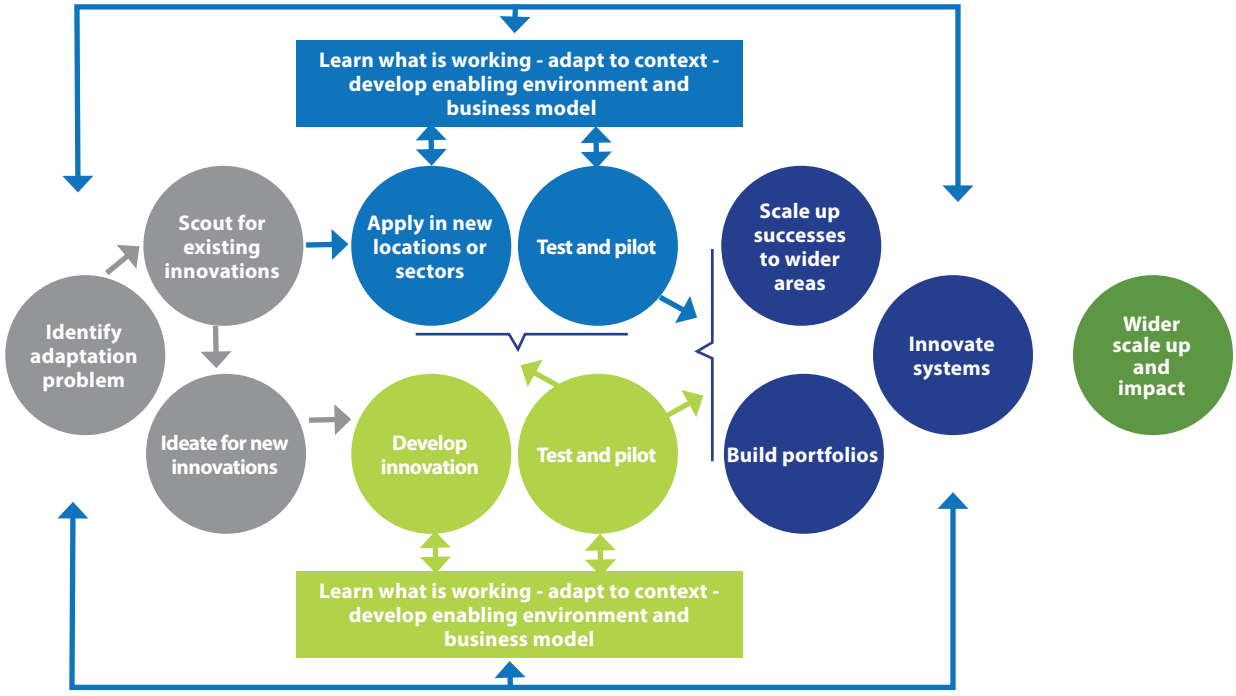
As stated in section 6.3, the innovation finance that the Fund has provided so far is focused on the proof-of-concept/ testing stage and, to a lesser extent, the initial R&D and the subsequent scaling-up stages. Therefore, designing and preparing the scaling of innovation and putting in place a MEL system that allows the successful identification of innovations that would be ready for scaling up is essential. A MEL system to support innovation must include indicators that consider aspects of the innovation ecosystem (see section 4.1). Overall, an innovation process requires great attention to constant

22. There is no standard, internationally-accepted definition of a PPP. The term is used to describe a wide range of types of agreements between public and private sector entities, and different countries have adopted different definitions as their PPP programs evolved. Typically, a PPP is a long-term contract between a private party and a government entity, for providing a public asset or service, in which the private party bears significant risk and management responsibility (World Bank, 2022).

experimentation and testing, resulting in an iterative integration of learning in view of adjustments. Therefore, an institutional learning culture is crucial to developing an innovation culture. The innovation focus enhances the risk of failure, a frequent outcome of innovation development. Early signs of failure need to be detected and, if possible, rectified to manage this risk. Another potential outcome of sound risk management is the departure and discontinuation of an innovation process in order to save costs and time.

The innovation cycle proposed in document AFB.PPRC.26.b/17 highlights the crucial importance of appropriate MEL systems.[23]

Figure 18. Innovation cycle. (source: AFB.PPRC.26.b/17)



Findings/ observations:

- There is little evidence that monitoring, evaluation and learning (MEL) systems have been tailored or resourced to meet the specific challenges posed by innovation. At the portfolio level, the lack of clarity of definitions of what constitutes innovation (see AI1) limits the ability to identify and track innovations. Rolling out the new Outcome 8 indicators of the Fund's Results Framework will not address these challenges. The ability to learn at a portfolio level is compounded by relatively few learning mechanisms (see AI5).
- At a project level, there are many pilots and experiments. However, it was often difficult to identify what was being tested, what constituted "success" or "viability", or how that was being monitored. However, there were some indications of good practice, for example, in CTCN AFCIA support to grantees to design monitoring frameworks, and there may be interesting practice at the project level that was not visible to this review.

23. AFB/PPRC.26.b/17. 2020. Options for further defining innovation in adaptation projects and programmes. Page 20. Available at: https://www.adaptation-fund.org/wp-content/uploads/2020/10/AFB.PPRC_.26.b.17-Options-for-further-defining-innovation-in-adaptation-1.pdf. Accessed 24 August 2022

Implications:

- The Fund's stated ambitions cannot be achieved (nor tracked) if MEL systems are not robust, adequately resourced, and tailored to identify and monitor innovation (see the introduction in this section).

Potential Actions:

PA4.1 During the project design phase, IEs should be encouraged (among others, via available guidance) to use the Theory of Change and other project planning results/ impact frameworks and to integrate enhanced thinking on potential innovation scaling pathways from the outset. More attention and potentially funding (in the form of a project preparation grant) for this component of project design is required.

PA4.2 Project management approaches (and associated management and reporting tools) should embrace and implement adaptive and iterative management principles.

PA4.3 More attention should be given to the post-project funding legacy that a respective Fund project will likely leave behind. An enhanced innovation ecosystem focus (see also R.2.2) would further support this.

PA4.4 Integrate experiences and state-of-the-art knowledge about evaluating social innovation (e.g., Preskill and Beer, 2012; Castro Spila et al., 2016). Consider, for instance, adopting and supporting developmental evaluation approaches at Fund and project level, which encourage innovation development and learning. Such approaches are well suited to guide adaptation to emergent and dynamic realities in complex environments by supporting concept framing, testing quick iterations, and monitoring developments, among others.

PA4.5 Closer collaboration (including the exchange of data and information) and joint learning systems around innovation between the AFB Secretariat and the AF-TERG should be put in place.

AI5. Synergies with other strategic pillars of the Fund

Findings/ observations:

- There is limited evidence of synergies, collaboration and learning between the innovation and the Action and Learning strategic pillars of the Fund (see section 5.5). It is unclear how the current knowledge management and learning practices will enable the required learning and innovation culture within the Innovation strategic pillar, nor how the Action Pillar will profit from the learnings from the Innovation Pillar.
- There have been no applications for Project Formulation Assistance (PFA) Grants and only one use of the Project Scale-up Grants in support of innovation.

Implications:

- The lack of agile learning in the five years since the emergence of the Innovation Pillar may have acted as a barrier to better developing and implementing the Innovation Facility.
- Lack of consideration of synergies across Fund operations may have contributed to

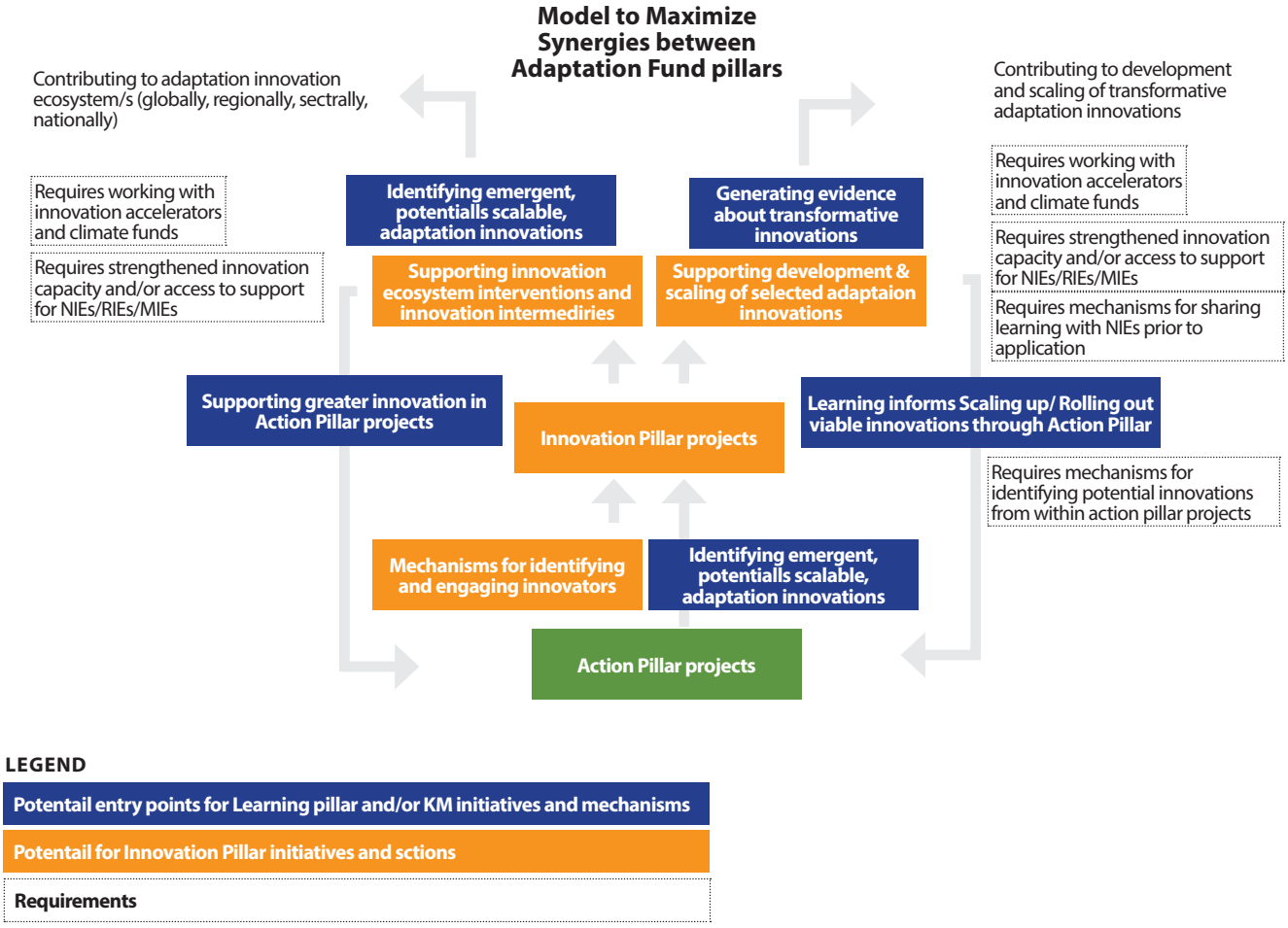
the low take-up of Fund grants (e.g., Scaling Up grants) and missed opportunities for maximising the effectiveness of the Fund resources.

Potential Actions:

PA5.1 Enhance the synergies between pillars (see Figure 19) based on initial positive example[24] . The Fund should look at its entire portfolio of activities as a potential source of innovative ideas and prepare processes to detect them successfully (see also section AI4 in this view).

PA5.2 Innovation support mechanisms need to create a learning culture, which requires integration and funding of learning across HR policies and strategies, including dedicated professional training, the establishment and roll-out of formats that enable learning about innovation between projects, across pillars or by the organisation as a whole.

Figure 19. Innovation cycle. (source: AFB.PPRC.26.b/17)



24. For this EDA, in addition to the routine monitoring of indicators, FONERWA will also collect case studies under each component to drill down into specific innovations and practices that arise due to project interventions. A lesson learning exercise will also be included at the mid-term of project implementation and at project completion. During this process significant new understandings will be catalogued and used to build the knowledge base of lessons and best practices...." REQUEST FROM RWANDA FOR ENHANCED DIRECT ACCESS (EDA) PROJECT/PROGRAMME FUNDING FROM THE ADAPTATION FUND (2017). Available at: https://www.adaptation-fund.org/wp-content/uploads/2021/08/Final-EDA-proposal-for-Adaptation-Fund_RWANDA.pdf. Accessed 24 August 2022

This diagram builds on the Innovation Cycle diagram in Figure 18 to illustrate how synergies may be maximised across Adaptation Fund activities in support of innovation. The left-hand side of the diagram represents interventions and learning around innovation ecosystems, and the right-hand side refers to specific innovations. Action Pillar projects are both a source of adaptation innovations that can be supported through the Innovation Pillar, while innovations supported through the Innovation Pillar can be rolled out through Action Pillar projects. Learning and Knowledge Management initiatives and mechanisms (represented in blue) connect the pillars and enable wider diffusion of insights.

AI6. Innovation and investment climate in developing countries

Findings/ observations:

- The Fund's Innovation Facility works mostly with and provides funds to public sector IEs in developing countries in which the innovation and investment climate is particularly challenging for many reasons (see also Huitema et al. 2016; WIPO, 2021)
- In addition, the organisational capacity to innovate (i.e. design, manage or evaluate innovation) is, for many reasons, limited (capacity of individual staff, institutional management styles and structures, lack of technical equipment etc.) in the respective IEs and partner organisations. Also, the number of individual talents with entrepreneurial and innovation experience is limited.
- The Fund's approach to innovation is a project-based approach, in which funded projects are implemented mostly in environments (i.e., innovation ecosystems) that lack important success factors, such as skilled labour, access to pre-seed and seed finance, public and private support schemes for the incubation and acceleration of innovations, among others. Such environments hamper the likelihood of successful design, management or evaluation of innovation through a project approach.

Implications:

- Based on the findings, the likelihood of successful innovation (support) is hampered, and it would require significant additional investment (not only in grant-making but also in the Fund's institutional infrastructure).
- The operationalisation of an innovation-focused support would require a significantly higher operational and institutional investment for both the Fund and the NIEs, compared to the 'business-as-usual' and well-established operational and institutional investment into the Action Pillar/ focus.

Potential Actions:

See also PA5.2

PA6.1 Focus on a long-term relationship-building process (beyond a project implementation approach) that enables the development of innovation potential and related capacities of selected actors (see also R2.1). This could also be achieved through enhanced collaboration with other non-financial innovation support mechanisms (such as accelerator and incubation programmes, innovation brokering etc.) (see also AI7).

PA6.2 Question the project-based approach (as a too isolated and insufficiently

embedded approach to support innovation in the Fund's typical context) and consider a more innovation ecosystem-focused approach. Consider potentially aligning funding to alternative frames of innovation support and policies (see Schot and Steinmueller, 2018 and Table 2 in AFB/PPRC.26.b/17). This would enhance the chance to target transformational outcomes of innovation more specifically.

AI7. The Fund's mechanisms to engage, identify and design innovations and support innovators

There is ample evidence that innovators in developing countries require financial and non-financial support, ideally bundled into a package. An increasing number of accelerator and incubation programmes, innovation brokers[25], climate adaptation knowledge brokers[26], communities of practice and other similar organisations at the global, regional and national levels[27] operate in support of climate adaptation-related innovators.

An increasing number of funders have also innovated new and proactive ways of engaging and identifying innovators and their organisations, instead of approaches (such as open calls for proposals as used by the Fund) that 'wait' for innovators to find the support mechanisms (see section 4.5)

Findings/ observations:

- As shown in Table 6 (see section 5.4), the progress in terms of numbers of projects and amounts disbursed by Fund administered funding windows are not promising (six Innovation Small Grants and zero Innovation Large Grants approved) and must be seen as an early indication of their effectiveness, five years after the Innovation Pillar was established and over three years since the Innovation Facility launched its first funding window at the COP24 in December 2018.
- The UNDP AFCIA mechanism has successfully generated high levels of applications, in part by working through partners who are already engaged in the innovation ecosystem (see section 4.5).
- The Fund is unusual in providing standalone innovation funding through its Innovation Large and Small Grants, without the kinds of packages of support provided by incubators/accelerators.
- The AFB Secretariat has limited capacities in relation to Innovation which constrains the consistency and type of support the Secretariat can offer to IEs. At its 38th meeting (April 2022), the Board took a positive step to approve the expansion of the team. This is welcome but unlikely to be able to provide the level of support required to achieve the Fund's current level of ambition in relation to innovation.

Implications:

There is a considerable level of risk associated with the continuation of the Fund's innovation facility approach as is, with special emphasis on risks specified in order to

25. Winch & Courtney (2007); Batterink et al. (2010); Climate-KIC; Ashoka etc.

26. E.g. PlanAdapt. Accessed 24 August 2022

27. E.g. Kenya Climate Innovation Center. Accessed 24 August 2022

achieve the Fund's stated ambition to support innovation and to scale up good practice in the promotion of innovation (as presented in the MTS and its implementation plan), there are several areas to which the Fund needs to pay attention.

Potential Actions:

PA7.1 The Fund should explore the rapidly emerging landscape of innovation intermediaries (used here as an umbrella term for the variety of actors, such as accelerator and incubation programmes, innovation brokers, climate adaptation knowledge brokers, communities of practice and other similar organisations) and build strategic partnerships with them (similar to the World Bank's global network of climate innovation centers[28]). The reliance on the expertise in engaging, identifying, and designing innovations will streamline and focus the support and will release the pressure on the Fund's institutional infrastructure.

PA7.2 The Fund may want to focus on its consolidated experience supporting climate change adaptation to support selected innovation intermediaries to strengthen their offerings to innovators in view of climate adaptation, such as the AFCIA mechanism.

PA7.3 Explore more 'proactive' ways of selecting and scoping for suitable innovators than 'reactive' mechanisms, such as the traditional call for proposal approaches, for example, by working creatively with incubator programmes or organising around a specific adaptation challenge (see section 4.5).

See also PA5.2

7.3 Option Packages for the Fund to Manage Innovation Support

In order to achieve the Fund's stated ambition to support innovation and to scale up good practice in the promotion of innovation (as presented in the MTS and its implementation plan), there are several areas to which the Fund needs to pay attention. The Fund should learn from its experience operationalizing the Innovation Facility, further strengthen its delivery and guidance, and improve processes to enhance its own readiness to successfully support and foster innovation for climate change adaptation (see seven areas of improvements outlined in section 7.2). As identified in 2020 by the PPRC document (AFB/PPRC.26.b/17) there are risks entailed in working in the space of innovation (see Table 8) but more so in not supporting innovation related to climate adaptation.

Table 8. Identified risks of funding innovation (source: AFB/PPRC.26.b/17)

Risks of innovating	Risks of not innovating enough
Lack of development impact or concrete action	Missing more effective innovations
Reputational risk	Spreading the Fund's impact too thinly
Maladaptation	**Missing systemic or disruptive opportunities**

28. World Bank (2016). Innovation Centers Help Developing Countries Capture Climate Change Opportunities. Available at: https://www.worldbank.org/en/news/feature/2016/05/12/innovation-centers-help-developing-countries-capture-climate-change-opportunities. Accessed 24 August 2022.

This section takes the potential actions presented in the previous section (7.2), and bundles them into three option packages. Each option package represents a different way of implementing the ambition established in the MTS 2018-2022 and potentially in the new MTS and related implementation plan.

Each option package involves a different degree of ambition, investment, cost, and timeframe. They also differ in the anticipated levels of impact.

Some potential actions are mentioned for more than one option package. However, the impact of the proposed actions differs according to the depth and degree to which resources are assigned and the amount of investment required to pursue an action under different option packages. It is highly recommended that the Board considers these options - which are not necessarily exclusive from each other - as part of the development of the implementation plan of future MTSs.

OPTION PACKAGE 1: 'Mainstreaming innovation and balancing ambition and resources' [29]

As part of this option package, the Fund would pursue a cost-effective use of institutional resources by focusing on a strategy that considers a moderate (as opposed to high in option package 3) institutional investment related to innovation.

The core strategic line would be following a mainstreaming logic in view of integrating innovation across all activities and operations of the Fund. This would particularly mean focusing on good practice standards in adaptation planning and implementation in highly vulnerable contexts (i.e., the core business of the Fund) that would almost by default consider aspects of innovation. By doing so, innovation would be regarded as more of a principle and vehicle to achieve better adaptation outcomes rather than a stand-alone objective.

The high level of cost-effectiveness of this option package, i.e. achieving the core objectives of the Fund by a moderate investment in the institutional capacity, would also be supported by a correspondingly modest target setting and level of ambition in terms of innovation-specific targets.

A sensible level of investment in a changed set-up in view of human resources, institutional processes and procedures, training and capacity development efforts etc. would be encouraged under this option package.

OPTION PACKAGE 2: 'Expanding smart and strategic partnerships' [30]

This option focuses on smart and strategic partnerships with innovation funders and intermediaries (see also section AI7). Here, the Fund would focus on its unique strengths such as (a) the proximity to and good long-standing relationships with national governments (NIEs) in vulnerable countries, (b) its support to concrete actions on climate

29. Under this option package, the following potential actions, as outlined in section 7.2 of this document, should be considered: PA1.1; PA1.2; PA2.1; PA2.2; PA4.2; PA5.1; PA7.2

30. Under this option package, the following potential actions, as outlined in section 7.2 of this document, should be considered: PA1.1; PA1.2; PA2.1; PA2.3; PA2.4; PA2.5, PA3.1; PA3.2; PA3.3; PA4.4; PA5.1, PA6.1, PA7.1

change adaptation and (c) extensive learning in view of reducing vulnerability and climate resilience in developing countries. The key implication for this option would be that the Fund would have to conduct a landscape analysis of who is doing what (and how well) and establish partnerships (the level of formality of these partnerships may vary). The UNDP AFCIA relationship with the Adaptation Innovation Marketplace could be considered a partnership to be replicated (see Deep Dive 2 in Appendix V.). Such partnerships would further connect the Fund with institutions with consolidated experience and knowledge in the field of innovation, who at the same time could attract new players to access the Fund resources without having to go through the accreditation process.

OPTION PACKAGE 3: 'Becoming a leader in supporting adaptation innovations' [31]

This option package would position the Fund as a thought leader on innovation support in the landscape of funding institutions promoting climate adaptation. However, it requires significant investments in view of getting the Fund's institutional infrastructure (including enhanced capacities, processes and procedures) ready to become a leader in supporting adaptation innovations in developing countries.

Enhancements and improvements would be required in the following areas:

- HR capacities (at the level of AFB Secretariat) in view of expertise to identify, promote and support (social) innovators as well as to set up support mechanisms and/or select and develop strategic partnerships.
- Procedures and processes, including conceptualisation, related to (a) type of grant recipient; (b) types of processes to identify innovators/ innovations; (c) funding volumes; (d) ability to co-finance/partner with the private sector (as financier and innovator); (e) learning (culture) / knowledge management mechanisms (e.g. quality of MEL systems) and (f) guidance for applicants/ innovators (guidance material, templates, training etc.).

7.4 Conclusion and way forward

Given the various future options for implementation pathways for the Fund as outlined above, budgetary and operational implications should be considered and assessed in terms of resources required and additional investment to be made, among others. The following recommendations are being made based on anticipated costs and investment levels progressively rising from option package 1 to 3, i.e. the lowest for 1 and the highest for 3.

On balance, and taking into consideration the overall picture and insights gained during the course of the thematic evaluation, as well as the Fund's current operations and procedures, a combination of option packages 1 and 2 would be suitable, assuming the current state of the Fund's innovation-related efforts. The potential impacts are expected to be achieved in a shorter time than Option 3, which would require a vast multi-year institutional change process and significantly larger investments.

31. Under this option package, the following potential actions, as outlined in section 7.2 of this document, should be considered: PA1.1; PA1.2; PA2.1; PA2.2; PA2.3; PA2.4; PA2.5; PA2.6; PA3.1; PA3.2; PA3.3; PA4.1; PA4.2; PA5.2; PA4.3; PA4.4; PA4.5, PA5.1, PA6.1; PA6.2; PA7.1; PA7.2; PA7.3

Appendix I. Landscape review - methods and list of institutions included.

The landscape review was based on an online desk-based review. An initial set of 39 institutions working in the field of development and climate was identified based on the following criteria: (a) institutions must pursue developmental, social and environmental objectives (with a primary focus on the Global South); (b) institutions must have some climate-related activities/measures/ schemes; (c) the final list should include institutions operating at different scales (international, regional, national). Next, a quick online scan was done to prioritise institutions with enough information on their approaches and support to innovation.

Table 9 shows the complete list of organisations included in the landscape analysis, both for the initial quick online scan (39) as well as for the in-depth analysis (16).

The in-depth review covered the following aspects and key questions:

- Conceptualisation of Innovation
  - Does the institution use rigorous, specific definitions?
  - How and to what extent does the institution define types, drivers, outcomes or stages of innovation?
- Institutional Policies, Guidelines and Structures
  - Are there clear guidelines about how the institution supports innovation?
  - Are there structures (units, focal points) dedicated to supporting innovation?
- Results and Measurement Frameworks
  - Does the institution report its results in supporting innovation?
  - Does it present a framework for which funding recipients are expected to report on results?
  - Does it go beyond activities (e.g. number of grants/people supported) to report on outcomes/impact?
- Funding Instruments, Schemes and Types
  - Are the funding instruments, schemes and types diverse?
  - Does the institution specifically target innovation within its funding instruments, schemes and types?
  - How do institutions promote social innovation and social impact as compared to return-seeking market-focused innovation?
  - Are there examples in which grant-making institutions/funds regularly join forces with other lending or private equity instruments to foster innovation (examples of

regular co-financing, long-term partnerships between funds/ers),

- how and to what extent is grant-making used to de-risk financial risks related to innovation funding,
- what kind of blended finance instruments exist that contain grants as one element
- What about the range of institutions and the proportional shares among them that receive grants from DFIs/ international public funds (predominantly public or not-for-profit recipients?)
- Under what circumstances do DFIs/MFIs provide grants to private sector actors?

- Non-Financial Support Services to Innovation Processes - Incubators, Accelerators
  - Does the institution offer support to innovators beyond funding?
  - Are the non-financial support services offered to innovators joined up with funding instruments, schemes and types?
  - Is the role of (access to) knowledge/ innovation and access significantly considered in the guiding documents, instruments and support services?
  - Does the institution in question provide specific support to theme/ sector-specific knowledge and information sources?
- Risk and Innovation

Table 9. List of organisations included in the landscape review

N°	Organization name	Type	Reach	Selected for in depth analysis
1	GCF - The Green Climate Fund	Fund - Multilateral Climate Fund	1 - International	YES
2	CIF - The Climate Investment Funds	Fund - Climate Fund	1 - International	YES
3	GEF - The Global Environment Facility	Fund - Trust fund	1 - International	YES
4	GIF - Global Innovation Fund	Fund - Multilateral investment fund	1 - International	YES
5	WWF - World Wildlife Fund	Non-profit organization / conservation organization	1 - International	YES
6	CTCN - the Climate Technology Centre and Network	UN - UNFCCC Centre	1 - International	YES
7	UNIDO	UN Industrial Development Organization	1 - International	YES
8	SCCF - Special climate change fund (Managed by GEF)	Fund - Multilateral Climate Fund	1 - International	YES
9	The Least Developed Countries Fund (LDCF) (Managed by GEF)	Fund - Multilateral Climate Fund	1 - International	YES
10	BNP Paribas S.A.	Bank	1- International	YES
11	KfW Development bank	Bank - Development Bank	1- International	YES
12	Horizon Europe - Europen Comission	Research Programme	2 -Regional - Europe	YES
13	EIT - European Institute of Innovation & Technology (incl. Climate KIC)	Agency of the European Union	2 -Regional - Europe	YES
14	EIT - Climate KIC	Knowledge and Innovation Community	2 -Regional - Europe	YES
15	Fundo Brasileiro para a Biodiversidade	Fund - Fund Biodiversity	3 - National - Brazil	YES
16	National Bank for Agriculture and Rural Development (India)	Bank - Development bank	3 - National - India	YES
17	Gates Foundation	Foundation, non-profit	1 - International	NO
18	MacArthur Foundation	Foundation, non-profit	1 - International	NO
19	Oxfam International	Foundation, non-profit	1 - International	NO
20	World Food Programme	Humanitarian organization	1 - International	NO
21	Conservation International	Non-profit organization / Charity	1 - International	NO
22	IIED - International Institute for Environment and Development	Policy and research organization	1 - International	NO
23	IFAD	UN agency for food and agriculture	1 - International	NO
24	UNEP	UN agency on enviroment	1 - International	NO
25	UNDP	UN centre and network	1 - International	NO
26	WIR - World Resource Institute	Research organization	1 - International	NO
27	Global Center on Adaptation	Foundation, non-profit	1 - International	NO
28	Master Card	Multinational financial services corporation	1- International	NO
29	MUFG Bank Ltd (Mitsubishi UFJ Financial Group)	Bank - Multinational investment bank	1- International	NO
30	HSBC Holdings	Bank - Bank and financial service organization	1- International	NO
31	Deutsche bank	Bank - Multinational investment bank	1- International	NO
32	ADB - Asian Development Bank	Bank - Development Bank	2 - Regional - Asia	NO
33	European Bank	Bank - Development Bank	2 -Regional- Europe	NO
34	CAF cooperación andina de fomento	Bank - Multilateral Development Bank	2 -Regional - Latin America	NO
35	Fondo Mexicano para la Conservación de la Naturaleza A.C.	Fund - Fund Environmental / Non-profit organization	3 - National - Mexico	NO
36	PROFONANPE	Fund - Environmental Fund	3 - National -Peru	NO
37	South African National Biodiversity Institute	Institute on Biodiversity	3 - National - South Africa	NO
38	Yes Bank Limited	Bank - Bank and financial service organization	3 - National -India	NO

Appendix II. List of main actors consulted

Table 10. List of main actors consulted

Institution	Name of Stakeholder	Designation
AFB Secretariat	Saliha Dobardzic	Senior Climate Change Specialist (contact person for innovation)
AFB Secretariat	Cristina Dengel	Knowledge Management Officer
AF-TERG	Claudio Volonte	AF-TERG member
Climate-KIC	Neil Walmsley	Head of International Markets, EIT Climate-KIC. External consultant to the Fund in support of innovation
Freelancer	Eleanor Saunders	External consultant to the Fund in support of the technical review of projects under the Innovation facility, innovation training.
Senior Research Fellow at King's College London ·	Susannah Fisher	External consultant to the Fund in support of innovation. Author of the report "Adaptation Fund and Innovation: emerging areas and strategic directions" (AFB/PPRC.26.b/17, Annex I)
UNDP	Chongguang (Charles) Yu	UNDP-AFCIA. Investment Appraisal Specialist, Nature, Climate and Energy
UNEP	Nadege Trocellier	CTCN/UNEP-AFCIA
CTCN	Rajiv Garg	CTCN/UNEP-AFCIA

Appendix III. Portfolio Analysis - methodology

Defining the Sample Portfolio of Projects from the Action Pillar

As of March 2022, there were 128 projects approved under the regular funding window of the Fund[32] (Action Pillar projects). Action Pillar projects did not have clearly defined metrics on innovation which made accurately assessing the level of innovation within the Action Pillar challenging.

In the absence of clear metrics, the identification and selection of innovative Action Pillar projects were made primarily by text mining project documents for innovation-related keywords as a proxy for a project's explicit incorporation of innovation elements in its design or outcomes. In other words, text mining was used to describe the typology of innovation across the Fund's entire portfolio of projects approved, under implementation and finalized. This is a methodological tool that enables evaluators to efficiently analyse large document collections to extract relevant information[33]. From the Action Pillar, the entire database of documents of all 128[34] projects approved, under implementation or finalized as of March 2022 was text mined in R[35]. The analysis included a total of 417 project documents, incl. project proposals, project documents, inception reports, completion reports, mid-term evaluations and final evaluations.

The initial list of keywords and word combinations used was taken from the recent GEF evaluation document "Support to Innovation: Findings and Lessons" (GEF 2021). The list was adjusted based on this review's framing of innovation and scoping review.[36] The final list of keywords follows:

"[Nn]ew approach", "[Nn]ew bill", "[Nn]ew institut", "[Nn]ew law", "[Nn]ew legal", "[Nn]ew market", "[Nn]ew model", "[Nn]ew organis", "[Nn]ew organiz", "[Nn]ew partner", "[Nn]ew polic" ,"[Nn]ew process", "[Nn]ew product", "[Nn]ew technolog", "[Ii]nnov", "[Dd]emonst", "[Ee]xperiment", "[Ff]orefront", "[Ff]rontier", "[Pp]atent", "[Dd]iffus", "[Cc]ompan", "[Ee]ntrepreneur", "[Ss]ocial entrepreneur", "[Pp]rivate sector", "[Pp]rofit", "[Cc]ommercial", "[Ii]ncubator", "[Aa]ccelerator", "[Dd]emo".

284 out of the 427 documents reviewed had at least one keyword match. From this analysis, the fifteen projects that had documents with the highest number of keyword matches were selected to be reviewed.

The second source of evidence was projects that have been scaled up by the GCF. From a total of seven as of March 2022, three projects were randomly selected for the analysis.

32. Universe of projects do not include scaling-up grants, learning grants, readiness grants, nor grants under the Innovation Facility

33. This methodology is consistent with the evaluation of innovation at the portfolio level conducted by the GEF. See GEF (2021). GEF Support to Innovation: Findings and Lessons. Available at: https://www.gefieo.org/evaluations/innovation. Accessed 24 August 2022

34. Readiness grants, learning grants and innovation grants are not included.

35. R is a free software environment for statistical computing and graphics.

36. AF-TERG Information Update on Phase One of the Thematic Evaluation of Innovation (AFB/EFC.29/Inf.3). Available at: https://www.adaptation-fund.org/wp-content/uploads/2022/03/AFB.EFC_.29.Inf_.3-AF-TERG-phase-1-report-on-innovation_final.pdf. Accessed 24 August 2022

One additional project that won a price in the category of social innovation was added to the final list of innovative projects.

There was some overlap between the different sources of evidence, e.g., some projects selected via data mining had been scaled up by the GCF. In the end, the total sample size of Action Pillar projects was 15, which equals slightly more than 11% (11.7%) of the total universe. The list and main characteristics of the sample projects are presented in Appendix IV.

Appendix IV. List and characteristics of innovative Action Pillar projects

The portfolio analysis considered 15 projects identified as having comparatively higher innovative elements as compared to other Action Pillar projects (see Table 11).

Table 11. Sample of 15 projects from the Action Pillar and selection criteria

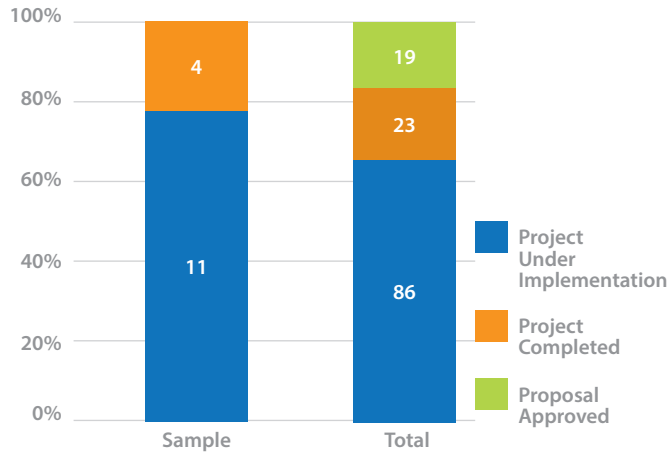
Evaluation code	Project Title	Type of IE	Country	Selection criteria	Status*
AP1	Enhancing resilience to climate change of the small agriculture in the Chilean region of O'Higgins	NIE	Chile	Text mining	Project Under Implementation
AP2	Strengthening Drought Resilience for Small Holder Farmers and Pastoralists in the IGAD Region (Djibouti Kenya Sudan Uganda)	RIE	Regional	Text mining	Project Under Implementation
AP3	Enhancing Adaptive Capacity of Andean Communities through Climate Services (ENANDES) (Chile Colombia Peru)	MIE	Regional	Text mining	Project Under Implementation
AP4	Climate Change Adaptation Programme in the Coastal Zone of Mauritius	MIE	Mauritius	Text mining	Project Completed
AP5	Developing climate resilience of farming communities in the drought prone parts of Uzbekistan	MIE	Uzbekistan	Text mining	Project Under Implementation
AP6	Building Resilient Food Security Systems to Benefit the Southern Egypt Region	MIE	Egypt	Text mining	Project Under Implementation
AP8	Adapting to climate change through integrated water management in Panama	NIE	Panama	Text mining	Project Under Implementation
AP11	Pilot rural desalination plants using renewable power and membrane technology	NIE	Namibia	Text mining	Project Under Implementation
AP12	Economic, Social and Solidarity Insertion for Resilience in the Governorate of Kairouan (IESS Adapt)	MIE	Tunisia	Text mining	Project Under Implementation
AP15	Enhancing Resilience of Agriculture to Climate Change to Support Food Security in Niger through Modern Irrigation Techniques	RIE	Niger	Text mining	Project Under Implementation
AP16	Talent Retention for Rural Transformation – Adapt (TART-Adapt)	MIE	Moldova Republic of	Text mining	Project Under Implementation
AP17	Reducing the Vulnerability by Focusing on Critical Sectors [...] in order to Reduce the Negative Impacts of Climate Change and Improve the Resilience [...].	NIE	Costa Rica	Winner of the INNOVAGRO 2019 award in the category of social innovation	Project Under Implementation
AP18	Reducing Vulnerability to Climate Change in North West Rwanda through Community Based Adaptation	NIE	Rwanda	Scaled-up GCF	Project Completed
AP19	Developing Climate Resilient Flood and Flash Flood Management Practices to Protect Vulnerable Communities of Georgia	MIE	Georgia	Scaled-up GCF	Project Completed
AP20	Increasing climate resilience through an Integrated Water Resource Management Programme in [...] Gadhdhoo Island	MIE	Maldives	Scaled-up GCF	Project Completed

The main characteristics of the project sample are presented in Figure 20 and summarized below:

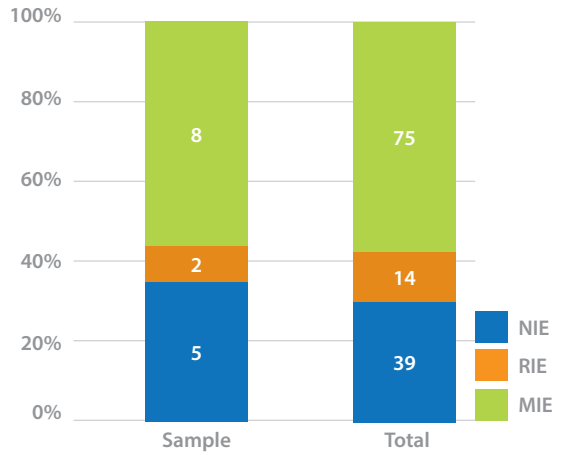
- The distribution of innovative projects per type of implementing entity (NIE 33%, RIE 13%, MIE 53%) matches the distribution of total projects of the Fund (NIE 30%, RIE 11%, MIE 59%). This suggests that innovative projects can be evenly found across projects regardless of the type of implementing entity.
- Almost half (47%) of the sample of innovative projects from the Action Pillar were from the African region
- Even though projects in the Asia-Pacific region represent 33% of the Fund's project portfolio, only 13% of the identified sample of innovative projects come from this region.
- The sample of innovative projects from the Action Pillar is composed predominantly of projects implemented in the water management and rural development

Figure 20. Comparison of the sample of Action Pillar projects identified as innovative with the universe (all Fund projects approved, under implementation and finalized, available as of March 2022)

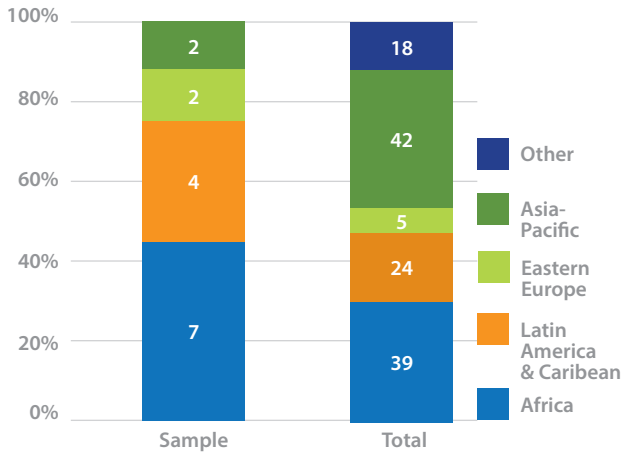
Per Status, (n=15, N=128)



Per type of Implementing Entity (IE), (n=15, N=128)



Per Region, (n=15, N=128)



3. Adapted from the Adaptation Fund Evaluation Policy, Section 8.

Appendix V.
Deep Dives into Innovative Adaptation Fund projects

Deep Dive 1: Innovation in the Action Pillar and Support to Scale, Action Pillar project in North Rwanda

Project name: Reducing Vulnerability to Climate Change in North West Rwanda through Community Based Adaptation (RV3CBA Project)

Status: Project completed and scaled up by GCF

IE: Ministry of Environment, Rwanda

EE: Rwanda Natural Resources Authority (RNRA) in collaboration with various ministerial departments (subnational), cell-level government and farmers cooperatives.

Summary: The project aimed to reduce vulnerability to flooding and rainfall variation through the promotion of climate resilient production and post-harvest systems, supporting livelihood diversification and capacity building to scale up successful climate adaptation strategies. The component on livelihood diversification had the most obviously innovative characteristics.

Key points:

- The project did not consistently describe itself as innovative, however it tested the feasibility of new integrated and multi-sectoral approaches to diversifying livelihoods, such as creating Rural Development Hubs and relocating beneficiaries to model Green Villages around which a range of innovative approaches were clustered.
- There was a strong emphasis on engaging the private sector throughout the project, for example to help farmers to diversify income through non-farm sectors and get access to credit to start new ventures. It also supported innovation by beneficiaries through competitions.
- The project was scaled up by the GCF; the scaled-up project replicated the model in other locations in Rwanda, based on the 'proof of concept' or 'baseline investment' that the AF project provided. The NIE received an AF project scale-up grant to support proposal development which focused on undertaking assessments (vulnerability, gender and stakeholder engagement analysis) and consultations around co-financing and private sector engagement.

Deep Dive 2: Piloting a global funding and support mechanism for locally-led adaptation innovation; the UNDP AFCIA project

Project name: The AF-EU-UNDP Innovation Small Grant Aggregator Platform (ISGAP)

(Note as this name and acronym is not widely used within AF documentation, this project has been referred as UNDP-AFCIA project throughout this review)

Implementing Entity: UNDP, working with partners

Status: Under implementation (Approved October 2019), 22 grants approved

Summary : The AF-EU-UNDP Innovation Small Grant Aggregator Platform (ISGAP) aims to support the development, diffusion and evidence building of innovative adaptation practices, tools, and technologies in developing countries. ISGAP is designed to meet this objective through an effective and efficient backbone management architecture and network of global best practitioners to (i) competitively source and screen innovative adaptation project ideas; (ii) grant funding and administering to bring selected project ideas to fruition; (iii) provision of customized technical and business development capacity building, incubation, and acceleration support; and (iv) knowledge management and sharing and result-based monitoring and evaluation.

Funding: Grant funding is provided to national NGO/CSO applicants on a competitive basis. There are two types of funding: 10-15 micro grants to promote new/pilot ideas (60k) and 5-10 small grants to accelerate ideas with scaling up potential (125K).

Key points:

- The project is delivered in partnership with other organisations working to support innovation which has strengthened project implementation: partners are from within the UN system (UNDP Youth Co-Labs, SDG Finance Sector Hub (FSH), Global Resilience Partnership (GRP) and beyond, supported in identifying potential applicants, screening applicants and providing TA. UNDP is part of the Adaptation Innovation Marketplace (AIM), a virtual platform for collaboration between partners supporting innovation in adaptation which will sustain beyond any specific project and supports an ecosystem for adaptation innovation.
- Demand-driven technical assistance is provided alongside grant funding: this comes from within the UNDP and from AIM partners, often on a pro bono basis. TA provided is broad and covers technical aspects (e.g. climate modelling), financial aspects (e.g. working with local banks to access loans), business development support (e.g. certification, patenting). A key area of provision is training on safeguarding and risk management (ESG).
- The project identifies two pathways to scale for the projects it supports; public and commercial/market-based: provides tailored technical assistance for grantees for each pathway.

a) Public/ Non-commercial route to scale: for innovations with high impact but low profitability - technical assistance focuses on identifying donors, vertical funds or development partners

b) Market-based approach to scale: for innovations with good impact and that are or close to profitable, technical assistance focuses on matching grantees to private equity, venture capacity, banks and potential investors, dealing with issues of patenting etc. Of the current 22 grantees, most have ambition to scale nationally, the majority using public funding, however approx. 20% aim to be financially self-sufficient, a minority intend to pursue a market-based approach to scale.

Deep Dive 3: Technical assistance to drive innovative adaptation practices, products and technologies, the UNEP-CTCN AFICA project

Project name: Adaptation Fund Climate Innovation Accelerator (AFCIA)

Implementing Entity: UNEP and CTCN

Summary: UNEP-CTCN AFCIA is a $5 million pilot project to provide technical assistance to developing countries on a competitive basis to test, evaluate, roll out and scale up innovative adaptation practices, products and technologies. Applications must be endorsed by the national focal points to the Adaptation Fund (Designated Authority) and the CTCN. The project will facilitate Information sharing and exchange of best practices between countries.

Funding: The project will allocate 25 micro-grants projects (up to USD 250,000 each) based on technical assistance services will be implemented for 5 years

Status and progress to date: Under implementation, 11 projects have been approved to date.

Key points:

- The emphasis of the UNEP-CTCNAFCIA is on demand-driven diffusion of technology; testing existing technologies in new contexts or in new ways to assess and demonstrate their feasibility with a view to scaling up via public routes. It rarely supports development and testing of new innovations. In this way, it is similar to the dominant approach to innovation identified within projects within the Action Pillar, although the delivery model is different.
- The CTCN-AFCIA delivery model is exclusively based on provision of technical assistance, it does not support applicants to implement innovation projects themselves. Instead it supports national applicants to articulate their technology needs or adaptation challenge, an intensive process requiring considerable support. The UNEP-CTCN acts as broker, connecting national entities to technical assistance services from the CTCN network through a competitive procurement process. The technical assistance providers, mostly private sector firms, implement the project working in partnership with local organisations who receive 20-50% of the budget.
- The CTCN-AFCIA pathway to scaling is by laying the foundations for investment by climate finance funds, so acting as a testing lab for larger funds. It supports the generation of an evidence base (including support for setting and monitoring indicators) that will enable NIEs and other national institutions to apply for funding for wider scale implementation, including from larger the AF funding windows. All 11 current projects are expected to be successful, suggesting they are low-risk investments.

Deep Dive 4: Combining public and private resources to respond to failings in innovation ecosystems for adaptation, Innovation Small Grant project in the Dominican Republic

Project name: Strengthening of a replicable Micro Ecosystem of Accelerated Technological Innovation for Adaptation and Mitigation to Climate Change in Dominican Republic through the Development of a Pilot Thermo Solar Desalination Appropriate Technology

Implementing Entity: Dominican Institute of Integral Development (IDDI)

Summary: The project aims to accelerate the development of climate change adaptation and mitigation technologies in marine-coastal areas through the strengthening of an international micro ecosystem of accelerated technological co-creation. Using the example of a developing a product for thermo solar desalination, it proposes a replicable model for technological innovation that blends public and private engagement and financing and is both grounded in a specific community and intended to be rolled out globally.

Status: Under implementation

Key points

- Private sector engagement and financing are at the core of the innovation ecosystem being piloted which addresses two key processes for the development of new technologies for adaptation to climate change, namely:

  a) an effective process of identification, idealization, conceptualization of new technologies, including the development of their patents, proof of concepts and development of prototypes and minimum viable products, it emphasises co-creation between universities, communities and companies from Dominican Republic and USA.

  b) a structural process for the effective leverage of the financial resources necessary to cover all the stages of the development of new technologies (in the order of US $ 1 to 2 million the first 24 months) that combines private sector and public resources, including funding from the AF and from US innovation accelerators.

- AF is supporting early stage innovation in a process with a clearly articulated commercial pathway to worldwide scale. The proposal outlines stages of technological development, with approximate timings and financing requirements. Adaptation Fund support was initially requested for the applied research, demonstration and scaling phases. However this would depend on securing funding from other sources for initial phases, which is not permitted in the absence of co-financing guidelines. The proposal was revised to instead support the initial four stages of development. The project is explicit about its goal to "identify appropriate technologies that have a large international market and a commercial potential that guarantees their worldwide scaling" The main characteristics of the new climate change adaptation technologies that the micro ecosystem will develop will be their modularity, their low cost and their ability to be placed in a distributed manner. Technological prospecting is used

to prioritize technologies to be developed (proof of concepts and minimum viable products) at an appropriate scale that allows for fast manufacturing, marketing and distribution.

- The project proposal demonstrates a strong innovation rationale and analysis of the barriers to adaptation innovation, including multi-lateral organisations' attempt to support innovation. Unlike most other proposals reviewed, it demonstrated understanding of innovation pathways and concepts and levels of financing required and was clear on what it was piloting. Analysis of barriers to technological innovation for adaptation include: The private sector in industrialized countries… that have the capacity to dedicate substantial financial resources for the research and development of technologies, look for very large markets with economies of scale, and not distributed markets such as SIDS, The financing of multilateral banks in technological innovation is highly concentrated in technologies derived from scientific processes, managed by ministries of science and technology and closely tied to the financing of projects in public universities.

Appendix VI. Barriers to Climate Innovations in Developing Countries

Table 12. Barriers to Climate Innovations in Developing Countries

Stage	Barriers	Description
1. Emergence	1.1 Limited awareness of climate physical and transition risks as well as new venture opportunities	• Limited understanding of climate change causes, effects and impacts on local living conditions. • Limited knowledge of government objectives, international commitments, and actions. • Limited capacity of entrepreneurs and investors to assess climate impacts in terms of new venture opportunities. • Limited understanding amongst policymakers of climate innovations' potential to boost economic activity in certain sectors, generate income, create jobs and reduce inequalities, especially post-COVID-19. • Limited awareness of public decisionmakers of available policy instruments to improve market conditions for climate innovations (e.g., R&D investments, regulations, equity-free pre-seed and seed-grants for start-up to cover expenditures, public procurement schemes, intellectual property frameworks, etc.). • Limited data availability to assess opportunities and validate business models.
	1.2 Limited capacity to ideate or access and adapt novel approaches	• Insufficient critical mass of entrepreneurs engaged in home-grown ideation of novel and transformative climate solutions. • Limited access to "global" solutions to reduce GHG emissions and climate vulnerabilities whose technical feasibility and commercial competitiveness have already been proven in other geographies. • Limited knowledge and experience of skilled entrepreneurs in developing and validating climate business ideas and business models.
	1.3 Lack of supportive innovation and entrepreneurial ecosystems	• Incomplete, unclear or inconsistently implemented regulations to support climate-friendly innovation and businesses. • Lack of incubators and accelerators to support climate technopreneurs in refining business models and forging strategic partnerships. • Limited means to adapt global solutions to local contexts due to inadequacies in infrastructure and logistics. • Limited data availability to validate market opportunities for climate solutions and business ideas. • Historical monopolies and sectoral policies that favour incumbent technologies. • Limited access to tried and tested operating procedures for reaching market fit due to a relatively low number of historical climate start-ups.
	1.4 Limited access to early-stage capital and VC's short investment horizons and high return expectations	• Venture capital model is inappropriate for financing climate-friendly ventures that are capital intensive, have long payback period and high ERR but low IRR. • High-risk perception of climate ventures is elevated further for VC investments in emerging and frontier markets. • Lack of an exit market through company IPO or sell to another company or fund. • Limited awareness of most public/official development/impact investors of the venture capital gap in early-stage climate solutions in emerging and frontier markets. • Difficulties for public/official development/philanthropic investors to establish the climate and public rationale of a specific investment opportunity. • Difficulties for public/official development/impact investors to invest public budgets in early-stage ventures due to risk-aversion of supervisory mechanisms and mandate restrictions.
2. Deployment	2.1 Higher perceived political, policy, market, and socio-economic risks	• New climate technologies, infrastructure and practices usually requiring higher upfront costs and have longer payback periods, and as such are perceived as having higher market, socio-economic, political and regulatory risks that adversely impact novel, complex, long-term investment. • Political and regulatory risks include contract renegotiations (e.g., renegotiation of long-term power purchase agreements in terms of tariff regulation or contract duration); regulatory approval and licensing processes
	2.2 Higher percieved technical operations and financial risks	• Lack of technological track record, risk of construction delays and lower than expected technical performance and new skills acquisition requirements. • Quantitative and qualitative deficit of supporting physical infrastructure (e.g., cranes and roads to unload and transport wind turbines or poor grid infrastructure). • Liquidity risks arising from technical and operations.
	2.3 Higher perceived market, and socio-economic risks	• Market and social risks include uncertainty about consumers' demand for novel products and services and social acceptance. • Macro-economic risks include changes in macro-economic variables such as inflation, real interest rates and exchange rate fluctuations; or default of counterparty (e.g., utilities for renewable energy or water technologies).

Table 12. Barriers to Climate Innovations in Developing Countries (continued)

Stage	Barriers	Description
2. Deployment	2.4. Lack of access to long-term affordable project finance	• Limited domestic fiscal capacity to support investments with high economic returns but limited bankability in early-stage markets. • Limited domestic capital markets and financial institutions, and reliance on foreign investors/international capital markets. • Higher return expectations from entrepreneurs and investors to compensate for higher perceived risks affect the financial attractiveness and bankability of projects.
	2.5 Lack of public resources to de-risk innovative investments targeting early-stage markets	• Limited capacity of government officials to identify and finance public instruments to de-risk investments at scale in early-stage climate technologies and practices mismatch in emerging and frontier markets. • Mandate restrictions for public/official development/impact investors to invest public budgets in scaling up early-stage technologies and markets due to the risk-aversion of supervisory mechanisms and mandate restrictions.
3. Adoption	3.1 Misalignment of policies, norms, and values.	• Opposition to market reconfiguration or inertia from historical operators and monopolies. • Legacy policies and regulations. • Distributional trade-offs and/or benefits capture. • Challenge to establish norms and values.
	3.2 Misalignment of finance with climate action	• Limited disclosure of climate physical, liability and transition risks by firms and asset managers. • Tyranny of quarterly performance reports- mismatch between short term business cycles, medium-term political agenda and long-term climate physical, transition and liability risks. • Lack of standards and taxonomies and outdated or inadequate valuation methodologies. • Lack of global, regional, national institutions to foster normative and behavioural shifts.
	3.3 Capacity barriers to widespread adoption	• Low customer awareness of the benefits and availability of climate-friendly products. • Limited knowledge of financiers of climate physical, liability and transition risks and capacity to incorporate them into every financial decision. • Proprietary nature of information and financial barriers to technology/practices transfer. • Limited capacity of domestic financial institutions and firms to originate, develop, finance and implement climate friendly investments.
	3.4 Limited access to long-term affordable finance	• Low domestic saving rates and capacity of domestic institutions to mobilise these savings. • Limited capacity of domestic institutions to access global and domestic capital markets. • Lack of instruments to mitigate local currency and interest risks.

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